

Report on the paper:

Results of the post flash-flood disaster investigations in the Transylvanian Depression (Romania) during the last decade (2001–2010)

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I. General comments: The paper is well structured and the most relevant publications are cited. It is based on a post-flood survey and the investigations include the meteorological context, the peak discharges analysis and the presentation of the social and economical consequences of 3 floods occurred in the study area. Finally, the Conclusions and the learned lessons are pertinent.

II. There are still some **specific comments** as it follows:

0. Page 6202, rows 17-88:

„.....increasing the flash flood risk.:

I suggest to reformulate this idea: „.... increasing the flash flood hazard.”, because the discussion was related to geomorphological parameters (Nevertheless, at the border with Carpathians, the basin's slope gradient becomes steeper) and not to the flood receptors (assets and population).

1. Page 6204, rows 7-8: In the relation (1), V represents the mean flow velocity in the river cross-section and this value cannot be measured. When using Doppler based measurements a field of local velocities $V(x,z)$ is obtained, based on which the discharge is computed. Thus, the mean flow velocity can hardly be linked with current-meter measurements. I suggest to change the sentence as it follows:

The mean flow velocity (V) is computed using Manning–Strickler empirical formula:

2. Page 6204, row 17: since the relation (1) is based on the mean flow velocity, its value cannot be approximated by the surface flow velocity (obtained through the video movies). I suggest deleting the row 17:

~~additional estimations of the flow velocity (video movies);~~

3. Page 6205, rows 13-14 and page 6208, rows 25-26: there is a contradiction between the assertions made in these two places. Thus, in the first case it is mentioned that:

the flash floods are listed **first** in the natural disaster category, in terms of life losses and **damages** while in the second it is written that:

During the 2001–2010 period, the damages (*due to flash floods*) represented **1.50%** of the cumulated value of the entire country (2005 USD69 574 000 as compared to 2005 USD4.678 billion).

Suggestions for the text at page 6205:

- a) "...the flash floods are listed first in the natural disaster category, in terms of life losses."
- b) "...the flash floods are listed first in the natural disaster category, in terms of life losses and in corresponding damages reported to affected population."

4. Page 6207, rows 5-6: to add the reference:

"...combined with hydraulic modeling from another related studies (probably Fetea et al, 2006, or RWNA),..."

Fetea is mentioned in the References, while RWNA isn't. Both sources are still indicated in Table 3.

5. Page 6207, row 17: the same problem, the reference is missing:

Another study (*references is missing*) in the Feernic basin confirms the above

6. Page 6207, rows 18-19:

the recorded discharge values at Simonesti streamgauge station show a sudden peak rising, while the simulated hydrograph in the same section follow a milder curve

Suggestion: to present both graphs on the same figure in order to put into evidence the importance of the river blockage by wood and debris.

7. Page 6207, rows 23-24:

Based on flood marks, has been found that the maximum water level ranged from 5.0m (Lupeni village – Feernic event) to...

I think it would be useful to specify that the maximum water level are considered from the ground level (and not from the river bank level or another relative reference level).

8. Page 6208, row 27: Why the damages are presented in USD and not in EUR ?

9. Page 6209, rows 25-26:

„...extensive deforestation activities in the steeper terrains were carried out.”

Suggestion: To specify in % how much of the former forested area was cut in order to underline the magnitude of the land use changes.

10. Page 6210, row 11:

„...to develop a plan for the rapid evacuation of these people..”.

Comment: The concentration time in the small watersheds is very reduced, and if the event is taking place during the evening or during the night the evacuation is difficult or even impossible.

11. Page 6210, rows 19-20:

„-a lack of sustainable awareness of the authorities involved in flood risk management...”

I think it is confusion: the water authorities are everywhere aware of the flood consequences; the problem is related to the lack of awareness of the administrative authorities.

Suggestion: to reformulate.

11. Page 6210, rows 19-21:

To split the phrase into two distinct issues: the first related to the lack of the awareness, and the second to the lack of a National strategy related to flash floods (although in the National strategy for medium and long term for flood risk management there are many references to flash floods).

III. Technical issues

1. Page 6202 rows 25 and 21: To move

(<http://www.emdat.be/glossary/9>)

from the row 25 to row 21, immediately after “..the definitions in the EM-DAT glossary..”

2. Page 6200 row 26:

„...difficult to predict accurately, making warning problems.”

To replace making by „raising”. The end of the sentence will become:

„...difficult to predict accurately, raising warning problems.”

3. Page 6201 rows 1-2:

„...emergency management are, by their nature, suitable to cope with the characteristics of flash flood risk...” -

The sentence is not very clear. May b it would be possible to reformulate it.

3. Page 6202 row 2: “...relatively short variety...”

May be it would be better: “...relatively small variety...”

4. Page 6202 row 13: “...the border depressions...”

I propose to replace it by: “...the depression borders...” or “...the depression limits...”

5. Page 6209 row 27: “...and have generated large amounts of debris wood which were formed instable dams ...”

I suggest replacing it by: “...and have generated large amounts of debris wood which ~~were~~ formed instable dams ...”

6. Page 6209/6210 rows 28/1: “...another problem is related to the expanded of the constructed areas”

I suggest replacing it by: “...another problem is related to the continuous expansion of the constructed areas”

6. Page 6210 row 16: “...there can be spotted:”

I suggest replacing it by: “...the following can be spotted:”

7. Page 6211 row 66: “...C’evennes...”

To be replaced by: “...Cevennes...”