WORKSHOP

Responsible Science in
Natural Hazard Research & Management in Nepal

14th February 2020 // 2nd Falgun 2076

Hotel Annapurna, Kathmandu, Nepal

OeAD ÖAW AUSTRIAN ACADEMY OF SCIENCES

Practical ACTION S4W-Nepal ICIMOD THE HIMALAYAN RESEARCH CENTER

1. Background

Coming to the end of the three-year project "touRES - Resilience of tourism systems to natural hazards in the Himalayas", the questions on "how" and "why" we do research in the field of natural hazards research and management became crucial. To address these questions, a one-day workshop – organised by the University of Innsbruck and kindly supported by Practical Action, Smartphones for Water Nepal (S4W-Nepal), ICIMOD, and the Himalayan Research Center – will provide an opportunity to critically reflect our own work as scientists as well as emerging issues in the context of natural hazard research and management.

2. Objectives

The objectives of the workshop is to give room for a substantial discussion on the adequacy of research with practical stakeholders, NGO representatives and local as well as international researchers working within the field of natural hazards research and management.

Specifically, the workshop aims to discuss the following issues:

- Inclusiveness of research: involving local actors
- Communicating research into practical action: dissemination strategies re-examined
- Appropriate technologies in natural hazards research and management
- Dealing with natural hazards in an uncertain, complex, and ambiguous future

3. Expected outcomes

A detailed workshop report will be produced and shared with all participants. The publication of a position paper on the biggest challenges, developments and aims of Responsible Science in natural hazard research and management is envisaged. Besides, we hope to raise awareness on this topic and to provide a platform for critical discussions – especially inviting young scholars.

4. Who will participate?

The workshop will give room for a substantial discussion on the adequacy of research with practical stakeholders, NGO representatives and local as well as international researchers working within the field of natural hazards and disaster risk management. The expected number of participants is around 50.

- National and international scientists and young scholars (from the master's level upwards) in the field of natural hazards research and management
- INGO/NGOs representatives in the field of Disaster Risk Reduction
- Public servants and bureaucrats
- Citizens and political stakeholders (involved in the touRES project)
- National Media

5. Event Location

The workshop will take place at Hotel Annapurna in Kathmandu.

6. Format

The workshop is highly interactive. The morning will start with sharing experiences and a panel discussion with national and international experts on the topic of Responsible Science. In the afternoon, we will discuss four specific sub-topics of Responsible Science in natural hazards research and management.

7. Detailed Session Description

Session 1: Inclusiveness of research: involving local actors

Key words: citizen science; co-production of knowledge; involvement of non-academic actors

Theme: Science is more and more under the demand to create societally relevant and usable research involving non-academic actors. There has been a growing amount of interest in a co-production of knowledge approach which involves non-academic actors and local citizens to increase the relevance and usability of science for society (Djenontin and Meadow, 2018). However, in practice, it is challenging to design and conduct research that includes scientists from different disciplines as well as non-academic actors particularly across cultural, linguistic and geographical borders (Woltersdorf *et al.*, 2019). On the one hand, traditional scientific research-funding schemes, proposal structures and evaluation procedures do not encourage the active involvement of non-academic actors and local citizens in the research process. This may lead to a problem framing and research design that are not co-designed by both researchers and non-academic actors. On the other hand, the participation of citizens and non-academic actors does often not go beyond mere passive data collection, measurements and observations activities (Haklay, 2013).

Integrating non-academic actors in research activities is a long-held claim of Citizen Science. A more fundamental way to enhance knowledge co-production is through the involvement of non-academic actors and local citizens in the identification of a joint problem understanding to formulation of a joint research objective and research questions to data collection and analysis. However, these steps need to be adapted to the given context and needs of scientists and non-academic actors involved. This session aims to strengthen our understanding of how local citizens, non-academic actors and scientists can collaboratively work together in the whole research process.

Key questions:

- How can local citizens and non-academic actors be involved in research (e.g. not only in collecting data but also in other stages of the research process (e.g. the formulation of research questions)?
- What transformative potential can the involvement of local citizens and non-academic actors have?
- Soul-searching: Why should we be inclusive at all?
- Experiences: Based on your research/practice, how have past and current projects engaged and involved local citizens in Nepal?

