

## Responses to referee 1

Dear Editor,

We are pleased to send you our responses to the questions Matt MacDonald (referee) asked concerning our manuscript entitled “**Perspectives on contextual vulnerability in discourses of climate conflict**” -ESD-2015-81.

We thank the referee for his constructive comments/insightful questions.

- Uche Okpara (on behalf of co-authors)<sup>1</sup>

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Referee: With an increasing focus among UN agencies, the G7 and European governments in particular on addressing questions of state fragility in the context of climate change, what implications does this analysis have for the ways in which key institutions/ actors should engage either climate policy or the 'needs-based agenda' endorsed in the paper as associated with climate conflict? And how would the conclusions fit with recent high-profile accounts of the relationship between climate, conflict, 'fragility' and vulnerability and responses to them (such as the G7 commissioned report A New Climate for Peace, eg)?

### Response:

The implications of this analysis point to contextual vulnerability as a useful tool/concept for constructing/portraying the true nature of climate conflict (such as that playing out in specific fragile locations in Africa as illustrated in Busby et al. (2014)) and for anchoring climate conflict policies/interventions upon a needs-based framework (e.g. to prevent unintended consequences). The findings in the paper point to a nexus between the development agenda, the climate agenda and the security agenda, the nuances of which require further context-based research in order to determine which actors are best placed to collaborate and interplay in order to address questions of fragile states and climate change.

Given that fragility creates a vicious cycle of vulnerability for areas affected by climate conflict, and that vulnerability increases climate conflict opportunities in fragile states, engagements require multi-actor and multi-level participation to: understand climate conflict transmission mechanisms, design solutions that are context-specific (e.g. climate adaptation, humanitarian aids/support and peacebuilding goals), and implement them while maintaining a continuous needs identification process using contextual vulnerability perspectives (in the reviewed manuscript page 2561, lines 20 – 25 and page 2562, lines 20 - 25 point to the policy direction for a needs-based agenda associated with climate conflict – although issues around implications for policy responses that are not directly the interest/focus of our article).

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<sup>1</sup> All page and line numbers in this document refer to the ESDD online article (not the marked-up document below)

In response to the second question raised, we contend that recent high-profile accounts of the relationship between climate, conflict, 'fragility' and vulnerability point to a context centrism discourse in which contextual vulnerability is a central component. Our study shows that how vulnerability is portrayed matters (e.g. contextual vulnerability defines the range of underlying mechanisms that keep an area in a perpetual fragile state under climate conflict). Indeed, a strong articulation of policy responses that are needs-driven and socially-focused may not be feasible without a proper representation of vulnerability in discourses of climate conflict. Popular voices/responses advocate for an integrated agenda. However, such an agenda must align with specific vulnerability reduction needs to realise significant co-benefits in fragile environments. Our conclusions therefore highlight the need to cast the climate conflict storyline as a vulnerability-based question to better communicate how we should make sense of climate conflict relationships and to guide discussions/decision-making for any area affected by climate conflict.

Note: In the context of our paper, a needs-based agenda seeks to mobilise needs-driven, socially-focused initiatives (such as those grounded on 'views from the vulnerable in fragile states') to address issues of climate adaptation, humanitarian support systems and peacebuilding, alongside any unintended/unplanned consequences of climate conflict policies.

## Responses to referee 2

Dear Editor,

We are pleased to send you the point-to-point answers to the issues raised by reviewer #2 on our manuscript entitled **"Perspectives on contextual vulnerability in discourses of climate conflict" -ESD-2015-81.**

We thank the referee for his time and effort towards the improvement of our manuscript.

- Uche Okpara (on behalf of co-authors)

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## Specific comments:

Referee #2: More specifically, it is not clear why the author(s) use the rather limited time period from 2007 to 2015 for its inquiry. Rather, the climate change security and conflict issues date back further. For instance, an important article by Miguel et alia on "Economic Shocks and Civil Conflict: An Instrumental Variables Approach" from 2004 marked the beginning of the, what the article calls "Climate determinism" body of the literature. The same applies to the other two discourses. Expanding the time period would also increase the number of observations of the 34 articles found.

Response: We disagree with the reviewer that we did not make clear the reasons we limited our search timeframe to 2007 - 2015. Please see our explanation again on page 2552 (lines 10 – 18). Our interest is not in when the climate conflict debate began, but the period it became 'markedly pronounced as a subject of growing international concern'. Recall that the concern about climate conflict and security reached high policy circles in 2007 following the UN Security Council debates on the security implications of climate change (see details in Adger, 2010, pg. 279 - 280). We observe a rapidly developing body of literature on the climate conflict subject within this timeframe that can allow for inclusion of more articles than the 34 we have used. However, the 34 articles (we selected) are the few that suitably met our criteria outlined in Table 4.

Referee #2: In addition, it would be also beneficial to consider books and book chapters if feasible for the analysis. The exclusive focus on scientific, peer-reviewed articles may give a skewed impression of the literature on climate conflict links that makes reference to vulnerability.

Response: We agree that books and book chapters can provide additional range of views, but most of these are difficult to assemble. And because majority are not critiqued before they are published, it is difficult to confidently establish their originality and scientific credibility. If you check our research question one (see page 2547), you will find that our interest is to use peer-reviewed articles – and the reasons are given on page 2552 (lines 4 – 5). We believe that insights from climate change and conflict refereed-articles convey a complete storyline on various climate conflict discourses (in agreement with e.g. McDonald, 2013), and especially in relation to representations of vulnerability. This does not suggest that future research should not engage these other sources – books etc. We consider this to be a difference of opinion in relation to the sampling strategy and feel that overall we already justified and explained our decisions.

Referee #2: Moreover, some of the causal explanations of climate security and conflict links are missing from the analysis. For instance, the "Climatic determinism" discourse also employs economic opportunity cost theories to explain the outbreak of violence, largely in sub-Saharan Africa. It has been argued in the literature that small-scale farmers that lose their income due to climate shocks join a rebellion against the established political order, leading to violent conflict within a state.

Response: The economic opportunity cost (i.e. opportunity cost of fighting) theories, including relative-deprivation theories, are all components of the neo-Malthusian perspectives on environmental/climate change and conflict narratives embedded within a context centrism discourse, and not climatic determinism.

Referee #2: Last, there is one discourse on climate change and conflict missing that also relates to vulnerability, the one on climate-induced migration and conflict. This discourse is rather new, and could be also included in the typology mentioned in the article.

Response: We disagree and think that the reviewer is identifying sub-categories of discourses. To clarify, statements pointing to migration and displacement are often embedded in a context centrism discourse (see Section 4.2). In other words, climate-induced migration does not constitute a stand-alone discourse, but represents one of MANY pathways from climate change/variability to conflict that is 'adequately' captured within a context centrism discourse frame.

Technical corrections: On page 2551, line 26, it should read "Füssel" instead of "Fussel".

Response: Correction taken.

### Responses to referee 3

Dear Editor,

Our responses to reviewer # 3 are presented below.

Uche Okpara (on behalf of co-authors)

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#### General comments:

This is an original, well-written and clearly structured paper that can (potentially) make an important contribution to the debate on climate change related conflict. In my view, the particular strength of the paper is its combination of an empirically-rich meta-study of the climate conflict literature with an attempt to advance the notion of vulnerability in the same literature. I very much sympathize with the proposal to advance the concept of contextual vulnerability and in general would strongly encourage such endeavors. While I found the author's empirical findings very convincing I was less convinced of the way they got there, i.e. of their methodological and conceptual approach as I would like to elaborate in the following.

Response: We thank the reviewer for finding our study interesting/empirically-rich. Following the issues raised, we show below how we arrive at our findings - which are based on our methodological choices guided by the discourse components framework presented in Table 2.

Specific comments:

In my view Foucault's discourse analytical approach comes off badly in the conceptual part of the paper. Equally, mentioning Hajer and Foucault in the same breath appears a bit odd to me because after all in his argumentative discourse analysis Hajer mainly draws on Foucault. Furthermore, there is no "singular Foucault" - other than suggested by the authors his earlier archeological works actually provides some analytical concepts for a text-based discourse analysis.

