

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
1	2	0	0	0	0	This chapter is overly long, with repeating information and too much detail in some places. There are overlaps with Chps 1, 5, 6, and 7 that need to be resolved. (IPCC WGII TSU)	OK, improvements have been made. The definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions.
2	2	0	0	0	0	This chapter is supposed to integrate the perspectives of the disaster risk management communities and climate change adaptation. A much more comprehensive literature search is needed to provide both perspectives, and to fairly represent what is in the literature. (IPCC WGII TSU)	OK, done, but its important to recognize that on determinants of risk there is more literature from DRM perspective than from CCA
3	2	0	0	0	0	Please refer to Chps 3 and 4 instead of repeating information here. (IPCC WGII TSU)	OK, done in most cases
4	2	0	0	0	0	LENGTH: The Chapter is overall too long, has many sections which read more like a text-book introduction into disaster risk management than an assessment and needs to focus more on the climate change context of Risk. While it's important to provide some background on general Risk issues, we feel that strengthening the climate change component in the Chapter is absolutely needed. Climate/Climate Change is currently only once mentioned in the ES, also highlighting the minor role it plays in the Chapter. (Stocker, Thomas, IPCC WGI TSU)	OK, done, but any way the emphasis is unavoidable on risk due to the objective of the chapter is to describe its determinants
5	2	0	0	0	0	COORDINATION WITH CHAP 1: some coordination between Chapters 1 and 2 is needed, mostly to decide on a common definition of some of the key terms used throughout SREX, like coping, adaptation, vulnerability, risk etc. Double definitions should be avoided to the extent possible. (Stocker, Thomas, IPCC WGI TSU)	OK, done, the definitions were made accordingly with Chapter 1
6	2	0	0	0	0	BOXES: The concept of adding Boxes to provide some additional background material and/or practical examples can be improved. The current Boxes don't seem to be very well linked to the text and sometimes don't seem to cover the most relevant issues that Chapter 2 is dealing with. (Stocker, Thomas, IPCC WGI TSU)	Some of them are clearly needed, others have been adjusted
7	2	0	0	0	0	This chapter could put more focus on the fact that the current risk patterns, and consequently most disasters, are mainly due to maladaptation to the current climate and its extremes. It could also assess the development development (experienced, foreseen) of vulnerability patterns. (Schmidt-Thome, Philipp, Geological Survey of Finland)	OK, done. Statements are included, but the main reasons of risk growing are the increase in vulnerability and exposure and the lack of governance
8	2	0	0	0	0	This chapter is generally well written, and contains many useful references to the literature. Some statements that I found on either historic/projected changes in hazards or impacts are problematic. The first should rather be included in Chapter 3, and the latter properly referenced. See for details below. (Bouwer, Laurens, Institute for Environmental Studies)	One of the titles defined in advance is related to trends and some statements are unavoidable related
9	2	0	0	0	0	I am finding this Chapter too descriptive with too many definitions. As presented this text may be more confusing than helpful. The presentation is completely missing to provide guidance on how to assess the vulnerability. For example, PVI is just presented as an illustration. Why we do not have complete methodology here? This is the chapter where the risk communication discussion (see my comments on Chapter 1) should take place (include work by Leiss, 2001). I am also missing clear indication of dynamic character of climate change risk and vulnerability. This dynamic character (long term slow process) involves natural adaptation occurring over time (Simonovic, Slobodan, University of Western Ontario)	Definitions have been reduced, but explanations and disaggregations have been maintained because the chapter is mainly conceptual. PVI is an good example of integrated evaluation of vulnerability but there are other approaches.
10	2	0	0	0	0	This chapter is written coincide to it's importance and needs very minimum corrections. (Saad-Hussein, Amal, National Research Centre)	OK
11	2	0	0	0	0	"Needs" might comprise the critical methods to get benefit of the disaster; how to get rid of malicious elements, before and after impact. Orientation of the chapter might be oriented to "Quality of Life" rather than "Well Being". (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	One of the objectives of the chapter is to illustrate that that risk is a problem of development
12	2	0	0	0	0	Chapter 2: The introductory section should make a reference to that part of Chapter 1 (currently Section 1.1.3) where alternative uses of key concepts, such as vulnerability, are discussed. (Fuessel, Hans-Martin, European Environment Agency)	OK, done, the definitions were made accordingly with Chapter 1
13	2	0	0	0	0	With 25 cited publications (alone Cardona 20, plus several co-authored publications), the coordinating lead author unreasonably emphasizes own literature and ignores original work (Weichselgartner, Juergen, GKSS Research Center)	He is one of the main authors with the view of South from middle 1980's The references are not included only by the CLA, but many other lead authors and from other references
14	2	0	0	0	0	Chapter 1: Climate Change: New Dimensions in Disaster Risk, Exposure, Vulnerability, and Resilience Chapter 2 Determinants of Risk: Exposure and Vulnerability According to Chapter 1's title, the aim of the Chapter is to determine or measure disaster risk exposure, vulnerability and resilience scopes; in other words, to discuss the dimension or extent of disaster risk, exposure, vulnerability and resilience that may be most relevant or functional for climate change adaptation; and chapter 2 aims to comprehend risk causes based on exposure and vulnerability Then, the idea is to improve the relationship between disaster risks and climate change adaptation: Basically, the necessary and important free flow, between these two chapters; still need a great degree of intense work. of intense work. (Mata, Luis Jose, IMF)	OK, done, an important discussion and coordination has been made with Chapter 1.
