

Interactive comment on “The December 2012 Mayo River debris flow triggered by Super Typhoon Bopha in Mindanao, Philippines: Lessons learned and questions raised” by K. S. Rodolfo et al.

Anonymous Referee #2

Received and published: 11 June 2016

General comments The paper deals with a hot topic and gives a thorough insight into a major rainfall-induced instability event occurred in the Philippines. Moreover, it is very well written and its structure is consistently logical and coherent.

Specific comments 1) Considering the importance that correctly authors confer to the classification of the event occurred at Mindanao in 2012, such issue deserves a major attention. Authors, in fact, reject the inclusion of the observed phenomena among the categories of flash floods, hyperconcentrated flows or landslides. However, taking into account classification schemes different from those considered by authors, and

[Printer-friendly version](#)

[Discussion paper](#)



equally consolidated among geomorphologists, engineering-geologists and hydraulic engineers, the features described and commented could also be referred to (at least, partly) to gravitational slope instability mechanisms. To this respect, authors are invited to reconsider their position, referring to the following papers of general interest:

Cruden D.M., Varnes D.J. (1996) - Landslide types and processes. In: Turner A.K., Schuster R.L. (eds), Landslides. Investigation and mitigation. Transp. Res. Board, Nat. Res. Council, spec. Rep. 247, National Academy Press, Washington, D.C., 36-75.

Hungr O., Evans S.G., Bovis M., Hutchinson J.N. (2001) - Review of the classification of landslides of the flow type. *Environmental and Engineering Geoscience*, 7, 221-238.

Pierson T.C., Costa J.E. (1987) - A rheologic classification of subaerial sediment-water flows. In: Costa J.E., Wieczorek G.F. (eds) Debris flows/avalanches: process, recognition, and mitigation. *Geol. Soc. Am., Reviews in Eng. Geol.*, 7, 1-12.

2) A second point which needs to be treated in a wider way is the shared opinion that landslides, and more generally geological risks have increased in the last decades also due to urbanization of unsafe areas. Unfortunately, this evidence cannot any longer be restricted to under-developed or developing countries. Several recent studies have demonstrated that also industrialized western nations suffer from similar phenomena, made possible by several reasons, (e.g. illegal housing actions). Authors are therefore invited to review their treatment of this topic: to this aim, useful hints can be found in the following papers.

Cascini L., Bonnard C., Corominas J., Jibson R., Montero-Olarte J. (2005) - Landslide hazard and risk zoning for urban planning and development. In: Hungr O. et al. (eds), *Landslide Risk Management*, 199-235, CRC Press.

Di Martire D., De Rosa M., Pesce V., Santangelo M.A., Calcaterra D. (2012) - Landslide hazard and land management in high-density urban areas of Campania region, Italy.

[Printer-friendly version](#)[Discussion paper](#)

Nat. Hazards Earth Syst. Sci., 12, 905–926.

Lari S., Frattini P., Crosta G.B. (2012) - Local scale multiple risk assessment and uncertainty evaluation in a densely urbanised area (Brescia, Italy). Nat. Hazards Earth Syst. Sci., 12, 3387-3406.

Technical corrections

No technical corrections have been made

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2016-102, 2016.

[Printer-friendly version](#)

[Discussion paper](#)