Response: We agree that Hajer's arguments on discourse analysis were inspired by Foucault's ideas. The intention of a Foucauldian discourse analysis is to construct critical narratives of stories about 'realities' or 'regimes of practices' that may constitute a discourse. Hajer takes this further by emphasising the notions of 'metaphor', 'storyline' and 'discussion coalition'. These are the important insights we bring into our approach, particularly Hajer's notion of 'storylines'. The insights led to our choice for studying distinct discourse elements/analytical categories drawn from Adger, Dryzek and McDonald.

To reflect, in clearer terms, how insights from these authors (Hajer and Foucault) feed into our analysis, we have restructured our representation of their ideas in Section 3. See the way we have restructured paragraph 2 of section 3 below:

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*"A discourse approach explores commonalities across multiple discourses competing to shape the way people, communities and authorities engage with a particular issue, including the dynamics of that competition. It provides insight into the interplay of messages, narrative/argumentative structures and policy perceptions (Rafey and Sovacool, 2011). Several approaches to discourse analysis in the environmental realm follow the works of Michel Foucault (1979, 1991). His exploration of social phenomena is often presented as classic in approaches to discourse analysis, (usually in the frame of 'regimes of practices' and power/knowledge nexus), pointing to the need to construct critical narratives of distinct stories of 'realities' that constitute a discourse (Hewitt, 2009). Inspired by Foucault's idea, Hajer (1995) provides insights concerning this aspect, particularly in relation to what should constitute the objects/elements of a discourse analysis, e.g. metaphor, storyline and discourse coalitions. He suggests that everything we perceive as discourses, which influence how societies engage with an issue (e.g. climate change), should be analysed in the context in which they are discursively constructed. McDonald (2013) for example, has focused on the use of textual and speech storylines/dimensions based on insights from Hajer's (1995) writings in his critical synthesis/analysis of discourses of climate security. Ideas from these previous studies inform our analytical approach for climate conflict discourses. Specifically, we focus on units of textual communications for climate conflict storylines using distinct categories of discourse components (i.e. sets of key discourse elements - Table 2) drawn from a synthesis of the fundamental*

*discourse components outlined by Adger et al. (2001), Dryzek (2005) and McDonald (2013) for the analysis of the broad sweep of environmental security discourses. Similar to Doulton and Brown (2009), we find the discourse components (Table 2) framework particularly useful for a more explicit portrayal of the basic storylines across different climate conflict discourses, and also because they give a less subjective basis from which to assess discourse lines. Although this study does not emphasise the range of actors articulating a particular discourse or the political agenda they pursue, it nonetheless recognises dominant discourses and the vulnerability thinking that they encourage”.*

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The second conceptual point refers to the analytical categories that were deduced from different discourse analytical approaches (Adger, Dryzek, McDonald). It is not sufficient to simply list the heuristic categories in the appendix (as it is in the present version of the article). They need to be explained in the text. Here the author’s should also make clear why they have selected exactly these categories and not others.

Response: Table 2 (containing the categories of the discourse components that we used as a framework for our discourse analysis) is not intended to appear as an appendix. It will be an integral part of section 3 after this peer-review process is completed – i.e. when the final article version is released.

On page 2551 (lines 15 – 20), we outline why we selected these components: that is, we find “the discourse components particularly useful for a more explicit portrayal of the basic storylines across different climate conflict discourses, and also because they give a less subjective basis from which to assess discourse lines”. This is in agreement with previous studies that used similar categories of discourse components - e.g. Doulton and Brown (2009) in discourses of climate change and international development.

With regard to the methodological approach developed in the paper I was wondering about the added value of the "vulnerability interpretation diagnostic tool"... how is this related/linked to the discourse analytical approach developed by the authors? And why do we need a particular "tool" to analyze understandings of vulnerability? In my opinion, there are many discourse analytical approaches that would be suitable for such a task.

Response: To clarify, ‘vulnerability portrayal’ is one of the discourse components (see the 5th item in Table 2) that we employ to categorise discourses into *climatic determinism*, *context centrism* and *denial claims*. Because it is in the interest of this study to understand representations of vulnerability across these categories, we devise a diagnostic tool based on previous vulnerability research (see page 2551, lines 23 – 29). O’Brien (2004, 2007), for example, used a similar tool in climate vulnerability studies to emphasis why different interpretations/conceptualisations of vulnerability matter. Since vulnerability conveys different meanings, a means of understanding how it is portrayed is needed to guide climate impact

studies and to demonstrate the need for studies to be explicit and transparent in the interpretation of vulnerability that they employ (see page 2550, lines 3 -5). The tool we use (Table 3) is linked only to the vulnerability component of our discourse analytical approach (Table 2) to enable a clearer identification/delineation of the meanings ascribed to vulnerability across the three climate conflict discourse categories (i.e. Table 3 only addresses item 5 in Table 2). While there may be several other approaches for this purpose, our study advances/demonstrates a particular approach, and we have justified why this approach/tool is suitable for this particular study (see page 2547, lines 1 – 5).

Secondly, I was a bit confused by the author's claim that the "vulnerability interpretation diagnostic tool" would make the analysis "less subjective". Would that mean that it becomes more objective? I would honestly doubt that. Maybe one could say that the analysis becomes more structured and transparent, which might increase the replicability of the analysis (to stick with positivist terminology) , but that doesn't make the analytical choices to be made less subjective.

Response: The tool is all of these in that compared to previous research approaches it is: less subjective, and allows for a structured, transparent/replicable assessment. What is considered 'less subjective' in the context of a diagnostic tool can be a subject of differences in opinion. A verifiable pattern or process of judgement that can help us understand representations of a concept is less subjective. We believe that the 'diagnostic' nature of the tool makes our perspectives of the vulnerability interpretations underpinning climate conflict discourses less subjective, and advances understanding of how vulnerability may encourage a particular discourse.

As mentioned before I really liked the empirical analysis presented in the paper. However, I see a couple of omissions here. A first one refers to the debate on climate-induced migration and conflict, as already mentioned by reviewer 2.

Response: We copy the response we presented to reviewer 2 here to reflect our position on this – "We disagree and think that the reviewer is identifying sub-categories of discourses. To clarify, statements pointing to migration and displacement are often embedded in a context centrism discourse (see Section 4.2). In other words, climate-induced migration does not constitute a stand-alone discourse, but represents one of MANY pathways from climate change/variability to conflict that is 'adequately' captured within a context centrism discourse frame".

Secondly, the recent rise of resilience is completely ignored. There is a growing body of literature arguing that resilience has become the dominant concept/storyline in climate security/conflict discourses and has actually replaced vulnerability as a nodal point in these very debates. So, the authors need at least to show that they have taken note of this debate and should also argue why it is in their view still important to focus on vulnerability.

Response: Our study is situated on the premise that “climate conflict reflects a continuum of conditional forces that coalesce around notion of vulnerability” and focuses on how “different portrayals of vulnerability influence the discursive formation of climate conflict links’ – these justify our focus on vulnerability (note also that our research motivation draws from Gemenne et al., 2014 where the need for vulnerability is emphasised).

The point about resilience replacing vulnerability as a nodal point in the debate is an interesting point, but one that is subject to debate based on disciplinary persuasions. For example, studies emphasising ‘migration’ tend to invoke a discursive shift towards resilience (e.g. Scheffran, Marmer and Snow, 2012; Methmann and Oels, 2015). Others demonstrate that resilience and vulnerability are inextricably linked - since to reduce vulnerability to climate conflict is to strengthen resilience (e.g. Vivekananda et al. (2014)). While our study is not concerned about which of resilience and vulnerability is dominant in climate conflict debates, we demonstrate implicitly, that the subject of resilience cannot be completely ignored in discussions about vulnerability and climate conflict (in fact vulnerability seems to have emerged alongside resilience in climate conflict debates). Our analysis points to a context centrist discourse in which discussions on vulnerability often raise issues about climate adaptation, peacebuilding and humanitarian aid programme, which are often geared towards enhancing capacities for resilience (see page 2558, lines 15 – 19). Similarly, it can be deduced from our paper that it is the context centrist discourse that may best demonstrate the resilience storyline. Here, resilience may be conceived where vulnerability is framed as a transformative process based on an understanding of local realities and vulnerabilities – a framing that serves as a means to building the resilience of areas affected by climate conflict, which in our study points to the needs-based agenda which can be shaped by combining notions of vulnerability and resilience.

We show on page 2562, line 24 (i.e. an added sentence in the revised manuscript), the emerging interests on resilience, pointing the reader to key literatures that are shaping discursive shifts towards resilience.

