CHANGES WORKSHOP
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THE ROLE OF PARTICIPATION IN NATURAL HAZARD MANAGEMENT AND DECISION MAKING

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The role of participation in natural hazard management and decision making

STRUCTURE

ADAPTATION TO CLIMATE CHANGE
- Bangladesh
- Role of Participation

NATURAL HAZARD MANAGEMENT
- European Case studies
- Participation

LESSONS LEARNT
- Contexts for participation
- Potentials and drawbacks of participation

CapHaz-Net
Social Capacity Building for Natural Hazards
Toward More Resilient Societies

Adaptation to climate change: Bangladesh

BRIEF OVERVIEW

- Basic facts:
  - >50 million people live in poverty
  - 60% of country's population depends on agriculture.
    (Bangladesh Ministry of Finance, 2007)
- Climate change increased impacts of natural hazards:
  - Cyclones, droughts, flash floods
  - Salt water intrusion in coastal areas, increase of temperature, change in rainfall and season patterns.
- Rural livelihood severely threatened

Adaptation to climate change: Bangladesh

RURAL COMMUNITIES

- Rural Communities are vulnerable to the effects of climate change
  - VULNERABILITY: Kelly & Adger "Theory and practice in assessing vulnerability to climate change and facilitating adaptation" (2000).
- exposed to certain hazardous/threatening events;
- in a position in which their own weaknesses make it difficult for them to successfully overcome the changes and maintain a good livelihood.

Adaptation to climate change: Bangladesh VULNERABILITY

- Vulnerable: from Latin '*vulnerabilis*' → wounded soldier on battle field, exposed more than others to assaults of the enemy.
- Often mainly shaped by social determinants
  (Adger et al, 2003; Few, 2003; Pelling, 1998, 1999; Roncoli, 2006)
- Case of rural Bangladesh: vulnerability rests on the pre-existing conditions of poverty/social exclusion/lack of resources etc.

Adaptation to climate change: Bangladesh ADAPTATION

- The capacity to resist the assaults in a human community is termed '**adaptive capacity**'
  - i.e. capacity to turn its pool of human, social or material assets into resources for a viable livelihood in the modified conditions (Bebbington, 1999).
- The better the adaptive capacity of a community, the higher its level of **resilience**

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RESILIENCE

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Reducing factors of vulnerability of a community increases RESILIENCE to climate change

↓

Resilience of a community to external stress **depends** on its capacity to **organise the society's relations:**

- towards the resource basis (natural or economical)
- with other communities
- among its members

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CASE STUDY: investigating the role of social and human capital in enhancing resilience

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A. high exposure to climate change-related natural hazards;
B. conditions of poverty and marginalisation of the community.

A drought prone district	*Char* islands -flood	Coastal areas

- Sites included both communities that had taken part to capacity building programmes and communities that did not

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RESEARCH METHODOLOGY

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- Qualitative research methods
  - focus group discussions
  - in-depth and semi-structured interviews
  - direct observations

- SWOT analysis tables, highlighting Strengths, Weaknesses, Opportunities and Threats to identify social vulnerabilities of each specific case, the potentials for improvement and the factors that limit the capacity building.

	POSITIVE	NEGATIVE
INTERNAL	**Strengths** ❑ ability to diversify income sources ❑ strong social structures based on cooperative principles ❑ traditional knowledge on the damage from deforestation ❑ knowledge about agriculture amongst both men and women ❑ traditional system for communal pooling of assets (borga) ❑ capacity to adopt new crops ❑ very strong social network and cooperation amongst the women ❑ good cost-effective crop management ❑ good awareness of issues and possible ❑ information sharing between men and women ❑ women's participation in agricultural activities and decision making ❑ social cooperation for research and work ❑ diversified activities (animal rearing) as income sources	**Weaknesses** ❑ very low financial capital ❑ very low education levels ❑ unawareness about climate change and its impact on crops ❑ no strategy to overcome threats to agriculture ❑ no means to create independent knowledge ❑ fatalistic attitude towards worsened environmental conditions ❑ very low social position of women; information is gender-locked ❑ little or partial understanding of the causes of waterlogging ❑ little understanding/ownership of flood protection strategies ❑ very marginalized community ❑ very low awareness about climate change and its relation to crop cultivation ❑ agricultural knowledge locked in the hands of men
EXTERNAL	**Opportunities** ❑ employment opportunities ❑ further training and support on best agricultural practices available ❑ NGO activities to raise households ❑ the empowerment of women at decision-making levels ❑ involvement in research ❑ learning opportunities from neighbouring communities	**Threats** ❑ increased soil salinity ❑ unpredictability and increased intensity of cyclones and floods ❑ land erosion by the river ❑ intense cold spells ❑ waterlogging ❑ changing rain patterns and a lack of rain ❑ increased intensity of droughts ❑ unpredictability of future changes in climate ❑ incomprehensible information from the Agriculture Department ❑ temptation to get microcredit loans ❑ misleading information from the media or local political leaders ❑ land is very low and extremely exposed to flooding ❑ following a poor harvest there is no money to buy new hybrid seeds for higher crop production ❑ loss of traditional local varieties of crops and vegetables

