Sajag-Nepal newsletter

Third quarter, September 2023

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Overview

Welcome to the latest in our series of quarterly newsletters for the Sajag-Nepal project. The purpose of these newsletters is to summarise the breadth and depth of research across the project, highlight outcomes and outputs that we want to share more widely, and draw attention to upcoming activities or milestones.

The past three months have been intensely busy across all parts of the project as we come toward the end of our third year of work. It is hard to believe that we have just about reached the end of the project as it was originally planned; after a slow start during the pandemic, the pace of the research has really picked up.

A highlight over the last few months was definitely the multi-hazard risk sharing workshop that we ran in Kathmandu on 11 September. This brought together a large part of the team – which was very valuable and enjoyable in itself – along with more than 60 external partners and interested people for a half-day meeting at Hotel Square in Pulchowk. We used the meeting to showcase the work that we are doing and the outcomes that we've achieved so far, as well as getting input and ideas about where to focus our efforts in the remaining 15 months of the project. There were a total of 15 talks from project members and they were uniformly excellent – clear, focused, and informative. It was great to see the breadth of expertise across the project, and also to reflect on how much progress we have made. The panel discussion raised some challenging points for us as a project and it's clear that we still have a ways to go toward the goals of our research. But for me, the most striking thing about the workshop was the fact that nearly everyone stayed to the end, and the discussions were still continuing as the hotel staff were shooing us out of the room to prepare for the next event. Thank you to everyone across the project for making that event such a success, and for showing the outside world what we have been up to. And of course Emilia Rosser was unquestionably the star of the show and kept everyone entertained throughout.

Field work has continued in the case-study palikas through the monsoon, and we have now collected a full year's worth of data from the hillslope stability monitoring stations. Work is underway both to understand those data – what can we say about the relationships between rainfall, soil moisture, hillslope movement, and people's experiences of landsliding in the monsoon – and to help put those data into context with the communities. The first of a planned series of explanatory videos is now up on the project YouTube channel (see https://www.youtube.com/@Sajag-Nepal/videos) and members of the team are preparing to go back to the palikas in late October to continue working with local government and community groups on making sense of the observations. This is painstaking but critical work; there are no quick or easy answers, but we hope that by doing this carefully and keeping the focus always on people's experiences and goals, we can make some real progress.

Importantly, members of the team from NSET and SSB were able to visit several of the palikas this summer with officials from the Ministry of Federal Affairs and General Administration, seeing first-hand the monitoring stations as well as meeting with the local government and hearing about their perspectives and concerns.

We are also nearly ready to release the first project film, created by BBC Media Action and building directly on the work that Nyima has done in Annapurna gaun palika. It's a powerful look at impacts of monsoon rainfall and road building on the community of Phagam, as well as some of the ways in which both residents and the local government are responding to those impacts. The BBC Media

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Action team have been planning the next film, which will focus on Bhote Kosi gaun palika, and if all goes well filming for that should be taking place in October and November.

Alex Densmore

Photos from the multi-hazard risk sharing workshop on 11 September. Left, Dipak sharing his work with Anuradha; right, Prem speaking as part of the discussion panel.

SPOTLIGHT ON RESEARCH

As part of our 'spotlight on research' section, Sarmila Paudyal, from NSET took part in our quiz, please read on to find out more!

Q1. Tell us a little bit about you and your background

I am a Geologist with a specialization in Engineering Geology. I have been involved in landslide hazard research work after graduating in 2017. I did my master's dissertation on cut slope stability on the Mugling-Narayanghat Highway of Nepal. As my thesis was also related to slope stability, I was keen to research landslides and slope geomorphology. During my master's degree, I got a "Himalayan Periglacial Summer School Grant" from a free competition for the field study of the periglacial region of Solukhumbu District. I also got an opportunity to get myself involved in the research work organized by the United Kingdom, Japan, and American Universities.

Q2. What drew you into your research area?

After getting a grant to go to the higher Himalayan for the study of the periglacial region, I got more interest in the geomorphology of the earth's surface and its processes. It was just after the Gorkha Earthquake 2015, we were on a field trip where I could see many landslides and unique features on the land surface. I was more curious about the landslide mechanism. Finally, after joining the NSET, I got an opportunity to work more on landslides and succeed in giving live demonstrations on landslide mechanisms as an awareness tool for the community who are living with landslide risk. Similarly, developed guidelines for landslide hazard, vulnerability, and risk assessment for the Municipality level giving the example of Tamakoshi Rural Municipality of Dolakha district. 3D models of the municipality ward level generated from DEM also helped

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people to identify risk at their community level and can be used in landuse planning for stakeholders. From small exposure I got to learn and explore more about landslide studies and research. So, I want to continue in the same research field and hope to get my knowledge enhancement from further studies.