Finally, some key literature on the emergence of climate change and security/conflict discourses is missing, e.g. the works of Brzoska (e.g. 2009), Oels (e.g. 2013) or Rothe (e.g. 2015).

Response: These are very interesting studies. Collectively they inspire and are inspired by the articles we have cited in this paper. Because our study is concerned about general stances within the taxonomy of climate conflict discourses, and how different portrayals of vulnerability influence the discursive formation of climate conflict relations (and not necessarily the emergence of discourses), there is a limit to the range of articles we are able to include. Overall, your suggestion is greatly appreciated.



## 5 **Perspectives on contextual vulnerability in discourses of climate conflict**

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### 10 **Abstract**

The science of climate security and conflict is replete with controversies. Yet the increasing vulnerability of politically fragile countries to the security consequences of climate change is widely acknowledged. Although climate conflict reflects a continuum of conditional forces that coalesce around the notion of vulnerability, how different portrayals of vulnerability influence the discursive formation of climate conflict relations remains an exceptional but under-researched issue. This paper combines a systematic discourse analysis with a vulnerability interpretation diagnostic tool to explore: (i) how discourses of climate conflict are constructed and represented, (ii) how vulnerability is communicated across discourse lines, and (iii) the strength of contextual vulnerability against a deterministic narrative of scarcity-induced conflict, such as that pertaining to land. Systematically characterising climate conflict discourses based on the central issues constructed, assumptions about mechanistic relationships, implicit normative judgements and vulnerability portrayals, provides a useful way of understanding where discourses differ. While discourses show a wide range of opinions “for” and “against” climate conflict relations, engagement with vulnerability has been less pronounced – except for the dominant *context centrism* discourse concerned about human security (particularly in Africa). In exploring this discourse, we observe an increasing sense of contextual vulnerability that is oriented towards a concern for complexity rather than predictability. The article concludes by illustrating that a turn towards contextual vulnerability thinking will help advance a constructivist theory-informed climate conflict scholarship that recognises historicity, specificity and variability as crucial elements of contextual *totalities* of any area affected by climate conflict.

### **1 Introduction**

Several accounts of the relations between climate change and conflict are organised around three sets of ideas: “trends in climatic events”, “presence of conflict triggers” and “dynamics of intervening variables”. Extreme climatic events are increasing in several regions of the world (IPCC, 2014). They are envisaged as driving natural disasters and resource scarcity, and causing huge material destruction, challenging livelihoods and spurring widespread economic downturn (Buhaug et al., 2008). Conflict triggers, such as random acts of group clashes and a history of ethnic and religious tensions, are held to combine and exacerbate the social impacts of climate change (Adger, 2010). Intervening variables (e.g. poverty, marginalisation and inequality), which are linked to conflict triggers, are equally thought to define and shape how climate change and

5 conflict emerge and combine (Papaioannou, 2016). These ideas have not gone unchallenged. Several studies suggesting a link between climate change and conflict have been extensively critiqued on both theoretical and empirical grounds as either being climate-centric with disproportionate focus on environmental determinism (Raleigh et al., 2014), or framed around threats posed to the sovereignty and territorial integrity of the nation-state to promote the political and military interests and development agendas of certain governments (von Lucke et al., 2014). Yet, these ideas have remained dominant in academic and policy circles, and mainstream scholarship oriented to critiquing the ideas has been less concerned about proposing alternative portrayals of the climate change and conflict issue. In particular, there has been little attempt to pin down the categories of voices articulating whether climate change poses a pressing security threat, and how portrayals of vulnerability influence the discursive formation of the issue. There is a need to investigate these aspects to better advance the discussion on how to address the imbalances in climate conflict knowledge production, especially in relation to land use pathways to conflict under climatic changes.

20 This paper develops a new way of understanding the varying contentions amongst climate conflict discourses using discourse components typical of the broad sweep of the environmental security discourses (Adger et al., 2001; Dryzek, 2005). Specifically, it is concerned with how particular interpretations of vulnerability (see Kelly and Adger, 2000; Füssel, 2007; O'Brien et al., 2007), enable or constrain the representation of climate conflict discourses. Discourse here is conceived as a historically emergent collection of shared ideas and practices for apprehending and comprehending climate change and conflict. Crucially, discourses of climate conflict are often articulated either based on the referent object(s) whose security is threatened under climate disruptions (McDonald, 2013) or framed to tease out whether or not climate change is a factor in conflict outcomes (Scheffran et al. 2012b). In other cases, they are framed broadly around notions of “environmental conflict” and “environmental security” (Detraz, 2011). There has been no previous analysis of how framing of climate conflict links as a vulnerability-based question can adequately feed into the ways the links are understood.

35 This paper argues that different theoretical conceptualisation of the character of climate change and conflict interactions is a manifestation of a limited understanding of the degree/nature of overlap and distinction between the terms “threats” and “vulnerabilities”. Although climate change can be a threat and also a source of vulnerability, its framing as a threat is contingent upon its capacity to drive vulnerability. Threats denote danger that is imminent or approaching, while vulnerabilities imply a demanding condition or state of weakness or powerlessness, and may not always imply a threatening one (see O’Neil, 2011, p. 24–32). Therefore, a useful way to engage with climate conflict would be to transition from threat-centred thinking to concern about vulnerabilities (Detraz, 2011), where climate change is recognised and assessed first as an “accelerant of vulnerabilities” in linked climate conflict outcomes, before its portrayal as a “threat multiplier” (see Jasparro and Taylor, 2008, p. 237). This way, vulnerability can be applied to understand the myriad of hidden contextual conditions (i.e. the *bright spots* and *black holes*) in climate-conflict links, and for framing responses to conflict, including climate and land based adaptation and conflict mitigation (Scheffran et al., 2012a; Busby et al., 2014).

5 In much of the climate conflict discourses, there is no reference to a specific  
interpretation of vulnerability. Since climate conflict reflects a continuum of conditional forces  
that coalesce around the notion of vulnerability (Ludwig et al., 2011), we posit that how  
vulnerability is embedded in the discourses must, therefore, be interpreted and understood  
10 through research arguments, illustrative questions, prioritised focal points and particular  
methodologies in bodies of texts and debates (O'Brien et al., 2007). This perspective informs the  
vulnerability interpretation diagnostic tool applied in this research. The research identifies  
discourse categories by laying out discrete expressions that depict homogeneity in messages  
regarding the: (i) roles of climate change in conflict outcomes, (ii) perceptions regarding the  
15 referent object whose security is threatened, and (iii) how frameworks of meaning about  
vulnerability are portrayed (i.e. the vulnerability interpretations underpinning climate conflict  
discourses). This approach allows for a less subjective search for and characterization of  
discourses. As such, it represents a significant departure from most previous efforts to  
understand the discursive construction of climate conflict/security in the literature. By  
20 investigating frameworks of meanings ascribed to vulnerability, using a more nuanced and less  
subjective vulnerability interpretation diagnostic tool, the study demonstrates how different  
interpretations of vulnerability may encourage or shape a particular climate conflict discourse.

The main research motivation draws largely from Gemenne et al.'s (2014) call regarding  
the need to re-embed the notion of vulnerability as a function of power into the discourses on  
climate and conflict in order to increase the prospect of explaining better the climate conflict  
25 links. This paper therefore asks:

- How are the different discourses of climate change and conflict constructed and  
represented in peer-reviewed articles?
- How is vulnerability portrayed across discourse lines and how does this influence the  
discursive formation of climate change and conflict issues?
- 30 – How may we frame climate conflict as a vulnerability-based question and what new  
knowledge can we anticipate with this framing (e.g. for guiding climate, land use and  
conflict research)?

## **2 Logic of vulnerability interpretations**

35 Vulnerability is commonly understood as the susceptibility of people to the harmful  
consequences of (climatic) shocks or stressors, yet various underlying interpretations are  
ascribed to it in the climate impact literature. The interpretations come under a variety of labels,  
e.g. “end point”, “starting point” and “focal point” interpretations (Kelly and Adger, 2000), as  
well as “outcome” and “contextual” interpretations (O'Brien et al., 2007). In O'Brien et al.'s  
40 (2007) writing, end point and starting point interpretations convey the same meanings as  
outcome and contextual vulnerability interpretations respectively. A review of what these  
different terms mean shows that there are generally two main interpretations (Table 1); although  
there could be another interpretation that falls between the end point and starting point of a

5 vulnerability assessment. Füssel and Klein (2006, p. 305) refers to this as “an intermediate element” of vulnerability portrayal.

