Linking the ideal and the real

Mekong Region Futures Institute: John Ward

December 2019

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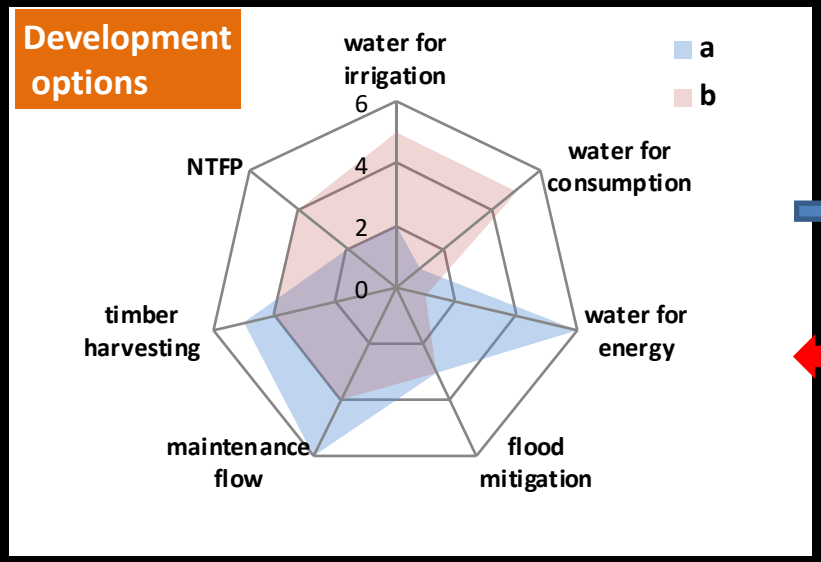
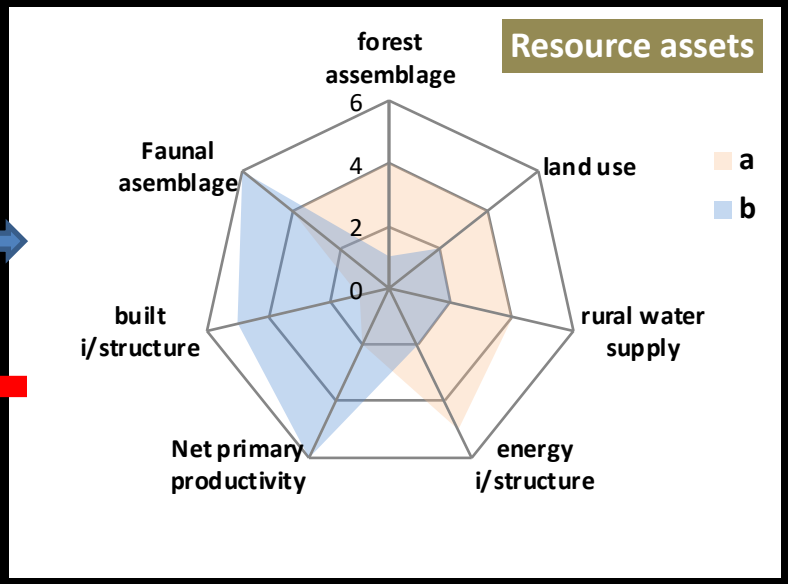
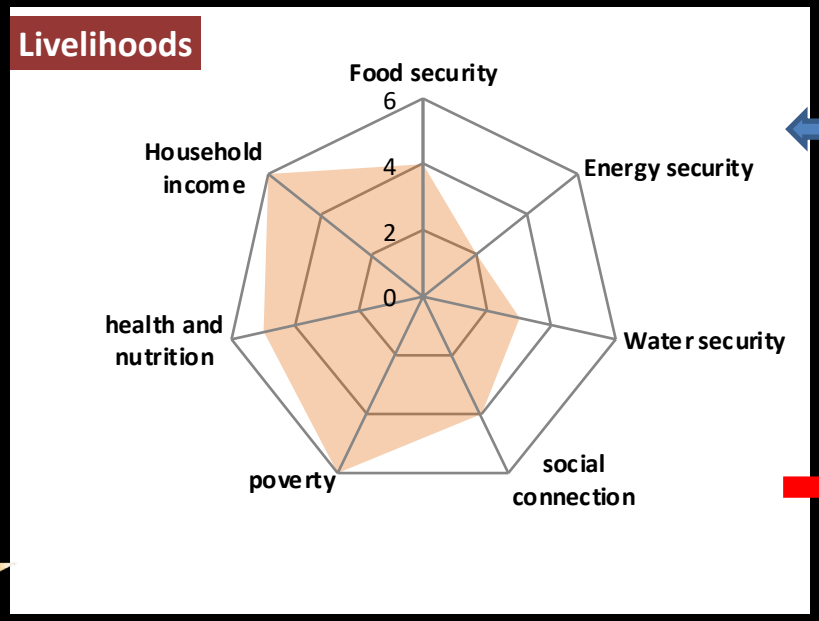
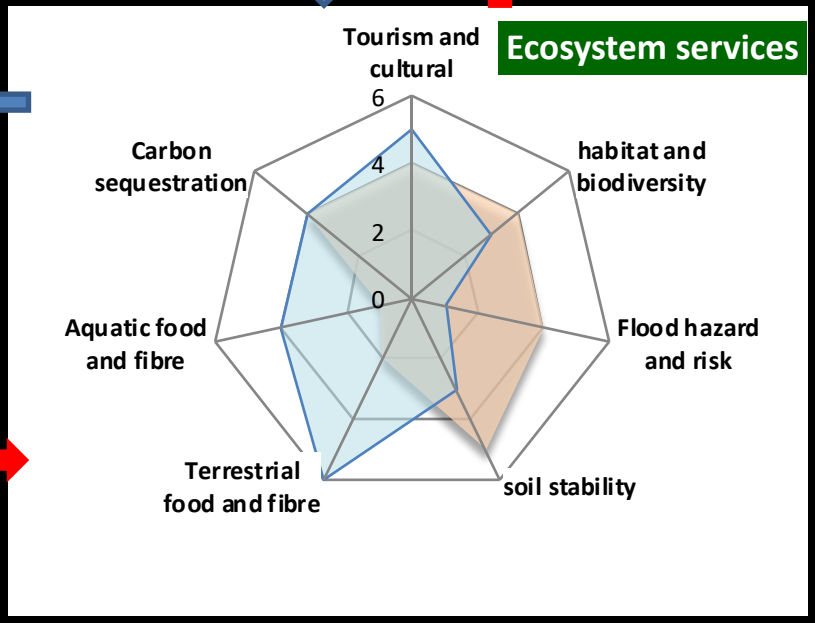
Coupling livelihoods, ecosystem functions and services and decisions









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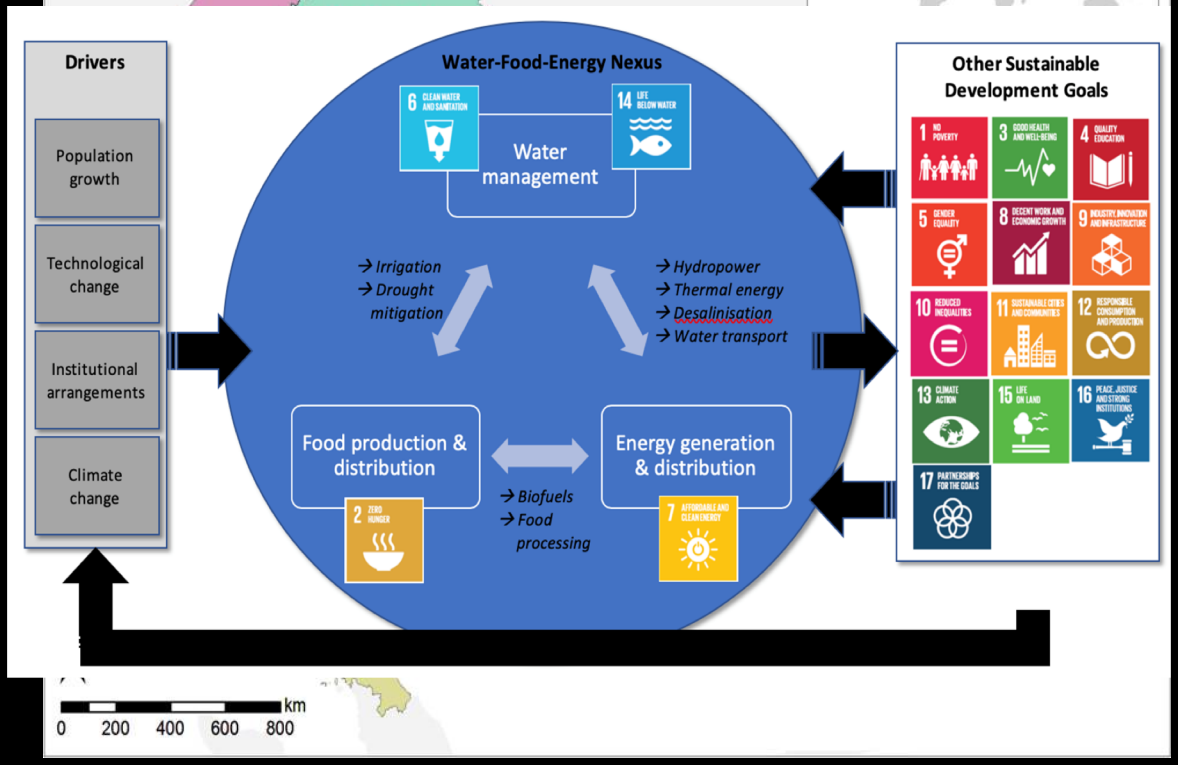
Pending investments in a highly connected Mekong region



