Review report by Enrico Tavarnelli for manuscript by E. Gueguen et Al. titled "The Verdesca landslide in the Agri Valley (Basilicata, southern Italy): a new geological and geomorphological framework" published on NHESS Discussions, 3, 1971/2015 (doi:10.5194/nhessd-3-1971-2015)

This review builds on a previous review produced on Nov. 29th, 2014. The results of a detailed analysis carried out along the Verdesca landslide, a major geomorphologic instability in the Agri Valley tectonic trough, located in the heart of the southern Apennines of Italy, are presented in revised form. This area exhibits a high natural vulnerability, amplified by the fact that it is densely populated. The study of the geological history of such an environment is therefore of major interest for an improved understanding of instability processes within fault-controlled intramontane basins, and for an enhanced knowledge necessary when evaluating natural risk in analogue settings.

The Verdesca landslide has been investigated in detail through analysis of the mineralogical and geochemical content of the terreins affected by the gravitational movement. A borhole has been dug and samples collected therein were analysed. A slip surface was detected, and its mineralogical and geochemical composition was defined. The stratigraphic log defined in the borehole correlates positively with those reconstructed in other nearby boreholes, providing original evidence to constrain the geometry and evolution of the landslide, and to infer the depth of the main slip and detachment surfaces.

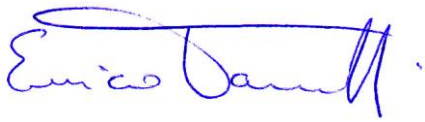
To my knowledge, good credit is given to previous work and existing literature, both methodological and regional. The English form is generally good. The illustrations are all necessary and clear.

I found this revised manuscript very well prepared, well organized and very interesting for a broad audience of both Apennine and non-Apennine specialists, as well as for both geological/geomorphological, engineering and mineralogical-geochemical communities. The outcomes of this study are ultimately a key tool for a correct evaluation of the geomorphological hazard of densely populated areas. It is therefore my opinion that the manuscript is perfectly pertinent and suitable for publication on NHESS Discussions. I recommend its publication after only very minor revision, that mainly deal with typographic mistakes. A set of specific, suggested changes keyed to the text is listed separately. I require no anonymity, wish to be identified by the Authors and remain available to them and to the Editor for eventual clarification.

Thank you for asking me to re-review this stimulating contribution for NHESS Discussions.

With my warmest regards, yours sincerely

Enrico Tavarnelli



OBSERVATIONS AND SUGGESTED ALTERATIONS TO THE TEXT:

Please Note:

- The suggested changes are indicated in green;
- the sentences to revise/correct/rephrase are indicated in red;

1) Page 1974, line 13 – see also Reference list! The manuscript erroneously indicated as Novellino et al., 2012, in the text is, actually, Bucci et al. 2012. Its complete, correct acknowledgement is as follows:

   Bucci F., Novellino R., Guglielmi P., Prosser G. & Tavarnelli E. (2012) – Geological map of the northeastern sector of the high Agri Valley, Southern Apennines (Basilicata, Italy). Journal of Maps, 8, 3, 282-292.

   This acknowledgement should be corrected in both text and reference list.

   Please, note that the abovementioned contribution (Bucci et al., 2012) is a different one with respect to Bucci et al., 2014. Both must be acknowledged.

2) Page 1975, line 4: here again Novellino et al., 2012 must be acknowledged as Bucci et al., 2012.

3) Page 1975, line 26: … related to regional tectonics and environmental changes…

4) Page 1976, line 13: the correct form of spelling in English is Holocene (not Olocene).

5) Page 1978, line 29: … allowed ~~the~~ for observation of ~~a~~ of a freshly exposed sandy and clayey deposits… .

6) Page 1981, line 13: … old manmade structures; (Fig. 10) (Bentivenga et al., 2012).

Siena, Italy, 4 May 2015

Enrico Tavarnelli