Session leader: S4W-Nepal
Session language: Nepali or English

Session 2: Communicating research into practical action: dissemination strategies re-examined

Key words: dissemination/communication strategies; dissemination/communication needs; risk communication

Theme: Addressing deficiencies in the dissemination and transfer of research-based knowledge into practical action is high on the agenda of both academia and practitioners in the field of natural hazard research. There is a common understanding that dissemination strategies must go beyond the mere publication of results in scientific journals. Specific target and stakeholder groups should be identified (e.g. media representatives, NGOs, policy planners, bureaucrats). Yet, researchers and research projects often overlook communication and dissemination needs that may differ between stakeholders, institutions, and individuals.

However, an initial problem comes along with what represents dissemination in a research process. The role of research dissemination is described as one-way communication of research outcomes to the public but without direct feedback from the audience. Underlying that definition is the belief that a deficit of information, knowledge or in comprehension is the reason for wrongful actions or inaction of laypeople. Research in climate change adaption and environmental psychology has shown that knowledge and awareness does not necessarily lead to action (Kollmuss and Agyeman, 2002). Thus, alternative communication formats with a non-technical audience outside the scientific discipline might be worthwhile investigating.

Key questions:

- Which knowledge products and formats are useful for different groups? How should scientific results be arranged to be actable for different groups (e.g. local citizens, NGOs, practitioners, media, policy makers)?
- Soul-searching: Is the dissemination and transfer of research-based knowledge into practical action too demanding for scientists?
- Experiences: Based on your research/practice, how have past and current projects engaged with communities with regard to sharing of results and benefits? What are citizens and practitioners' perceptions about scientists studying disaster risk and natural hazards in Nepal?

Session leader: Practical Action
Session language: Nepali or English

Session 3: Appropriate technologies in natural hazards research and management

Key words: appropriate technology; early warning systems; top down

Theme: Not only since the Sendai Framework for Disaster Risk Reduction, technological innovation is seen as key element for reducing the impact of natural hazards on societies around the globe. Ideally, such science driven technological innovations would address underlying causes of natural hazards like climate change, urbanization or environmental degradation in all phases of disaster management. Additionally, collaborative efforts between stakeholders, the private sector, academia, NGOs and governmental bodies would guarantee sustainable impacts of these technologies.

However, the use of innovative technologies is no guarantee of their success, nor of their suitability and applicability in a certain context. Often, the prevailing social, cultural and economic context is not considered when new technologies are applied. The lack of capacities (e.g. skills, knowledge or organizational capacities) to operate, maintain or reproduce a particular type of technology almost certainly leads to failure – an experience numerous governments and development agencies have made (Practical Action, 2012). Doing so, unequal relationships are maintained, in which recipients need to rely upon 'donors' in order to operate technologies effectively (Practical Action, 2012). Further, some technologies may seem rational from a government's or donor's viewpoint, while the intended beneficiaries are neither sufficiently consulted, involved, trained or informed. The appropriate technology approach has long been advocated by Schumacher who argues that people are not passive recipients of a technology (Schumacher and McKibben, 1973). Rather, technology is developed in response to a particular set of needs and wants of the users and in accordance with given settings and circumstances.

In the context of natural hazards management, technologies are often imposed or inappropriately implemented (e.g. without consulting local administrations and communities or building capacities) based on commercial, political or personal agendas. Such top-down approaches often result in failing technological approaches as seen in the case of early warning systems for glacier lake outburst floods or landslides (Sherry and Curtis, 2017; Dahal and Hagelman, 2011; Watanabe *et al.*, 2016). Similar patterns can be found in natural hazards research, where a lack of funding often requires researches in the Global South to gain access to 'state of the art' research equipment and methods through donors or researchers from the Global North.

Key questions:

- How can be ensured that technologies are appropriate for the users and the given context concerning disaster risk management?
- How can intended beneficiaries of technologies be better involved in decision process and management?
- How can the problem of limited access to 'state of the art' research equipment and methods be tackled?