N = 5,980 (household randomized sample)

Xishuangbanna: Testing proposed PES scheme to reduce mono-culture rubber plantations.

Nam Ngum: Would poverty levels be reduced if water resources were better utilised (large scale irrigation)?

Hua Sai Bart: Should water be diverted to north east Thailand ?

Tonle Sap: Impoundment impacts on fisheries and regional master development plan

Mekong Delta: hard infrastructure or farm adaptation to manage sea level rise and upstream developments ?

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Survey design: descriptive, comparison or inference?

Purpose

1. Baseline household data
2. Guided by consultations identifying pending developments and indicators
3. Data for future research
4. Standardized but modular instrument
5. Baseline data for dynamic modelling, simulations and decision support

Data classes:

- Data on household composition, assets and characteristics;
- Current household activities (livelihood strategies and income sources)
- Relative importance of livelihood factors and determinants
- **Values that guide peoples' lives**
- **Subjective wellbeing**
- **Future livelihood strategies and barriers to adaptation when confronted with change**

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Household subjective wellbeing

- Social, economic and environmental wellbeing dimensions made up of 38 factors
- We calculated an index of well-being for each factor from degree of importance and dissatisfaction
- Higher scores mean more important and more dissatisfied

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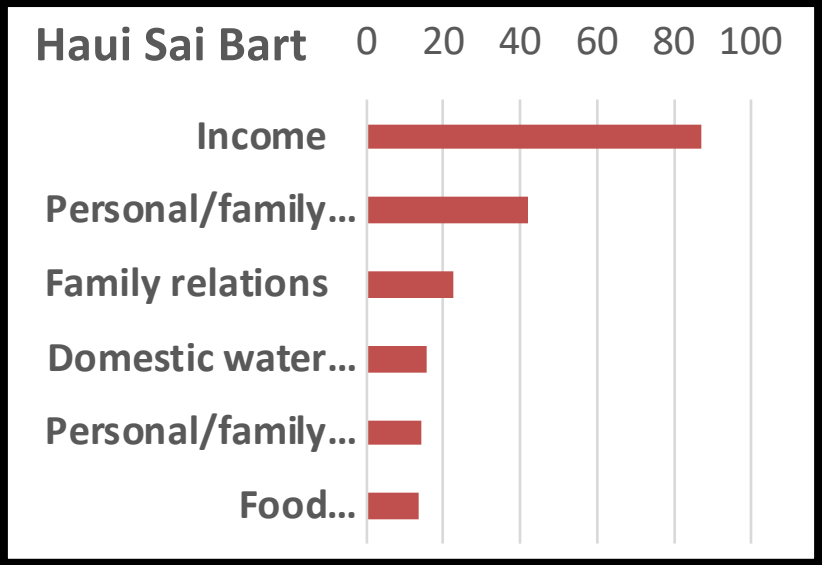
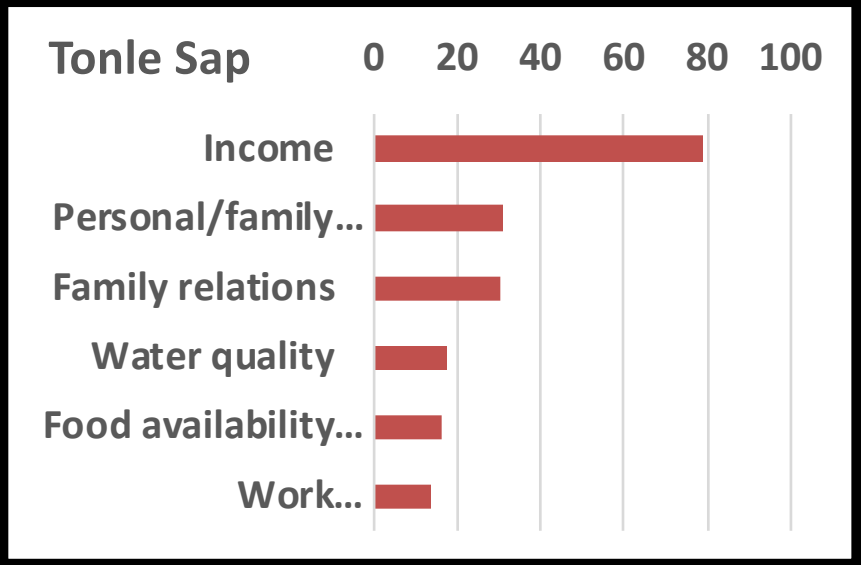
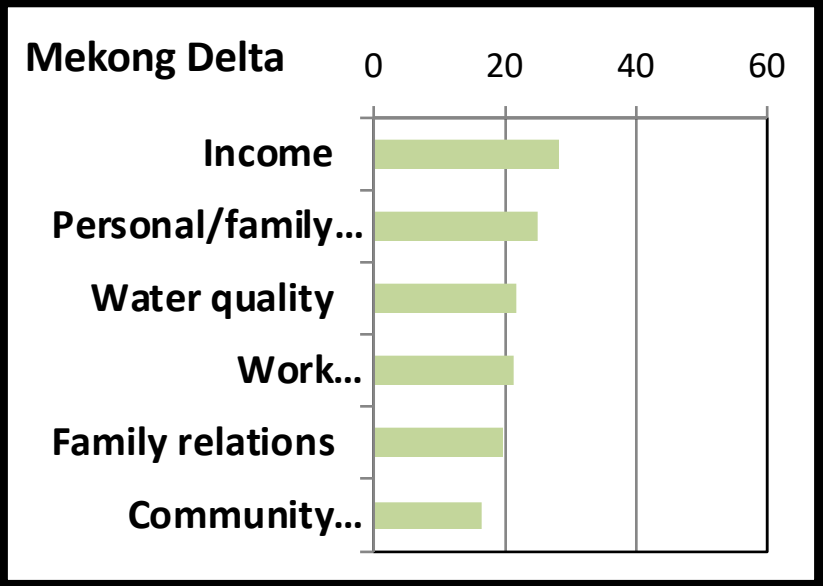
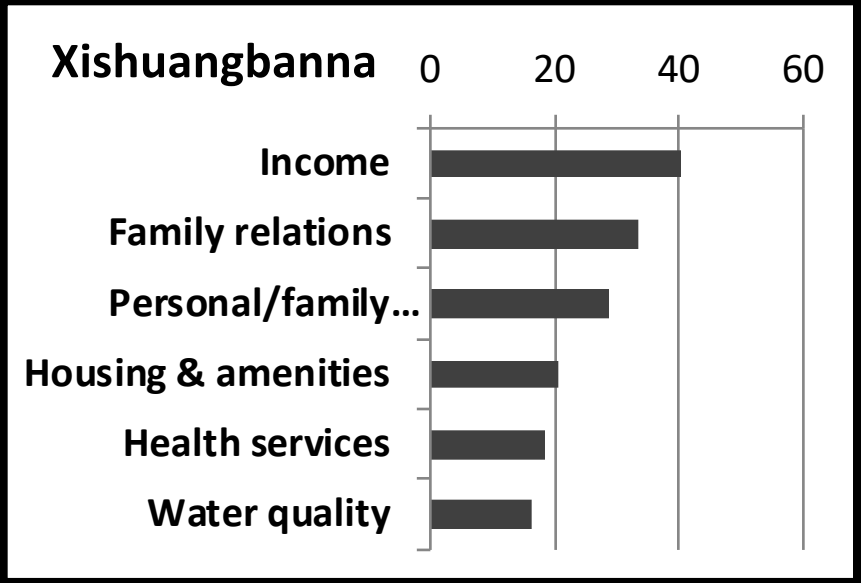
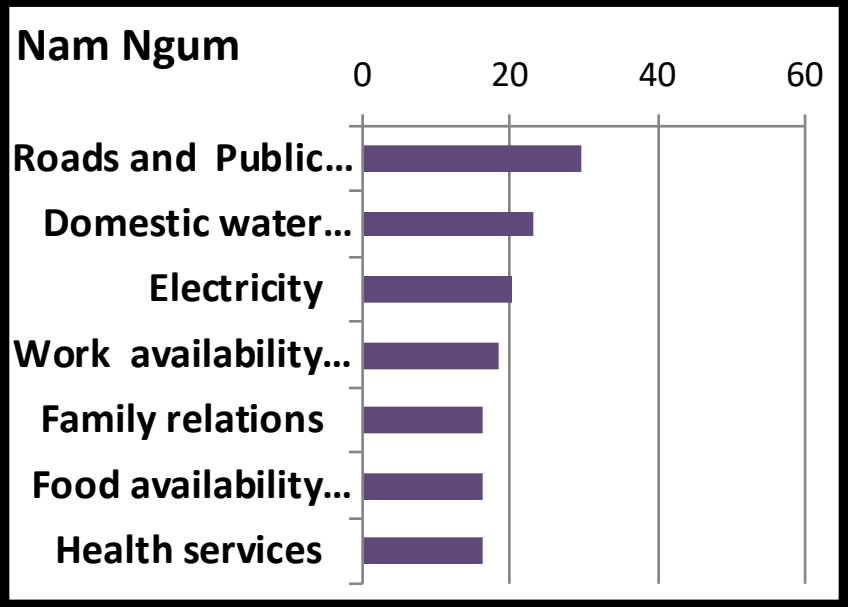
Subjective well being in the Mekong

