

# Mekong River Village Project

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Presentation of Intermediate Report  
at  
Mekong River Commission, Vientiane  
19 Feb 2024

## Hermann Waibel:

- Formerly Associate Professor at Asian Institute of Technology
- Professor of Development and Agricultural Economics, Leibniz University Hannover, Germany, until 2023
- Director of Thailand Vietnam Socioeconomic Panel (TVSEP), until 2023
- Coordinator Mekong River Village Project

## Suputra Boriwut

- Student of Economics, Ramkhamhaeng University, Bangkok
- Training Fellowship on Video Storytelling by Internews/Earth Journalism Network
- Project Assistant, Mekong River Village Project

## China:

- Prof. Dr. Shi Min, College of Economics and Management, Huazhong Agricultural University

## Myanmar:

- Mr. Chit Myolwin, Consultant

## Laos:

- Mr. Phouvong Phami, PhD student Wuhan University

## Thailand:

- Dr. Somkid Naprom, Udon Rajabat University
- Dr. Nopporn Tantisirin, Ubon Ratchathani University
- Dr. Chompunuch Nantajit, Ramkamhaeng University

## Cambodia:

- Mr. Chea Chaeath, Consultant

## Vietnam:

- Mrs. My Hao Van, Consultant

## Germany:

- Dr. Niels Wendt, IT coordinator

1. Motivation
2. Objectives of the Project
3. Literature Review
4. Selection of Villages and Data Collection
5. Initial Results
6. Economics of Sand
7. Next Steps

- 1) My „love“ for the Mekong River
- 2) My „Naka“ dream
- 3) My concern for Sustainable Development in Asia

# My love for the River...



# The Naka at Nakhon Phanom





# The „Naka“ came to my dream...





# The Mekong River (03/2020): ...“on the way to death?”



# Example: Satellite Images of Mekong River north of Nong Khai



**2013**



**2020**

Source: (<https://earthexplorer.usgs.gov/>)



# TVSEP Panel: A decade of development in 54 Thai villages (=540 households) in the Mekong Basin

Parameter	Unit	2007	2017	Difference
<b>Population</b>				
Households per village	No./village	134	158	+ 24
Average Population	Persons/village	589	612	+13
Average Household Income	PPP \$/HH	5012	9899	+4887
<b>Income Shares:</b>				
Crop production	%	17	18	+1
Livestock and Aquaculture	%	3	11	+8
Natural Resource Extraction	%	7	1	-6
Remittances	%	20	16	-4
Off-farm wage employment	%	34	23	-11
Non-farm self-employment	%	15	20	+5
Public transfers & others	%	4	11	+7
Households engaged in fishing	No.	276	141	-135
Households with migrants	No.	300	273	-27
Average No of migrants	No./HH	2.02	1.76	-0.26
<b>Household Debt</b>				
Annual Debt Repayment	PPP \$/HH	663	3246	+2583
Over indebtedness (DSR>40)	% of HHs	12.5	25.4	+12.9

Source: own calculation by the authors (C. Nantajit) based on TVSEP panel data; Note: The number of households interviewed was 537 in 2007 and 469 in 2017; there are 10 households per village in the panel, however attrition has occurred. [u](#) Numbers are rounded up or down

- Document the changes in the livelihoods of rural villages located at the Mekong River during the past two decades in the six Mekong countries
- Assess the benefits, costs and risks of past development in the Mekong Region
- Investigate the Sustainability of development in the Mekong River Basin

- 1) Book publication (CABI or KAS or others) with all research partners as co-authors
- 2) Joint papers
- 3) Individual Papers
- 4) A documentary Film (Miss Suputra)
- 5) A Data base for follow-up project by others
- 6) A final workshop?



- 1) Use the GPS reference points of the river (see map) as starting point
- 2) Search for rural village nearby river with Google maps (max. 3 km); and nearby reference point
- 3) Enter GPS of identified village in a country excel sheet
- 4) Collect secondary information about village (e.g. name of village, contact address, population, no. of households, etc)
- 5) Conduct personal interview (PAPI/CAPI) with village representatives
- 6) Upload questionnaire on “*SurveySolutions*” Server at Hannover; online checking
- 7) Paper questionnaires collected by Ms Suputra Boriwut
- 8) HW/SB visited all countries except Myanmar, during the survey (July – December 2023)