Vulnerability according to the end point or outcome interpretation is focused on estimates of potential (net) climate change impacts, taking into account possible (future) adaptive responses. It represents a linear result or outcome of a sequence of analyses that involves  
10 projections of future emission trends, development of climate scenarios, biophysical impact evaluations and identification of adaptation options (Kelly and Adger, 2000). This interpretation orients towards a static quantification of biophysical vulnerability, and relates to the level of susceptibility that is observed after adaptation has taken place (Hopkins, 2014). Vulnerability assessment based on this interpretation provides a convenient means of differentiating between  
15 net and gross climate impacts through estimates of feasible adaptations. Füssel (2007) reveals this interpretation is grounded in the integrated or risk-hazard vulnerability framework and is relevant for mitigation and compensation policies (i.e. the assistance high CO2 emitting nations offer countries who disproportionately suffer from climate impacts), and for advancing technical adaptations (e.g. irrigation schemes, supply of drought-tolerant seed varieties or structural  
20 improvements in housing).

The starting point or contextual interpretation, in contrast, presents vulnerability as a “present” lack of capacity to cope or adapt to changing climate conditions. It considers vulnerability as a condition generated by multiple factors and processes, and focuses on social and ecological systems (O’Brien et al., 2007). This interpretation suggests that the starting point  
25 to understanding climate change problems in societies should be based on the locations and land use context in which climate variability and change occur. The context entails a multidimensional view of climate and society interactions, which may draw upon climatic, biophysical and other contextual conditions (i.e. social, economic, political and institutional structures and dynamics), consistent with the political ecology framework of vulnerability, and  
30 the entitlements, local livelihoods and social capital literature (Leach et al., 1999). This interpretation is relevant for explaining how intrinsic (dynamic) vulnerability determines adaptive capacities and adaptations, and for addressing broader social development issues.

Vulnerability according to the “focal point” idea represents an overarching concept or goal that a particular vulnerability study seeks to address. It reflects the course of a particular  
35 vulnerability analysis. It is more like an indicator for identifying other interpretations of vulnerability. Relating “focal point” to the food security and natural hazards literature, Kelly and Adger (2000) make reference to the space of vulnerability in terms of exposure, risk and capacity to cope with stress, including the consequences of stress and the associated risks of slow recovery. The focal point indicates whether a study is concerned about current, future or dynamic  
40 vulnerability of climate impacts (Füssel, 2007); sectoral sensitivities, political economy or multiple stressors (O’Brien et al., 2007); or concerned about “intermediate elements” that lie between outcome and contextual interpretations (Füssel and Klein, 2006). Because of its indicative nature, the “focal point” notion is often not considered as a type of vulnerability interpretation.

Commented [UO1]: All citations with this name have been corrected as suggested by reviewer #2.

Commented [UO2]: Corrected.....

5 Outcome and contextual interpretations of vulnerability differ in their descriptions of  
vulnerability, temporal reference and framing, starting point of analysis, vulnerability approach,  
adaptation-vulnerability links and policy contexts (Table 1). Although none of the interpretations  
is considered more or less appropriate than another in the context of climate impacts research  
10 (Kelly and Adger, 2000), contextual vulnerability can be more apt for studying current  
vulnerability to the social impacts of climate change, such as conflict and violence. Differences  
in interpretations are often emphasised to guide climate impact assessment studies and to  
demonstrate the need for studies to be explicit and transparent in the interpretation of  
vulnerability.

### 15 3 Analytical approach

The term “discourse” is subject to a diverse array of definitions. Broadly, it is understood as a  
shared way of apprehending or constructing reality (Dryzek, 2005) or as Hajer (1995, p. 44–45)  
puts it – “a specific ensemble of ideas, concepts and categorisations that are produced,  
reproduced and transformed in a particular set of practices and through which meaning is given  
20 to physical and social realities”. It contains “a corpus of expressions in which we can find  
homogeneity in messages as well as in expressive means” (Adger et al., 2001, p. 685).  
Discourses structure issues in distinct ways, define what is acceptable as “true” by society, and  
invoke significant power effects within a particular framework of practices (Detraz, 2011;  
McDonald, 2013; Ide and Fröhlich, 2015). Because they influence perceptions and  
25 interpretations of a phenomenon (and an action) by emphasising the autonomy of the acting  
individual/institution (Müller, 2008), they can be dynamic or static, dominant (when their core  
statements are widely accepted as true by a large majority of society) or relegated, and can be  
communicated in various concrete forms (e.g. through written or oral statements) (Doulton and  
Brown, 2009). These different perceptions offer a robust support for viewing “climate-conflict  
30 discourses” as shared assumptions and contentions about climate change and conflict links,  
which apparently often coalesce into a range of singular norms with common themes.

A discourse approach explores commonalities across multiple discourses competing to  
shape the way people, communities and authorities engage with a particular issue, including the  
dynamics of that competition. It provides insight into the interplay of messages,  
35 narrative/argumentative structures and policy perceptions (Rafey and Sovacool, 2011). Several  
approaches to discourse analysis in the environmental realm follow the works of Michel  
Foucault critical theorists, such as Foucault (1979, 1991), a critical theorist, and Hajer (1995).  
Although His exploration of social phenomena is often presented as classic in approaches to  
discourse analysis (usually in the frame of ‘regimes of practices’ and power/knowledge nexus),  
40 pointing the need to construct critical narratives of distinct stories of ‘realities’ that constitute a  
discourse (Hewitt, 2009).

According to him, is the storyline in a conversation/dialogue often represented by text  
and spoken communications, and shaped by social practices it does little in the way of advancing  
close linguistic assessments of texts (i.e. the textual dimensions of a discourse). It also does not  
45 show how multiple realities evolve in particular spatial and temporal contexts. Inspired by

5 Foucault's idea, Hajer (1995) provides insights concerning this aspect, particularly in relation to  
what should constitute the objects/elements of a discourse analysis, e.g. metaphor, storyline and  
discourse coalitions. He ~~these aspects, and~~ suggests that everything we perceive as discourses,  
which influence how societies engage with an issue (e.g. climate change), should be analysed in  
10 the context in which they are discursively constructed. McDonald (2013) for example, has  
focused on the use of textual and speech storylines/dimensions based on insights from Hajer's  
(1995) writings in his critical **synthesis/analysis** of discourses of climate security.

Ideas from these previous studies inform our **analytical approach for climate conflict**  
**discourses. Specifically, we focus on units of textual communications for climate conflict**  
**storylines using distinct categories of discourse components (i.e. sets of key discourse elements -**  
15 **Table 2), i.e. on the content of texts or textual dimensions of discourses. The object of discourse**  
~~analysis are usually the discourse components, the unit of a storyline/conversation/dialogue—~~  
~~discourse components are usually objects of discourse analysis. The approach employed in this~~  
~~paper draws on these various views. In particular, the objects of discourse analysis employed~~  
here (Table 2) ~~The approach adopted here (Table 2) draws~~ drawn from upon a synthesis of the  
20 fundamental discourse components outlined by Adger et al. (2001), Dryzek (2005) and  
McDonald (2013) for the analysis of the broad sweep of environmental security discourses.  
Similar to Doulton and Brown (2009), we find ~~this approach~~ the discourse components (Table 2)  
framework particularly useful for a more explicit portrayal of the basic storylines across different  
climate conflict discourses, and also because they give a less subjective basis from which to  
25 assess discourse lines. Although this study does not emphasise the range of actors articulating a  
particular discourse or the political agenda they pursue, it nonetheless recognises dominant  
discourses and the vulnerability thinking that they encourage.

To investigate the framework of meanings ascribed to vulnerability, in particular how  
interpretations of vulnerability enable or constrain the ways in which climate conflict relation is  
30 understood, we develop a vulnerability interpretation diagnostic tool (VIDT), based on Füssel  
(2007) and O'Brien et al. (2007). The tool (Table 3) uses illustrative research questions, focal  
points, methods and policy suggestions that appear in the body of texts as clues to deduce the  
particular vulnerability interpretations implied. The study demonstrates that the tool can be  
usefully employed for more specific issues such as climate and conflict, and in the identification  
35 of the variables that feed into any sequence of climate conflict analysis.