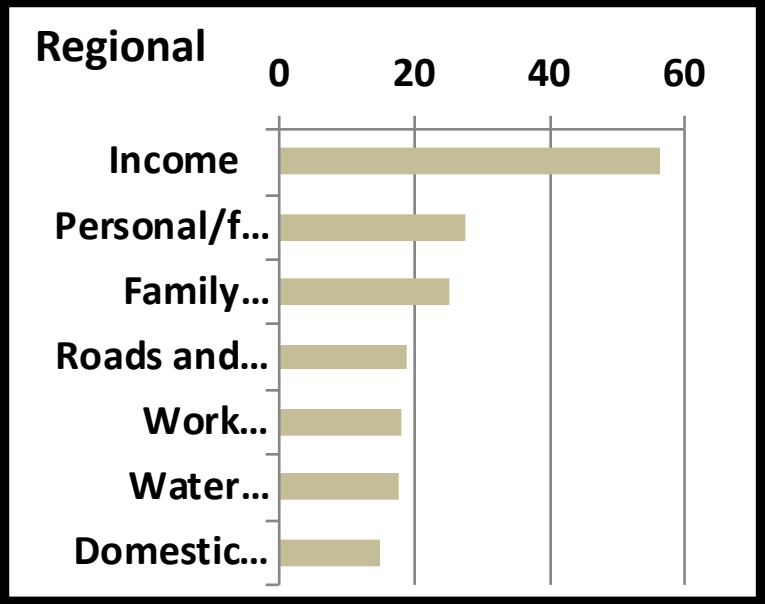












Correlation of "wellbeing" income score with actual income: $r < 0.2$ for all studies, consistent with international results in developed economies

That is increasing household incomes does not necessarily result in increased wellbeing.

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Subjective wellbeing by country and gender

	Tonle Sap	Nam Ngum	Huai Sai Bart	Vietnam delta	Xishuang banna	Male	Female
	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Overall dis-satisfaction (1-10)	7.1	6.8	7.7	6.9	7.6	7.1	7.4
Environment	327	202	248	429	301	310	318
Social	99	87	23	185	63	105	80
Economic	776	404	680	436	388	513	566
Totalm IDS	1201	693	951	1050	752	928	963

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So what?

1. Multiple factors make up Subjective Wellbeing

2. The most important factors of wellbeing are relatively consistent across the Mekong except for the Nam Ngum-Nam Xong

3. Income is NOT the most important wellbeing factor but the sum of all economic factors have the greatest (negative) influence on wellbeing

4. Women are more dissatisfied with the economic dimension: men with the social dimension

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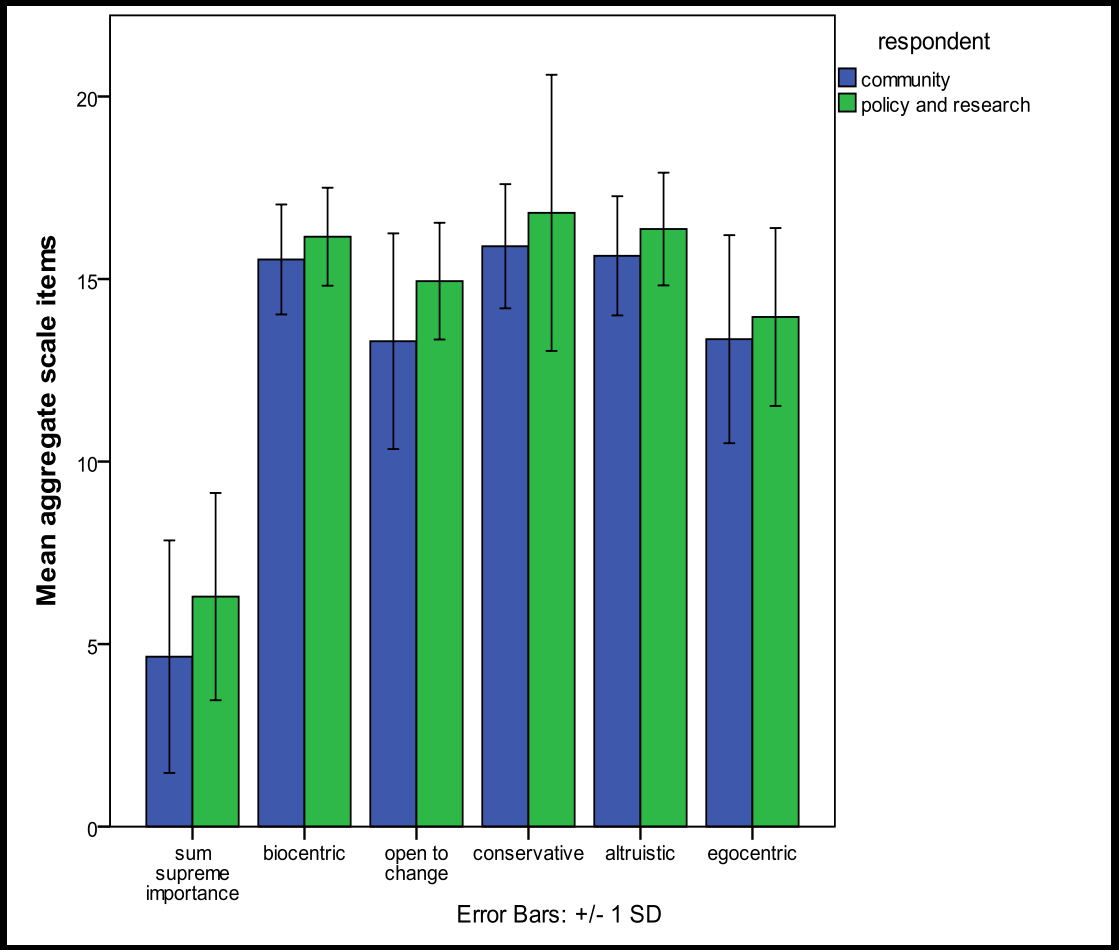
Life guiding values

Biocentricity	Egocentricity (right to lead & influence)	Altruism (social membership and equity)	Openness to Change	Conserving family
1. Respecting the earth (harmony with other species). 2. Unity with nature (fitting into nature). 3. Protecting the environment (preserving nature).	1. Wealth (material possessions, money). 4. Authority (the right to lead or command). 5. Influential (having an effect on people and events).	1. Equality (equal opportunity for all). 7. A world at peace (free of war and conflict). 8. Social justice (correcting injustice, care for the weak).	1. A varied life (filled with challenge, novelty and change). 10. Curious (interested in everything, exploring). 11. An exciting life (stimulating experiences).	1. Honouring parents and elders (showing respect). 13. Self-discipline (self-restraint and resistance to temptation). 14. Family security (safety for loved ones).