Adaptation to climate change: Bangladesh

SUMMARY OF RESULTS 1/6

- The results of this research reflect the conclusion drawn by Smit and Piliposova in the IPCC Third Assessment Report on 'Impacts, adaptation and vulnerability'(2001):

- **determinants of adaptive capacity** of a community are its human capital, in terms of **accessible information** and **skills**, **social equity** among its members and the **active participation in decision making by all concerned parties**.

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SUMMARY OF RESULTS 2/6

Education/awareness crucial for development of adaptation strategies.

- Unawareness and confusion → communities are bound to opinions/explanations given by media and choices made by prominent individuals of the society

- Traditional/local knowledge related to the environment → good understanding of changes/dynamics of the natural world (e.g. link between deforestation and decrease in rainfall).

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SUMMARY OF RESULTS 3/6

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- *Marginal or inexistent understanding of the causes of the problem generate a sense of impotence*

Thus:

- Where NGOs or government provide training about climate change, they should make sure that information is delivered in a way that is meaningfully understood by the rural population

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SUMMARY OF RESULTS 4/6

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- Stronger adaptation strategy in communities where people:

A. were given the possibility to research and understand independently causes of and solutions to the natural hazards threatening them;

B. participated actively in the project by putting in place operative solutions;

Adaptation to climate change: Bangladesh

SUMMARY OF RESULTS 5/6

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- The community became empowered through

A. Understanding causes/effects of climate change

B. Equal conditions/opportunities and participation in community for men and women

C. Cooperative research

D. Functioning social networks.

Adaptation to climate change: Bangladesh

SUMMARY OF RESULTS 6/6

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- Communities that did not put in place adaptive strategies were those in which:

A. women didn't have an independent role in society

B. there was no functioning social network among the farmers.

- These communities depended on NGOs intervention and did not participate to any choice concerning the management of their lands.

Adaptation to climate change: Bangladesh

CONCLUSIONS

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- Empowerment over their own territory and choices of life, as well as effective participation of all members of the community in decision-making are main drivers of resilience to climate change in the analysed communities.

Natural hazards management in Europe

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- The case seen above relates to rural, small communities of Bangladesh, highly vulnerable and exposed to severe impacts of climate change on their livelihoods.
- What about Europe? What are issues/challenges/potentials for improvement of natural hazards management?

Natural hazards management in Europe

ROLE OF PARTICIPATION

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- Article 6,1992 UNFCC : promotion of public participation for developing adequate responses to effects of climate change
- Hyogo framework 2005-2015: a priority for action is promotion of community participation in disaster risk reduction
- EC Floods Directive (2007/60/EC): to be implemented at national/regional scale through involvement of population in natural hazard management decisions

Natural hazards management in Europe

ROLE OF PARTICIPATION

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- It seems reasonable to think that in order to reach decisions concerning public goods and services the public should be granted the right to express its opinion and act as a stakeholder

Natural hazards management in Europe
PARTICIPATION IMPLEMENTATION PHASE

We should consider:

- **Trade-offs**: when in order to get something desirable, something else (also desirable) has to be given up

- **Issues of power**
  - Political (Who really decides?)
  - Economical (Who pays? What are economic interests behind the decision?)

PARTICIPATION IMPLEMENTATION PHASE
Trade-offs

- Inherent to all human choices – the problem emerges when they are not addressed directly.

- In natural hazard management trade offs concerning:
  - Private good - public good conflict
  - Priorities in the use of limited resources (e.g. land)
  - Certainty of the loss of the present good (e.g. land) for the protection from an uncertain event (e.g. major flood)

PARTICIPATION IMPLEMENTATION PHASE
Issues of power

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- Who is in charge of taking decisions? Is this clear since the beginning?

"Participation without a redistribution of power is a frustrating and empty process" (Arnstein, 1969)

- i.e: Who really takes responsibility for the decision?

