Editor Decision: Publish subject to minor revisions (review by editor) (04 Apr 2018) by Stefano Luigi Gariano
Comments to the Author:
Dear Davide Tiranti and co-authors,
the second check made by two reviewers highlighted that you have improved considerably your article, as to being acceptable for publication.
However, they provided few comments and some corrections, useful for a final amelioration of your work.
Moreover, in the following, I list some other technical corrections, mostly regarding tables and figures, proposed by myself.
After addressing these corrections, your manuscript will be briefly checked again by me and then will proceed to proofreading for the final publication in NHESS journal, in the selected Special Issue.
Best regards.
Sincerely,
Stefano Luigi Gariano
NHESS Guest Editor

Re: Dear Editor,
Thank you for suggested reviews, that we addressed.
We changed the First and Corresponding Author (now Graziella Devoli), please refer to the new one since now.
Best regards,
Davide Tiranti

Technical corrections
Figure 1B: Please check the legend of slope. I suggest using non-overlapping classes instead of limits. As an example, if a pixel has a slope equal to 10 degrees, it is in the second or in the third class? The same for values equal to 20, 30, 40, and 50.
Re: Done.
Figure 1C: Please check the legend of shallow landslide density. I suggest using non-overlapping classes for values higher than 5. Please check the unit of measurement.
Re: Done.
Figure 2: Please correct the legend by using non-overlapping classes instead of (upper or lower?) limits.
Re: Done.
Figure 4: Please correct the legend by using non-overlapping classes and including or excluding upper and lower limits. Please change "Annual mean precipitation" into "Mean annual precipitation" or "MAP". Also in the caption please change "Annual Precipitation Map" into "Mean Annual Precipitation".
Re: Done.
Figure 8: Please check the legend. I suggest using non-overlapping classes.
Re: Done.
Figure 9: Please check the legend. The measuring resolution is of the order of 1 mm?
Re: The Figure 9 shows mean sea level pressure (Pa) analysis over Europe on 16th May 2013 at 00:00 UTC derived by numerical weather prediction model operated by ECMWF.
Figure 12: Please correct "km2" in the legend, by using superscript.
Re: Done.
Figure 17: I suggest adding a legend.
Re: We added in the figure caption.
Figures 1, 3, 5, 6, 8, 11, 13, 14, 16: These figures have a low quality in the pdf file. Probably, this is due to the compression process. However, I suggest checking the readability of all figures, in particular regarding labels and legends.
Re: Yes, it is due to the pdf compression. However, the original figures have an appropriated resolution.
Table 1. I suggest using always two columns also for equal values, e.g. for "Operative (daily)", "Rainfall and snowmelt", and "4".
Re: Done.
I suggest correct "rainfalls" by using "rainfall" (uncountable) everywhere in the text.

Re: Done.

Please use the abbreviation "Fig." when it appears in running text or in brackets, unless it comes at the beginning of a sentence (see https://www.natural-hazards-and-earth-systemsciences. net/for_authors/manuscript_preparation.html).

Please do not use abbreviations for Table.

Re: Done.

Please add DOI to each reference in the list, where available. Please check the style of the reference list, following the Copernicus guidelines (https://www.natural-hazards-and-earth-systemsciences. net/Copernicus_Publications_Reference_Types.pdf)

Re: Done.

Dear Reviewers,
thank you for your precious contribution.
We modified the manuscript according with your suggestions, when possible.
Best regards,
The Authors

RE: NHESS 2017 411 Tiranti et al. Comparison of landslide forecasting services in Piemonte (Italy) and in Norway, illustrated by events in late spring 2013.

Overview

The authors improved the paper that now is easily readable. However, there are two points to be exploited/discussed:

1) A final comparison between warned phenomena and those occurred is missing for the Norway territory hit by the cyclon: they show the map of occurred phenomena in Figure 11 and the warnings in Figure 14. A new figure showing warned area and locations of the occurred events should be provided as done in figure 17. After that, the value of POD and FAR (see page 30 of the submitted manuscript) should be computed.

Re: Thank you for your suggestions, we tried to satisfy all the requests compatibly with the maximum paper-length allowed.

2) About the EWS of Norway, some simple explanation should be addressed about the use of the same threshold for all the phenomena: shallow landslide, debris avalanches, slushflows and debris flows.

Re: Thank you. Explanation of use of thresholds is already in the text.

The following are the detailed comments and specifications.

Introduction

At page 2, line 5 "of and"???; line 31 the reference Hungr et al (2014) should be between bracktes. At page 3, line 1 perhaps it is better "volume inferior to 5000 m3", line12 perhaps it is better "tens of minutes" instead of "minutes"; line 32 "shortage of personnel" it is better than "loss of personnel". At page 4, lines 16-17 the sentence does not sound; line 24 large-scale pattern of what????. Moreover, as the authors study the hazard phenomena triggered by synoptic scale meteorological processes, the writer suggests the reading of the work of Underwood et al (2016) that studied the meteorological processes associated to the convective rainfalls that triggered debris flows on Italian Alps.

Re: Corrections done.

The landslide forecasting service in Piemonte region and Norway

Table 1: as threshold parameters "the rainfall from rain gauge" is setted for Piemonte, Italy columns. This seem to contradict the type of thresholds, where radar hourly intensity rainfall threshold is used. Perhaps, it is rainfall, the threshold parameter. Moreover, I suggest the authors to change the threshold parameters into threshold quantities.

Re: Corrections done.

General comment: it seems that this EWS warns the channelized debris flows occurring after large-scale meteoric processes. Unfortunately on summer debris flow of large magnitude could occur after local high intensity convective rainfall: the case of Rovina di Cancia where the 23th of July a debris flow was triggered

by an isolated precipitation of about 30 mm in half of hour, concentrated in about 1 square kilometer while in the surrounding area for an extension of more than 50 square kilometer no rainfall was recorded according to Gregoretti et al. (2016). Therefore, authors should add a sentence where it is specified that channelized debris flows caused by isolated intense convective rainfall are not considered by the present EWSs.

Re: Thank you for suggestion, but that's already clarified in Tiranti et al., 2014.

At page 12, I would suggest some more details on the areas where radar visibility is good. How much is it deep starting from the mountains feet?

Re: Please, see cited literature.

Page 14, line 10: compares perhaps it is better than consults; page 15, lines 12-13, perhaps there is a contradiction: how a hydrological model that use precipitation as input variable can predict rainfall? Line 28, latter shape is it correct?

Re: Corrections done.

Meteorological conditions in late spring 2013

At page 21, line 9: please substitute Saturday and Sunday with the day number. At page 23, line 14 most of????. At page 24 line 13 100-year return period of what? Flood?. The writer think it could be the peak flood discharge. Therefore, specify it and also at lines 14-18

Re: Corrections done.