# Some basic thoughts: what are the benefits of a river?

Table 1: The Benefits of a River

Benefit Category	Component	Outputs	Relative Importance	Basis for economic valuation
Economic	Water Quantity	Hydropower	High	Market value of electricity
		Capture Fisheries	High	Market Value of Fish
		Cage Culture	Low	Market Value of Fish
		Irrigation	Medium	Added value in Agriculture
		Shipping	Low	Opportunity Costs of Transportation
		Domestic Water Supply	Low	Opportunity Costs of Water
	General Viability of River	Fish Species Diversity	Medium	Stated Preferences
		Domestic Waste disposal	Low	Opportunity Costs of Waste Disposal
		Sand Extraction	High	Market Value
		River Width	Bridges	High
Environment	Water Quality	Fish Health	Medium	Revealed/Stated Preferences
		Plant Health	Low	Revealed/Stated Preferences
		Human Health	Medium	Revealed/Stated Preferences
	River Floodplain	Plants & Crops	Medium	Market Value
		Biodiversity (animals and plants)	Low	Stated Preferences
		Flood water retention	Medium	Loss of Earnings
Social	General River Viability	Local Food Security	Medium	Revealed Preferences
		Tourism	Medium	Market value of recreation
		River Atmosphere	Low	Stated Preferences
		Sports	Low	Revealed Preferences
		Mythology, Traditions & Religion	Low	Revealed Preferences
		River Institutions	Participation of river communities in decision making	High

# Cost Benefit Analyses of Hydropower Dams

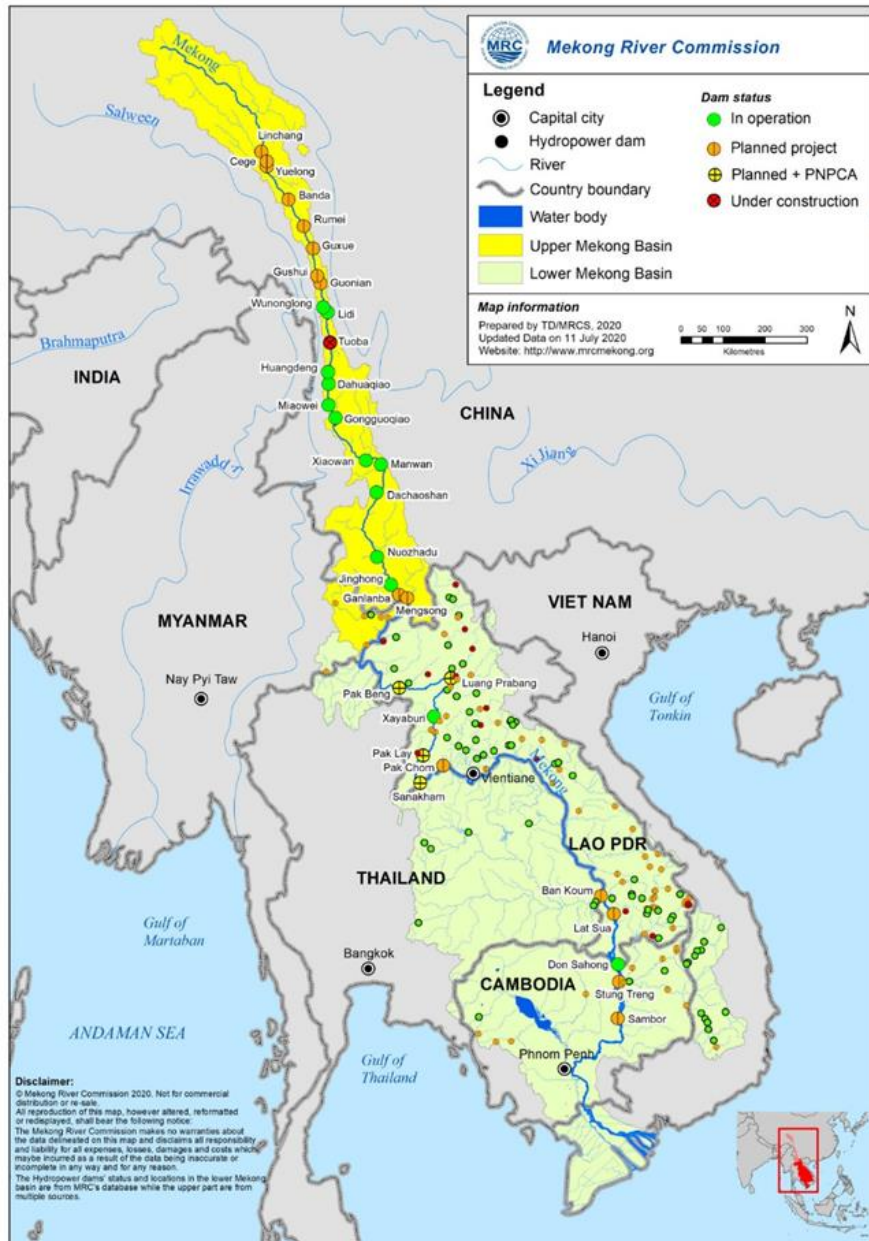
Table 1: Summary of NPV calculations for 11-dams scenario

