Regional flood information system in the Hindu Kush Himalayas (HKH-HYCOS) with a gender perspective

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Presentation outline

- Disasters scenario in HKH region-focus on floods
- Women and disaster vulnerability-focus on mountains
- Women, technology and disaster information.
- Establishment of regional flood information system.
- Challenges and gaps in promoting gender inclusive infrastructure
- Assessment of EWS with a gender perspective - on going initiative.
- Key features and future directions-HKH HYCOS Project

FLOOD

Source: "EM-DAT: The OFDA/CRED International Disaster Database"
Floods in the HKH

2000 killed, 20 million affected

Immense human suffering and impediment to development

Transboundary floods - Shared vulnerability across national borders
Women and disaster vulnerability

- Women, boys and girls are **14 times more** likely than men to die during a disaster.
- In 1991, Bangladesh Floods: Of the 140,000 people who died, **90% were women**.
- More women than men died during the heat wave that affected Europe in 2003. In France most deaths were among **elderly women**.
- Hurricane Katrina, USA: Most of the victims trapped in New Orleans were Afro-American women with their children.
- In Sri Lanka and India, it was easier for men to survive during the tsunami because knowing how to swim and climb trees is mainly taught to boys.

(Neumayer and Plümper, 2007)
Women, mountains and disaster risk

- Mountain women are primary managers of water and other natural resources.
- Increasing male migration: women take additional responsibilities at home and on the farm.
- Yet, women are last to get the disaster information and first to suffer.
- *The social structure of most societies formally relegates women dependency on male members in receiving disaster information, risk awareness, preparedness and evacuation.*
Women, technology and disaster information

- Agriculture and other productive occupation: women have less access and control on advanced tools

- Digital electronics and information technologies: women have less access and control

- Why? power associated with technology and information and social structure

- In disaster preparedness, women are less prevalent where disaster information is communicated

- Several case studies: many disasters early warning information was passed only from man to man, because they felt, there is nothing women could do with information as they are only capable of saving family members
Flood mitigation: end to end forecast process

- Data Collection and Monitoring
- Hydrometeorological Forecasting
- RANET

Lead time

- Transmission
- Decision Policies Coordination
- Planning Preparedness
- Dissemination

- Weather Forecast
- Satellite Precipitation Estimation
- Flash Flood Guidance GeoSFM and NWSRFS

Source: USAID/OFDA
Global framework

- improve the basic observation activities
- strengthen international cooperation
- promote free exchange of data in the hydrometeorology
Establishment of regional flood Information system:

Making Information flow faster than floods - equally to men and women
The Hindu Kush – Himalayan Hydrological Cycle Observing System (HKH – HYCOS)

Field sensors

Real-time hydrometeorological data acquisition
Data product development
Operation and maintenance of country hydrometeorological networks

National hydrometeorological services

Requirements, quality control, data validation
Real-time data and regional products

Project Regional Centre (ICIMOD)

Real-time hydrometeorological data acquisition
Data product development
Capacity building and training activities

National forecasts based on Web-based national flood information system

Regional outlooks based on Web-based regional flood information system

Users (flood risk reduction, agriculture, health, water resources management, etc.)
**Overall objective:** to minimise the loss of lives and property by reducing flood vulnerability in the HKH region

**Five distinct components:**
- Framework for cooperation
- Regional flood observation network
- Regional flood information system
- Training and public awareness
- Planning of a full-scale regional project

<table>
<thead>
<tr>
<th>Project Duration</th>
<th>5 years (Dec 2009 – Dec 2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners</td>
<td>Hydro-meteorological services of six participating countries - Bangladesh, Bhutan, China, India, Nepal, and Pakistan</td>
</tr>
<tr>
<td>Facilitating Agency</td>
<td>ICIMOD and World Meteorological Organization</td>
</tr>
<tr>
<td>Funding</td>
<td>Government of Finland</td>
</tr>
</tbody>
</table>
Challenges and gaps in promoting gender inclusive infrastructure

**Technical challenges**
- Expansion of hydrometeorological network
- Data acquisition and transmission
- Communication of risk and warning at various levels

