

Climate change, its impacts and Participatory Vulnerability assessment (PVA): Learning from a field project in Nepal

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Climate change

- An unequivocal fact
- Visible impact on people's livelihoods-specific to poor
- Major impacts- precipitation, temperature and CO₂ level

Vulnerability

- Higher level of risks
- Resource poor are mostly affected

Problem

- Lack of knowledge regarding climate change, impact assessment and development
- Evaluation of climate change and development is new area
- Very less learning and sharing both nationally and internationally

Participatory Evaluation

- Need to document, learn and share from the past
- Participatory evaluation tools can be used for evaluation of climate change and development projects
- Participatory Evaluation Assessment (PVA) – one of the options

Objective

- To present some potential participatory evaluation tools for vulnerability assessment in climate change and development projects in Nepal through a Participatory Vulnerability Assessment (PVA) method

Study methods

- Field practice based exploratory study
- a consultative process of community groups, natural resource management (NRM) experts and local level project staff
- PVA:
 - is a systematic process of examining potential risks and to manage the adverse impacts from climate change and climate variability with involving local community and stakeholders.
 - is rooted in a people-centred approach to analyze qualitative information.
 - is a proven ‘action and learning’ tool
- Steps
 - Situation analysis:
 - Cause-effect analysis:
 - Community response:
 - Vulnerability analysis:

Situation analysis

- Broader questions and corresponding participatory evaluation tools
 - To what community is at risk? – Ranking matrix
 - When a household or the community is at risk? – Seasonal Calendar
 - Where are the most risky places? – Social and resource Map
 - Who is at higher risk? – Focus Group Discussion (FGD) / case study