Item	Benefit/Cost Category	MRC (2011) (USD million)	Intralawan et al. (2018 (USD million)
Net Benefits	Hydropower (Electricity)	32,800	6,650
	Irrigation	1,659	1,832
	Reservoir fisheries	200	822
	Aquaculture	1,300	931
	Wetlands	100	238
	Rice Production on recession land	278	307
	Navigation	64	71
<b>Total Net Benefits</b>		<b>36,401</b>	<b>10,851</b>
Indirect Costs (externalities)	Capture fisheries	1,900	13,030
	Social/Cultural	0	1,665
	Sediments/Nutrients	0	2,311
	Biodiversity Loss	415	458
	Forest Reduction	372	411
	Flood damage	273	301
	Salinity affected areas	2	2
<b>Total Costs</b>		<b>2,689</b>	<b>18,178</b>
<b>Difference</b>		<b>33,712<sup>1)</sup></b>	<b>-7,328<sup>1)</sup></b>

Source: Intralawan, A., Wooda, D. Frankel, R. Costanza, R. and Kubiszewski, I. (2018), (modified).

1) Minor differences from source due to rounding

# Hydropower dams at the Mekong/Lancang River



Source: Mekong River Commission, 2021

# Sampling of Mekong Villages

Table 1: Basic sampling information for identifying Mekong villages

Country	No. of villages sampled	Approximate sampling point distance (km)	Actual No. of Villages surveyed	Remarks
China	12	15	11	China has the largest share of the river but the upper region is not accessible to international research
Myanmar	10	25	6	Security situation prevented to reach the target
Laos	36 (10+26)	25	36	Ten villages in parallel with Thai side
Thailand	25 (10 +15)	25	31	Ten villages in parallel with Laos side and 6 more villages with sand operations
Cambodia	18	25	18	According to target
Vietnam	10	25	8	Two villages denied permission for interview
Total	105	-	110	