This research uses peer-reviewed sources as the focus of analysis – because they are  
based on original research, convey credibility and provide reliable insights (including their  
relative ease of analysis) (Atkinson et al., 2015). Searches for articles were based on a close  
examination of articles that suitably meet the criteria specified in Table 4. We used the search  
40 terms “climate change and conflict” OR “climate conflict” OR “climate violence” OR “climate  
security” AND “vulnerability” to screen the *Web of Science* (WoS) and *Scopus* databases based  
on Title, Abstract and Keywords, and “climate, violence, security, conflict, vulnerability” on the  
*Google Scholar* (GS) search engine. The search process covered the period 2007 to 2015 (last  
access: 11 August 2015). This timeframe covers a period when issues about climate security and  
45 conflict became markedly pronounced as a subject of growing international public concern,  
especially following the publication of two Intergovernmental Panel on Climate Change reports  
(IPCC, 2007, 2014). Similarly, this period allows for an in-depth engagement with advances in

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5 climate conflict issues, particularly in terms of whether and how vulnerability had become an integral part of the discourses/analyses. The search process resulted in a database of 34 articles that articulate climate conflict links and that made reference to vulnerability following the criteria outlined in Table 4.

10 We utilise Tables 2 and 3 to analyse each selected article to more precisely detect the range of discourses depicting homogeneity in stances. Our approach evidently demarcates what represents a particular way of viewing climate-conflict ideas. The identified stances and discourses are presented in Sect. 4. Each discourse is described by using illustrative quotes, basic storylines and a brief outline of the discourse components/contents.

#### 4 Characterising discourses of climate conflict

15 Nine general stances regarding interactions between climate change and conflict were identified from the taxonomy of discourses present in the peer-reviewed sources. The stances differ in their arguments “for” and “against” considerations of climate change as a security issue (or as a threat multiplier). The stances arguing for climate conflict (seven stances in all) affirms a *security threat* position across different scales. One specific stance with a *climate-centric* viewpoint suggests that climatic conditions and events directly and dominantly influence conflict and violence. Another stance based on a *context-centric* narrative affirms indirect linkages through a confluence of factors which evidently differ across different scales (national, human, global and ecological), particularly in terms of what may constitute “the state of nature” and the “nature of the state” across varying contexts. Next comes the opposing stances (two stances in all) – which hold that conflict under climatic trends is a social construct, and that climatic changes need not be characterised as a security issue. The stances and the discourses linked to them are outlined in Table 5. All shades of conflict and violence types, including climatic stressors, events and extremes are considered in categorizing the discourses. We focused predominantly on the textual dimensions and practices of communicating and reinforcing discourses. Our categorisation does not include a *neutral stance*, i.e. messages that are somewhat ambivalent about the climate conflict issue.

##### 4.1 Discourse 1. Climatic determinism

“Large deviations from normal precipitation and mild temperatures systematically increase the risk of many types of conflict, often substantially” (Hsiang et al., 2013, p. 1).

35 “Wetter deviations from precipitation norms decrease the risk of violence . . . much warmer than normal temperatures raise the risk of violence” (Loughlin et al., 2012, p. 18344).

40 *Climatic determinism* demonstrates that warming climates influence irritability, aggression and violent intergroup conflicts. Central to this discourse is a thermal stress hypothesis grounded in research mainly from psychology of social conflict and aggression (Anderson and DeLisi, 2011). In particular, extant studies that use quantitative methods to link conflict to climate in global or regional data sets affirm that heat and aggression are closely linked by illustrating that physically uncomfortably hot conditions (e.g. during El Niño events)

5 can increase the likelihood of physical aggression and violent conducts (Hsiang et al., 2011).  
This discourse prescribes an almost instant “conflict” response to thermal extremes and  
represents a worldview in which climate change is conceived as a dominant factor in, and a key  
entry point to the climate conflict storyline. By promoting a direct effect of uncomfortably warm  
temperatures on conflict and violence, and therefore placing climate trends as the central focus,  
10 the discourse evidently suggests a modern form of “biophysical or environmental determinism”  
(Raleigh et al., 2014). Indeed, the discourse draws upon enlightenment ideals of positivist  
science to suggest that more knowledge about the dynamic climate/biophysical/land use systems  
will enable humankind to better mitigate climate impacts, and cope with social conditions such  
as conflict escalations.

15

#### 4.2 Discourse 2. Context centrism

“Political and economic, rather than climatic factors, can be a key source of human insecurity”  
(Zografos et al., 2014, p. 335).

20 The *context centrism* discourse in which the notions of human, national, global and  
ecological security are a part, is often cast from a deterministic storyline that encourages viewing  
climate change as a threat to the extent that it precipitates threats across diverse scales (Detraz,  
2011; McDonald, 2013). In the frame of political ecology and neo-Malthusian perspectives, it  
embeds the subjects whose security is threatened, including specific causal mechanisms, as a  
central premise to offer support for connections between climate change and conflict.  
25 Specifically, it is concerned about tracing multi-level linkages, including decision-making,  
governance and hierarchies of power (Kallis and Zografos, 2014). Statements pointing to climate  
change as fuelling more droughts and famine, more forced migration/mass displacement, hikes in  
food prices, scarcities of resources anchoring human livelihoods, land use changes, and negative  
changes in economic growth are often invoked to explain how climate change drives conflicts  
30 and violence (Gemenne et al., 2014; IPCC, 2014). Generally, studies articulating a *context-*  
*centric* view emphasise that: (i) climate-conflict links are multi-directional, i.e. there is not a  
simple one-way connection, (ii) several themes and variables are involved, pointing to climate  
change as one of a range of factors in conflict outcomes, (iii) sub-Saharan Africa and  
southern/central Asia present potential locations where evidence is most stark, and (iv) climate  
35 change is associated with low level conflicts. The discourse concentrates on what must be done  
to address some known drivers of conflict under climatic changes to create resilient societies  
(Dumaine and Mintzer, 2015).

#### 4.3 Discourse 3. Denial claims

40 “Climate change . . . need not be characterised as fundamentally a security issue” (Gartzke, 2012,  
p. 177).



5 “Quantifications of climate conflict links are of dubious value, since they inevitably rest upon coding and modelling premises that are arbitrary and sometimes even untenable” (Selby, 2014, p. 20).

“... scholars who study conflict itself are less persuaded by the importance of climate as a factor in outbreak of conflict...” (King and Mutter, 2014, p. 1248).

10

*Denial claims* discourse does not deny climate change, nor imply that its influence will not be problematic. Rather, it questions the existence or severity of climate change impacts on conflict outcomes, insisting that claims about climate conflict are insufficiently supported by scientific evidence (Slow, 2013). Most studies here either establish “no link” (Gartzke, 2012; 15 Koubi et al., 2012), demonstrate “little evidence” (Wischnath and Buhaug, 2014) or view climate conflict predictions with scepticism (see Mason and Zeitoun, 2013). This discourse draws mostly upon a philosophical/traditional security type of thinking that presents conflict as a social construct, a somewhat “militarised framing” or “heterodox idea” that is critical to claims about relations between environment/climate and conflict (Deudney, 1990). By constructing realities 20 based on a combination of historical antecedence and current economic, political and cultural contexts, the discourse argues for a need to explore conflict in more complex ways than simply pointing to climate change, and suggests tackling more pressing challenges such as terrorism, HIV and poverty that plague Third World countries (Selby, 2014; Floyd, 2015).

Table 6 gives a summary of the different discourses, showing key similarities and differences, and how they are constructed using the central entities/issues recognised, the 25 assumptions about causality and mechanistic relationships, normative judgements inferred and vulnerability portrayals. Although the constructed discourses differ considerably in their conceptualisation of the roles of climate change in conflict events, we observed, as have others (e.g. Ide and Scheffran, 2014; O’Loughlin et al., 2014; Buhaug, 2015), that studies within 30 particular discourses – in particular the quantitative *climate-centric* and *context-centric* studies – also differ in the conclusions and policy suggestions they provide. This is explained by the: (i) varied climate and conflict data sets used, (ii) different quantitative and qualitative definitions and scope of conflict employed, (iii) different climate change parameters, (iv) benchmark model specifications (i.e. modelling problems), including varied evaluation and statistical procedures, 35 and (v) choice of spatial scales and theories.

### 5 Portrayals of vulnerability across climate conflict discourse lines

“... much of the emerging climate security discourse contains elements of early environmental security research which many critics have found to be problematic” (Jasparro and Taylor, 2008, 40 p. 237).