Cause and effect analysis

- DPSIR method

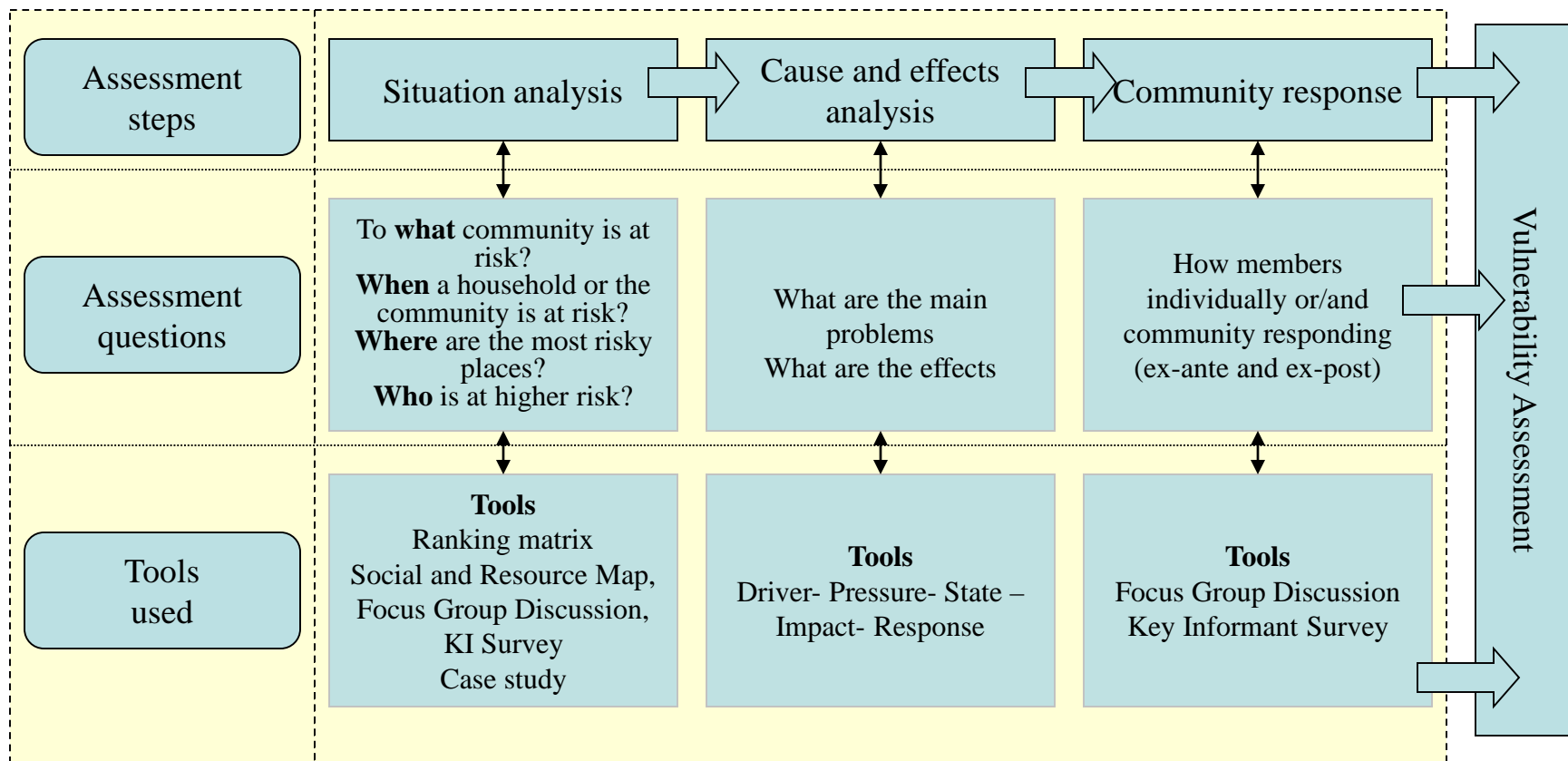
Community Response analysis

- Focus group discussion (FDGs)

Vulnerability assessment

- Focus Group Discussion (FDG)

Table 1: Framework of the study



Study site

- Small village of about 200 hhs
- Diverse ethnicity
- Fragile geology
- Main profession agriculture
- Affected by severe floods in the last 5-6 years
- Practical Action (INGO) and Ecological Services Centre (NGO) working
- A community group - to improve the resilience of community against adverse impact of climate change



Results and discussion

Climate change- general understanding at the community level

Reason for climate change and variability

- changing human behavior of consumptions and greed.
- Use of resources more than needed

Situation analysis

- To what community is at risk?

- Identify major area of impact area or events that those are risky List out vulnerability parameters;
- Cluster them according to 'risk' and 'sensitivity' category;
- preference given (high X - high level of vulnerability); and
- Count for each parameter and prioritize

RANKING MATRIX

Parameters	Agriculture Land Cutting	Landslides	Loss of house	Irrigation Canal damage	Drinking water Supply System damage
Risk:					
Scale/extent/Severity	XXXXX	XXX	XXX	XXXX	XXX
Probability/frequency of happening	XXXXX	XXX	XX	XXX	XX
No. of Persons affected	XXX	XX	XX	XXX	XX
Sensitivity					
Fragility	XXXX	XXXXX	XXX	XXX	XX
Slope / Land Cover	XXX	XXXX	XX	XXX	X
Lack of awareness and Early warning Systems	X	X	X	X	X
Severity of Risk	I (21)	II (18)	IV (13)	III (17)	V (11)

X- Shows level of Problem

When' is a household or a community at risk?