Source: own survey



# Map of interviewed Mekong villages by country

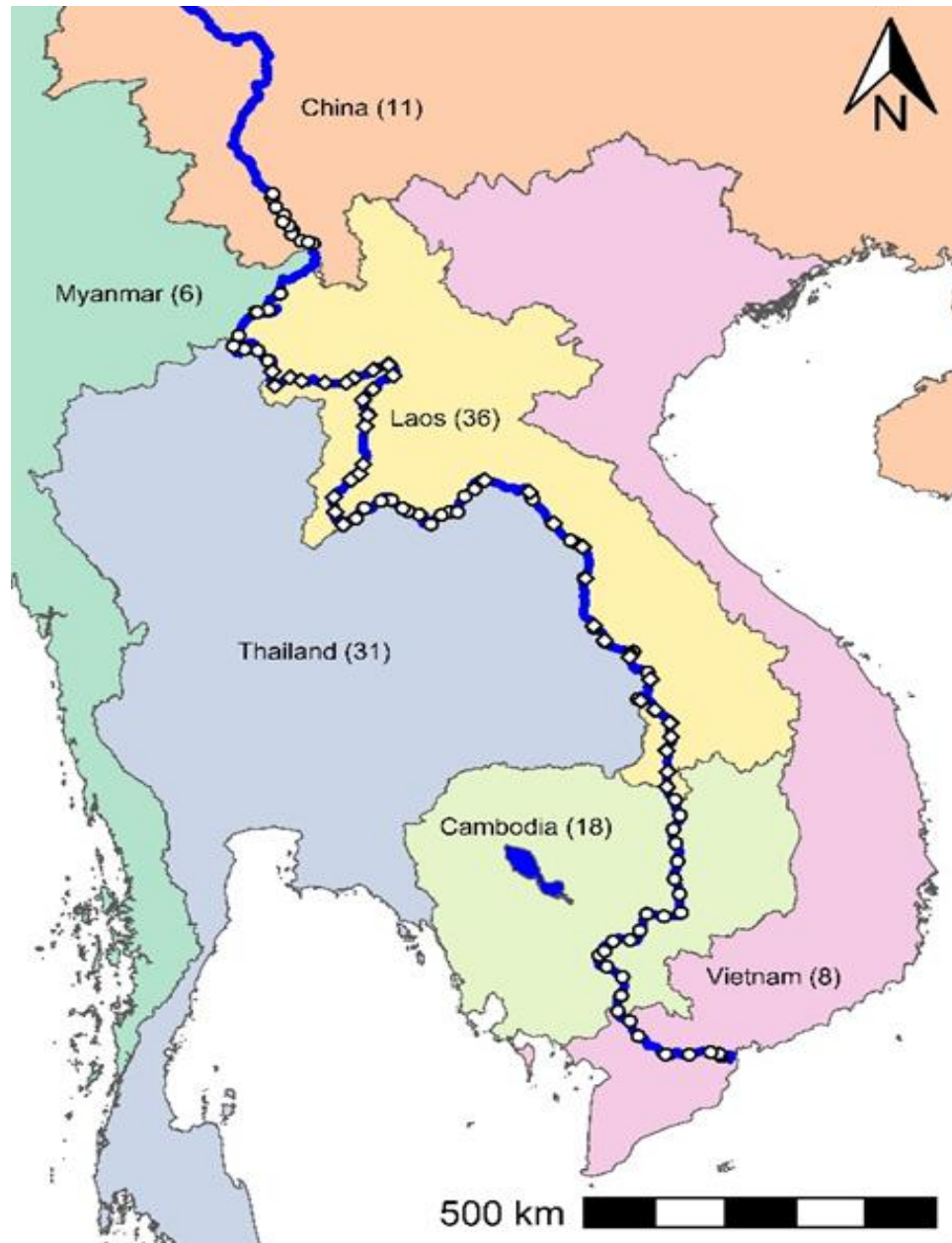


Table 1: Structural Parameters of Mekong Villages, Survey 2023

Country	No. of Villages	Village Population <sup>1)</sup>		Number of Households per Village		No. of HH with migrants		Village Area (ha)	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
China	11	494	672	113	138	16	22	600	600
Myanmar	6	771	696	172	158	16	19	200	200
Laos	36	971	594	180	97	51	49	2200	2600
Thailand	31	752	376	219	124	53	44	400	300
Cambodia	18	1757	1079	340	182	71	73	900	1500
Vietnam	8	2852	1603	731	426	120	137	300	100

1) Mean population rounded up;

# Changes in Population and Households, 2003 -2023

Table 1: Changes in Population, Households and Household Size since 2003, compound growth rate