“Vulnerability” is mentioned much less frequently in peer-reviewed evidence for and against climate conflict. However, there are differences across discourse lines. For example, the somewhat “direct link” premise upon which the *climatic determinism* discourse is based

5 ordinarily seems to de-emphasise vulnerability, indirectly implying that previously recorded  
incidences of climate conflict may not have happened because an entity between changes in  
climate and onset of conflict is vulnerable. Nonetheless, based on the VIDT approach, we note  
that references to the state of nature and a biophysical frame shift the discourse towards a  
10 vulnerability description that suggests an outcome interpretation. This position is particularly  
evident in assessments where the probability of conflicts arising is linked to a single net climatic  
event (e.g. Hsiang et al., 2011). As vulnerability is generally given less explicit consideration, it  
is highly likely that the discursive formation of *climatic determinism* has progressed without  
attention to conditional elements shaping vulnerability.

This position is in sharp contrast to a *context centrism* discourse where discussions about  
15 vulnerability often invoke the contexts in which humans live or the boundaries in which states  
operate (Barnett and Adger, 2007). In high risk-regions of Africa where climate change impacts  
are far-reaching and where contextual conditions imply weakness, vulnerability is interpreted in  
the language of insecurity and presented as a condition of powerlessness (Gemenne et al., 2014).  
This discourse emphasises that climate change not only causes conflict through resource  
20 scarcities or a decline in national incomes, but by increasing human and national vulnerabilities.  
Indeed, climate change produces its effects more within extremely vulnerable systems  
(Sherbinin, 2014).

Broadly, vulnerability is conceived as occurring and increasing conflict outcomes of  
climate change when and where individuals, communities and states lack the capacities  
25 necessary to end internal and external vulnerability drivers (Busby et al., 2014a; Kallis and  
Zografos, 2014). Adger's (2010) writing is a good example of how vulnerability is portrayed  
here, particularly through a human security framing. It is the consideration of human security –  
in terms of conditions that make people susceptible to harms under climate change (e.g.  
ecological marginalisation, deprivation, disempowerment) – that makes the inclusion of  
30 vulnerability in contextual climate conflict studies richer and more meaningful. As climate  
change is more relevant for human security and low level conflicts than for other security types  
(Floyd, 2008, 2015), reference to contextual vulnerability is most visible in studies that follow a  
human security frame.

*Context centric* discourse shows that interpreting vulnerability in the notion of contextual  
35 dynamics can reveal the complex nuances of vulnerability, and also of climate conflict  
interactions. One facet of this complexity presents vulnerability as a potential transformative  
process (O'Brien et al., 2007), implying that it could be beneficial if it leads to the creation of  
positive strategies for better governance, resilience, adaptability or peace building, particularly in  
conflict-prone communities facing climate extremes. On the other hand, it can be negative if it  
40 reverses moves towards peace and cooperation by increasing conflicts and social instability. The  
positive transformative aspect of vulnerability is particularly silent in this discourse because  
vulnerability is widely viewed as “bad news”, as providing space for climate change to thrive  
and inflict harms on humankind (Adger, 2010). Because the discourse of *context centrism*  
emphasises that climate conflict cannot be separated from contextual factors driving  
45 vulnerability (which are often unique to every society), it is possible that portrayals of

5 vulnerability as a contextual issue may have played a role in shaping the various stances associated with this discourse.

10 *Denial claims* is the most robust of the discourses in terms of vulnerability considerations. Similar to the *context centrism* discourse, this discourse conceives conflict as an element of social vulnerability, emanating from structures and processes inherent in a particular “vulnerable unit” and less from “external climatic forces”. It recognises internal contextual variables that often shape outcomes of, and responses to, conflicts under climate change, and thus gives room to suspect a contextual vulnerability interpretation. This position is implied, albeit implicitly, in key studies such as those by Bergholt and Lujala (2012), Koubi et al. (2012) and Buhaug et al. (2014).

15 Although *context centrism* and *denial claims* discourses are seen as supporting a contextual vulnerability portrayal in expounding the role of climate change in conflict, whether and how vulnerability is portrayed seems likely to also depend on the country from which a particular study originates. Schafer et al. (2015) show that studies grounded in western countries strongly focus on national and global security/conflict and often give limited attention to the notion of vulnerability. In contrast, studies from developing/emerging economies place greater emphasis on human security (and to key resources such as water, land and food as important catalysts), and therefore tend to give more attention to vulnerability (Zografos et al., 2014). Similarly, as more disaggregated sub-national studies have gained traction in recent years (Raleigh and Kniveton, 2012; Papaioannou, 2016), and as “qualitative-focused studies” demonstrate a more engaging link with issues around vulnerability (especially by paying attention to the uniqueness of individual locations and their power dynamics concerning access and governance of public resources, including communal land; Adger et al., 2013), it is likely that contextual vulnerability considerations will become more central to climate conflict scholarship.

## 30 **6 Advancing the notion of contextual vulnerability**

“... estimating a model without consideration of specific locations of violence across a large region over a long time period hides a myriad of contextual conditions” (Loughlin et al., 2012, p. 18347).

35 “... to enhance specification of theoretical arguments ... maintenance of the recent emphasis on conditional effects ...” is necessary (Meierding, 2013, p. 185).

The recent rise in calls to pin down more subtle and complex indirect causal mechanisms and contexts “under which climatic events plausibly may have a measurable impact on conflict dynamics” (Buhaug et al. 2014, p. 396) reflect an increasing sense of contextual vulnerability. Arguably, vulnerability in the totality of its meaning cannot be suitably portrayed in climate conflict research without reference to context and dynamism. Such a position was already apparent in studies from Scheffran et al. (2012a), Adger et al. (2013), Busby et al. (2014b), Ide et al. (2014) and Wischnath and Buhaug (2014), which largely endorse a *context centrism* discourse frame. The most immediate insight here illustrates that it is preferable to say that to understand

5 climate conflict relations is to understand nuanced and context-sensitive intervening factors. Halvard Buhaug (2015, p. 271) captures the fundamental nature of this position, suggesting that:

“ . . . there is no mechanistic link between the environment and society that dictates the same social response to a climatic phenomenon across contexts. Societies differ with respect to environmental vulnerability, coping capacity and ability to adapt, and also with respect to  
10 exogenously defined drivers of latent conflict risk”.

The imperatives of contextual vulnerability increasingly challenge a deterministic narrative of scarcity-induced conflict (Selby and Hoffmann, 2014). They redefine the way we think about the subtle patterns certain climatic conditions and extremes (e.g. El Niño events) relate to conflicts in practice (Koubi et al., 2013). Expanding climate conflict research to  
15 incorporate knowledge of contextual vulnerability processes and directionality does not require great conceptual or analytical stretching (Brown and McLeman, 2009). As has been echoed in the environmental security and vulnerability literature, locational climate conflict and vulnerability share similar structural determinants: poverty, fractured social and political structures, and resource depletion (Adger et al., 2013). The breadth and scope of these are most  
20 powerfully advanced in the analytical framework proposed by Scheffran et al. (2012b), which draws upon environmental (e.g. ecosystem damage, biodiversity losses, etc.) and human (e.g. livelihood losses, asset depletions, etc.) vulnerabilities as key elements of contextual vulnerability in tracing pathways among the climate system, natural resources, human security and social stability. Similarly, the climate security vulnerability hot spot study conducted by  
25 Busby et al. (2014a, b) points to locations where large number of people could possibly die under climate conflict events by highlighting a repertoire of explanatory variables. For Brown and McLeman (2009, p. 294), “the identification of security risks and the prevention of conflict due to the impacts of climate change can be considered strongly linked to the identification of regions or populations that are vulnerable to climate change because of inadequate adaptive  
30 capacity”. These studies advance variables that matter and explain why the security consequences of climate change are a “big” issue in some locations and less at other places. Further, Papaioannou’s (2016) disaggregated, sub-national study presents a detailed scoping assessment of contextual conditions that provide a robust qualitative and quantitative evidence for climate shocks in conflict mechanisms. Several other studies also show the distinctive  
35 manner in which contextual vulnerability assessment can offer explanatory power to support distinct causal pathways and dynamics (Fjelde and von Uexkull, 2012; Zografos et al., 2014).