**Institutional**
- Fewer women engaged in EWS
- Lack of capacity and knowledge

**Social challenges**
- Differential impacts of disasters
- Operationalization of an end to end flood forecasting system, lack of disaggregate data and limited research in the context of EWS
- Early warning and its outreach particularly to women and children
Assessment of EWS with a gender perspective
ICIMOD study on effectiveness of EWS through gender lens

- Initiative targeted to **increase the effectiveness of EWS** through participation of both women and men
  - to assess the EWS provisions, practices and its effectiveness
  - examine the extent to which it has reached the target communities,
  - explore the strengths, gaps and needs of various organizations from gender perspectives
  - Provide recommendations for mainstreaming of gender in EWS.

- Considering how hazards affect them differently using gender analysis frameworks
Frameworks for analysis

- Project cycle analysis framework (Gender Analysis Framework, Operholt et. al. 1985)
- Gender-sensitive disaster risk assessment (UNISDR 2009)
- Gender-sensitive early warning systems (UNISDR 2009)

Main Questions:
- Men and women’s hazard and risk awareness in the project locations?
- Is there gender bias in existing information systems?
- What are the means and media through which men and women receive disaster information and early warning alert? And how do they act on the information?
- What are measures taken by concerned institutions for gender equal early warning and communication?
Sample size and methods

- Government Ministries/Departments (13)
- International NGOs (5)
- National/Local NGOs (6)
- Humanitarian Organization (UNDP and Nepal Red Cross Society) (2)

Data from 26 organizations including Governmental, non-governmental organizations and humanitarian organizations were collected.
Data collection methods

Phase-I
- Desk review
- Preparation of inception report including work plan and data collection tools and assessment matrix

Phase-II
- Interview with key stakeholders
- Data collection from other means (phone, emails, newspaper articles, etc.)
- Field visit/data collection; field verification

Phase-III
- Analysis of stakeholder consultation and interview
- Analysis of field data and identification of gaps and opportunities
- Recommendations and Final report
- Publication
## Initial findings:
Women participation in disaster risk assessment

<table>
<thead>
<tr>
<th>Categories</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the hazard, vulnerability and risk maps gender segregated?</td>
<td>Yes: 4</td>
</tr>
<tr>
<td></td>
<td>%: 15</td>
</tr>
<tr>
<td>Do the women participate in risk assessment</td>
<td>Yes: 5</td>
</tr>
<tr>
<td></td>
<td>%: 19</td>
</tr>
<tr>
<td>Are the risk reduction strategies gender sensitive?</td>
<td>Yes: 4</td>
</tr>
<tr>
<td></td>
<td>%: 15</td>
</tr>
<tr>
<td>Have the gender analysis conducted?</td>
<td>Yes: 3</td>
</tr>
<tr>
<td></td>
<td>%: 12</td>
</tr>
<tr>
<td>Have women’s capacities, knowledge/attitudes incorporated/documenting in the assessment?</td>
<td>Yes: 3</td>
</tr>
<tr>
<td></td>
<td>%: 12</td>
</tr>
<tr>
<td>Have women organizations engaged in risk assessment?</td>
<td>Yes: 3</td>
</tr>
<tr>
<td></td>
<td>%: 12</td>
</tr>
<tr>
<td>Has advocacy campaign for gender sensitive risk assessment done?</td>
<td>Yes: 2</td>
</tr>
<tr>
<td></td>
<td>%: 8</td>
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</table>
EWS with a gender perspective

- Parvati Gurung: Gauge reader at Chisapani Karnali stations of Department of Hydrology and Meteorology, Nepal
- Provides early warning to 45 communities living downstream
- More than 35,000 thousand people were provided early warning in the floods that occurred in 2012

Source: Practical Action, Nepal
Key features and future directions: HKH HYCOS Project

- Establishment of 23 new Hydro-Meteorological stations and connect with hundreds of existing stations.
- Regional flood information system established and real time data being shared from the stations.
- Development of flood outlooks and promotion of an End-to-end flood forecasting and response mechanism.
- Strengthen institutional capacities on gender sensitive early warning and dissemination policies and practices.
- Gender inclusive public awareness and community outreach activities.
- Recommendation for gender sensitive EWS in the context of HKH HYCOS.
Thank you