15	2	0	0	0	0	It is necessary to maintain inside the whole chapter, focus and criteria that it are wanted to assume for the authors. In other words, in spite of presenting a definition or other authors' concept, presenting vision or position of the authors ( Panel ) on each definition or concept recommends itself always. (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology, meteorology and environmental studies))	Different views are needed and addressed but to give a flow to the Chapter it is important to have agreed definitions

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16	2	0	0	0	0	The units in a mathematical expression or concept should verify like a way of holding consistency themselves. With regard to this matter, if risk is a loss, such condition should be guaranteed. Seeing the comment number 1. (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology , meteorology and environmental studies))	Risk is more the latency (probability) of loss not the loss itself
17	2	0	0	0	0	They see a great quantity of concepts better exposed with examples of practical application. It is been advised to take into account the evaluation of the achieved vulnerability for the IDEAM ( Institute of hydrology, meteorology and environmental studies ). IDEAM & MAVDT. 2010. Segunda comunicación nacional de la República de Colombia ante la Convención Marco de las Naciones Unidas. Capítulo 4. PNUD, GEF y MAVDT. Bogotá: Ideam. 447 p. See: <a href="http://www.cambioclimatico.gov.co/segunda-comunicacion.html">http://www.cambioclimatico.gov.co/segunda-comunicacion.html</a> (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology , meteorology and environmental studies))	This chapter is mainly conceptual and the instruction is to avoid the grey literature if it is possible
18	2	0	0	0	0	This chapter is extremely frustrating because it falls into all of the traps that the authors of chapter one of this SREX avoided by their establishment of clear definitions of the concepts related to risk, hazard, exposure and vulnerability. By trying to be diplomatic (i.e. assuaging the diverse and incongruous voices of the literature) and seemingly trying to meld the diverse uses of the conceptual terminology in this chapter, it seems that the authors serve only to confuse the reader. As opposed to the first chapter of this special report, chapter 2 simply leaves me with the conclusion that there are so many competing and contradictory definitions to many of the terms (vulnerability, coping, exposure and risk) that the scholarship is essentially driven by the data that are available and the terms are simply jargon that represents what the research has. Instead of trying to find ways to make all of the term definitions equivalent, it seems that the text should reflect the "right" definition of the terms. For years scholars have been giving their own meaning to each of these terms and they've been talking past each other (risk is not = risk is not = risk -- see chapter one of this volume). Is vulnerability (whether it's a condition a characteristic or a measure of propensity) referring to the same thing as vulnerabilities? Is hazard always used to describe the geophysical/technological/social event that generates a disaster? Is hazard always a probability? The text of this chapter gives me the impression that the scholarship is harmonious, when clearly it is not. I cannot imagine a non-expert garnering anything but confusion from this discussion and this is only because the scholarship is not really of the single voice that the authors seem to have made it. (Tiefenbacher, John, Texas State University )	It is necessary to make referece to different views but to maintain the flow some definitions have been agreed for all chapters. There are several views but many are describing similar perspectives
19	2	0	0	0	0	Chapter 2. This is a very important chapter with a lot of very good ideas and materials. Yet, it requires some strengthening. Definitions and the use of concepts vary throughtout the chapter and further differ from chapter 1. Some sections may be integrated to avoid some redundancies. There is also a lot of typos, formatting and referencing problems. (Gaillard, JC, The University of Auckland)	OK, done, an important discussion and coordination has been made with Chapter 1.
