Transfer of Knowledge: Reading and Creating Risk Assessment Maps

Linking risk assessments to their practical use

Risk assessment maps are useful and increasingly common, however the technical knowledge needed to interpret these maps is a potential barrier to widespread implementation. Using risk maps to inform climate policy requires skills in map interpretation and a baseline understanding of uncertainty inherent in climate simulations. Therefore, fostering the right skillset to correctly read and interpret maps of climate risk factors is a crucial aspect of risk science communication. To address this need, skill transfer and capacity bundling are an integral part of this study. To address this need, Woodwell Climate Research Center and Institute of Forestry and NRM, Tribhuvan University intend to engage with students/academics who are interested in learning the risk mapping process and the basic skills needed for interpretation.

Goals of training

- Participants are able to work with climate model data and create their own maps and visualizations.
- Participants are able to communicate how climate change will impact Province 1.
- Participants are able to use the data to help tell their story.

Budhi Khola & Itahari

Woodwell Climate Research Center (Woodwell) is working on climate change risk assessment of Budhi Khola of Morgan and Sunsari district. It focuses on the flooding of Itahari, Sunsari. The river was selected after discussions with stakeholders, including Prof. Rajesh K Rai, Ph.D., from Tribhuvan University's School of Forestry and Natural Resource Management, based on its potential impact in terms of population, economic entities and ecological vulnerability. The study uses a proven risk assessment method that involves high resolution remotely sensed maps, climate data sets and local socio-economic information such as infrastructure and settlements to model risk. A Woodwell risk assessment provides cutting-edge science that communities can customize and direct to meet their needs. Currently, highly localized climate projection data is primarily offered by private companies that many communities cannot afford. Woodwell is committed to open and transparent science and is providing municipal climate assessment free of charge.

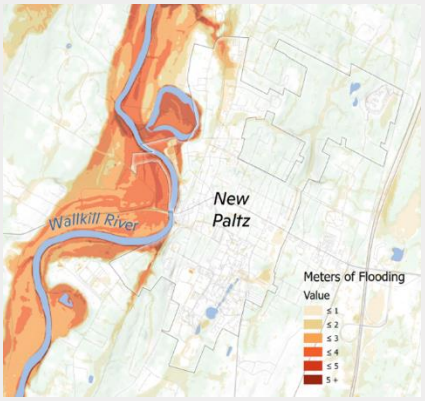

Figure 1: Example of river flooding risk map

The output of this risk assessment study will be a set of maps and graphs showing climate change risk over time. An example of a risk analysis map is shown in Figure 1. The map provides useful information on the risk of flooding and drought; and thus, insights to local governments and provinces on disaster risk reduction and preparedness.

Session plan

The program will run during the first full three weeks of September. The first week will be a single three-hour General Session. The following two weeks will be Technical Sessions aimed at practitioners. There will be 2 two-hour sessions per week.

Week	Session	Activities	Facilitator	Outcome
Week 1: General Session	Part 1: Why and how of the session	Introduction, understanding the expectation and explaining the project	Bishal	Understand context of course and expected outcomes
	Part 2: Introduction to risk mapping	Participant read and interpret risk maps	Darcy	Familiarize with risk map and help know each other
	Part 3: Basics of risk models	Learn how modeling is done	Darcy	Understand input, process and output
Week 2: Technical Session 1	Try modeling 1 (upload and understand)	Use demo-version risk mapping	Darcy & Individual practice	Play around risk mapping process
Week 2: Technical Session 2	Try modeling 2 (learn mapping)	Use demo-version risk mapping	Darcy & Individual practice	Learn, try and ask questions
Week 3: Technical Session 3	Try modeling 3 (create your own risk map)	Use demo-version risk mapping	Individual practice (Darcy & Bishal available)	Learn, try and ask questions
Week 3: Technical Session 4	Presentation session	Present the maps with other and respond to questions	Individual groups	Communicate climate data & its importance to the community

Content

The training will cover fundamental ideas of risk mapping and provide basic skills in using risk maps. We will select five modules from the content below. Once we have a list of prospective participants we will email the session plan and request that each participant to select what they want to learn. Modules will be selected based on participant response and expert moderation.

Learning outcome

After the completion of the program, participants will be able to discuss risk maps and describe the process to their friends and community.

Technical sessions ONLY - students will receive:

Regional climate model data for Nepal

- Maximum temperature (daily) 1990-2019 and 2040-2069
- Minimum temperature (daily) 1990-2019 and 2040-2069
- Maximum wetbulb temperature (daily) 1990-2019 and 2040-2069
- Precipitation (daily) 1990-2019 and 2040-2069

Example codes that students can use to further explore their own climate risk questions

Key dates

The deadline for expression of interest is **August 14, 2022**. To sign up click here or go to https://forms.gle/47EYuyriyDTy4okd7.

Notification email by: **August 25th, 2022**

Training dates: **Week starting 4th, 11th and 19th of September 2022 (Time: 3-5 pm (NPT))**

Note: To select the day of the week, we request interested candidates to select all suitable dates while registering. The date with the highest response will be selected for training.

Participants

Interested candidates from academics, students, and environment officials from the local governments. A cohort of the participants will be from the Institute of Forestry, and academics/environment officers from Province 1.

Participant commitment

Participants are expected to attend all courses. We request participants who cannot attend all classes not to enroll in the course to give opportunity to other interested participants.

Technical sessions ONLY - tools needed/how to ensure platform access:

Google Earth Engine

- Requires a Google account
- Free to access, but requires signing up beforehand