

Understanding and Identifying Local Knowledge on Flood Risk Management



Objectives

- understanding, and integrating people's knowledge and practices into flood risk management activities
- ways to combine local knowledge with scientific knowledge

Content

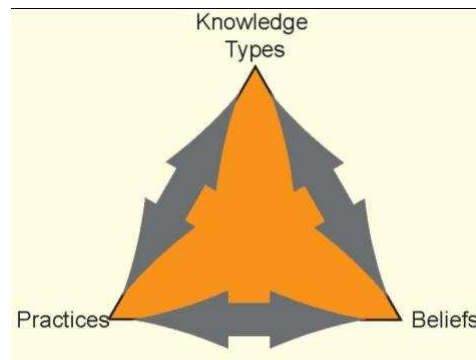
- What is local knowledge, where is it located, who has it, when and;
- How is it produced, how to identify and document it, what are the advantages and disadvantages
- How to make use of local knowledge in integrated flood risk management.
- Q&A
- Some Examples from FMMP

Entry Points

- Trainings on local knowledge related to flood disaster preparedness and risk management
- To move from the conventional top-down approach in flood disaster management towards the participation of communities

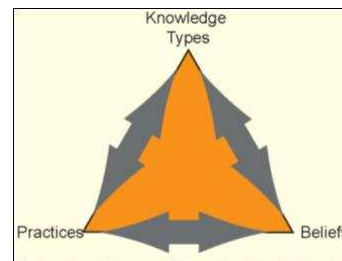
What is Local Knowledge?

- 'local knowledge' is used to refer to **what the people living with risk know about natural hazard risks, and indirectly what they believe and do about them in a given situation.**
- Peoples' **practices, lifestyle, and beliefs influence their knowledge on natural hazards** and, therefore, the way they respond to them



What is Local Knowledge?

- Indigenous knowledge (Local coping mechanism) is part of local knowledge
- it refers to knowledge **unique to a given culture or society.**
- The term 'local knowledge' puts the emphasis **on a place or a region, rather than time** (i.e., a knowledge that is anterior to another).
- Local knowledge and practices are not static: they are **complex adaptive responses to change.**
- In many cases, people have been living with natural hazards for generations and have been able to cope and adapt to minimise, reduce, or avoid the negative impacts of natural hazards to their livelihoods, properties, and lives.



Local Knowledge: Practices Vs Believes

- **What people know** influences, and is influenced by, **what people do** (practices) and **what people believe in (beliefs)**. Practices refer to **local coping and adapting strategies**.
- Local belief systems refer to **people's beliefs (e.g., religious belief systems), worldviews (i.e., ways of perceiving the world), values and moral principles (e.g., respect, reciprocity, sharing and humility)**.
- Belief systems shape **people's understanding, perceptions, and responses to natural hazards**.

Local Knowledge: Practices Vs Believes

- Local knowledge on natural hazards has often only been associated with local technical knowledge (e.g., **local methods of construction, use and combination of specific materials for buildings**), but many other dimensions of local knowledge (or 'knowledge types') exist – for example, **local environmental and agricultural knowledge (e.g., local soil classification)**.

Where is Local Knowledge Located?

- Local knowledge is everywhere: in **people's heads, beliefs, buildings and other constructions, farming tools, landscape, urban and rural areas, cultural and religious ceremonies, and practices, taboos, local rules, songs, proverbs, books, and so on**

Who has Local Knowledge?

- We all have local knowledge, but knowledge differs among groups (e.g., **ethnic, clans, gender, age, wealth groups**)
- Local knowledge is located at **the individual and household level as well as collectively through community stewards and other key social actors (e.g., elders, local religious and political leaders, healing artists).**

When and How is Local Knowledge is Created ?

