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IPL Project Proposal Form 2019 CENACID-UFPR (Brazil)

(MAXIMUM: 3 PAGES IN LENGTH)

1. Project Title: (2 lines maximum)-

Studies of disasters related to natural and anthropogenic landslides in Brazil - Characterization of landslides triggers and impacts as a tool to rapid risk analysis

2. Main Project Fields (Select the suitable topics. If no suitable one, you may add new field)

(1) Technology Development

A. Monitoring and Early Warning,

B. Hazard Mapping, Vulnerability and Risk Assessment

(2) Targeted Landslides: Mechanisms and Impacts

A. Catastrophic Landslides,

B. Landslides Threatening Heritage Sites

C. Landslide hazard risk management in urban areas

(3) Capacity Building

A. Enhancing Human and Institutional Capacities

B. Collating and Disseminating Information/ Knowledge

(4) Mitigation, Preparedness and Recovery

A. Preparedness,

B. Mitigation,

C. Recovery

3. Name of Project leader: Prof. Renato Eugenio de **Lima**

Affiliation: (office and position): Center for Scientific Support in Disasters (CENACID) – Federal University of Paraná (UFPR) - Director

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4. Core members of the Project: (Names/Affiliation) ns: (4 individuals maximum)

1.Prof. Adriana Ahrendt **Talamini** (CENACID – UFPR)

2.Prof. Lazaro Valentim **Zuquette** (CENACID – USP-SCar)

3.Prof. Tiago **Marino** (CENACID – UFRRJ)

4.Prof. Wilson **Soares** (CENACID – UFPR)

4. Objectives: (5 lines maximum; what you expect to accomplish?)

- - To continue the research of the project IPL 182 studying the Brazilian disasters related to landslides,
- - Prepare the map of the distribution of types of mass movements throughout the country,
- - Classify the most destructive landslides in Brazil.
- - Provide scientific knowledge to facilitate the preparation and response of landslides disasters.
- - Apply and develop RRLA (Rapid Risk Landslides Analysis) methodology for rapid analyzes of landslides, useful in disasters.

5. Background Justification: (10 lines maximum)

The “Project 182” was the phase 1 of the project accomplished some of the expected results, specially the field investigations, the national technical seminars and the offer of scientific knowledge to landslides impacted areas. Some national scientific papers were produced and we are now preparing scientific papers to publish at international level. Brazil is continuously being hit by an important group of landslide-related accidents in the country's history. We estimate more than 20,000 landslides in these major disasters and about 2,300 dead or missing victims. The CENACID-UFPR group associated with the 6 most important universities in the country responded to almost all of these accidents and developed a new methodology for rapid emergency risk assessment at these events. In addition, the group is studying the mechanisms and impacts of each type of slip.

6. Study Area: (2 lines maximum; where will the project be conducted/applied?)

The project aims to evaluate all the most prone landslide areas in Brazil, and is planned to develop detailed studies in the States of Paraná, Rio de Janeiro and Santa Catarina.

7. Project Duration: (1 line maximum): 4 years (2019 to 2022)

8. Resources necessary for the Project and their mobilization (Personnel, Facilities, and Budgets)

The main financial source is the Federal University of Paraná (UFPR) and also other universities are involved: Federal Rural University of Rio de Janeiro (UFRRJ), University of São Paulo State (USP), State University of Rio de Janeiro (UERJ), Federal University of Bahia (UFBA) and Campinas University. Also geological surveys of some Brazilian States are invited participants for example the Geological Survey of Rio de Janeiro -DRM. The total project budget is 200,000USD and we are still looking for additional financial support to complete the necessary budget.

9. Project Description: (30 lines maximum)

The proposed project operates on two levels:

- a) National-level studies - analysis of events and information at the national level in order to understand the most important and destructive types of landslides.
- b) Local studies - development of detailed geological mapping and impact analysis to identify local controls and triggers, magnitudes, destructive process capability, etc. of some referential landslides

Most studies are conducted in disaster areas when the CENACID team is moved to offer

scientific knowledge to assist disaster managers. After this first emergency action, the team continues to study some of the affected areas, trying to identify the natural and social factors that facilitate hazardous processes. This phase includes some laboratory tests. The activities are field mapping, image analysis, meteorological data collection, analysis of anthropogenic processes and detailed interpretation of geological processes. Visiting some specific areas in other countries is also planned for the comparative analysis of mechanisms and disaster preparedness. It is also planned to develop four technical seminars with 12 scientists from the CENACID group and also two workshops with national and international invited scientists. The final product will be recommendations for local and national governments and technical reports and scientific articles with the results and conclusions of the research.

10. Work Plan/Expected Results: (20 lines maximum; work phases and milestones)

We are continuing the previous phase of the project called “PHASE I”, so the work plan takes into consideration this fact as follows:

Stage II-1 – Results analysis: to study documents, reports and publications of the PHASE I. Also search financial additional support and preparation of the team.

Stage II-2 – Continuous field activities, detailed mapping, data collection, sampling of key areas, impact analysis, interpretation of social processes, discussion about detailed geological interpretation,

Stage II-3 – Technical thematic seminars (geological controllers, meteorological processes, anthropogenic controllers, destructive capacity of each geological process, etc)

Stage II-4 - Complementary field, office and laboratory studies.

Stage II-5 – Final seminar to discuss the most important conclusions and to organize the final documents of the project

Stage II-6 – Final recommendations, reports and publications.

11. Deliverables/Time Frame: (10 lines maximum; what and when will you produce?)

- Preparation of PHASE II actions - 2019
- New reference landslide inventory - specific collection of referential landslide data – 2019-2020 (permanent up date)
- Disaster areas studies – 2019-2021
- Technical thematic seminars – one in 2019 and one in 2020.
- Workshops – one in 2019, one in 2021
- Specific publications – 2019, 2020 (WLF) and 2021
- Final report – 2022

12. Project Beneficiaries: (5 lines maximum; that directly benefits from the work?)

The direct beneficiaries of the project are National, State and Local government authorities and the communities living in landslide prone areas in Brazil. Also other countries in Latin America and Caribbean region supported by CENACID members and missions can use the studies for disaster preparation and prevention. Other direct beneficiaries are the students involved in the activities.