

# Communicating Climate Risk Examples from SUMERNET and SEI

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## Case study: SUMERNET

# Research Locations



# Research rationale

- The densely settled, low-lying coastal and delta areas in Mekong region (including Cambodia, Thailand and Vietnam) are among the most vulnerable areas to climate change in the world
- Communication of climate change information and uncertainty to non-scientific audiences has been insufficient.

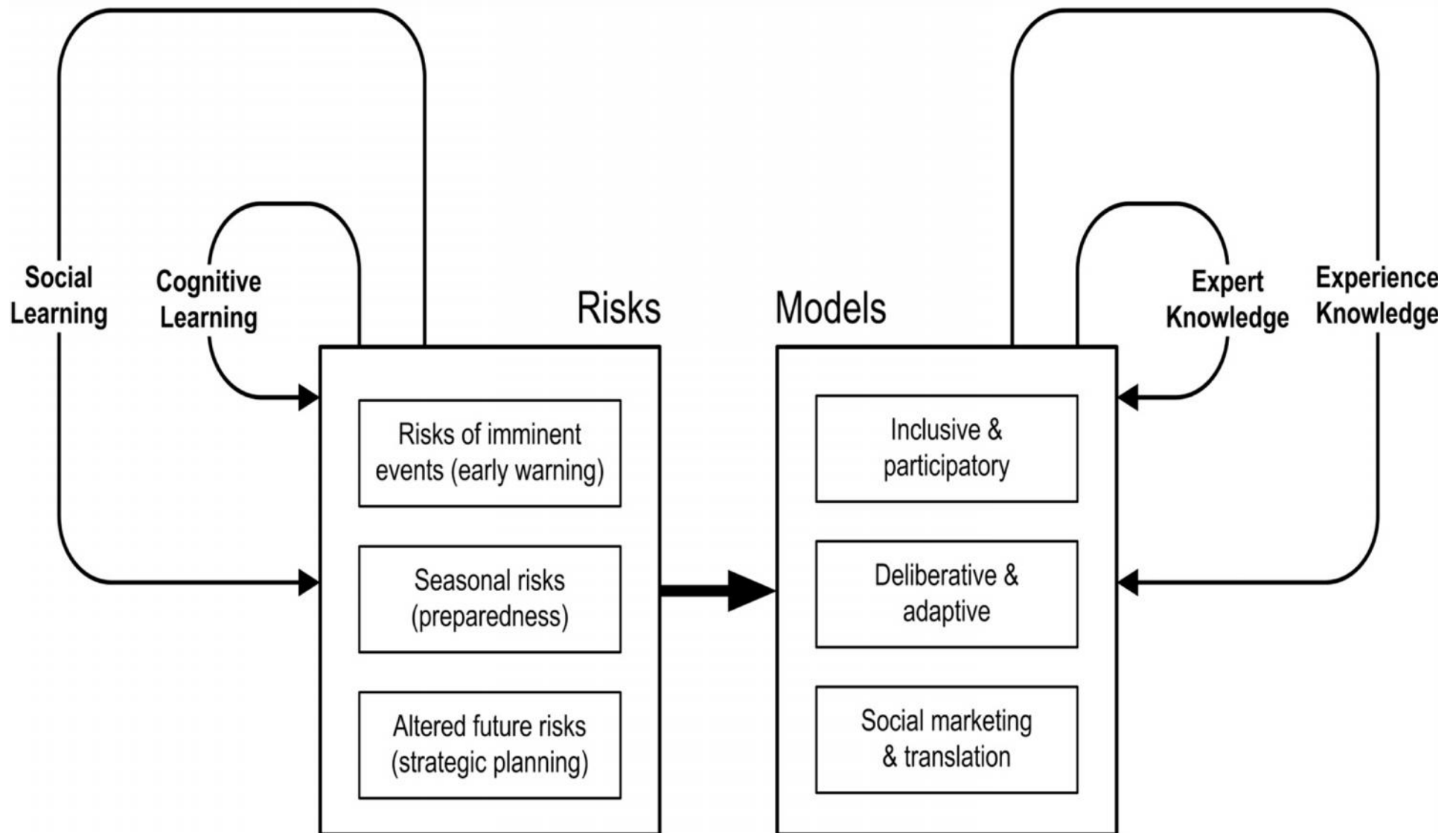
## Different knowledge

- **Local communities** often have substantial experience and local knowledge about their vulnerabilities, risk, and adaptation, but understanding of climate risks is usually low both among residents and officials
- **Experts** on climate change have a better understanding of climate-related risks but not of local risks or vulnerabilities or capacities to respond in particular places