Country	No. of Villages	Change in village population per year (%)		Change in No. of Households per year (%)		Average Household Size (No.)		
		2003 – 2013	2013 - 2023	2003-2013	2013-2023	2003	2013	2023
China	11	1,2	2,3	1,17	3,43	4,25	4,26	4,81
Myanmar	6	3,95	4,99	3,59	4,65	4,52	4,37	4,26
Laos	36	1,04	2,01	1,39	2,02	5,35	5,6	5,81
Thailand	31	2,44	3	2,63	3,18	3,54	3,65	3,8
Cambodia	18	2,43	3,18	2,17	2,39	5	4,95	4,66
Vietnam	8	1,56	1,69	2,11	1,46	3,98	4,21	4,17

Table 1: Awareness of Hydropower Dams and Distance to nearest Town

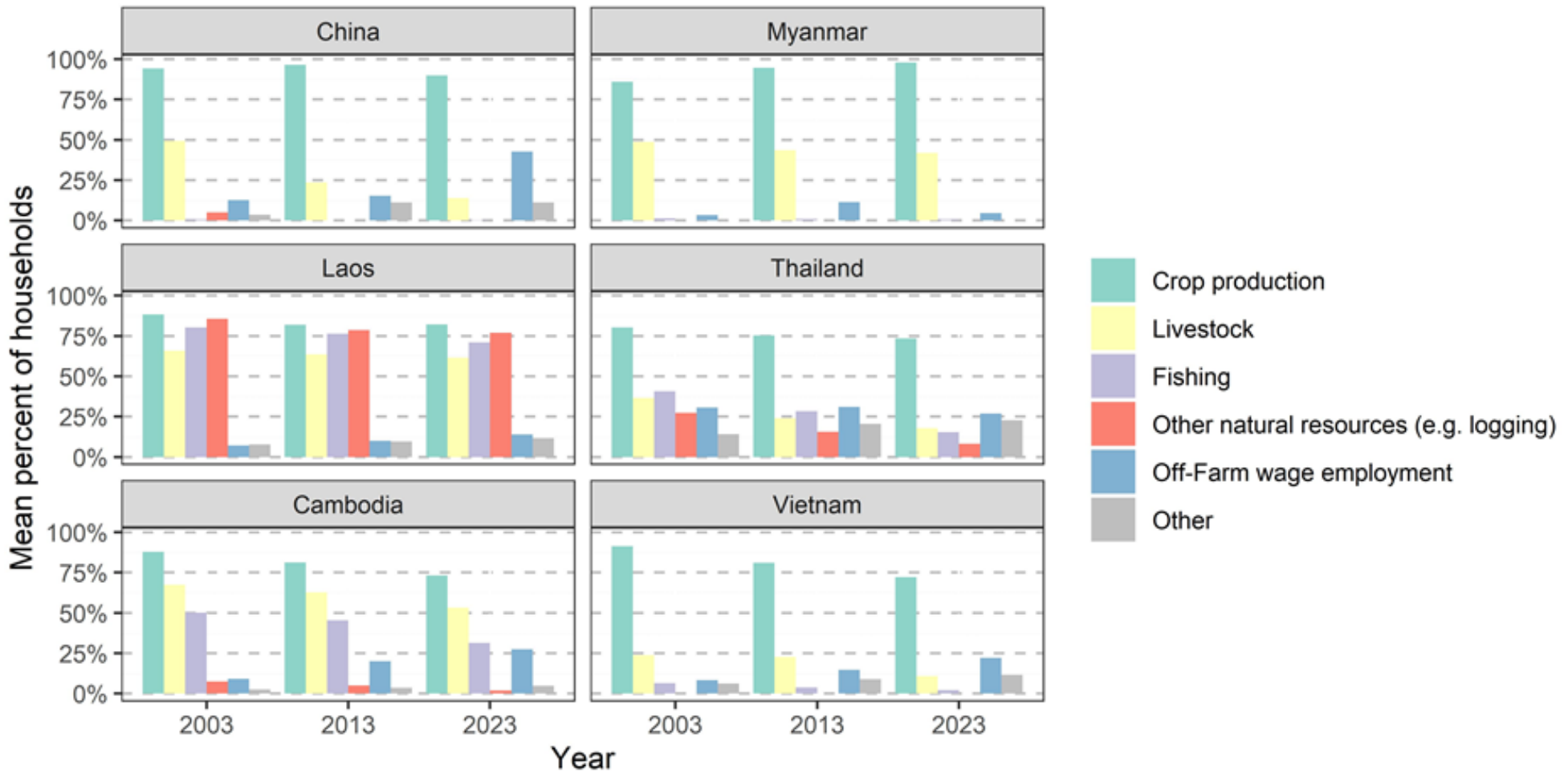
Country	% Village respondents aware of Hydropower dams; <50 km (Close); > 50km (Far )		Distance Village to nearest Town (km)	
	Close	Far	Avg	SD
China	82	0	15.09	14.07
Myanmar	0	0	21.53	14.33
Laos	33	61	23.11	16.47
Thailand	16	48	11.61	9.82
Cambodia	6	94	17.06	18.63
Vietnam	0	25	9.56	6.98

