Date of Submission	June 7, 2025

IPL Project 280 Annual Report Form

Period of activity under report
from 1 January 2024 to 31 December 2024

1. Project Number and Title:

IPL 280 "Landslide Alert: Co-Production of Knowledge Based on Community Participation"

2. Main Project Fields

Select the suitable topics. If no suitable one, you may add new field.

(1) Technology Development

B. Hazard Mapping, Vulnerability and Risk Assessment

(2) Targeted Landslides: Mechanisms and Impacts

A. Catastrophic Landslides

(3) Capacity Building

B. Collating and Disseminating Information/ Knowledge

(4) Mitigation, Preparedness and Recovery

A. Preparedness

3. Name of Project Leader

Affiliation:
Institute of Geography, National Autonomous University of Mexico (UNAM)
Telephone: (+52) 55 5623 0222 ext. 45466
Email: ialcantara@geografia.unam.mx
Core members of the Project:
Irasema Alcántara Ayala
Adán Montes de Jesús
Ricardo J. Garnica Peña
Gema Velásquez Espinoza

4. Objectives (5 lines maximum)

The Landslide Alert project aims to enhance disaster risk reduction (DRR) capacities through the co-production of knowledge, involving local communities in the landslide-prone Sierra Norte de Puebla, Mexico. Emphasising a participatory approach, the project focuses on education, early warning, and the dissemination of contextually appropriate preparedness strategies.

5. Study Area

The project was conducted in the municipalities of Teziutlán and Tlatlauquitepec in the Sierra Norte de Puebla, Puebla, Mexico.

6. Project Duration

4 years (2024-2027)

7. Report

1) Progress in the project (30 lines maximum)

Fieldwork activities were conducted in the municipalities of Teziutlán and Tlatlauquitepec. These areas, situated within a complex socio-environmental setting characterised by high landslide susceptibility, served as key sites for implementing the project's community-based interventions.

Field visits included direct engagement with local households in high-risk zones, community leaders, civil protection personnel, and educators. Participatory mapping sessions were conducted with selected neighbourhood groups to document local perceptions of landslide risk and identify areas historically affected by landslides. These activities contributed valuable empirical data to support the co-design of locally relevant awareness and preparedness tools.

A central component of the project involved strengthening institutional ties. Communication was established with the newly appointed education authorities at the municipal level. Meetings were also held with directors of primary and secondary schools in the targeted municipalities, facilitating the integration of landslide risk awareness into the school activities.

To build local knowledge and foster a culture of prevention, a series of educational conferences on the topic of landslides were delivered to students and teachers. These sessions covered the scientific principles underlying landslide processes, the nature of disaster risk, and practical measures for reducing risk and enhancing preparedness. Special emphasis was placed on promoting student engagement through interactive discussions and locally grounded examples.

In parallel, the project team prepared a set of educational materials designed to enhance children's and adolescents' understanding of landslide risk. These included infographics, activity sheets, and preparedness guides tailored to the regional context.

A key component of the communication strategy was the introduction of a popular science book, Erebus and the Flowing Mountains. Activities were designed to focus on reading comprehension, discussion, and creative interpretation of the book's content. These exercises helped reinforce key concepts related to landslides in an accessible and engaging manner, while also promoting critical thinking and narrative-based learning among students.

Planned future activities or statement of completion of the Project (15 lines maximum)

The activities undertaken during this reporting period have laid a solid foundation for ongoing collaboration between communities, educators, and DRR actors in the Sierra Norte de Puebla. The project continues to prioritise knowledge co-production, with future phases focusing on the development of locally managed awareness strategies and the institutionalisation of risk education practices in schools.

2) Beneficiaries of Project for Science, Education and/or Society (15 lines maximum)

Civil Protection officials from various municipalities in the Sierra Norte de Puebla, together with local residents, the National Centre for Disaster Prevention, the Civil Protection Coordination Unit of the State of Puebla, students from UNAM, and all participating community members and sectors of society engaged in the project.

3) Results (15 line maximum, e.g. publications)

Research articles

Lucatello, S., & Alcántara-Ayala, I. (2024). Sustainable Synergy: Strengthening Disaster Risk Reduction in Latin America and the Caribbean through Nature-Based Solutions, International Journal of Disaster Risk Reduction1, 104860 https://doi.org/10.1016/j.ijdrr.2024.104860

Book Chapters

Alcántara-Ayala I., Ramos-Hernández, S.G. (2024). Integrated volcanic disaster risk management in Mexico: insights, challenges, and opportunities, In: Schneiderbauer, S., Szarzynski, J., Pisa, P. F., & Shroder, J. F. (Eds.). (2024). Safeguarding Mountain Social-Ecological Systems, Vol 2: Building Transformative Resilience in Mountain Regions Worldwide. Elsevier.

Velásquez Espinoza G., Alcántara-Ayala I. (2024). Spatio-Temporal Distribution of Rainfall-Induced Landslides in Nicaragua (2000–2022): Preliminary Insights to Communicate Landslide Disaster Risk. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 1, 2024. Progress in Landslide Research and Technology. Springer, Cham. https://doi.org/10.1007/978-3-031-55120-8_8

Hernández-Cadena, K.M., Garnica-Peña, R.J., González-Sánchez, J., Alcántara-Ayala, I. (2024) Understanding Landslide Awareness: Exploring Students' Disaster Risk Perception in Higher Education Institutions. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 3 Issue 2, 2024. Progress in Landslide Research and Technology. Springer, Cham.

Alcántara-Ayala I. (2024). Landslide Disaster Risk: Refreshing Notions and Terminology in the Context of the Sendai Framework for Disaster Risk Reduction, In Sarmiento, F. and Gunya A. (Eds.) Mountain Lexicon, A Corpus of Montology and Innovation, Springer Cham, 262 p. ISBN 978-3-031-64884-7, DOI: 10.1007/978-3-031-64884-7

Books

Abolmasov, B. Alcántara-Ayala, I., Arbanas, Ž., Huntley, D., Konagai, K., Mihalić Arbanas, S., Mikoš, M., Ramesh, M.V., Sassa, K., Sassa, S., Tang, H., Tiwari, B. (Editors) (2024) Progress in Landslide Research and Technology, Volume 3 Issue 1, 2024, Springer Cham, ISBN: ISBN 978-3-031-55119-2 DOI: 10.1007/978-3-031-55120-8, 474 pp.

Abolmasov, B. Alcántara-Ayala, I., Arbanas, Ž., Huntley, D., Konagai, K., Mikoš, M., Sassa, K., Sassa, S., Tiwari, B. (Editors) (2024) Progress in Landslide Research and Technology, Volume 3 Issue 2, 2024, Springer Cham, ISBN: 978-3-031-72735-1, 559 pp.