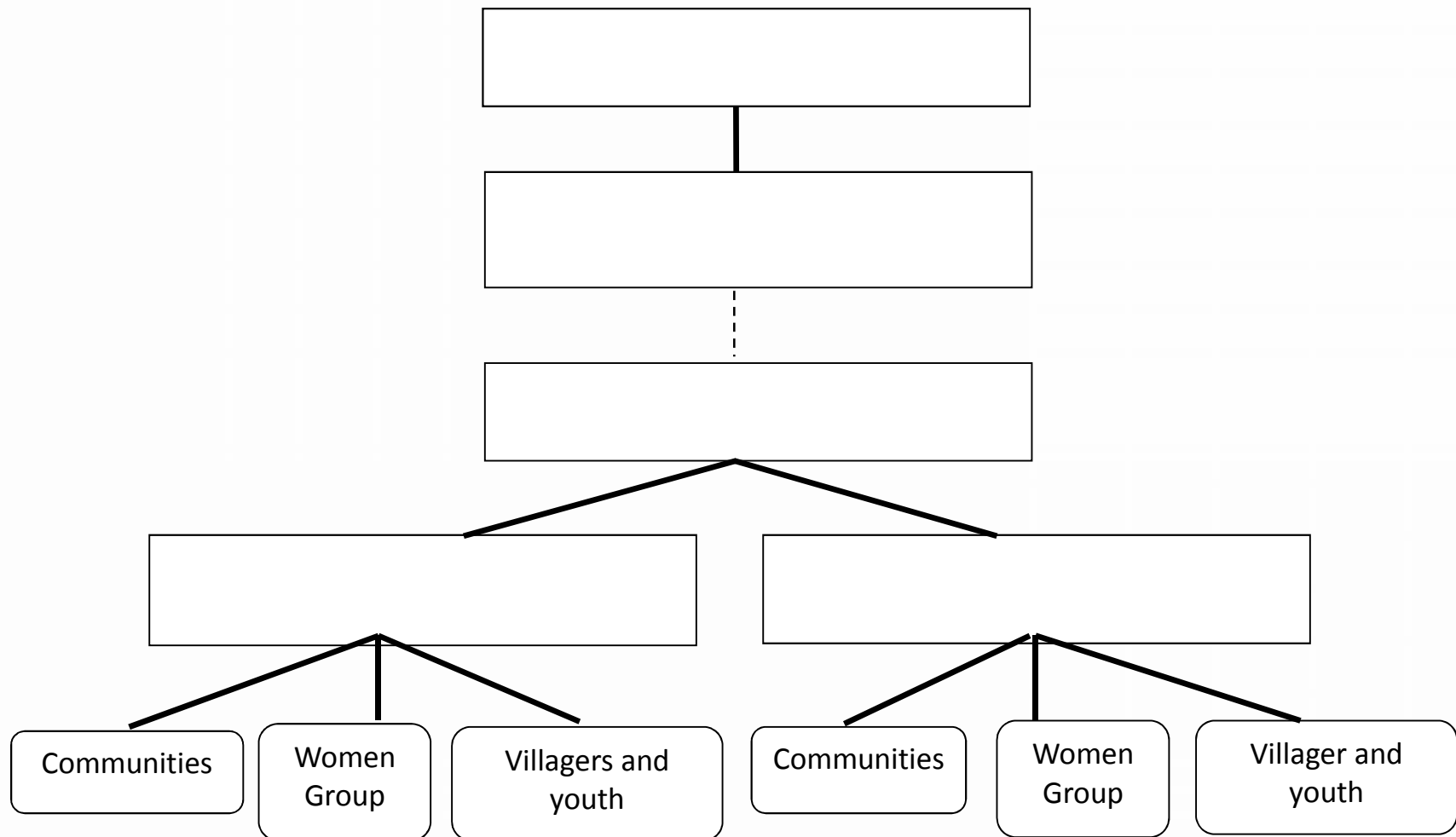
# Research goal

- To identify effective ways to improve and share understanding of water-related climate change risks and uncertainties among local stakeholders as a basis for contributing to sustainable development of delta communities in the Mekong region.

# Methodology: *Conceptual framework*



# Sample of a Risk Communication Working Group (RCWG) in Cambodia





# Key Survey Finding

- The most significant factor to influence knowledge, concern and perception of CC and climate variability was consistently “country of residence”.
  - Thai had more knowledge of climate change
  - Cambodian and Vietnamese were more likely to have observed climatic variability.
    - Vietnamese reported more variability on flood patterns than the other countries
    - Cambodians demonstrated much higher levels of concern about the impacts of climate change.



# Communication models

Developed communication model using participatory approaches, including timelines, preferred communication techniques, target audiences, content and resources.

- Short video “Learning from the Big Flood” (Mekong Flood 2011)
- SMS via cell phone: a Bank of SMS short messages
- “Talking Farmer” who conduct short talk with households using video, messages, print materials