Community vs decision maker values



Policy maker value orientation (all workshops n=737) compared to household value orientation (all case studies n=5,991)

Significant differences ($p<0.05$) between policy makers and households across all value scales

Sum of supreme importance reflects the degree of discrimination across the 6 point Likert scale. Policy makers selected significantly more scale items as of supreme importance (less discriminating) compared to households.

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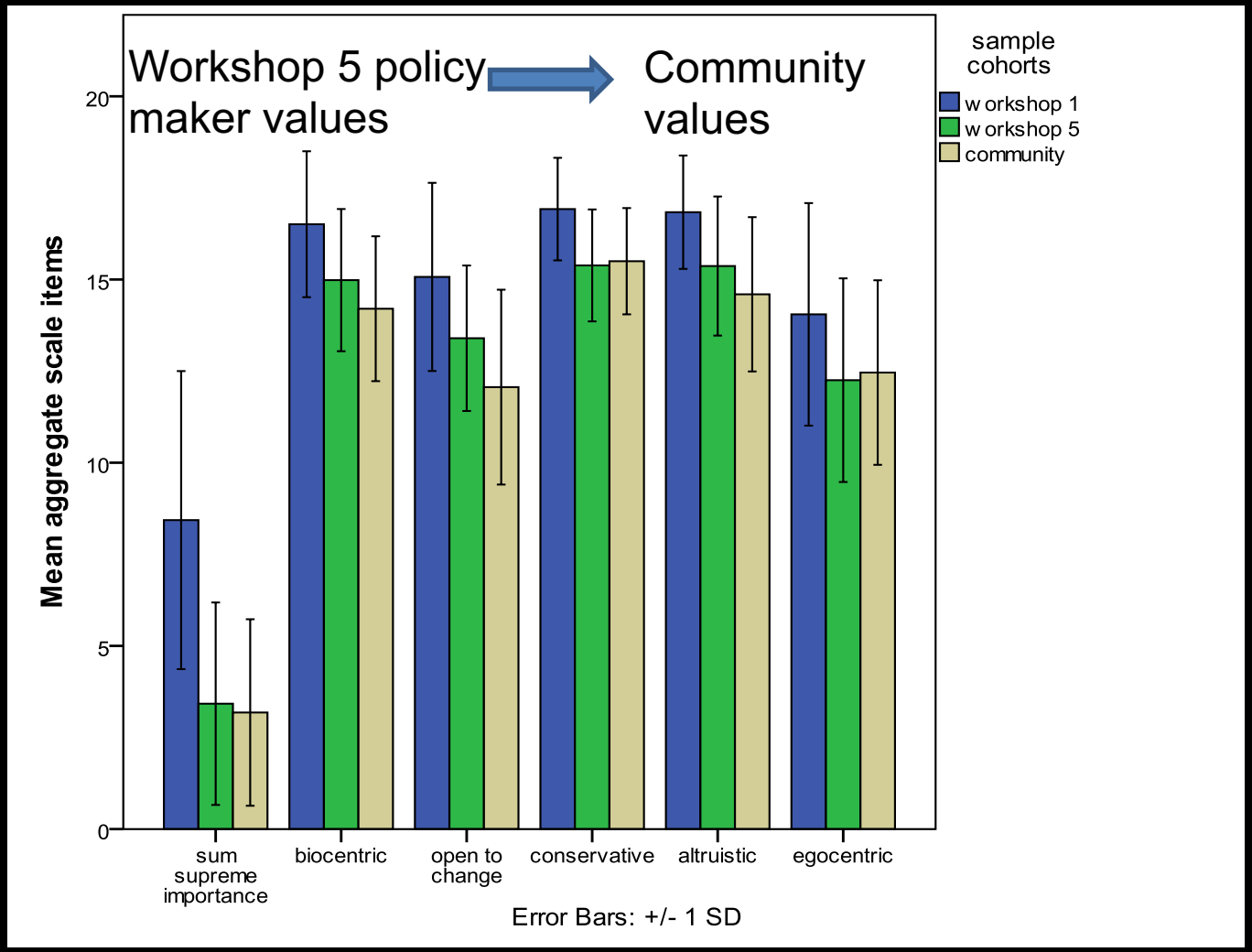

General convergence of the value orientations of policy makers elicited in workshop 5 (beliefs challenged) with observed community value orientations

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So what?

(1) Values underpin beliefs, attitudes and behaviour

(2) Changing values (beliefs) indicate changing behaviour

(3) Values are one of the psychometrics to monitor and evaluate learning

(4) Metrics used in a process of “quantified imaginings of a desired future”

(5) Process is critical: participation in a structured participatory process aligns policy maker values with the community

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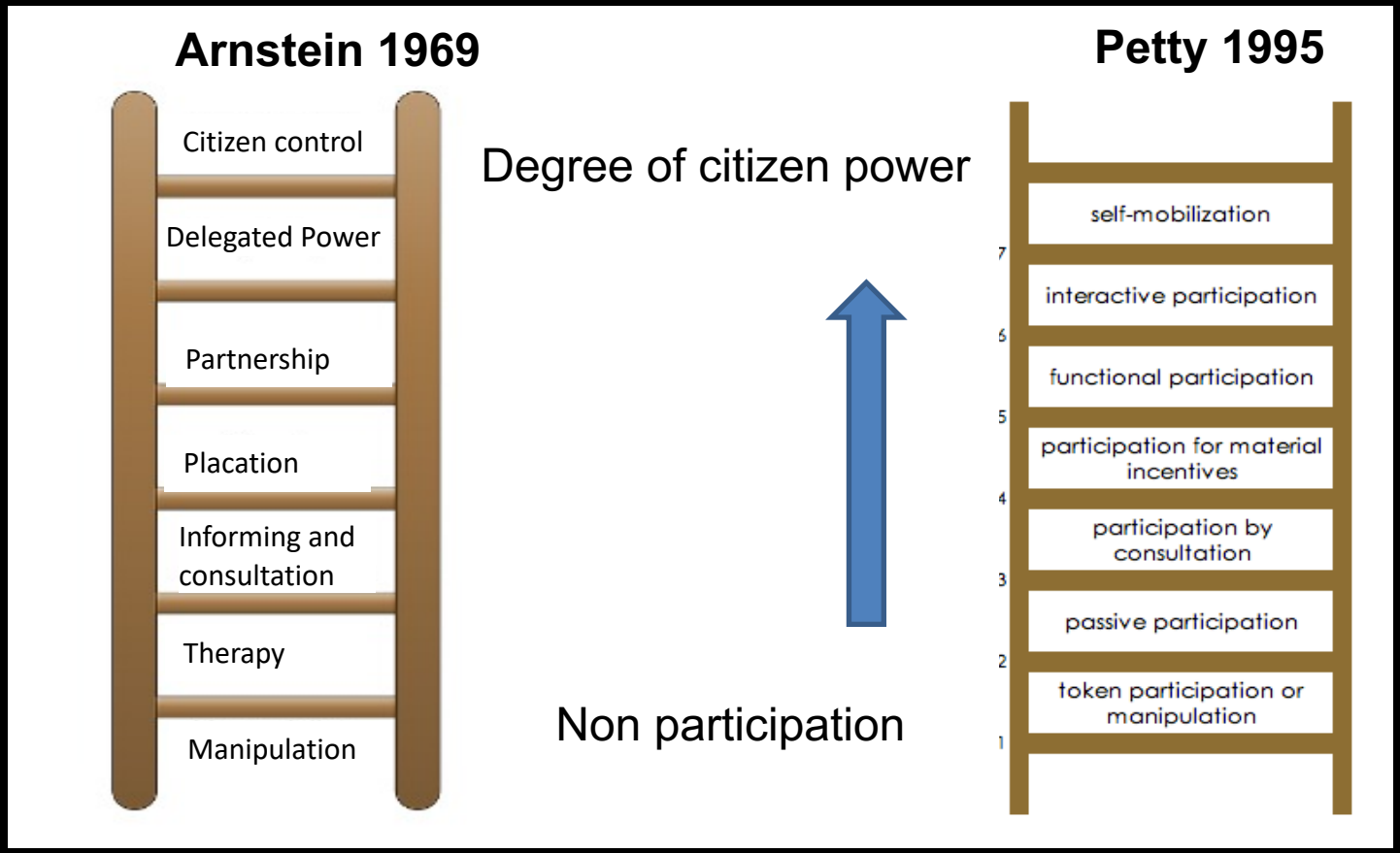
Participatory and inclusive approaches