Given that contextual vulnerability represents dominant portrayal of vulnerability in climate conflict studies, and offers a promising entry point for analysts, researchers and policy-makers aiming for a robust disentangling of the climate conflict nexus, we find reasons to  
40 advocate a framing of climate conflict as a vulnerability-based question that orients towards a needs-based agenda advanced in Raleigh et al. (2014). Such an agenda seeks to rescale the debate “bottom-upward” to highlight specificity and differences, and to combine threat-centred thinking and rhetoric about dangers emanating from climate shocks with a discourse along simplistic contextual vulnerability lines (Jasparro and Taylor, 2008). Specifically, it asks what  
45 makes people vulnerable; questioning the trajectories of conditional forces at the root of social

5 tensions (such as spatialities of economic and geopolitical powers driving, for example, strategic  
resource manoeuvres over e.g. land), which for Adger et al. (2013) is one overlooked  
dimension. Casting climate conflict as a vulnerability-based question, therefore, supports making  
vulnerability and adaptability the central analytical issues (Adger, 2010). It orients the research  
10 towards fundamentally rebalancing the missing synergy between the climate science and social  
science communities (see Lewis and Lenton, 2015) and suggests taking into account the  
deterministic storyline regarding causes of peace and cooperation under climate change  
(Gemenne et al., 2014). Indeed, the considerable range of knowledge this can generate has been  
voiced (Slow, 2013; King and Mutter, 2014), especially in the hope for more convergence and  
consensual results (Ide and Scheffran, 2014).

15 Overall, contextual vulnerability can support a constructivist theory-informed climate  
conflict scholarship in three ways: (i) unravelling contextual *totalities* (e.g. a turn towards  
contextualised political ecologies of climate vulnerability-conflict pathways in which concrete  
socio-political phenomena are analysed, including how “enclosure, territorialisation, and market  
20 strategies of accumulation by dispossession” may drive conflicts associated with land acquisition  
practices under climate change (Dunlap and Fairhead, 2014, p. 19), (ii) highlighting historicity,  
specificity and variability (difference) of social structures and processes that seek to resolve  
complexity rather than pursuing predictability; and (iii) demonstrating flexibility in ways that  
incorporate contextual knowledge across space and time, and that challenges existing order  
(Selby, 2014). Further, a contextual vulnerability frame can enrich policies that are more  
25 socially-focused and that include options on resource diversification, poverty reduction,  
conservation of common property resources, strengthening of collective adaptation actions and  
so on. **These point to resilience-building as another significant concept/storyline in the climate  
conflict debate (e.g. see Vivekananda et al., (2014); Methmann and Oels, (2015)).**

30 While our focus is mainly on contextual vulnerability, our argument does not suggest that  
the outcome interpretation of vulnerability will be irrelevant for climate conflict studies. Given  
the projected changes in climate for several regions it is possible that most of what we know  
about vulnerability “conditional factors” and processes in climate conflict research will be  
insufficient to support our explanatory power of future climate-conflict links (Lewis, 2013;  
Lewis and Lenton, 2015). This is where outcome vulnerability might be useful. However, its  
35 limitation remains its inability to capture gross climate impacts and social adaptations (Füssel,  
2007). Since climate conflict reflects a continuum of conditional forces, a deeper diagnosis of  
current climate conflict vulnerabilities can enable vulnerabilities to future climate conflict  
conditions to be addressed.

## 40 **7 Conclusions**

Discourses of climate conflict serve to articulate the variety of associations between climate  
change and conflict. The analysis presented here illustrates that there are multiple ways of  
conceiving how discourses are constructed, with different considerations for how climate conflict  
phenomena should be understood, including assumptions about causality, normative judgements

**Commented [U05]:** An added sentence pointing to resilience as both a significant concept in climate conflict and as a policy direction – with references to studies addressing resilience.

5 and vulnerability portrayals. While there is an absence of a specific interpretation of vulnerability  
in much of the discourses, we outline an orientation towards contextual vulnerability in both  
*context centrism* and *denial claims* discourses. This orientation is consistent with the portrayal of  
climate conflict as a continuum of socially-determined factors that coalesce around extremely  
10 vulnerable systems. More importantly, as the somewhat “indirect link” premise regarding  
climate conflict relations has found its way into popular consciousness, we find most problematic  
the challenge associated with the point of entry for interpretation of climate conflict links.  
Current insights illustrate that a deterministic narrative of scarcity-induced conflict and a “threat-  
centred” type of thinking can downplay the prospect of pinning down more subtle interactions  
15 between climate change and conflict. In this light, an inclination towards contextual vulnerability  
offers a useful direction on how we might understand conflict in more complex ways rather than  
through climate change. This idea invokes the notion of contextual totalities, and embodies the  
complexity of the climate conflict challenge in the frame of historicity, specificity and  
variability. Similarly, the idea points to what may constitute parts of an integrative framework’s  
20 requirements for modelling pathways between climate change, land use and conflict (see Link et  
al., 2015).

Although the various discourses presented here have had a lot of purchase in the public  
domain where security experts and climate change practitioners speak different languages and  
consult different assessment tools, this paper suggests that climate conflict discourses can be  
better portrayed as a flow of socially-constructed knowledge using a language that communicates  
25 vulnerability and powerlessness. In this way climate conflict can be presented as an issue that  
cuts across several disciplines, the type that embraces theories across notions of access, control  
and struggle in which the precise and changing interactions of power, governance, institutions  
and investments are a part. Indeed, there is a need to integrate existing knowledge within a  
contextual vulnerability perspective. It is our contention that since much of climate conflict  
30 articles in the frame of *context centrism* reveals a compelling priority for human security in  
Africa, casting the climate conflict storyline as a vulnerability-based question would re-enforce a  
needs-based agenda that allows for more convergence and consensual argument for any area  
affected by climate conflict.

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**Table 1.** Interpretations of vulnerability in climate change impact studies (based on Füssel and Klein, 2006; Füssel, 2007; Kelly and Adger, 2000; O'Brien *et al.*, 2004; O'Brien *et al.*, 2007)

	Outcome interpretation	Contextual interpretation
Prioritised meaning of vulnerability	Extend to which expected net climate change may harm a particular system	Current susceptibility to climate change and variability as influenced by multiple factors and processes
Temporal reference	Future vulnerability to climate impacts; adaptation to future climate change	Present vulnerability and adaptation to current climate variability and change
Framing	Scientific framing of the climate change problem based on physical-flows (the state of nature) view	Human security framing based on actor-system view (nature and society are inseparable aspects of the same context)
Entry point of analysis	Projections of future emission trends and scenarios of future climate hazards	Current climatic, biophysical and contextual conditions driving vulnerability
Vulnerability approach	Integrated, risk hazard	Political economy, social or intrinsic vulnerability
Vulnerability and adaptive capacity links	Adaptive capacity determines vulnerability	Vulnerability determines adaptive capacity
Policy context	Climate change mitigation, compensation, technological and sectoral adaptations	Social and economic adaptations, reduce inequalities, promote sustainable development

**Table 2.** Analytical approach for discourse analysis of climate conflict peer-reviewed articles.

Surface/external descriptors	These recognise the title, abstract and keywords of the article
Central entities/issues recognised or constructed	This specifies the ontology of the issue; how climate-conflict phenomena are understood; the role of climate in conflict; the referent object being threatened; definition of the nature of the threat; and the scientific evidence expressed based on context
Assumptions about causality and mechanistic relationships	The likely linkages and impacts of climate change on conflicts across different scales; the degree of uncertainty
Normative judgements	Perceptions of responses for dealing with climate threats, policy prescriptions on social impacts; extent to which the issue should be a priority
Vulnerability portrayal	Framing of meanings ascribed to vulnerability in discourses

Adapted from Adger et al. (2001), Dryzek (2005) and McDonald (2013)

Note: No consideration of actors producing, reproducing and transforming a particular discourse, including agents' interests/motives – these aspects can be explicitly defined in voice or speech dimensions of discourses. Similarly, there is no focus on 'expressive means' such as rhetorical devices deployed to convince readers by putting climate threats in a particular light – newspaper articles do this well, not peer reviewed articles (e.g. see Doulton and Brown, 2009).