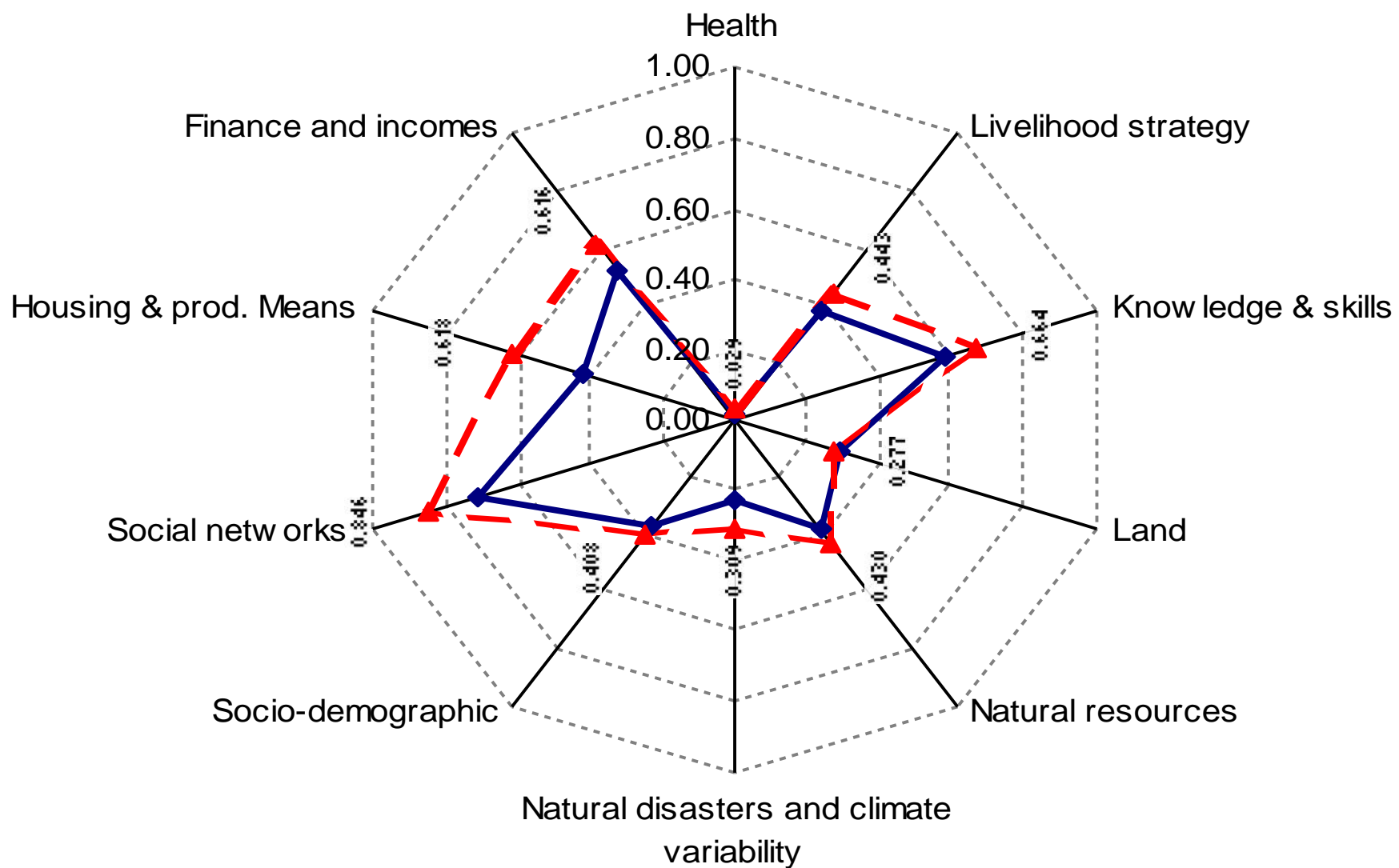
# Communication models implementation

- Communicated to the same groups of households visited during KAP survey
- Visited them at their house to conduct communication activities