Self-mobilization: citizen control, independent of external agencies

Interactive: participation as a right: co-design and analysis

Functional: A means to achieve project goals (eg reduce costs)

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Thank you for listening

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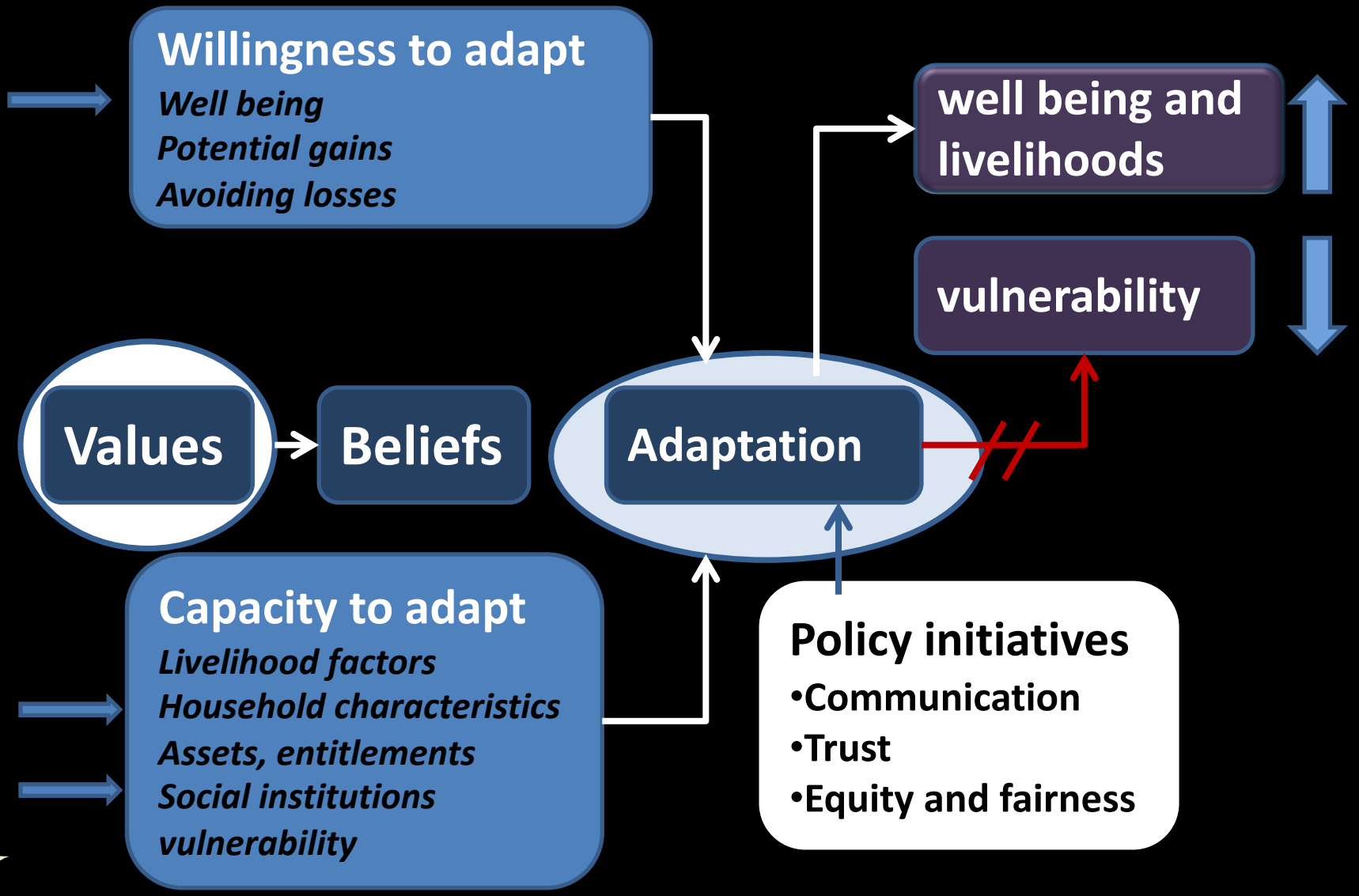
Linking the ideal and the real



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Drivers of change

- All actors see forest clearing as the most important driver in 2019, *except* government.
- Relatively high disagreement between government and other actors.
- HP considered generally important, but not the *most* important.

Driver	code	Aggregate	CSO	Students	Faculty	EAO			
Forest clearing	EN06	1	1	1	1	7			
Local employment increase	EC02	2	7	2	2	20			29
Hydropower development	EN04	4	4	4	8	1	3	6	11
Water resource management planning	S02	6	11	12	4	2	30	41	1
Agricultural production increase	EC01	7	6	8	7	10	29	7	4
Education	S08	8	18	3	3	16	47	5	34
Energy production increase	EC04	9	16	16	6	5	27	30	5
Power generation technology	T10	10	8	11	18	26	20	28	7
More foreign investment	EC11	11	17	9	9	12	11	11	14
Water supply and electricity network	T03	12	29	6	17	4	13	24	2
Improved tourism services and sites	EC03	13	22	21	16	11	16	3	6
Climate change adaptation	S10	14	12	25	11	21	24	34	33
More roads (climate resilient)	T02	15	13	23	20	9	18	10	40
Increasing household income	EC21	16	10	18	12	15	35	42	24
More phones and internet use	T01	17	15	13	22	8	28	18	25
Agro-chemical use	EN03	18	23	22	15	18	42	1	23
Economic growth	EC12	19	20	14	24	28	12	40	38
Mining concession increase	EN05	20	5	36	31	13	44	2	43
Agricultural modernization	T09	21	19	24	25	25	40	4	30
Water quality	EN24	22	31	19	10	34	8	13	3
Human rights	S24	23	9	15	27	31	7	47	17
Public health risk	S21	24	39	10	14	6	25	36	39
River bank erosion	EN17	25	21	28	19	44	38	32	32
Irrigation technologies	T13	26	26	20	28	27	1	33	26
Nutritional-food security	S19	27	32	30	29	38	15	9	16
Wastewater release	EN02	28	44	17	21	43	41	37	12
Urban planning	S05	29	35	42	23	29	23	22	36
Fishing increase	T11	30	30	37	26	47	9	20	20
Technology adaptation/use	S07	31	41	35	30	36	32	31	37
Strict implementation/enforcement	P06	32	14	40	34	24	4	46	15
Community based organizations	S22	33	28	26	38	30	2	12	35
Special economic zones	EC08	34	38	32	33	14	33	15	8
Increased market access and demand	EC07	35	24	38	43	35	10	14	31
Endangered fish species	EN22	36	34	27	39	23	14	39	13
Electrified public transport/trains	T07	37	46	34	32	39	19	19	44
Change in wetlands and floodplain	EN26	38	40	39	37	19	31	45	22
River flow (velocity)	EN18	39	33	45	36	22	45	38	19
Wildlife conservation	EN23	40	25	29	44	33	21	26	27
Social enterprises	EC20	41	37	41	35	41	34	16	46
Change in sediment load	EN21	42	42	43	42	45	39	44	21
Local migration	S15	43	36	46	41	46	5	35	9
Gender parity/equality	S18	44	27	31	45	37	43	23	42
Increase in legal and illegal fishing	EN19	45	47	33	40	32	46	25	41
Increased mono-plantations	EC19	46	43	44	46	40	17	21	45
Contract farming	EC22	47	45	47	47	42	36	43	47