CASE STUDIES www.caphaz-net.org

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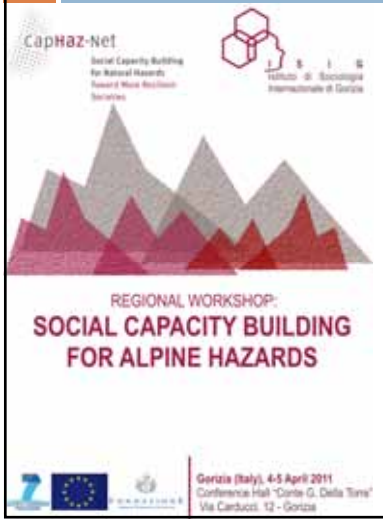

Natural hazards management in Europe
CASE STUDY: VIPITENO-STERZING

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- Municipality of the autonomous province of Bolzano/Bozen, in the region of Trentino Alto Adige/Südtirol, northern Italy. The province borders Austria and Switzerland;
- 6306 inhabitants; 10 hamlets
- altitude of 948 metres above the sea level;
- crossed by the river Isarco/Eisack;
- Flood risk in the area is high (frequently subject to minor flooding between 1965 and 1998);
- only two major floods (1965 and 1987) too far in time to still be present in the collective memory

Natural hazards management in Europe
CASE STUDY: VIPITENO-STERZING

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- Risk assessment showed that Vipiteno/Sterzing is at high risk of flooding;
- Last major flood far in time
  - population's risk perception lower than real risk index
- area most at risk of flooding is used intensely for human activities and settlements;

Natural hazards management in Europe
CASE STUDY: VIPITENO-STERZING

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- hydraulic engineering along watercourses affects **directly** individuals and groups of citizens;
- Forum as space for representatives of local administrations, organisms with interest in economic development, tourism, environment and agriculture to discuss/cooperate with experts in river management planning.
- Provincial office for hydraulic works decided for mitigation works in Vipiteno/Sterzing, to reduce the risk of floods.
- Participatory process implemented for decision-making

Natural hazards management in Europe
VIPITENO-STERZING - Workshop

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Remarks on the participatory process:

- economic and political elements (rather then safety needs) have been stronger incentives for decision making
- there is a contrast between immediately perceivable losses and long term and uncertain natural hazards (i.e. the value of land is real and tangible, while a flood is an uncertain event in the future)
- regulatory requirements of following the 'safest mitigation option' turn out as largely theoretical

Natural hazards management in Europe
VIPITENO-STERZING - Workshop

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- conflict between private-public interests lead to adoption of sub-optimal measures for what concerns 'safety'
  - i.e. while people in theory agree on the 'need for safety', when their own property has to be taken for the realisation of flood protection they don't agree anymore
- local authorities had in theory the possibility to expropriate the land even without consent, if necessary for public interest. However, in a small municipality landowners are also part of the municipal council and have political weight
  - Adopting measures against local private interest →problem for local administration!

Natural hazards management in Europe
CASE STUDY:MALBORGHETTO VALBRUNA

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- Municipality (1036 inhab., six hamlets) in the Region of Friuli Venezia Giulia
- located in an Alpine valley (Valcanale) bordering Austria and Slovenia
- at the confluence of the River Fella and the streams Malborghetto and Uque
- Multi hazard location
  - debris flows
  - landslides
  - floods
  - earthquakes

Natural hazards management in Europe
CASE STUDY:MALBORGHETTO VALBRUNA

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- A severe flash flood hit Malborghetto-Valbruna on the 29th of August 2003
- Combination of two extreme events: a storm (355 mm of rainfall within three to six hours) and the anomalous dryness of the soil
- Water transported sediments, stones, shrubbery, trees into the village
- Evacuation: ~600 residents
- Total damage: ~200 million Euros



Natural hazards management in Europe
CASE STUDY:MALBORGHETTO VALBRUNA

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- a process of negotiation and constant communication was started between major and private citizens;
- the Regional Civil Protection joined committee for safety in their claims to municipal authority, acknowledging relevance of local knowledge of the territory;
- the major took clear assumption of responsibility in overseeing the reconstruction process.

Participation: CONCLUSIONS

- In the case of developing countries participation in very important as a tool for empowerment of marginalised communities over their territories ;
- In natural hazards management in Europe when participation is used trade-offs have great relevance (if participation is not limited to consultation)
  - it is really important to acknowledge and address them directly
- It is important that the dynamics of power are clear so to find the appropriate and realistic level of participation possible

Participation: CONCLUSIONS

- It is important that there is a clear assumption of responsibility from the authorities as to the overseeing of the implementation of decision
- Participation of the community is not an improvised process, but
  - is built through awareness and knowledge
  - works as involvement and responsibility of the citizens in actions of management/prevention in the **long run**


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Thank you for you attention
..... and your questions!
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