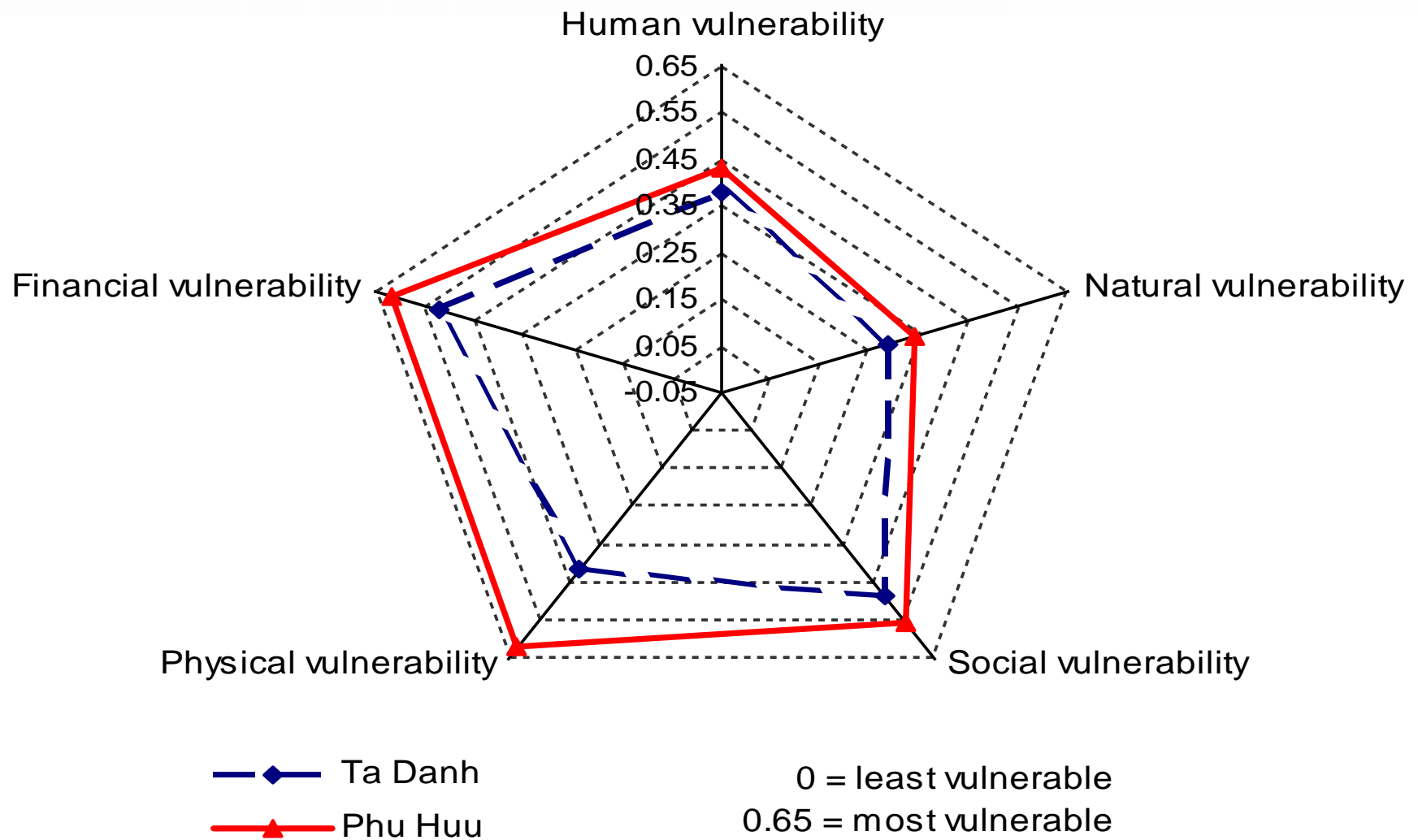
# Multi-Dimensional Vulnerability Indicators

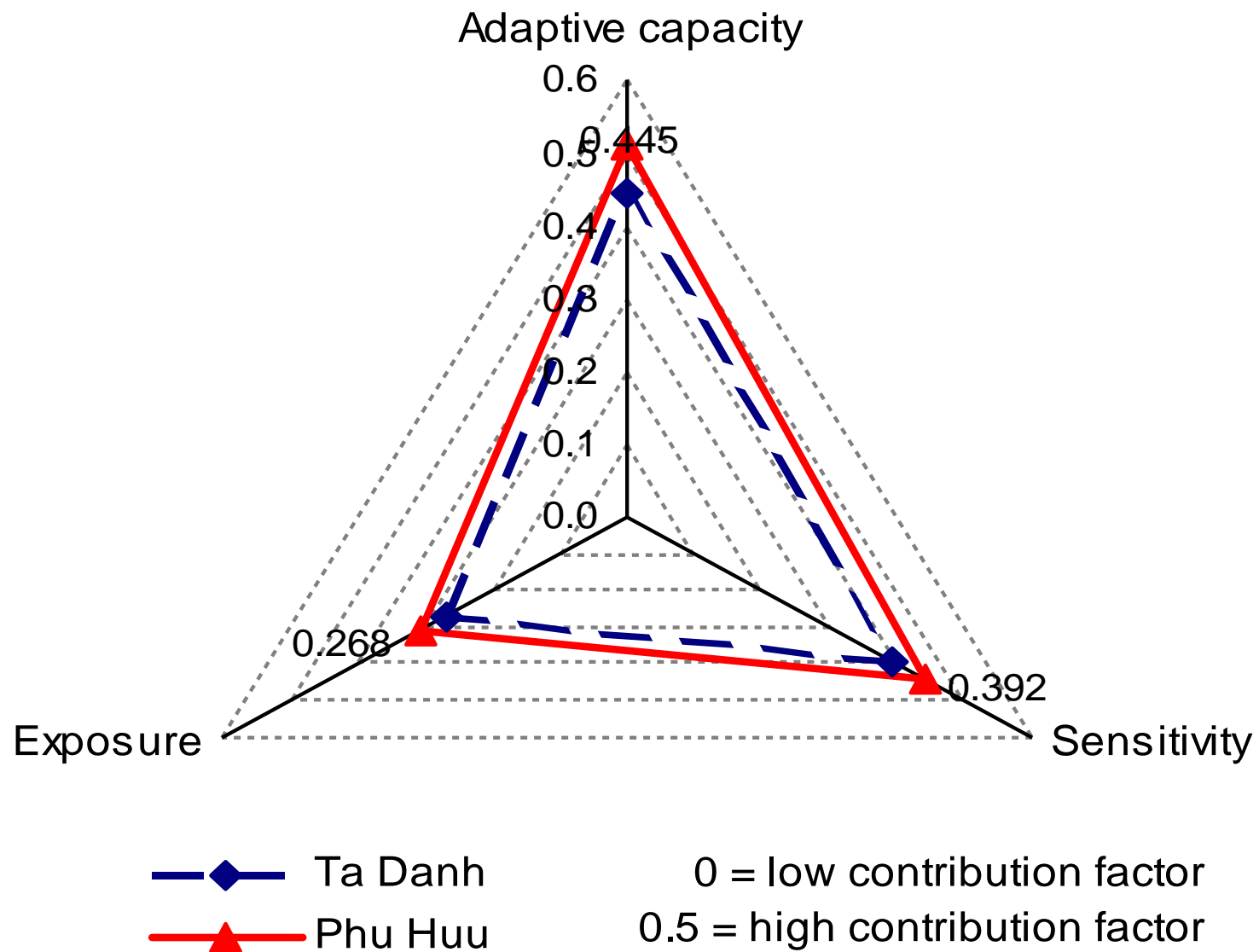
- Part of the larger study: aims to improve understanding of the flood situation and sources of livelihood vulnerability in flood-prone districts in Cambodia: An Giang and Kandal provinces.
- The Livelihood Vulnerability Index (LVI) is designed to provide development organizations and local policy makers with a practical tool to understand demographic, social and other related factors contributing to flood vulnerability.
- It is a practical method that can be used to:
  - Monitor vulnerability
  - Compare two or more study areas