**Table 3.** Diagnostic tool for identifying different interpretations of vulnerability in climate conflict research (partly based on Füssel, 2007 and O'Brien *et al.*, 2007)

	Outcome vulnerability	Contextual vulnerability
Illustrative research questions	Are human activities contributing to global warming and insecurity? What are the expected net impacts of climate change and conflict in different regions?	Is climate change a relevant security problem? Why are some groups more affected by climate-induced conflict than others?
Focal points/starting point of analysis	Future implications of climate change on security and conflict; scenarios of potential climate change and conflict interactions, dynamic cross-scale integrated assessments	Past and current climate variability and change interactions with conflict; livelihoods, political economy, place-based and internal contextual issues (multiple factors and processes)
Methods	Simulations/scenario based approaches; integrated assessment models	Longitudinal, cross-sectional surveys, household surveys, quantitative/qualitative case studies, context-specific indicator approaches
Policy recommendations	Reduce GHG emissions, technical and sectoral adaptations, prevent trading in arms, securitisation/militarisation of climate change etc.	Address local constraints in vulnerable areas through direct aids, conflict preventive actions, building socio-economic adaptation capacities, promoting internal conflict resolution, supporting livelihood security etc.

**Table 4.** Article selection criteria

The scholarly interest of the article is on the interactions between climate change and conflict or security
The article is focused on climate causes only or a combination of location-specific climatic and contextual issues, or the article questions and denies the rationale for a climate connection in conflict outcomes (articles showing mixed, unclear ideas were excluded)
The article is peer-reviewed and published between 2007 and 2015
Articles in which the keyword 'vulnerability' is mentioned, either explicitly or implicitly, at least once in the title, abstract, keywords or in the entire text, excluding the reference list (Desktop Mendeley Reference Manager enabled the screening of texts depicting vulnerability/vulnerabilities)
The article is widely available in English and accessible through electronic media (either by an open access or subscription only platform or both) to readers from various backgrounds

**Table 5.** Typology of climate conflict discourses and associated stances across the peer-reviewed sources

Discourse lines	Stances *
<b>For ‘climate conflict’</b>	Climate change is a ‘threat multiplier’, an ‘accelerant of instability’.
<i>Climatic determinism</i>	Climatic conditions and events directly influence the propensity for violent conflict (Burke <i>et al.</i> , 2009; Hsiang <i>et al.</i> , 2011).
<i>Context centrism</i>	Indirect linkages demonstrate that the ‘state of nature’ and ‘nature of the state’ are inseparable aspects of the same context across different scales (Raleigh <i>et al.</i> , 2014).
<ul style="list-style-type: none"> <li>▪ <i>National security threat</i></li> </ul>	Threats from the manifestations of climate change will challenge the sovereignty, territorial integrity and institutional capacity of the nation-state, undermining the national ‘way of life’ (Busby, 2008; Morales Jr., 2015).
<ul style="list-style-type: none"> <li>▪ <i>Human security threat</i></li> </ul>	The poor are powerless victims; climate change will drive human insecurity and violent confrontations by shrinking the resource base anchoring livelihoods and by undermining political and economic stability (Zografos <i>et al.</i> , 2014).
<ul style="list-style-type: none"> <li>▪ <i>International security threat</i></li> </ul>	Climate change is likely to cause planetary upheavals (Brown and McLeman, 2009).
<ul style="list-style-type: none"> <li>▪ <i>Ecological security threat</i></li> </ul>	Climate change will accelerate (negative) systematic structural change in people-biosphere relationship, and undermine moral obligation humans have to preserve plants, animal species and other living beings (McDonald, 2013).
<b>Against ‘climate conflict’</b>	Branding conflict as an outcome of climate change is misleading and fails to address the ideological variables driving conflict.
<i>Denial claims/detached</i>	Conflict is a social issue/construct, its drivers have no link with climate change (Selby, 2014).

\*Grouping in this format tries to pull together various related stances into singular norms about climate-conflict outcomes using a discursive homogenisation or coalition perspective similar to Rafey and Sovacool (2011). Climate security is not freedom from climate threats, but a way to express the risks and threats posed by climate change: conflict and violence make this expression clearer in terms of the meanings inferred.

**Table 6.** Summary of the different discourses showing key similarities and differences

Discourses and example references	Central issues recognised	Assumptions about causality	Normative judgement	Vulnerability portrayal
<p><i>Climatic determinism</i></p> <p>(Burke <i>et al.</i>, 2009; Hendrix and Salehyan, 2012; Hsiang <i>et al.</i>, 2011; 2013; Loughlin <i>et al.</i>, 2012; Raleigh and Kniveton, 2012; Devlin and Hendrix, 2014)</p>	<p>State of nature; biophysical systems</p> <p>Climate conflict is a challenge; positivist epistemology and quantitative methods show it will worsen violence</p>	<p>Climatic reductionism: certain climate extremes bring hotter and drier weather - represent a model for conflict and violence</p>	<p>Rich countries must lead emissions cuts to mitigate impacts</p> <p>Precautionary peace measures</p> <p>Vulnerable people – subjects to be protected in the face of climate extremes</p>	<p>Vulnerability is usually not give any explicit meaning; when mentioned it tends to convey a notion of fragile places; of conflict outcomes from exposure to given levels of global change</p> <p>Suggests that knowledge about the dynamic climate system will enable humankind mitigate climate change and reduce conflicts and vulnerabilities</p>
<p><i>Context centrism</i></p> <p>(Ludwig <i>et al.</i>, 2011; Mason <i>et al.</i>, 2011; Fjelde and von Uexkull, 2012; Meierding, 2013; Kallis and Zografos, 2014; Vivekananda <i>et al.</i>, 2014; Ide, 2015; Raleigh <i>et al.</i>, 2015)</p>	<p>Dangerous climate change a threat on human survival; livelihoods, communities and cultures under threat</p> <p>Relevance of territorial borders, sovereignty and institutional capacity in national security</p> <p>Climate change undermines state capacity to prepare for/carry out security responsibilities</p> <p>Bigger ever threat to planetary survival</p> <p>Ecological balance, natural equilibrium threatened</p>	<p>Changes in food supplies/prices; powerless victims are in developing countries</p> <p>Populations displaced by resource violence are a threat to states;</p> <p>If fragile states become resilient, politically stable, they will be better able to resist violence</p> <p>Global demographic changes, mass migration crises will increase environmental pressure globally</p> <p>Equilibrium exists between consumption levels of human populations and nature's ability to provide resources/services</p> <p>Ecological crises linked to climate and human practices</p>	<p>Peacebuilding, disaster risk reduction strategies</p> <p>Incorporate climate conflict concerns into national intelligent assessment/military planning; defence establishments/military to respond to threats</p> <p>Need for mitigation and adaptation/focus on threat minimisers</p> <p>Close watch on borders to prevent damaging spill over effect of climate conflict/violence</p> <p>Challenge norms encouraging environmental degradation</p> <p>Extend moral obligation to ecological sustainability</p>	<p>Vulnerability - influenced by changing biophysical conditions, dynamic socio-economic, political, institutional and technological structures and processes</p> <p>Implicitly refers to contextual vulnerability by linking vulnerability to conditions of insecurity and powerlessness (e.g. Gemeinne <i>et al.</i>, 2014)</p> <p>Suggests linking vulnerability to the context in which humans live to reveal complex nuances in climate conflict links (e.g. von Uexkull, 2014)</p> <p>How scarcity or abundance lead to conflict is contingent on the manner conditional (pre-existing) vulnerability play out (e.g. Koubi <i>et al.</i>, 2013)</p>
<p><i>Denial claims</i></p> <p>(Buhaug, 2010; Hartmann, 2010; Gartzke, 2012; Gleditsch, 2012; Koubi <i>et al.</i>, 2012; Theisen <i>et al.</i>, 2012; Selby, 2014; Wischnath and Buhaug, 2014)</p>	<p>Climate conflict evidence unclear</p> <p>Increasing uncertainty about the security/conflict consequences of climate change</p> <p>Understand conflict in more complex ways rather than through climate change</p>	<p>Explanatory pathways unreliable</p> <p>Robust models non-existent; mere rhetoric/speculations – reflect an ensemble of Northern ideologies</p>	<p>Deep concern for sustainable development</p> <p>Climate conflict concern will militarise provision of development assistance (i.e. misdirect assistance to defence establishments), provide ammunition for various powerful elites and distort climate policy</p> <p>Pay less attention to scaremongers</p>	<p>No attention is given to the notion of vulnerability but conflict is conceived to be the outcome of weak structures and processes inherent in a particular 'vulnerable unit', and less from external climate stressors; contextual vulnerability is suspected from the focal point of the discourse</p>



