

Reply to RC 551 'Interactive comment on “Assessing institutional capacities to adapt to climate change – integrating psychological dimensions in the Adaptive Capacity Wheel” ', Anonymous Referee #3, 19 July 2013

Comment 1 by Anonymous Referee #3: “The paper distinguishes between “soft social factors” (institutions, perceptions, social capital) and “hard social factors” and is based on the assumption that “soft” factors “can probably be changed faster than ‘hard social factors’” (the latter: economic and technological development). This statement is problematic on the analytical level as well as on the normative level. [...] a simple juxtaposition of “soft” and “hard” is misleading as well as the normative claim that institutions can be “changed faster than ‘hard social factors’”, since even soft social factors persist quick alterations. Additionally, economic and technological developments are embedded and closely intertwined with an institutional setting making the difference even more problematic. The review asks the authors to either further elaborate and also problematize this juxtaposition, or simply leave it out; the paper will not lose any substance by not referring to this difference. This applies to the entire paper (e.g. page 796, 9ff; 797, 1ff).

Reply by authors: We agree with referee #3 that the argument of institutions as “soft social factors” and their higher changeability than “hard social factors” is difficult to substantiate because institutions are closely intertwined with economic and technological developments. Furthermore, there are no empirical studies, which can really prove the higher changeability of institutions compared to other societal entities (like economic and technological development). Hence – although we still believe that *on average* institutions in a particular social system can be changed faster than the economic and technological development of that system – we agree with the referee’s suggestion to delete this argument in our revised version of the paper.

Comment 2 by Anonymous Referee #3: “Operationalisation of adaptation motivation: While the description of adaptive motivation is very concise and clear, its operationalisation in the questionnaire might appear to some readers a bit awkward, since it focuses on the relevance of climate change adaptation and not on the motivation to adapt. Relevance and motivation are two very different issues: A topic might be very relevant for an organisation; but the organization might not have any motivation to engage with this issue and vice versa (or might even not be responsible for an issue, although it might be considered as relevant by single person in an organisation or the organisation itself). The reviewer is aware that the discrepancy between “relevance” and “motivation” cannot easily be dealt with or even solved satisfyingly in this paper, since the study was already conducted. However the authors are asked to reflect more about this discrepancy and what it might imply for the validity of their empirical results.

Reply by authors: The operationalization of adaptation motivation via only one interview question on the relevance of adaptation is already partly problematized in the discussion of the paper: “it seems

advisable to assess adaptation motivation based on more than just one indicator (in this study: perception of current relevance of adaptation to climate change in organisation). Including also questions to assess the perceptions of future relevance of adaptation and questions from classical risk perception surveys would minimize the danger of false positive (assessment of adaptation motivation as high) or false negative (assessments of motivation as low) ratings” (see pages 815/6).

We disagree with the comment by referee #3 that “Relevance and motivation are two very different issues”. Certainly, they are not identical but if an issue is regarded as relevant in an organisation there is a high probability that there is also an ‘organisational motivation’ to deal with this issue, either an organisational motivation to analyse what the issue means for the organisation or even an organisational motivation to take concrete measure to deal with the issue, now and/or in the future. Managers in organisations often structure their work by focusing on relevant/important and urgent issues. Hence, relevance is one important determinant of organisational decision making and ‘organisational motivation’. The argument by referee #3 that perceived relevance might not translate into ‘organisational motivation’ because the organisation “might even not be responsible for an issue” reflects an understanding of organisations as following some predefined responsibilities. This is an outdated understanding of organisations. Many organisations in Germany (including governmental agencies) have started to take action on adaptation to climate change because they regarded the issue as relevant, although there were no formally or informally defined responsibilities to do this.

To explain why we have used “relevance of adaptation to climate change in the organization” as the indicator of adaptation motivation instead of “perceived risk” we will include the following paragraph in section 4.1.1 of the revised version of our paper:

It has been argued in section 3 that the main determinant of adaptation motivation is the perception of risks (or: risk appraisal) and/or chances of climate change and its potential impacts. Nevertheless, we assessed adaptation motivation in this study via the perceived relevance of adaptation to climate change in the organisations of the interviewees. Most of the interviewees represented organisations in which adaptation to climate change has not yet or not deeply been discussed (especially not at top levels of organisations). We knew from previous studies (e.g. Zebisch et al., 2005) that a question asking for perceptions of risks in the organisations would have resulted in many “don’t know” answers because organisational representatives do not want to make statements about risks, when there is a lack of formalised organisational risk assessments and organisational discourse on climate change risks has just started. Therefore, we decided to measure adaptation motivation by a question asking for the perceived relevance of adaptation in the organisations. This was a question which the interviewees were willing to answer. Certainly, perceived relevance of adaptation and adaptation motivation are not identical but if an issue is regarded as relevant in an organisation there is a high probability that there is also an ‘organisational motivation’ to deal with this issue.