—◆— Ta Danh  
- -▲- - Phu Huu

0 = least vulnerable  
1 = most vulnerable

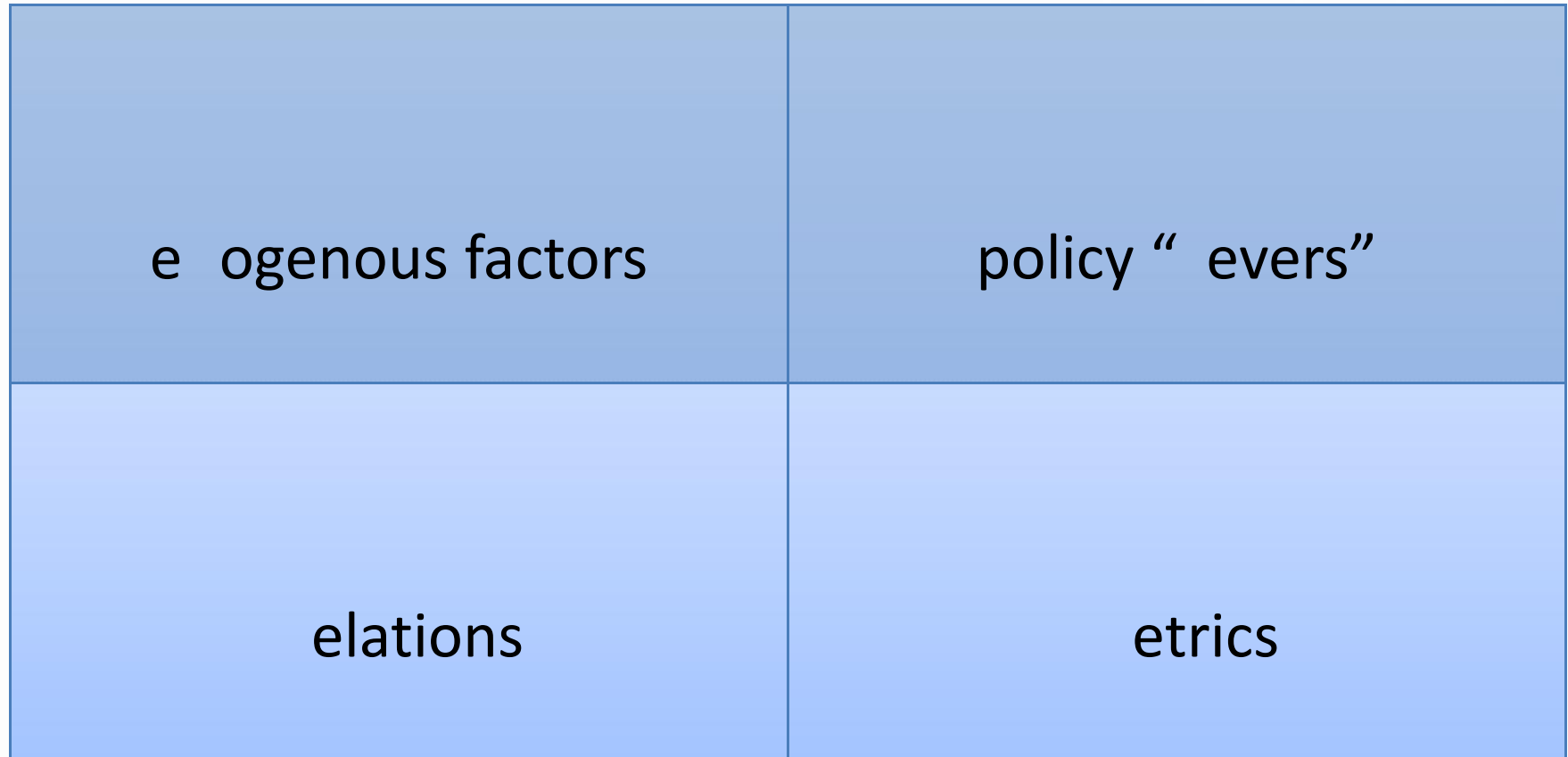




Case study



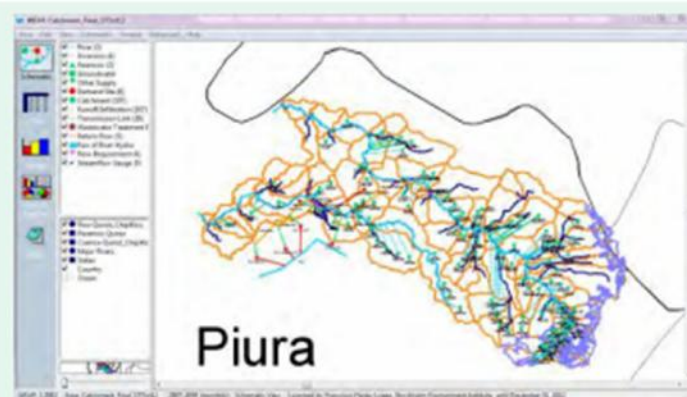
# The XLRM Framework



### Factores de Incertidumbre (X) y Escenarios

- X1.** Área de Páramo (constante ó con decremento)
- X2.** Cambio en el clima futuro (precipitación y temperatura)
- X3.** Crecimiento de la población
