Date of Submission	30 April 2026

IPL Project (IPL-261) Annual Report Form

Period of activity under report
from 1 January 2025 to 31 December 2025

1. **Project Number and Title: IPL-261 World-wide-web-based Landslide Observatory (W3bLO)**

2. **Main Project Fields – (1) Technology Development**

3. **Name of Project Leader – Professor Matjaž Mikoš**
   Affiliation: University of Ljubljana, UNESCO Chair on Water-related Disaster Risk Reduction
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   Core members of the Project: Jošt Sodnik, PhD (UL FGG), Nejc Bezak, PhD (UL FGG), Mateja Jemec-Auflič, PhD (Geological Survey of Slovenia–GeoZS), Mitja Jermol, MSc (IRCAI – International Research Centre on Artificial Intelligence, Institute Jožef Stefan, Ljubljana, Slovenija – under auspices of UNESCO), Joao Pita Costa, PhD (IRCAI, IJS).

4. **Objectives -** Development of a web-based Landslide Observatory, capable of collecting/ presenting a nearly now-casted information on the present status of selected indicators relevant for landslide risk reduction at the global scale. For its development Artificial Intelligence (AI) techniques will be applied (e. g. Deep Learning, other algorithms), and selected large databases with data from public domain. The observatory is a first step towards building of a Digital Twin of Landslide Risk Assessment.

5. **Study Area -** Global scale using different on-line satellite data (i.e., Sentinel) and large web databases.

6. **Project Duration -** 3 years (July, 2022 – June, 2025) with a possibility to prolong it for another 1 year. We plan to work on the project in 2026 and 2027.

7. **Report**

1) Research activities in 2025 have been divided into: i) WP I – Development of AI tools and techniques to be used for Landslide Observatory, ii) WP 2 – Building up the observatory using available and curated open datasets and filtered news feeds.

   After the initial version of the observatory has been successfully published on the web in December 2024 (Landslide Monthly News), further development was undertaken (Pita Costa et

al., 2026; Landslide Research Dashboard) and a new version published (WRDRR Chair, 2026; Landslide News Category, Landslide Trends Timeline, Landslide Research Evolution) that now includes a few selected case study histories under Landslide Research Dashboard.

2) Beneficiaries of Project for Science, Education and/or Society – By supporting informed decision-making and timely action, the observatory contributes directly to several United Nations Sustainable Development Goals (SDGs), including Goal 6 (in water-related disasters), Goal 11 (on the resilience of Sustainable Cities and Communities), and Goal 13 (on Climate Change Preparedness). The global web Landslide Observatory is also a contribution to the IHP-IX Program (2022-2029) on Science for a Water Secure World in a Changing Environment, and to the Kyoto Landslide Commitment 2020. The global web Landslide Observatory is also a contribution to the new governance, asked by the 2023 Global Assessment Report on Disaster Risk Reduction.

3) Results – two written open access articles and several web pages with the Landslide Observatory

   a. Pita Costa, J., Corzo Perez, G., Topal, O., Matjaž Mikoš, M. Novalija, I., Orel, R., Casals del Busto, I., Goveas, N. (under review) A Machine Learning Approach to Hydrological Event Detection from News-informed Social Media Alerts. Water (MDPI), Manuscript ID: water-4270875

   b. Mikoš, M. and Pita Costa, J. (2026) Developing Global Web Landslide Observatory to Support Sustainable Development and Landslide Risk Reduction. In: Progress in Landslide Research & Technology, Vol. 4, Issue 2, 8p., in print

   c. WRDRR Chair (2026) Global Web Landslide Observatory. Available at: https://www.unesco-floods.eu/landslide-observatory/