Q3. What part of the project are you looking forward to the most?

I am trying to see the relation between rainfall and landslide occurrence. With advanced techniques, there are some of the tools to predict the landslide occurrence that we have been using. But can we rely only on those approaches? To determine the concept, I have collected the landslide inventories with detailed information like where, when, what, how, etc. Collected data can be used to compare the timing and rainfall threshold to determine whether either approach was effective at anticipating the landslide occurrence. Finally, this rich dataset can be used to provide guidance for future mitigation measures in landslide-prone locations.

Q4. What do you hope to have achieved by the end of the project?

I was limited to the municipality or district level for the landslide research. This project let me work on a national scale which means I am expanding my knowledge on landslide research. While collecting detailed information for each event, there was some pattern that will help in giving some results for mitigation measures. We might be thinking some area only is affected by the landslides and the government should respond to them. Nepal is a Himalayan country that always suffers from such problems within the hilly range, this will not end with some response by the government. This research helped me to think in the broader aspect as we need to find out some landslide prediction approaches and possible mitigation measures.

Q5. Tell us an interesting/surprising fact about yourself

I love to explore new places, trek and do adventure things. I have been doing such adventure things as Bungee Jumping in Bhotekoshi, walking on a Glass Bridge in China, Visiting the Great Wall of China, trekking to Everest Base Camp, and visiting a laboratory situated at the highest altitude EV-K2.

The surprising fact is that I have been to Everest Base Camp several times. During those visits, I got claustrophobia and fear of cold and gloomy weather, which was a bad experience and now I cannot think of going back to Everest base camp again.

Updates from the Work Packages

Work Package 1

In July, we welcomed Ram, Dammar, and Sarmila from NSET to Durham University for a productive few weeks working on their independent research projects with Erin, Nick, Mark and the wider team. During their visit, the group also enjoyed day trips to Edinburgh and Newcastle, despite the British summer not quite living up to expectations!

Ram has been using semi-automated methods to analyse how landslides following the 2015 Gorkha earthquake have evolved through time, exploring how the persistence of co-seismic landslides

compares to pre-seismic landslides. Dammar has been busy manually mapping landslides and changes in road length across Nepal. He plans to use these datasets to better understand how roads are influencing landslide occurrence across the country. Sarmila is currently identifying the 100 most fatal landslides between 2018 and 2022. Sarmila then intends to explore how well our current understanding of landslide susceptibility, rainfall-triggering thresholds and local knowledge can be used to anticipate the most fatal landslides. Please get in touch with Ram, Dammar or Sarmila if you want to find out more about their research.

At the end of the visit, Ram, Dammar and Sarmila gave a series of presentations to both the wider UK Sajag team, who joined us in Durham, and to Drs Bhim Kumar Dahal and Ellen Robson, who are working on slope stability with respect to roads in Nepal.

It was a great experience to welcome Ram, Dammar and Sarmila back to Durham and we are all looking forward to seeing how their projects develop.

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A few photos from the NSET visit to Durham in July, including dinner at Nick and Katie's house

This summer members of the Sajag-Nepal WP1 project team undertook fieldwork in Bhote Koshi gaun palika, focusing on the themes of vulnerability, exposure and ways of knowing and understanding the landscape. One element of the research carried out by Katherine, Erin, Dipak, and Anuradha focused on a second phase of mapping and understanding mobility within and through the landscape, with a view to improving our understanding of risk within the mountain hazard chain. Using participatory mapping, the research aims to move away from a static understanding of exposure, commonly based on building or point data, to a more dynamic understanding which captures people's daily, weekly, monthly and seasonal movements throughout the landscape. It is anticipated that the findings will help refine local-level planning, as well as informing our understanding of multi-hazard risk and preparedness nationally.

The work led to a rich dataset of local perspectives on movement and hazard from the area around Kodari, and Katherine has been compiling and analysing these over the autumn. Some preliminary findings were shared both at the September workshop and with Stine in the UN Resident Coordinator's Office. Katherine, Dipak, and Anuradha have planned a follow-up visit to Kodari in early November, and the team are keen to trial the participatory mapping approaches in the other case-study palikas in the new year.

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Photos from the mobility mapping work in Bhote Koshi gaun palika

Finally, Katherine, Tek, Anuradha, Nyima, Dipak, and Katie have put together a compelling session for the Regional Humanitarian Partnership Week meeting in Bangkok in December. This takes a detailed and critical look at local and scientific knowledges for multi-hazard risk reduction, building on the work in Sajag-Nepal as well as previous research on this topic in Nepal. The session will involve a set of activities around rapid landscape change, mapping and modelling exposure to hazards, co-production of information around landslide activity, and non-binary ways of knowing.