- X4.** Cambio de cultivos y crecimiento de la frontera agrícola

### Modelos (R)



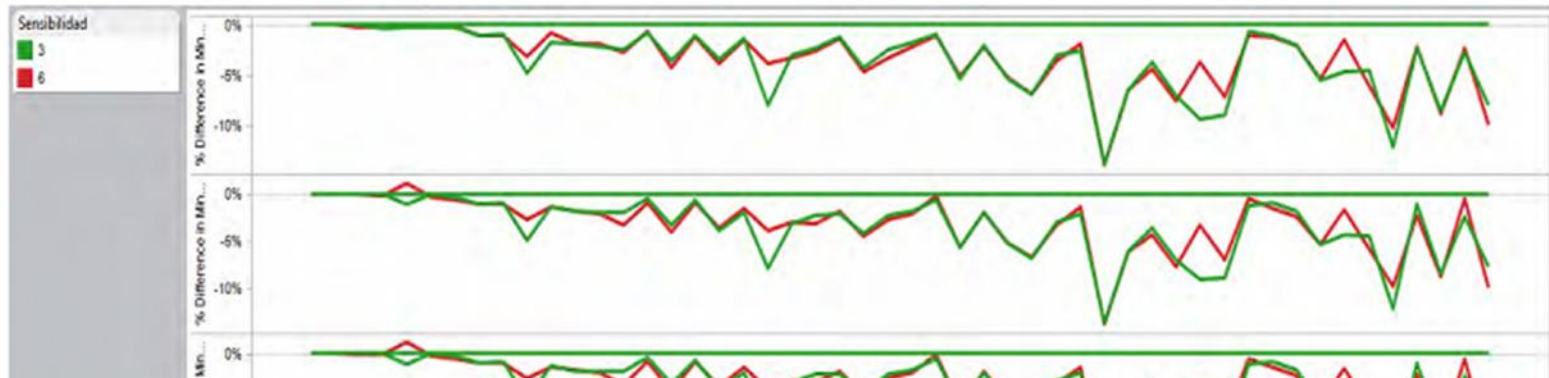
### Estrategias de Gestión (L) y Paquetes de Respuesta

- L1.** Línea base (no cambios)
- L2.** Reforestación con especies nativas
- L3.** Mejoramiento de infraestructura
- L4.** Tecnificación del riego
- L5.** Construcción de reservorio

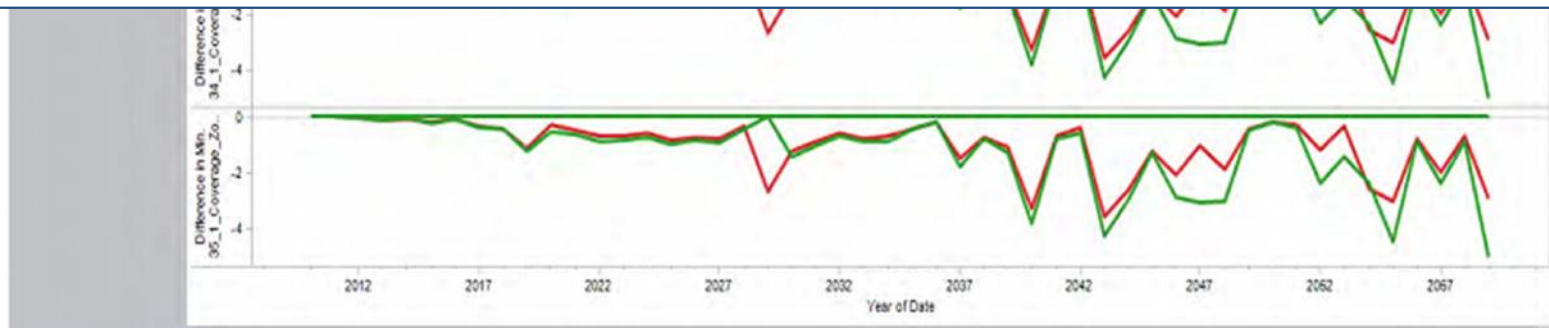
### Medidas de Desempeño (M)

