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Discussions

Interactive comment on "Assessing floods and droughts in the Mékrou River Basin (West Africa): A combined household survey and climatic trends analysis approach" *by* Vasileios Markantonis et al.

Anonymous Referee #1

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<General comments>

My expertise allows me to evaluate only the parts of this paper that concern the socio-economic survey. My assessments and comments about this paper, which are shown below, are solely based on how the authors perform the survey and discuss its results.

A positive aspect of this paper is the methodological novelty that it puts together original survey data in West Africa and discusses them in combination with scientific climate data. However, in the current version of the paper, methods, data and results of the survey are poorly described and presented. I also doubt that the authors have taken full advantage of the results to support their arguments. Below are the specific problems I

find in the current version of the paper.

<Specific comments>

- Descriptions of survey methods are incomplete. First, it says that the survey targeted 30 villages in three countries, but it is not clear on what criteria these villages were chosen. Do they constitute all the villages in the study region, or are they a sub-sample of the villages? If the latter is the case, how are they selected? Do they have similar geographical characteristics (elevation, vegetation, soil types, local weather conditions, etc.), or different ones? Second, how the number of surveyed households is determined for each village. Is the number proportional to the village population or not? How large is the population of each village in the first place? Third, to prove randomness of sample selection, exact methods of selecting households in each village need to be specified. Did the authors make a full list of households for each village and randomly picked up households from the list, or did they use any other methods? In the latter case, how did they warrant randomness of sampling? Fourth, was the questionnaire conducted in an in-person interview or through mail? If the former is the case, were the interviews conducted in French only or supplemented with information in a local language(s), and is there any possibility that such a linguistic choice could affect responses? Finally, response rates and summary statistics need to be presented.

- The authors would need some more analysis on the exact reasons of why perceptions of flood and drought occurrence differ across respondents. Do they reflect differences in locations of households, differences in affluence and lifestyle of households, differences in psychological biases across respondents, or simply the accuracy of responses? In particular, I suspect that detailed locational data of households have already been collected through the survey, and that it is possible to verify if differences in self-assessed occurrence of floods and droughts could be explained by differences in local weather and topological conditions or reflects other factors.

- The authors mention that obtaining cost estimates of floods and droughts from the

respondents has been difficult. In such a case, they should at least show the percentages of valid responses for the three countries, including Burkina Faso. Also, the authors would need to add some more discussions of what the cost numbers given by the respondents may really represent (costs could mean many things: asset loss, repair/resettlement costs, loss in wage and employment, loss in agricultural production, opportunity costs of labor time, medical costs, etc.) and of how accurate they are.

- Provided that estimated per-household costs of floods and droughts are credible to some extent, it may as well be useful to calculate the total costs of floods and droughts in the region, by using the information of the total number of households and of average household characteristics in the region.

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