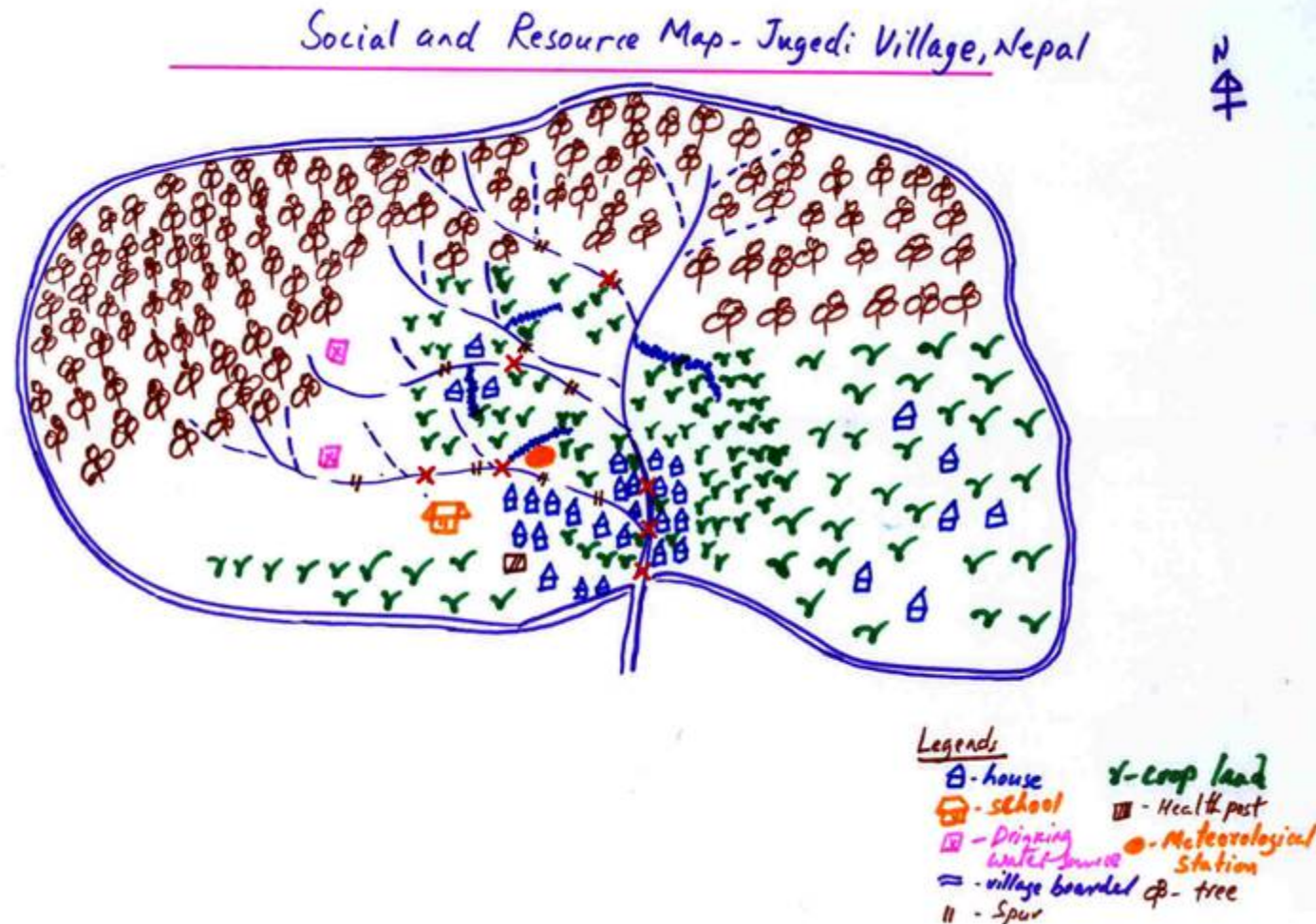
Seasonal Calendar

	MONTHS											
	Apr-May	May-June	June-July	July-Aug.	Aug-Sept.	Sept-Oct.	Oct-Nov.	Nov-Dec.	Dec-Jan.	Jan-Feb.	Feb-Mar.	Mar-April
Particulars	Baishakh	Jestha	Aashad	Shrabon	Bhadra	Aaswin	Kartik	Mansir	Poush	Magh	Falgun	Chaitra
Rainy Season			■	■	■							
Flood period				■	■							
Festivals						■	■					
Land cutting				■	■	■						
Food deficit	■	■				■	■					
Drought		■	■							■	■	
High Money requirement		■				■	■	■	■			
water borne diseases				■	■							
Most Vulnerable months				II	I	III						

- List out some activities/events;
- Select main activities or events;
- Identify time (in months) of those events;
- Identify most risky month
- Ranking them based on discussion; and

'Where' are the most risky places in the community?

- Draw social and resource map;
- Identify area which might be flood prone area;
- Ask why they think is important than others;
- Mark them in the social and resource map.



Who is affected mostly?

- Women
- Poor

Cause-effects relation analysis

Reasons for heavy floods : Steep slopes,
Fragile land / geology, Denuded land

DPSIR

Drivers	Change in climatic variability Fragile ecosystems Weak geo-physical setting Floods	Response -Local group to address issues jointly -Spur (physical/biological) formation -Change cropping pattern -Shifting temporarily during flooding time -Start income generation activities (e.g. vegetable production) -Out-migration
Pressures	Excessive agricultural land cutting Loss of life Loss of physical property	
State	Destroyed productive and fertile land Polluted drinking water Reduced livelihoods asset base	
Impacts	Food insecurity increased Insecure livelihoods- bio-physical (floods/landslides), economically (loss of property: house/livestock/land)	

Community adaptation measures:

- Spurs construction:
- Plantation in the river bank:
- Temporary shift from the flooding areas during rainy seasons:
- Shifting agricultural practices:
- Income generation activities:
- Capacity building through training/
general awareness raising and exposure visits:

