

## Introduction

The Institute of Hazard, Risk and Resilience (IHRR) is harnessing the capacity of researchers from across Durham University to make a difference to how we live with emerging hazards and risks. IHRR is a nerve centre for innovative, interdisciplinary approaches to hazard and risk research in the UK and throughout the world.



We are championing key research programmes in hazards, vulnerability and resilience. The Institute operates through a growing array of research projects and externally-funded fellowships. It is involved in policy engagement in risk and hazard debates across much of the globe, strategy development with industry and wider stakeholders and also research consultancy. Our research aims to improve human responses to both age-old hazards such as volcanoes, earthquakes, landslides and floods as well as the new and uncertain risks of climate change, surveillance, terror, banking and emerging technologies. It also focuses particularly on the nature of hazard, risk and vulnerability in the developing world. The Institute aims to develop radical new insight with regard to hazard and risk. By adopting an approach which directly engages policymakers, local communities and other appropriate stakeholders in the co-production of knowledge, the Institute aims to develop innovative policy and to increase social capacity for reducing vulnerability and harm.

## Focus

The Institute is developing three areas of activity through interdisciplinary research, allowing problems to be framed in different ways and new theoretical approaches and understandings to be developed in relation to existing problems.

**Hazards:** how hazards are produced, particularly environmental hazards and notably landslides, floods, droughts, volcanoes, sea level rise and earthquakes; but also hazards that emerge in surprising ways, such as socio-technological and financial hazards.

**Vulnerabilities and Resilience:** the vulnerabilities and resilience of communities that have to live with hazards, notably those communities whose vulnerabilities arise from poverty, changes in life course and social isolation, and where these in isolation and combination reduce resilience.

**Frontier Knowledge:** innovative and creative ways of learning to live with the pervasive nature of hazard and risk, through new ways of risk learning, new forms of risk sharing and new ways of risk forecasting.

## Examples of Current Research Activities

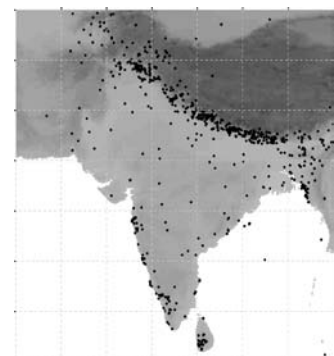
**Landslides:** Exploring both the spatial and temporal distribution of landslides, and the impacts that they cause (Fig. 1).

**Secondary Hazards:** Examining secondary earthquake phenomena, particularly landslides and river basin changes, in space and time, while collaborating with social scientists to explore ways these hazards affect communities in developing countries in order to build resilience.

**Climate Adaptation:** Understanding the diverse array of influences climate change has on species including humans, especially in the preparation of infrastructure needed for vulnerable groups, such as older people.

**Tipping Points:** Researching the physical and social complexity of so-called 'tipping points' in past climate systems, historical and contemporary banking crises, knowledge diffusion and mathematics.

**Resilience:** Developing innovative ways to build resilience in communities to the hazards that they face, ranging from threats from natural disasters (e.g. earthquakes in the Himalayas through to acute social impacts (such as the loss of major industrial employment in County Durham).



**Fig. 1:** Rainfall-triggered, fatality-inducing landslides in South Asia in the period 2004-10.

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