[New reference: Zebisch, M., Grothmann, T., Schröter, D., Haße, C., Fritsch, U., Cramer, W. (2005). Climate change in Germany. Vulnerability and adaptation of climate sensitive sectors. Report 201 41 253. Dessau: Federal Environmental Agency Germany.]

(see also Reply by authors to Comment 3 by Anonymous Referee #2)

Comment 3 by Anonymous Referee #3: Interviews: The authors are asked to provide more information on their interviews. Even basic information seem to be missing: How many interviews were conducted in total and how many interviews were conducted in the four difference sectors?

Reply by authors: In the revised version of the paper we will include more detailed information on the interviews, including their numbers (water management: 5; flood/coastal protection: 5; civil protection: 3; spatial/regional planning: 10).

Comment 4 by Anonymous Referee #3: Role of “psychology” in an institutional/organisational setting: adaptation motivation as well as adaptation believes are not primarily a result of psychological factors, as suggested in chapter 3 (i.e. risk perception; self-efficacy or outcome-efficacy), they are rather (and probably predominantly) a function of institutional/organisational decisions and contexts. As a consequence, the simple juxtaposition between objective (financial resources, institutional entitlements) and subjective perception (page 804, final paragraph) is hardly helpful in this strongly regulated context, it is even misleading. “Subjective” expressions individuals provide in the interviews, are surely NOT exclusively their personal ones, but also that of organisations and the broader institutional setting interview partners are representing. Authors are asked to further specify the interrelation of psychological factors in a highly regulated and institutionalised organisational setting by being more explicit on the interplay of individual cognitive factors in a specific organisational setting and the wider institutional environment influencing and shaping both the organisational roles and responsibilities as well as individuals’ motivations and beliefs. This appears all the more relevant, as the paper is exactly based on the assumption that the integration of psychological factors is a relevant topic in an institutional/organisational context in order to understand the adaptive capacity of actors, whereas it is not clear whether the paper understands individual role-holders within an organisation as the relevant actors or the organisation itself.

Reply by authors: We agree with referee #3 that adaptation motivation and adaptation beliefs are also a function of institutional/organisational decisions and contexts – but in our understanding these institutional/organisational decisions and contexts are/were generated strongly based on psychological processes (e.g. individual information processing but also social psychological processes like negotiations between different people in an organisation). It seems that our understanding of psychological factors and processes is broader than the understanding by referee #3.

Also the understanding of “subjective” by referee #3 seems to be different from our understanding, which is based on the use of this term in psychology. In psychology “subjective” refers to a subject's personal perceptions, feelings, beliefs etc. The term does not imply that these perceptions, feelings, beliefs are exclusively their personal ones and they are independent from an organisational or an institutional setting interview partners are representing.

We already acknowledge in the paper the relevance of factors outside individuals (see for example page 804: “The “objective” ability or capacity of a human actor (e.g. available financial resources, institutional entitlements) only partly determines if an adaptive response is taken”). But to avoid further misunderstandings we will – in the revised version of the paper – further specify the interrelation of psychological factors in a highly regulated and institutionalised organisational setting by being more

explicit on the interplay of individual cognitive factors in a specific organisational setting and the wider institutional environment influencing and shaping both the organisational roles and responsibilities as well as individuals' motivations and beliefs. Furthermore, we will make clear that individual role-holders within an organisation and the organisation itself as relevant actors – the reason why we conducted both interviews and document analyses of organisational documents in our empirical studies.

Comment 3 by Anonymous Referee #3: Generally, the three main parts of the paper need to be better integrated in order to make the paper more consistent; single parts appear to a certain extent independent and hardly relate to each other (see also comment Nr 5 of reviewer #2).

Reply by authors: In a revised version of the paper the discussion section will refer to both the empirical implementation and the conceptual development part of the paper and therefore serve as a bridge between the conceptual and the empirical part of the paper (see also reply to general comment by Anonymous Referee #2).