Table 1: Respondent Information

Country	Age (years)		Gender (%)		Education (% share)				Additional Respondents
	Mean	SD	M	F	Primary	Secondary	Tertiary	None	%
China	47.09	7.54	91	9	18	64	18	0	45
Myanmar	57	8.67	83	17	50	0	17	33	83
Laos	52.03	9.51	94	6	28	58	14	0	53
Thailand	54.26	5.76	71	29	13	55	32	0	77
Cambodia	63.72	11.34	78	22	56	33	11	0	89
Vietnam	49.88	7.66	100	0	0	75	25	0	38



# Income Sources in % of households reporting by country, between 2003 and 2023

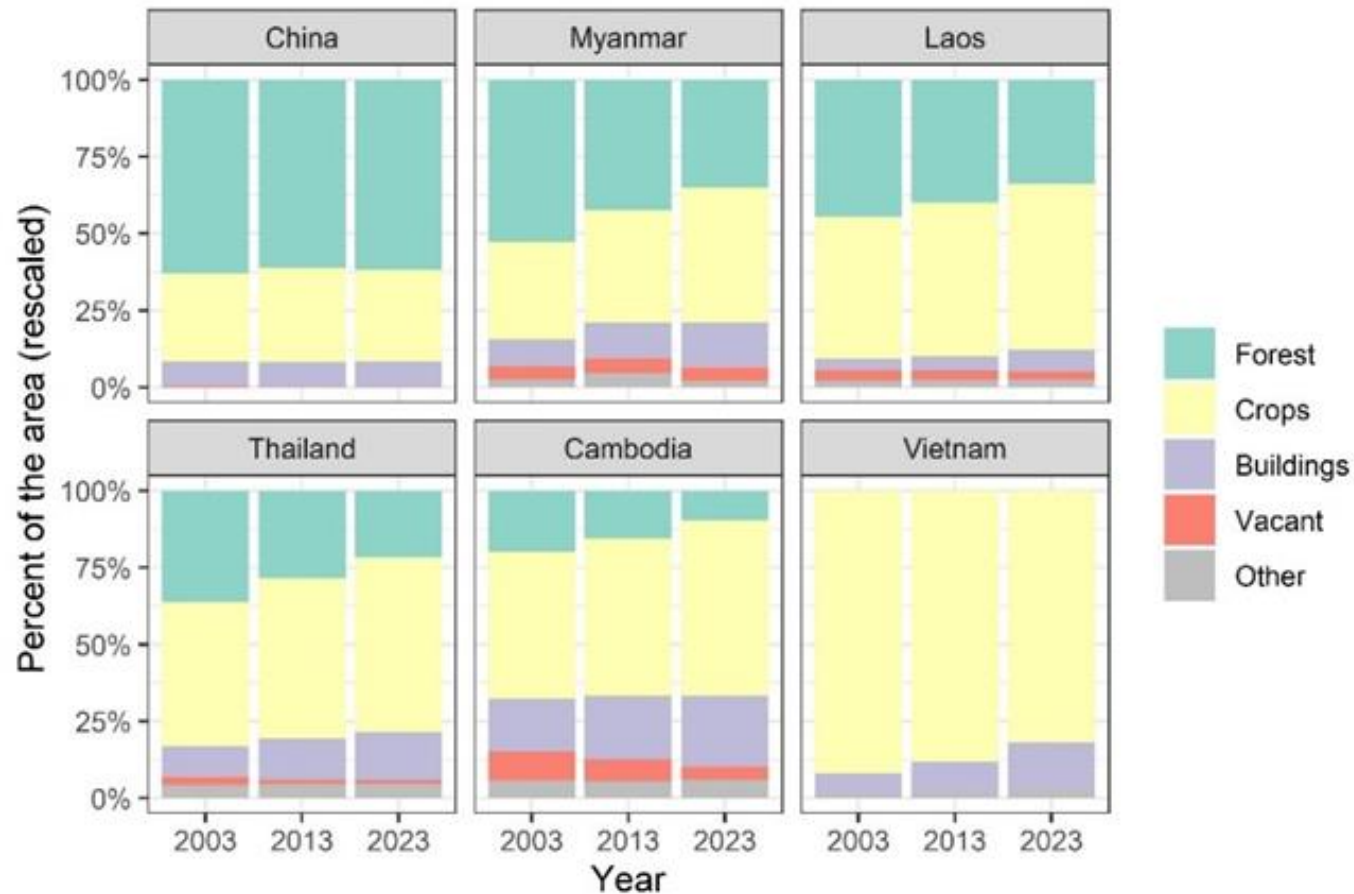


# Priority sources of village income, 2003, 2013, 2023

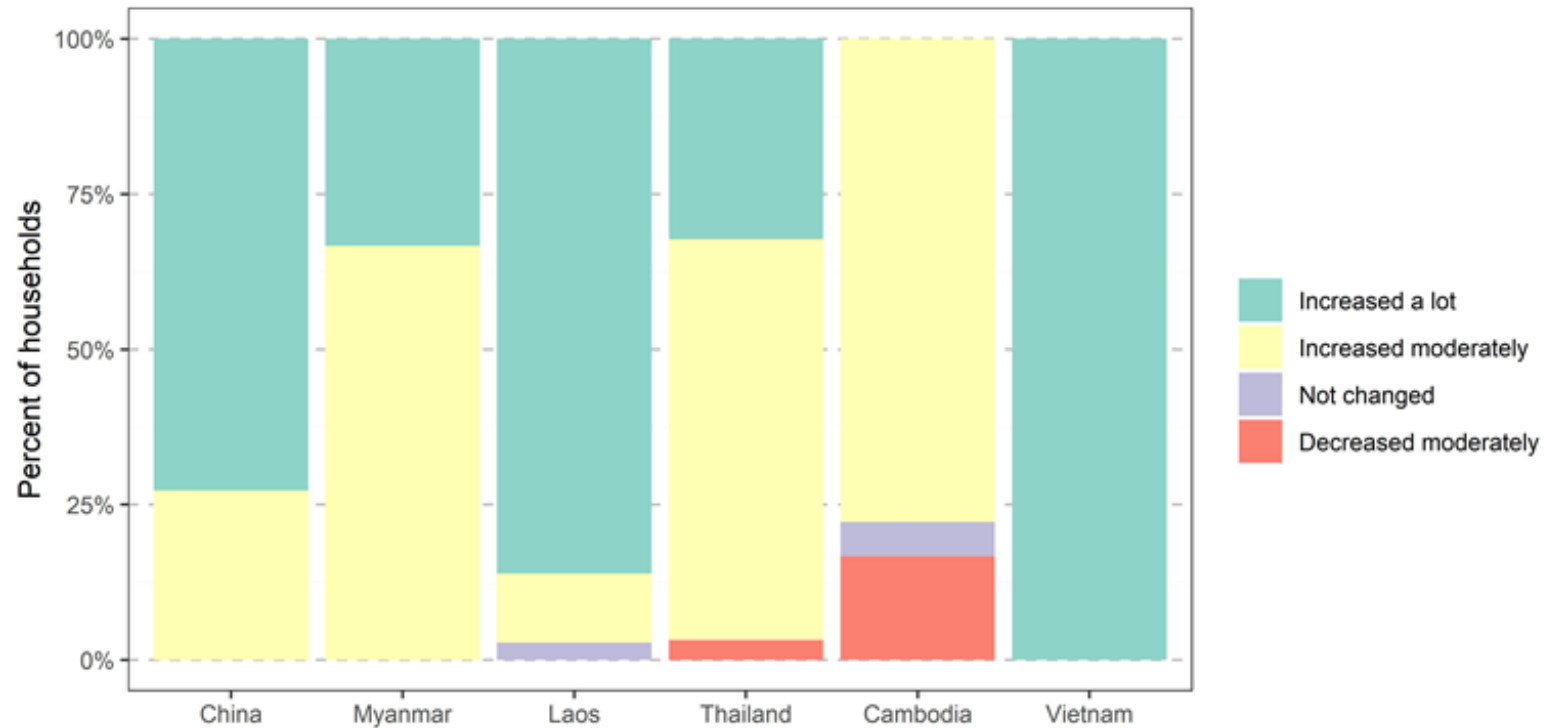
Table 1: Priority Sources of Income by county, 2003, 2013 and 2023