- Local knowledge is being created and lost all the time
- As opposed to conventional, scientific **knowledge it derives more from memory, intuition, and the senses than from the intellect**
- Local knowledge is always a **mixture of experiential and transmitted knowledge**

Local Knowledge Identification Framework

1. people's ability to **observe** their local surroundings,
2. people's capacity to **identify and monitor** environmental indicators (of an upcoming flood),
3. people's ability to develop **adaptation** strategies for recurrent floods, and
4. people's ability to **communicate** about past and present floods.

How to Identify and Document Local Knowledge

1- Observation

People's experience of the local surroundings

2- Anticipation

People's identification and monitoring of environmental indicators

3- Adaptation

People's access to assets and their ability to learn, self-organize, reorganize, innovate etc

4- Communication

People's ability to transfer knowledge among themselves and between generations

1- Observation

- **History of Floods**, *Examples: knowledge on the location, time, duration, frequency, intensity, predictability of previous floods*
- **Nature of Floods**, *Examples: knowledge on the onset, origin, velocity of water flow; knowledge of different types of rain*
- **Evolution of social and physical vulnerabilities to floods**, *Example: life stories explaining the impoverishment processes of households following recurrent floods and other stresses*

2- Anticipation

- **Early warning signals** Examples: *interpretational knowledge of changes in animal behaviors, vegetation patterns; knowledge of local weather forecast*
- **Time thresholds** Examples: *knowledge of when it is time to buy and store food in advance, leave the house, move the cattle, and remove important belongings*

2- Anticipation

- **Escape route and safe places for humans and cattle** Examples: *knowledge of the safest and fastest routes*
- **Key actors and skills** Examples: *knowledge of who knows what, who does what and when, who stays behind, who goes first*

3- Adaptation

- **Human assets** Examples: *specific skills such as traditional carpenters and masons*
- **Socio-cultural assets** Examples: *knowledge of different social groups depending on occupational, physical ability, ethnicity, gender, caste, class, & age characteristics*
- **Institutional assets** Examples: *knowledge generated by local institutions*

3- Adaptation

- **Financial assets**, Examples: *micro-finance arrangements such as credits and savings*
- **Natural assets**, Examples: *natural resource management strategies such as intercropping and agro-forestry that conserve biodiversity and protect soil erosion and can contribute to reducing the impacts of natural hazards*
- **Physical assets**, Examples: *infrastructural safety arrangements such as boats, housing, embankments*

4- Communication

- **Oral & written communication** Examples: *local songs, poems, proverbs which help the younger generation and outsiders to learn about previous hazards; stories of previous hazards encoded in the name of specific places*

4- Communication

- **Early warning systems** Examples: *use of visual signals such as mirrors, fire or audio signals such as drums; having dreams of natural hazards in advance*

4- Communication

- **Other practices** Examples: *taboos which prevent people from going to certain hazardprone areas; ceremonies, local art which helps the community to understand, remember past natural hazards, and relieve the anxiety related to the threat of future hazards*

Advantages of Using Local Knowledge

Local knowledge and practices often, but not always, have the following advantages compared to most external, top-down strategies

- They are low-cost strategies using local resources and know-how.
- They are well-accepted, trusted, and understood (internalised).
- Community ownership and involvement are more prominent.
- They are culturally sensitive.
- They provide continuous monitoring.
- They include time-tested reliability

Advantages of Using Local Knowledge

Local knowledge and practices often, but not always, have the following advantages compared to most external, top-down strategies

- They are in tune with local contexts and needs (more data and technology alone will not improve people's lives unless they are combined with an understanding of local contexts and needs).
- They empower the community, including the most vulnerable and disadvantaged groups, to take action instead of relying on external help only.
- They are holistic (take into account other stresses or priorities that affect the vulnerability of social groups, households, or individuals).
- They provide clues on how recurrent shocks gradually increase the vulnerability of communities and their environment.

Limitations/Barriers to the Use of Local Knowledge

- The dominant belief that conventional or scientific knowledge is 'superior' to local knowledge.
- Local knowledge is difficult to identify, use, assess, validate, generalise, and replicate because it is very context specific and often taken for granted by local people themselves.
- Local knowledge is often monopolised by dominant groups in the community.
- Some local practices, beliefs, adaptations, and strategies are unsustainable or not socially equitable.