- M1.** Caudal base (Páramo)
- M2.** Área de Páramos
- M3.** Volúmenes transferidos
- M4.** Volúmenes demandados agrícolas
- M4.** Volúmenes demandados uso rural
- M5.** Cobertura uso agrícola y rural
- M6.** Caudal en punto de cierre de ambas subcuencas

# Change in Water Supply to Demand Sites: Two Climate Scenarios & Reduced Páramo Area



Reduction of the páramo area has a larger impact than the most pessimistic climate scenario



Case study

# Telling Stories



# Example Story: Industrial, sugarcane, and organic farms

In the next 30 years, Huai Sai Baht became more developed and urbanised. A new “East West Corridor” is built close by. Mr. Dee, is a-60 year old farmer in the Huai Sai Baht area who must adapt himself dramatically. He had 30 rai of land. He sold 25 rai to an \_\_\_\_\_ because they offered a good price and could be a source of income for the local community. With that income he sent his son Mr. Den to study at high levels and to return to be a community leader. With the remaining 5 rai, Mr. Dee still practices \_\_\_\_\_ because he sees that he is able to sell to urban communities.

Later, under Mr. Den the Khu Kham Sub-district changed from growing rice to growing \_\_\_\_\_ for supply to ethanol factories because the price of sugar cane increased.