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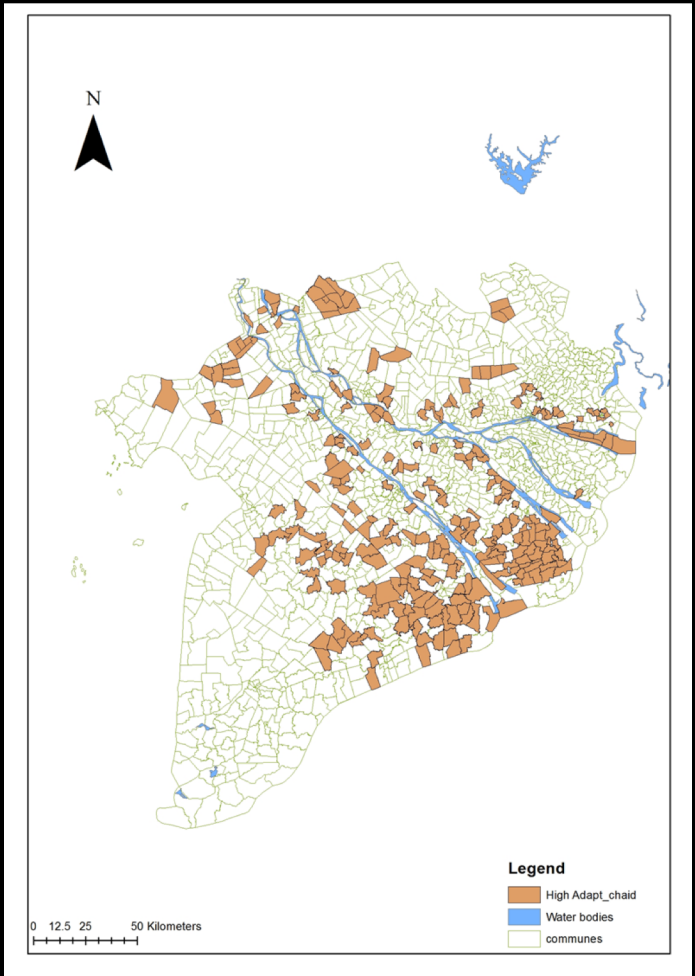

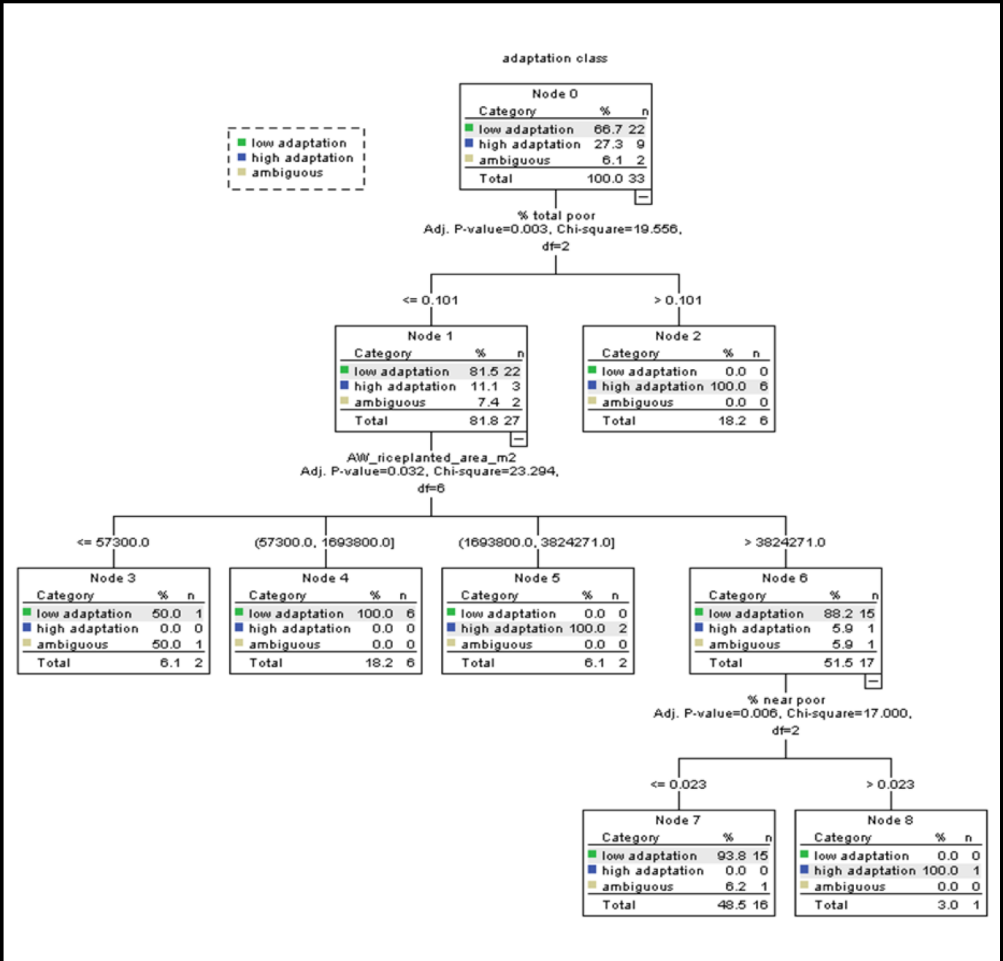

Upscaling sampled data: linking the real to the ideal

Mekong Region Futures Institute: John Ward

December 2019

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Upscaling from sampled respondents

1. Mekong ARCC employed resource intensive participatory approaches to improve rice-shrimp adaptation strategies for a Kien Giang community
2. Many other villages across the Mekong Delta face similar stresses and challenges. The identified adaptation strategies could potentially benefit a much larger number of communes throughout the Mekong Delta.
3. Up-scaling offers the potential to multiply the benefits at disproportionally lower investment.
4. Robust up-scaling lowers the risk of investment failure

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Upscaling from sampled respondents

1. Willingness and capacity to adapt is a critical characteristic for the adoption of new management practices. Identifying high willingness to adapt would allow for implementation investments without lengthy community level engagement.

2. Up-scaling requires similar livelihoods for the adaptation strategies to be beneficial, in this case rice-shrimp rotation farming.

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Upscaling from sampled respondents

Step 1: Eliciting households' willingness to adapt (sample)

Step 2: Identifying adaptation classes for communes

Step 3: Identifying characteristics of high adaptive communes

Step 4: Identifying high adaptive communes across the Mekong Delta (non-sample)

Step 5: Adding the livelihood or poverty filter

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Imagine that your profit - and/or production – and/or wages - from your main activity goes down by half, and is likely to stay that low for at least five years

Respondents were able to select one of four intended adaptation behaviours or strategies:

Imagine that a lot of employment in industry will be available and most people from your village will move to cities to work in factories

a. **Would you keep on doing the same activities and remain in your village? (same and stay) 1= non-adapter 0= adapter**
b. Would you keep on doing the same activities you are doing now, but go somewhere else to do it? (same and go)
c. Would you adjust your current activities here? (adjust)
d. Would you replace your livelihood activities and move? (replace)

Respondents with an aggregate score of < 2 were assigned as "**high adapters**". Respondents with an aggregate score of =>2 were assigned as "**low adapters**".

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Identified 3 commune level adaptation classes

Low adaptation represents a high proportion (<52%) of low adaption households;

High adaptation represents a proportion of high adaption households(>=52%);

Neutral adaptation represents communes or villages with relatively equal levels of high and low willingness to adapt (48% - 52%).