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Work Packages 2/3

In July, Alex Densmore, Alex Dunant, and Max visited the British Geological Survey to share some of the work that has been done so far on impact modelling as well as the analysis of slow landslides. They met with the team behind the Modelling Exposure Through Earth Observation Routines (METEOR) project, which was led by the BGS, and were able to discuss the METEOR building vulnerability data which underpin our impact modelling. There was a great deal of interest from BGS staff in Sajag-Nepal and it was really helpful to be able to better understand the origin and assumptions of their vulnerability dataset.

We held another round of workshops with the humanitarian clusters that make up the Humanitarian Country Team at UN House in September. These workshops covered two topics. First, we presented some analysis that Sihan had led on enhancing the seasonal monsoon outlook, by identifying the previous year with rainfall that most closely matches the expected seasonal pattern. We discussed the potential uses that this might have for the clusters in preparing their monsoon contingency plans. Second, we presented some early results on the expected patterns of multi-hazard impacts from sub-seasonal (14 day) rainfall forecasts, showing the palikas that would be expected to be most affected by that pattern of rainfall. We used 1-14 August 2023 as our trial period, and compared the expected pattern of impacts to what actually occurred. This led to a wider discussion with the clusters about the potential value of such information and the actions that they could take if this were to be provided to them during the 2024 monsoon. As a result of the workshops, we agreed to press on with refining both the seasonal and 14-day impact modelling. We also offered to meet with individual clusters in the spring, once the 2024 seasonal outlook has been released, to discuss how the impact model results can be used to improve their contingency planning.

Alex Dunant will present the work that he has been leading on multi-hazard risk modelling as a poster at the upcoming AGU conference in San Francisco. He has also submitted a proposal for some additional funding from the UKRI impact accelerator account; that spinoff project, if successful, would explore the use of computational techniques borrowed from astrophysics to try to model the way that people move across the landscape at a national scale. If successful, this could be another way of building up a better understanding of where people actually are, and how their exposure to hazards changes over time.

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Work Package 4

In July, Gopi and other members of the team presented Sajag-Nepal to the CBDRM Platform, facilitated by Bhesh. This was an excellent opportunity to introduce the project research to a wide range of NGOs that are involved in community-based disaster risk reduction projects.

Members of the team met with Anil Pokhrel (NDRRMA) in September to discuss the risk modelling work and how this could be used to support the government's Multi-Hazard Risk Analysis Task Group, which has been convened to develop approaches to planning for multi-hazard risk. Anil suggested a follow-up meeting to brief the Task Group, which we are hoping will take place in November.

Research ethics

The Sajag-Nepal project has undergone ethical review at Durham University and we have received approval to begin the research. A copy of the documentation (including a project risk assessment) is available via OneDrive for the team to access. As previously discussed, this is very much a live document and work package leads will be responsible for updating and resubmitting amendments as required, and as the research evolves. A big thank you to everyone who fed into this process. Any questions, please contact Katie: katie.oven@northumbria.ac.uk

Social media

Sajag-Nepal is active on Twitter (@SajagNepal) and our project website (www.sajag-nepal.org) is fully open for blog posts and reports. If you would like to tweet or post to the website, please contact Rachel for login details. We also feature on the recently relaunched Radix website (Radix: Radical Interpretations of Disasters), as an example of a project with its own ethical guidelines which build on the principles of the Disaster Studies Manifesto: Power, Prestige and Forgotten Values. It is worth noting that Tek took over the Radix Twitter feed from 12-18 June, so please see his posts at @DisastersRadix.

Alex Dunant has started a project Slack platform and several team members are active on Slack – if you are interested in exploring this as a way to communicate across the project, please contact Alex directly (alexandre.dunant@dur.ac.uk).

We are trialling a move from Google Drive to OneDrive for general project materials and information. We have started this with materials for our monthly team meetings, and if there are no access issues then we will extend this to other documents as well. Please contact Rachel if you have any questions or concerns.

Project communication guidelines have been developed with input from the WP leads, with guidance for good practice and things to consider when communicating about the project. This is available on the project OneDrive and Google Drive. We will continue to update and refine this, so please send any suggestions to Rachel.

Recent publications

If you have recently published a paper or other output that is relevant to Sajag-Nepal, please send the details to Rachel and we will list them here for the team to see. Please include the DOI and a link to any open-access version, if possible.