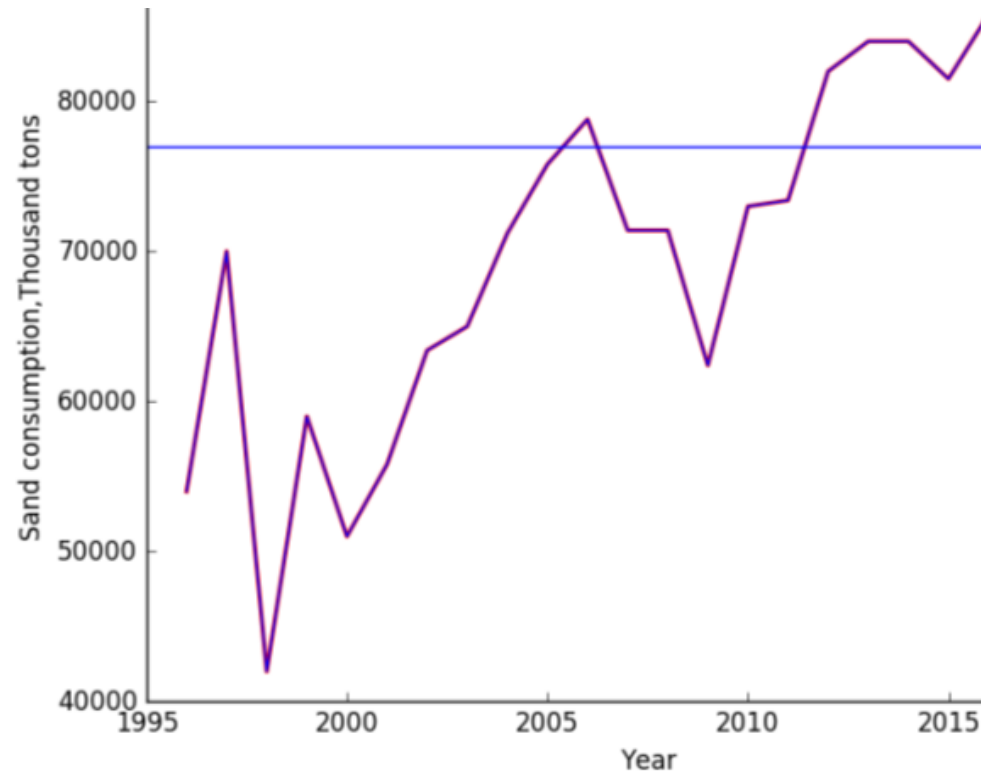
Period	2023			2013			2003	
Country	First	Second	Third	First	Second	Third	First	Second
<b>China</b>	Crop	Wage	Self	Crop	Wage	Self	Crop	Animal
<b>Myanmar</b>	Crop	Animal	Fishing/ Wage	Crop	Animal	Fishing/ Wage	Crop	Animal
<b>Laos</b>	Crop	Animal/ Fishing	Animal/ Natural	Crop	Fishing	Natural	Crop	Animal
<b>Thailand</b>	Crop	Wage	Wage	Crop	Animal/ Wage	Wage	Crop	Animal
<b>Cambodia</b>	Crop	Wage	Animal	Crop	Fishing	Animal	Crop	Animal
<b>Vietnam</b>	Crop	Self	Wage	Crop	Animal/ Self	Self	Crop	Animal/ Self

