Responds to Anonymous Referee #2 comments for
"Technical note: Surface fields for global environmental modelling" by Choulga et al.

Dear Anonymous Referee #2,

This manuscript describes datasets of surface fields for hydrological modeling, at two resolutions (1 arc min over Europe and 3 arc min over the full globe), for flood awareness system within the Copernicus Emergency Management Service. It merges multiple datasets (more than 25), global and regional, at different spatial resolutions, and with different temporal sampling (from static to 10-day climatology). The consistency of the many data sources is checked, to provide the user with a comprehensive and practical surface dataset for modeling purposes. The dataset is first designed for use with the LISFLOOD hydrological model but is generic enough for adaptation to other models.

General comments:
Merging this large diversity of sources is a very valuable effort, and the resulting dataset is very likely to be used broadly, for different modeling purposes. However, this technical note is rather difficult to read, with at the same times too much details and not enough convincing proof that it is a consistent and robust dataset. **Thank you for this feedback. We have restructured the paper and moved details on data source to the appendix, and have added regional high resolution examples to show consistency and robustness of the dataset and examples of applications for each surface field category.**

Sections 2, 3, and 4 repeat the same sequence of parameters (hydrology, vegetation…), first to provide a definition, then to describe the data sources, and finally to present the resulting data in the final dataset. Would it be possible to structure the paper differently and take each parameter at a time, covering first its description, the related data sources and finally how it is handled in the dataset? That would avoid repetitions and could be easier to follow. **Thank you for this suggestion. We have rearranged the sections as suggested and we believe we have now clear and easy to read article.**

The methodology to merge the datasets should be described better, with examples of resulting maps (at high spatial resolution). The reader needs some examples of the consistency of the dataset. A few maps, zooming on specific regions would really help realize what this dataset offers. The global maps that are shown do not present any interesting features, beside what we already know. **To help the reader follow the complex workflow, we have rearranged the text, added flowcharts to each category of surface maps as a guide to the explanation given in the text, and we have added regional examples of the surface field maps.**

Minor comments:
- The title should be more specific: Surface 'hydrological' field for global environmental modeling? **We have now added examples of use of the datasets beyond hydrological modelling for each of the surface field category, and we do not feel the title needs changing.**
- The description of the different datasets in section 3 is really difficult to read. There is too much details about most of the datasets. Just provide the reference, the content and general characteristics. **Thank you for this suggestion. We have moved the description of the selected source to the appendix.**
- Why is 'River hydrolics properties' (3.3.2) in the vegetation section (3.3)? **The section was renamed "Vegetation properties" to better reflect its content – surface fields describing how water can move over different land surfaces, e.g. during flooding.**
- Many datasets are merged to produce the water demand information. Any possibility to show that they are collectively consistent? Maps of specific regions? **Maps of specific regions have been added.**
- Figure 4. The sum of the two figures should be 1, no? If this is the case, no use to have both maps. We do not learn much from these large-scale maps anyway (same for figure 5). **Figure 4 shows only two different fractions out of seven that should sum up to 1 per grid cell. We have added regional maps in the main text and in appendix.**
- Line 606: 'Table 5'. **Corrected.**
- Line 696: 'consists' **Corrected.**