Session leaders: University of Innsbruck, Paris Diderot University
Proposed session language: English

Session 4: Dealing with natural hazards in an uncertain, complex, and ambiguous future

Key words: risk assessment and management; risk governance; low frequency – high risk events

Topic: Risk governance implies the involvement of various actors that play a key role in framing the risk (van Asselt and Renn, 2011). Analyzing, and in particular managing and communicating risk should not be restricted to single entities (e.g. private companies, scientific experts or international agencies). This is of particular relevance when it comes to natural hazards under conditions of climate change, associated with high uncertainties, complex interactions, and ambiguities (van Asselt and Renn, 2011).

Facing such uncertain, complex and ambiguous processes, assessing risks should include heterogeneous information – from academic sources to local tacit knowledge. Building on this assessment, a joint risk evaluation -- reflecting the different values, attitudes, and worldviews of affected communities -- and a co-design of risk management strategies is needed. Doing so, fosters the governance of natural hazards by becoming more socially robust, informed, and acceptable (van Asselt and Renn, 2011).

However, the governance of natural hazards is a highly sensitive process. Difficulties may arise when risk assessment, management, and communication is not well coordinated and/or integrated (van Asselt and Renn, 2011). Natural hazard events with high uncertainties associated with low frequency/high risks (e.g. glacial lake outburst floods), science might not be able to provide clear-cut assessments in terms of likelihood and measurable effects (van Asselt and Renn, 2011). Further, it is challenging to include and communicate with a range of actors which have complementary roles, diverging interests and various perspectives on risks in the context of natural hazards.

Due to communication misunderstandings, a lack of trust and social support between policy makers, experts, stakeholders and the general public may impede responsible governing of uncertain, complex, and/or ambiguous natural hazard risks. Based on experiences from Nepal, this session will reflect key issues of a responsible risk governance.

Key questions:

- What are the measures taken by communities, the government, and other stakeholders to cope with uncertain, complex, and/or ambiguous risks? How can policy makers, experts, stakeholders and the general public jointly govern uncertain risks? What is the role of science and research? Which communication strategies are appropriate in risk management situations with high uncertainties?
- Soul-searching: Are we scientist prepared to communicate about uncertain and complex risks to a broader public?

Session leaders: ICIMOD
Proposed session language: English

8. Workshop Agenda

9.30 - 10.00	**Registration & Coffee**	
10.00 - 10.30	**Opening Session** **Welcome, motivation & background of the workshop** Karl Michael Höferl, University of Innsbruck, Austria	
10.30 - 12.30	**Panel Discussion** Key question: How can science create societal impact with natural hazards research? Sagar Raj Sharma, Dean of Kathmandu University School of Arts (KUSOA) Rajaram Prajapati, S4W-Nepal Dharam Uprety, Practical Action Denis Samyn, ICIMOD tba Moderated by Narayan Gurung & Karl Michael Höferl	
12.30 - 13.30	**Lunch**	
13.30 - 14.30	**World Café I – parallel sessions** **Session 1: Inclusiveness of research: involving local actors** (hosted by S4W-Nepal)	**Session 3: Appropriate technologies in natural hazards research and management** (hosted by University of Innsbruck & Paris Diderot University)
14.30-15.30	**World Café II – parallel sessions** **Session 2: Communicating research into practical action: dissemination strategies re-examined** (hosted by Practical Action)	**Session 4: Dealing with natural hazards in an uncertain, complex, and ambiguous future** (hosted by ICIMOD)
15.30 - 16.00	**Coffee Break**	
16.00 - 16.30	**Sharing of findings** Moderated by Narayan Gurung & Karl Michael Höferl	
16.30 - 17.00	**Conclusions & final statements** Moderated by Narayan Gurung & Karl Michael Höferl	

9. Organizational Issues

The workshop will be hold in English and Nepali. Lunch and coffee breaks are included. The number of participants is limited. Participation only by invitation!

For more information and pre-registration please contact:

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or visit https://toures.travel.blog/workshop-in-kathmandu

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