Vulnerability analysis and mapping

$$V = f\{E, S - R\}$$

$$V = f\{E (Sc.CPO.PA), S(G.LC.CA) - R (K,GS,RA)\}$$

Where as

V = Vulnerability,

E = Exposure to risks,

(E = f (security (SC), probability of No. of occurrence (CPO) and no. of people get affected (PA))

S= Sensitivity,

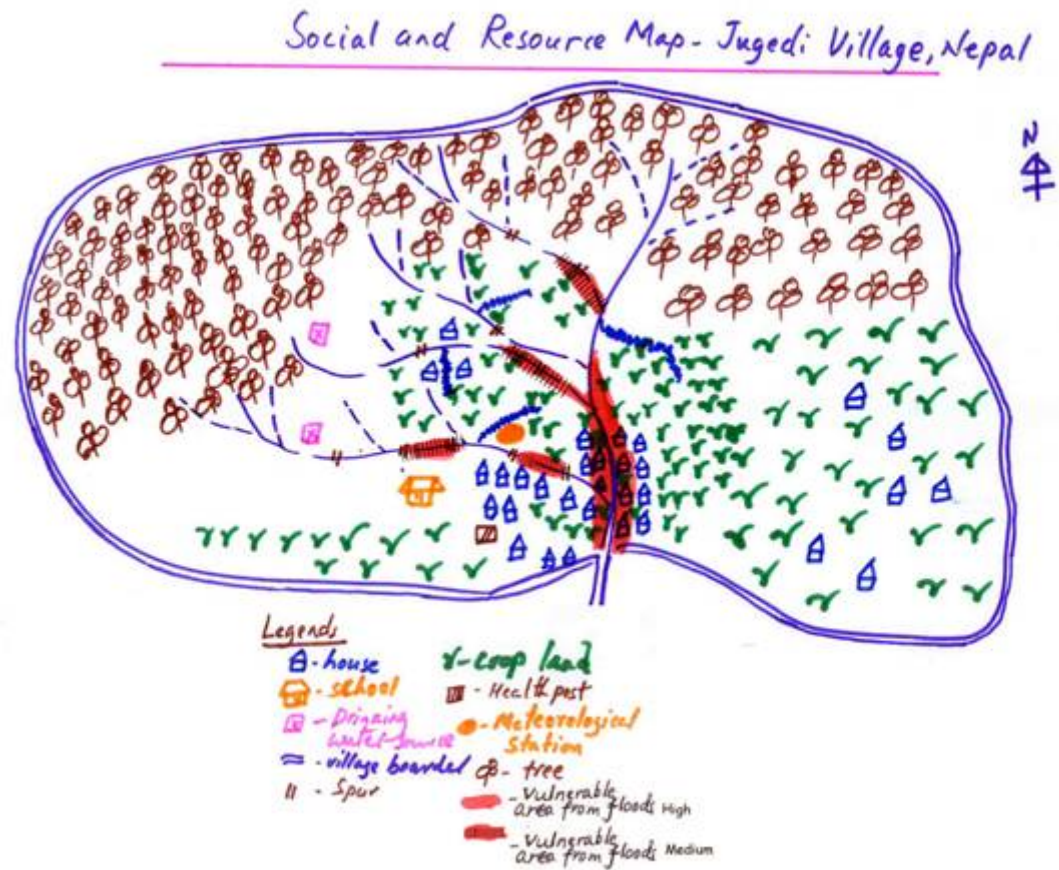
(S = f (Geology (G), Slope (SI), Landcover (LC), Level of Awareness (LA))

R = Resilience

(R = f (Knowledge (K), Governance Structure (GS), Resource Available (RA))

Vulnerability Map

- Discuss and explain about risks, resilience and sensitivity;
- Ask community to identify the scale of resilient and sensitivity;
- Agreed among the community which area and why these area are more vulnerable than others; and
- Locate those in the social and resource map



Applicability of participatory evaluation tools

- Ranking matrix- Good
- Seasonal calendar- Good
- Transect Map – not very useful
- DPSIR – difficult to use
- Case study- Good
- Focus Group Discussion – Good
- Key Informant Survey - Good

Conclusion

- Selected participatory tools are very useful to evaluate (understand and learn) climate change and development project at community level
- Participatory evaluation processes help to assess the (different attributes of) vulnerability and are being used for learning and action within community
- Still needs cross-learning, validation and sharing among the project both at national and international level

Thanks