Limitations/Barriers to the Use of Local Knowledge

- some local knowledge and practices are becoming inappropriate, irrelevant, or inaccessible over time due to changes in external environment.
- Local knowledge lacks accountability within communities themselves, especially with the younger generations
- local knowledge can be perceived as a threat to national interests and political structures, especially in authoritarian regimes.
- Exceptional disasters often require external means, beyond normal coping strategies.

Questions and Answers

Use Local Knowledge in Integrated Flood Management

Some Answers

- IFM strategies that help save life and reduce damage to property.
- Local knowledge can provide information related to local environmental variability and specific cities; local perceptions of natural hazards; risk tradeoffs
- flood management include local advice about safe locations and construction sites
- combining local knowledge with conventional knowledge for hazard mapping, early warning systems, surveys, and other inventories to verify information, adapting communication strategies to local understanding and perceptions, and integrating local values into decision-making processes.

Some Examples

Improving flood preparedness using local knowledge

Component 4 of Flood Management and Mitigation Programme (2004-2010)

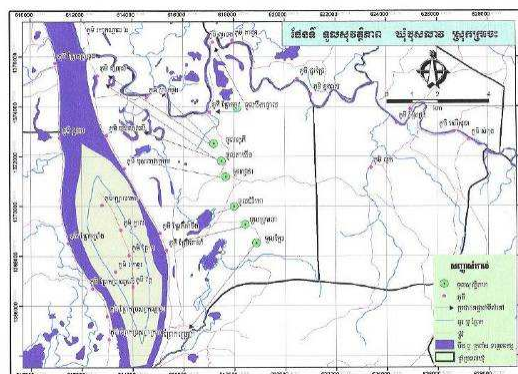
School Flood Safety Activity in Cambodia



Developing Safety Area in Cambodia



Safe Areas are the pre-identified locations by the Provincial and District Authorities for evacuation and temporary shelter for flood affected people and their livestock. These areas are open land area located at higher water level and near to the human settlement.



Safe Areas in Dar and Bosleav Commune Kratie District
Proving support to improve the functioning of Safe Areas



Local Cultural Shows in Vietnam



All students and teachers of My Thanh Nam Primary School, Cai Lay district attend "School Flood Safety Campaign"



Student performance



Fishing game



Students and parents enjoy activities together

Dissemination of Early Warning- Matching local and scientific knowledge in Cambodia



Microsoft Excel 2003

Mekong Bulletin
MRC Secretariat
Forecast period: 14 - 19 September
Date: 13 September 2003

LOCATION	Observed Rainfall (mm)	24hrs. Rainfall (mm)	Forecast Rainfall (mm)	Observed W. Level (m)	Forecasted Water Levels (m)						
					12.00	13.00	14.00	15.00	16.00	17.00	
Pake	14.4	56.40	12.70	11.00	10.20	10.72	11.06	11.10	11.16	11.20	10.76
Stung Treng	23.3	26.70	12.00	9.46	9.75	10.24	10.32	10.32	10.24	10.10	
Stung	40	11.80	22.00	20.00	20.14	20.87	20.77	20.44	20.00	20.06	
Kompong Cham	40	10.00	16.20	15.20	14.90	14.07	14.20	14.41	14.60	14.70	14.77
Phnom Prach (Bassac)	40	11.00	12.00	10.00	0.57	0.44	0.71	0.80	0.91	0.82	0.11



Peam Chor District, Prey Veng Province

Cultural Performances to improve flood preparedness in Cambodia



**Enhancing the safety of school children through swimming lessons-
Local adaptation of risk management practices**



**Pagodas in Lao PDR - Place of flood disaster management
planning**



Pagodas in Lao PDR - Place of flood disaster management
planning