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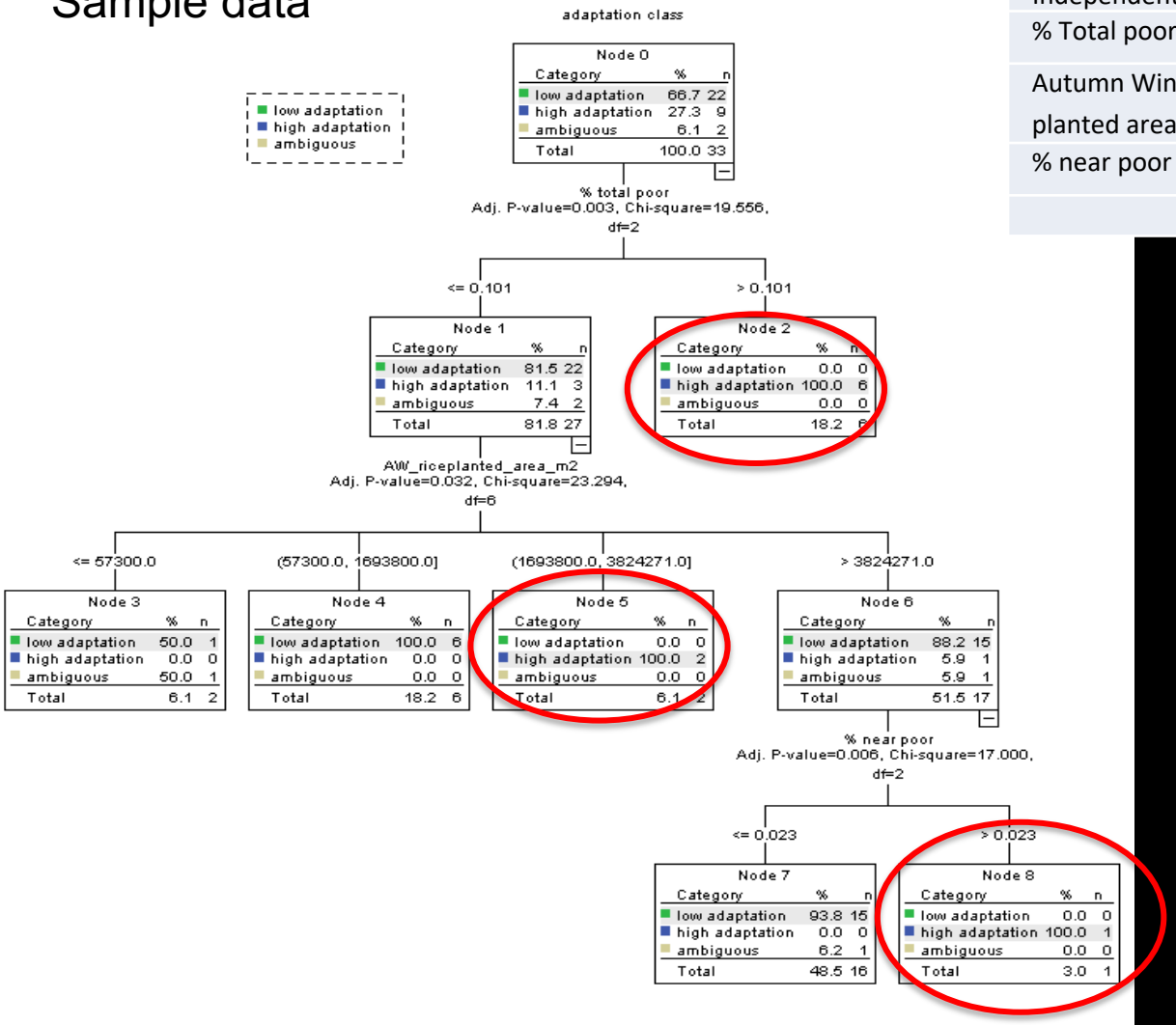
Sample data



Independent Variable	Chi Squared	P value
% Total poor	19.56 (df 2)	0.003
Autumn Winter rice planted area	23.294(df 6)	0.032
% near poor	17.00 (df 2)	0.006

A set of census based, land use and geographic variables, independent of the sampled data, were introduced as predictor variables.

94% accurate prediction of commune adaptation class

Predictor variables used to classify all 1591 communes

Validated against independent sample of 480 HH (100% correct prediction)

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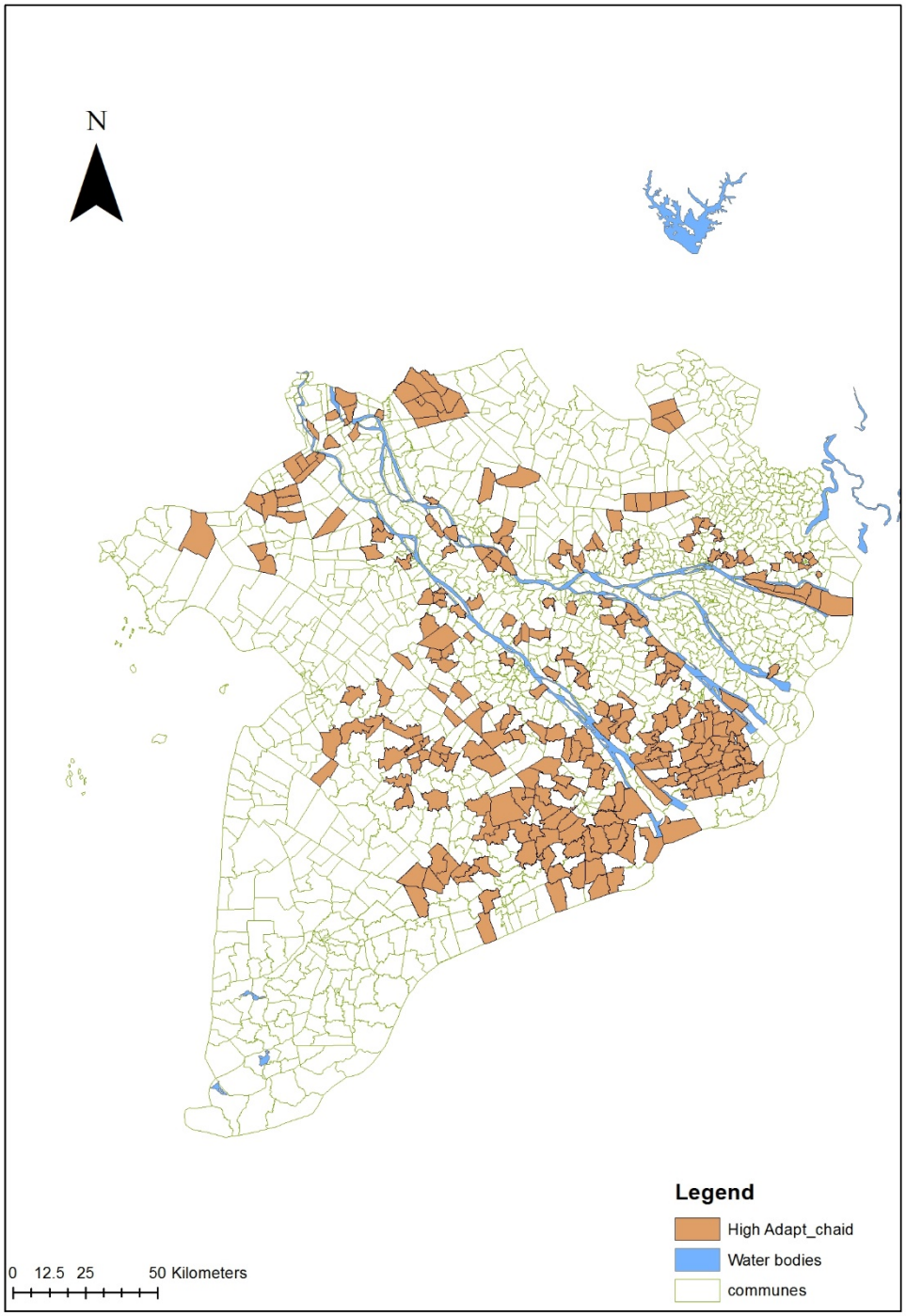
Step 4: High adaptive communes

- IF the % poor is higher than 10.1%
- OR IF the % poor is <= to 10.1% AND the area for autumn winter rice is between 1.7M m^2 and 38.2M m^2
- OR IF the % poor <= to 10.1% AND the area for autumn winter rice is greater than 38.2M m^2 AND the % of near poor is greater than 2.3%.