# Household Surveys & Focus Group Discussions

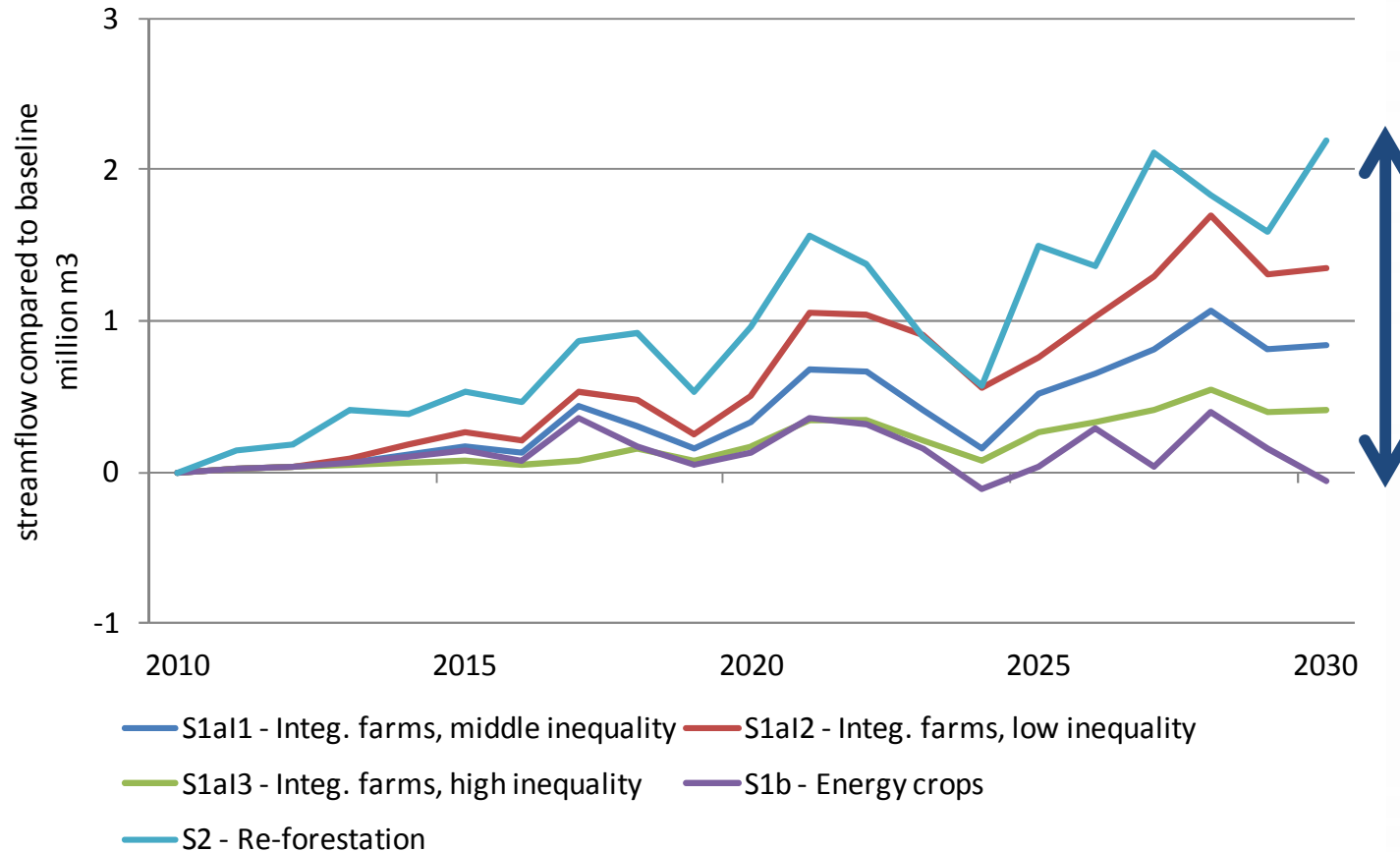




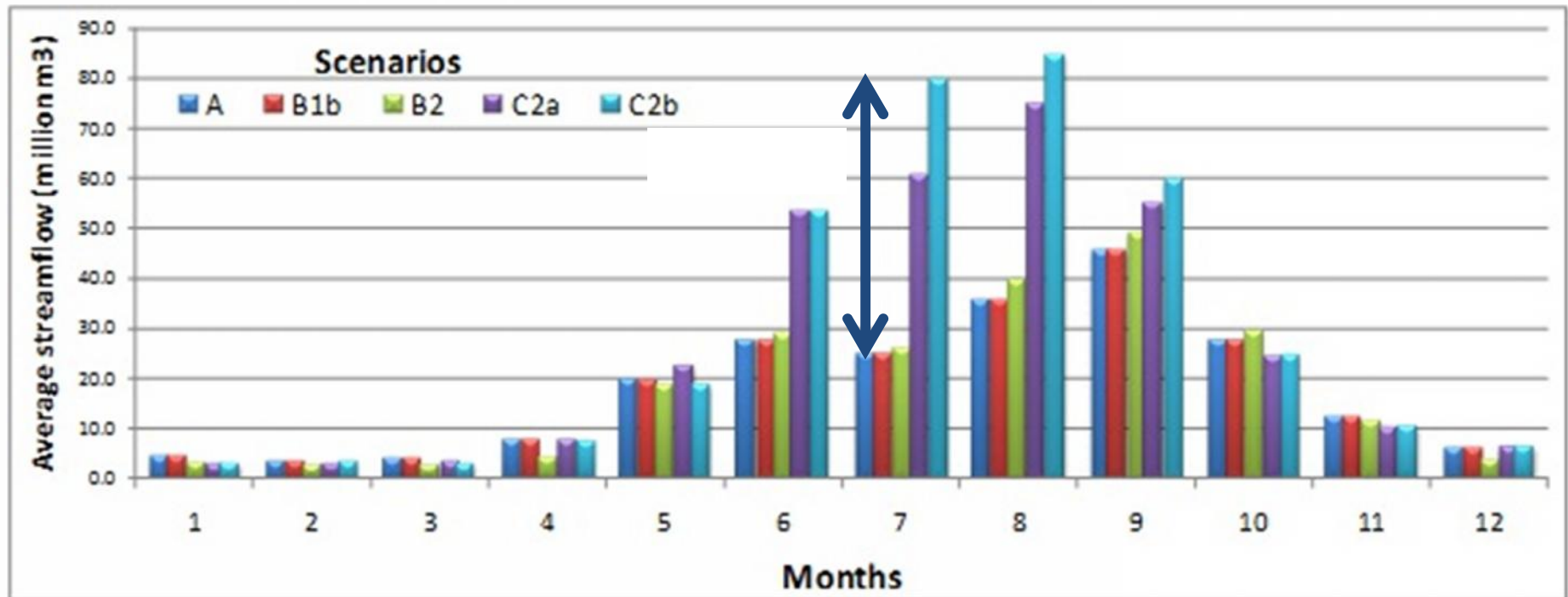
# Story scenarios: social, economic and environmental issues

Land Use Change - Story scenarios (S)	S1a	Food crops (mono-crops) are converted to mixed cropping
	S1b	Food crops are converted to energy crops
	S2	Food crops are converted to forest
Income Change (I)  These modify S1a to make S1aI2 & S1aI3	default	Same equality (constant Gini) with Isan growth linked to income
	I2	More equality (decreasing Gini)
	I3	Less equality (increasing Gini)

# Story Scenarios: Change in Streamflow



# Climate: Change in Streamflow



- Under some climate scenarios there is substantially more water and the timing of the wet season changes
- Differences under climate scenarios are much larger than under land-use scenarios

# Critical Feedback and Discussion of Implications



# Handover of Models & Tools



# Observations

- The same information can be communicated in different ways to different audiences
- Ongoing consultation and engagement allows for
  - Combining different kinds of knowledge
  - Multiple modes of exchanging information
- Formal models can yield possibly surprising results
  - The people who know the models are not usually the best at communicating the results
  - But non-specialists appreciate seeing the “black box” opened up
- Quantitative information can be shared in comprehensible ways that yield insights