# Figure 4: Changes in Land Use in Mekong Villages



# Welfare change in Mekong villages between 2003 and 2023, by country

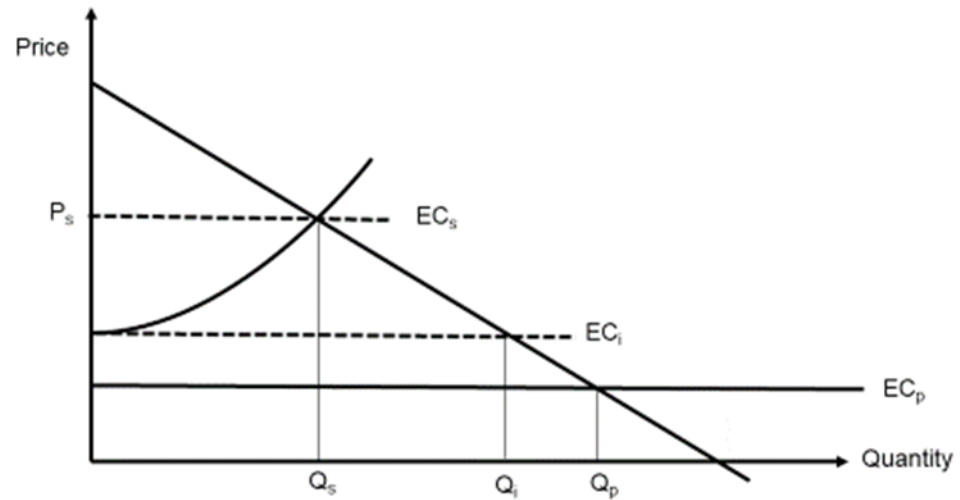
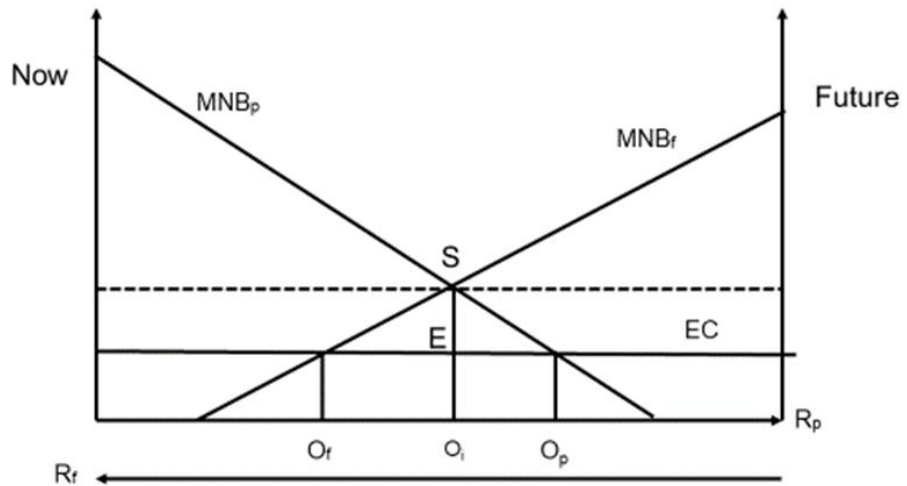




Source: Chilamkurthy et al 2016



# Social Optimum of Sand Extraction (hypothetical scenario)



# Timeline of future activities

Month	Activity	Data	Expected Output
February	Collect comments on intermediate report	-	Draw conclusions for further data analysis
March	Project Team Meeting (online)	-	Discuss participation in collection of additional data and participation of analysis
March	Transcribe/Translate/Code open-ended questions	Village survey	Tabulation and Data description
	Identify and acquire secondary data on villages	Government statistics/other surveys (as available)	Data assessment and summary
March/ April	Evaluation of different sources of satellite data	NASA/ESA	Data assessment and summary
April/May	Advance Special Study: Economics of Sand Extraction (see below)	Online/telephone survey of sand operators in Thailand	Data assessment and summary
May	Project Team Meeting (Online/Hybrid)	-	Assessment of Progress
June	Identify/Specify Mekong Village Development Model	Data links : Survey+ secondary+ satellite	Advancement of theoretical framework
July/August	Perform model analysis	Survey+ secondary+ satellite	Summarize and review model results
September	Review Film Material; outline documentary film	Own film material	Draft version of documentary film
	Write 2 <sup>nd</sup> project report	All materials	Update of intermediate report
October	Team Meeting (hybrid/ Bangkok)	All materials	Draft book outline; Identify Gaps; acquire additional funding for Conference
November/December	Draft Research Report (final)	All available	Draft Final report
December	Finalize Project documentary Film	All useful	Film
January/February 2025	Prepare Conference	Project networks	Conference Procedure and Organization
March 2025	Final Research Conference	KAS office in Tokyo as main sponsor	Conference Proceedings/Presentations
April/May 2025	Finalize Mekong Village Book	-	Book Manuscript
June – December 2025	Prepare Journal Publications	Country researchers and research networks	Up to 5 high quality papers

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- Unique survey with on-site interviews with representatives of 110 villages in all six Mekong countries
- Covers a distance of almost 3000 km on the Mekong River from Southern China to the Mekong Delta
- Interviews show reduced dependency of livelihoods on the river in the Mekong villages
- Confirm the findings in numerous reports that capture fisheries have substantially declined
- Only minor expansions of aquaculture and irrigation agriculture was found
- Income from natural resources diminished and agriculture increasingly substitutes forest land
- Mekong villages are developing with growing village population and intensifying economic activities
- Mostly, representatives of Mekong villages reported an increase in wellbeing of the village populations during the past twenty years. However, progress differs by country.

Khob Jai;  
Khob Khun Krap,  
Cam ón,  
Shea shea,  
Saum arkoun,  
Kyaayjuutainparsai,  
Thank you,  
Danke schön!