| Date of Submission | 5 February 2016 |

IPL Project 183 Annual Report Form 2015

1 January 2015 to 31 December 2015

1. Project Title: IPL-183 Landslides in West Africa: impacts, mechanism and management

2. Main Project Fields: Targeted Landslides: Capacity building, landslide investigation and risk assessment

3. Name of Project leader IGWE Ogbonnaya, Department of Geology, University of Nigeria, Nsukka, igwejames@hotmail.com

4. Core members of the Project: Ifeanyi Oha, Nnebedum Okechukwu, Ikenna Okonkwo

5. Objectives: The increasing incidence of deaths and loss of resources from geo-disasters in Africa has left people wondering whether such disasters are consequences of climate-driven changes; and the continent is barely prepared, in terms of technical know-how and education, to cope with such changes in its environment. The present IPL project 183 is targeted at assessing the impact, mechanism and management of landslides in Africa using results of landslide investigations in some West Africa terrains.

6. Study Area: Nigeria, Ghana, Uganda, Niger and Cameroon

7. Project Duration: 3 years

8. **Report** 1) Progress in the project: Some landslides that are a good representation of most other landslides have been selected and used to explain the impact, mechanisms and management of landslides in West Africa. The major aim of this on-going project is to produce a regional landslide risk map and to install alert systems at the most threatened and vulnerable localities, such as the mountainous areas of Benue state, Nigeria. Most of the landslides in West Africa occur during the rainy season when heavy and prolonged rainfall trigger mass movements that are often catastrophic. Although the landslides occur in igneous, metamorphic and sedimentary terrains, most of the documented debris flows and debris avalanches have occurred in non-sedimentary terrains.

2) Data Acquisition, compilation, validation, analysis and interpretation: Data will be acquired through field and laboratory work, universities, libraries, data archives, joint research projects, national and international agencies, and professional colleagues. After this the acquired data will go through compilation, validation, analysis and interpretation stages. The project involves extensive field and laboratory work to not only investigate and identify landslides but to also discover the dominant mechanism of the landslides. The project also involves the production of a landslide

susceptibility, inventory, and distribution maps. Proper documentation detailing the exact human and material cost of landslide disasters, landslide distribution, frequency, scale or severity of catastrophe, landslide mechanism, type, characteristics and the dominant factors responsible for their occurrence will be made.

9. Beneficiaries of Project for Science, Education and/or Society: Africans and ICL are the major beneficiaries. However, the direct benefits go to the poor people who live at the most vulnerable places in Africa.

10. Results: Igwe O (2015) The study of the factors controlling rainfall-induced landslides at a failure-prone catchment area in Enugu Southeastern Nigeria using remote sensing data. Landslides DOI 10.1007/s10346-015-0627-9. At the moment, the geologic maps have been produced from data gathered during field work, with inputs from satellite data. A line of section which traverses the known landslide location was selected in order to produce a cross section of the geologic map. During field survey, attempt was made to record the characteristics of the failed masses following laid down recommendations, while the failures were classified according to the recommendations of international standards. The topographic data were generated from 1:50,000 scale standard topographic maps. Detailed geomorphologic mapping with aerial photos was also used to characterize and delineate rock units and possible geologic structures such as bedding planes, joints, and faults. Particle size analysis of the soils was carried using the Unified Soil Classification System (USCS).