Status Report

NepalEEW: Testing the feasibility of an Earthquake Early Warning System in Nepal
Process: Geoscientists Without Borders Application: Q1Q2 2021
Date: November 10, 2023

1. Project Name*
Name of Project

NepalEEW: Testing the feasibility of an Earthquake Early Warning System in Nepal

2. Project Performers*
List all project participants. Include their title and affiliation.

Dr. Vaclav Kuna, Institute of Geophysics of the CAS, v. v. i., Prague, Czech Republic
Dr. John Nabelek, Oregon State University, Corvallis, Oregon, USA
Dr. Soma Nath Sapkota, consultations on a freelance basis
Dr. Anil Pokhrel, National Disaster Risk Reduction and Management Authority, Kathmandu, Nepal
MS Rajendra Sharma, National Disaster Risk Reduction and Management Authority, Kathmandu, Nepal
Dr. Prashant Rawal, National Society for Earthquake Technology, Kathmandu, Nepal
MS Surya Shrestha, National Society for Earthquake Technology, Kathmandu, Nepal

3. Project Start Date*
Select the date when your project was started.

7/1/2021

4. Anticipated Project End Date*
Select the date when you expect the project to be completed.

6/30/2024

5. Summary of Project Goals and Objectives*
Provide a short summary of the project's goals and objectives.

The main goal of the project is to test a low-cost, real-time earthquake monitoring system in central Nepal, in a densely populated region between the cities of Pokhara and Kathmandu. If successful, the system should be transformed into an earthquake early warning system in Nepal. We want to build local expertise to ensure the continued operation of the network and help our local partners secure finances for the continuation of the system.

6. Summary of Progress Made*
Provide a brief summary of the progress you have made toward the planning and execution of the tasks in your project as outlined in the statement of work in the grant agreement. If available, preliminary results should be included in this section.

We conducted three field trips in November/December 2021, April/May 2022, and April 2023. We completed the deployment of the seismic network that monitors the ground motion in the region in real time. The seismic network has recorded several earthquakes that have occurred within the network or in the adjacent regions. The most notable earthquake of magnitude 5.8 occurred on Friday, October 3, 2023.

The system issued a test warning within a few seconds after the earthquake signal arrival and published a technical report a few minutes after the event.

7. Problems or Challenges Encountered*
Describe any problems or challenges that the project team has encountered and what actions have been taken to mitigate those problems.

The main challenge remains the station connectivity. We are using local infrastructure for station power and internet connectivity, however, interruptions have been very common. To tackle the challenge, we developed a new seismic instrument with cellular connectivity and deployed 5 of the new instruments in Nepal during the May 2023 trip. So far, the instruments perform well and may be a good alternative to those connected by Wi-Fi.

8. Evaluation of project schedule*
Give an assessment of how the project is progressing according to the projected schedule. Is it on schedule? If not, what has contributed to the delays? How will the schedule need to be adjusted to complete the project? What, if any, challenges will the adjustment(s) create?

The project ran on schedule. We asked for a project extension as we were able to save some money which we would like to use for the continuation of the NepalEEW project.

9. Percentage of the completion of original goals and objectives

- *Test a modern, low-cost, real-time earthquake monitoring system in central Nepal, in a densely populated region between Pokhara and Kathmandu. 90%*
- *Assess the feasibility of the earthquake early warning system in central Nepal. 90%*
- *Build a team of local seismologists and infrastructure for the continued operation of the earthquake early warning system. 90%*
- *Support the development of a culture of preparedness that acknowledges earthquake risks and the importance of their mitigation. 90%*