

February 5, 2016

## IPL Project Annual Report Form 2015

1 January 2015 to 31 December 2015

1. Project Title : STUDY FOR MITIGATION AND RECOVERY OF MUD ERUPTION DISASTER IN EAST JAVA AND MODELING FOR RISK REDUCTION AGAINST MUDFLOW HAZARDS
2. Main Project Field : Landslides
3. Name of Project Leader : Prof Paulus P. Rahardjo

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4. Objectives :

- increase awareness of the risk of mudflow to human settlement and people
- Modeling of what happen if the dykes fail and causing severe damages
- To develop the technology to save or even reclaim the area of the mud disaster
- To give input to the Indonesian Government cq Departement of Public Works to develop management on risk reduction of mud disaster area

5. Study Area : Landslides Risk Reduction

6. Project Duration : 2.5 years (Jun 2015 – Dec 2017)

7. Report :

1) Progress in the Project

- Data collection and related references almost completed
- Site visits have been conducted 3 times
- Discussion with the authority and the people almost completed
- Permit for research by the corresponding authority (BPLS) completed
- Reveiw of References (75%)
- Schedule and Planning for future progress is fully defined
- Soil investigation by CPTu (80% completed)
- Results of CPTu have been used for identification of the problems
- Reporting is on going (45%)
- Analysis is being done

2) Planned Future Activities (2016)

- Continue with additional insitu testing
- Discuss the present research with authority
- Sampling of soils
- Study the current slope stability condition
- Investigation of the mud characteristics

3) Beneficiaries of Project for Science, Education dan/or Society

- The results will be used for simulation using computer program for research and students involved is very clear

4) Results :

- The soil conditions underneath the mud eruption and the area of mud containment are generally very soft. This condition rise serious problem of stability and subsidence. In most cases, the soils are still consolidating and sensitive to disturbance. Additional laoding will be very dangerous for the dyke failures
- The first year study has been basically to identify the geotechnical problems of the mud eruption disaster. Need more detail study, awareness and preparedness
- CPTu is the best tool to study the mud condition as well as the foundation soils
- There is a chance for improvement due to the significant decrease in mud discharge. Reclamation may be proposed. At least part will be possible to compressed the mud into stronger layer along the pheriphery dyke.
- The mud discharge to Porong river might cause long term problem due to the sedimentation along the river and in the estuary area.
- It is suggested to install geotechnical monitoring system which will provide information on the performance of the dykes.