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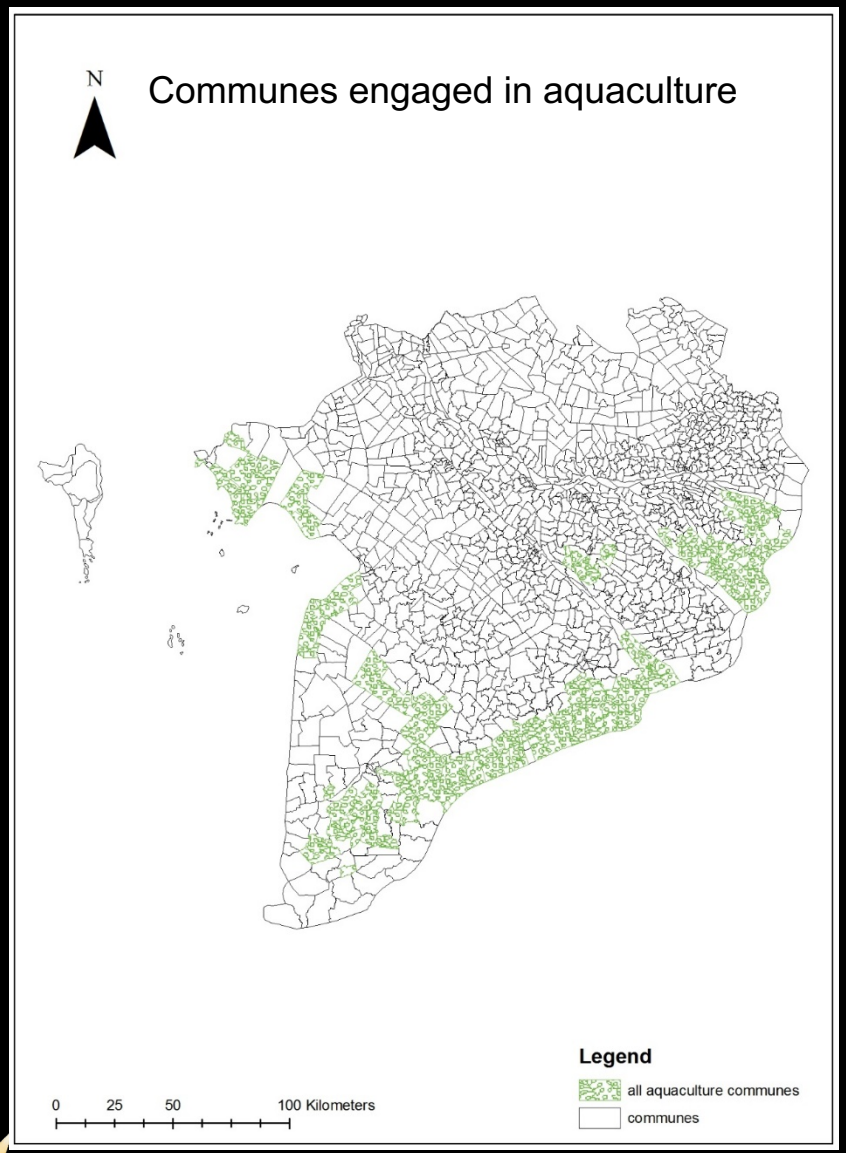
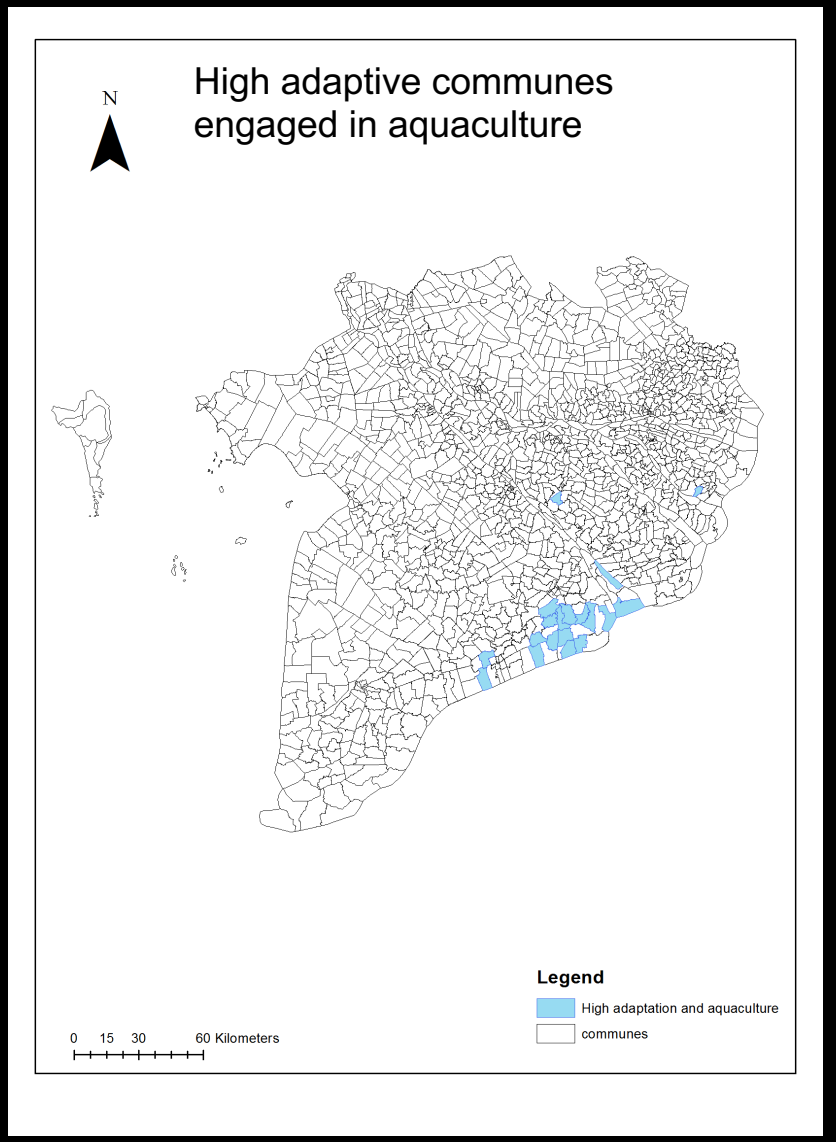
Step 5: Adding the livelihood relevance filter





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Investment prioritization: poverty filter

1. The adaptation classes can be further refined by applying a poverty ranking.
2. If communes had to be further prioritised agencies could invest in the poorest of those communes **willing to adapt.**

Province	Commune	% poor households	Rank
Soc Trang	Lac Hoa	10.5	1
Vinh Long	Tan My	10.2	2
Ben Tre	An Duc	9.9	3
Soc Trang	Vinh Tan	9.9	4
Soc Trang	An Thanh Nam	9.2	5
Bac Lieu	Vinh Hau	8.7	6
Soc Trang	Phuong 2	7.8	7
Soc Trang	Thanh Thoi An	7.8	8
Soc Trang	Tham Don	7.5	9
Soc Trang	Ngoc Dong	7.4	10
Soc Trang	Vien Binh	7.4	11
Soc Trang	Thanh Thoi Thuan	7.2	12
Soc Trang	Lieu Tu	7.0	13
Soc Trang	Hoa Tu 2	6.6	14
Soc Trang	Khanh Hoa	6.2	15
Soc Trang	Vinh Hiep	6.2	16
Soc Trang	An Thanh Dong	6.1	17
Soc Trang	Trung Binh	5.8	18
Bac Lieu	Long Thanh	4.3	19

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Designing adaptation strategies: poverty filter

1. Poorest communes in the delta: low willingness to adapt
2. Require different development processes: e.g. to promote adaptation, raise awareness, visioning

Province	Commune	% poor households	Rank
Tien Gieng	Phu Dong	19.7	1
Tien Gieng	Tan Hoa Dong	16.6	2
Tien Gieng	Thanh My	14.1	3
Tra Vinh	Don Chau	13.8	4
Tien Gieng	Phu Thanh	13.1	5
Tien Gieng	Phu Tan	12.2	6
Tra Vinh	Thanh Hoa Son	12.2	7
Tien Gieng	Tan Thoi	11.9	8
Tra Vinh	Long Son	11.9	9
Tra Vinh	Truong Tho	11.6	10

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Summary

1. Objective to provide investment prioritisation guidance for the up-scaling of actions to improve the resilience of communities in Vietnam's Mekong Delta.
2. The adaptation strategies were pre-defined by the participatory community work Mekong ARCC conducted in one commune in Kien Giang.
3. Replicating these adaptation investments in other communes depends on what livelihoods prevail in those communities and on the households' willingness to adopt new management practices.

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Summary

1. Using a 5 step statistical process we were able to estimate the willingness to adapt of 1591 communes in the delta.
2. The analysis highlights areas in which up-scaling investments are most promising to generate benefits and improve communities' resilience to climate change.
3. Livelihood related inertia is high across the Mekong Delta and ignoring willingness to adapt risks investment failure.
4. Robust up-scaling lowers the risk of investment failure.
5. Additional filters can be combined with adaptation classes:
   - Threats to ecosystem services
   - Alternative land use
   - Alternative poverty and livelihood indicators

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