20	2	0	0	0	0	The focus on vulnerability and exposure further expands on Chapter 1, but lacks depth in comparison to the first Chapter. For example, vulnerability assessment should bot be limited to "who" are vulnerable and "where"(typology and exposure). This should also look at causal factors of vulnerability. Poverty alone is not the cause of vulnerability- there are other causal factors and drivers of risk. Some driveres are not even local, i.e. food insecurity due to market disfunction and economic failures. (Jegillos, Sanny, UNDP)	OK, done, an important discussion and coordination has been made with Chapter 1. Causal issues or factors of vulnerability have been addressed
21	2	0	0	0	0	Above comment re drivers and root causes of vulnerability could be more explicitly discussed in ch 2, e.g., in section 2.5 (Glavovic, Bruce, Massey University)	OK, done, the explanations and disaggregations of concepts have been understood unfortunateluy as repetitions or new definitios for some reviewers
22	2	0	0	0	0	Chapter 2 on Determinants of Risk was quite different than what I had expected. Unfortunately, the topic lies outside of my working expertise and, therefore, I do not have suggestions for improvement. It is seems to be comprehensive and is certainly interesting but I wonder how it will be received by policy makers. I found it to be very technical and complex, and the central messages were not readily clear. I'm not sure how to fix that problem in the time I have available. (Naiman, Robert J, University of Washington)	OK, certainly it is not trivial. We are making our better effort to be clear for any audience
23	2	0	0	0	0	you might want to consider reports from the EU FP7 project Caphaz-Net ( <a href="http://www.caphaz-net.org">www.caphaz-net.org</a> ); reports on vulnerability will be Online by end of October (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	Indeed, the better is to make reference to the papers issued from the projects, because there is an instruction to avoid grey literature
24	2	0	0	0	0	you might want to consider a report by the Swiss National Platform PLANAT available at: <a href="http://www.planat.ch/ressources/planat_product_de_1111.pdf">http://www.planat.ch/ressources/planat_product_de_1111.pdf</a> although most reference regard structural aspects of vulnerability or damage susceptibility. However, you will find references. (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	Lead authors have several references and not always it is possible to include all we have and a selection of the main has been done
25	2	0	0	0	0	you might want to consider a paper on the implementation of the risk concept in practice in Switzerland: Bründl, M., Romang, H., Bischof, N., and Rheinberger, Ch. 2009. The Risk Concept and Its Application in Natural Hazard Risk Management in Switzerland. Natural Hazards and Earth System Sciences, 9(3): 801-813 (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	Lead authors have several references and not always it is possible to include all we have and a selection of the main has been done
26	2	0	0	0	0	Construction of risk and disaster. (Kuhlicke, Christian, Helmholtz Centre for Environmental Research - UFZ)	Yes, social construction of risk and disaster is a key message of the Chapter

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27	2	0	0	0	0	Again, the literatur on risk perction is hardly taken into account. A more thorough analysis appears necessary (Kuhlicke, Christian, Helmholtz Centre for Environmental Research - UFZ)	OK, done. I new version of risk communication section has been done
28	2	0	0	0	0	A more thorough analysis of the literatur on risk perception and communication is neccessary. An extensive literature reviews was conducted in the EU-funded FP7 project CapHaz-Net. Please find the report on www.caphaz-net.org (Kuhlicke, Christian, Helmholtz Centre for Environmental Research - UFZ)	OK, done. I new version of risk communication section has been done
29	2	0	0	0	0	Some of the authors excessively quote their own articles and book chapters. They are surely of great importance. This would be no problem if other highly relevant literature on certain topics (see comments above) would have been equally considered. (Kuhlicke, Christian, Helmholtz Centre for Environmental Research - UFZ)	Some are the main authors with the view of South that have been very important in the literature of DRM
30	2	0	0	0	0	Some relevant references e la Fuente, Alejandro, and Ricardo Fuentes, "The Impact of Natural Disasters on Children Morbidity in Rural Mexico: " background paper HDR 2007-08 (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	Lead authors have several references and not always it is possible to include all we have and a selection of the main has been done
31	2	0	0	0	0	"Politicians in donor and recipient countries are often more willing to provide and receive relief aid than to invest in disaster reduction activities. These aligned incentives on the part of donors and recipients give rise to a tragic case of moral hazard, and in some instances to a perception of opportunistic behaviour on the part of relief agencies. As a result, disaster relief will have a propensity to be overzealously funded while disaster risk reduction will remain the poor cousin in development cooperation."Links between Natural Disasters, Humanitarian Assistance and Disaster Risk Reduction: A Critical Perspective, PApa Sek, HDR 2007-08 background paper (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	Yes, this is an interesting statement that can be important to address in the Chapters 5,6 or 7
32	2	0	0	0	0	The chapter will be highly improved if it were to take into account the literature produced by UNDP on Human Development, and in particular several of the definitions of the interrelations between development, inequality and climate change offered in the Human Development Report 2007-8,HDR Fighting climate change: Human solidarity in a divided world. Climate change is one of the most important human development challenge of the 21st Century. The poorest countries and most vulnerable citizens will suffer the earliest and most damaging setbacks, even though they have contributed least to the problem. The Human Development Report 2007/2008 shows that climate change is not just a future scenario. Increased exposure to droughts, floods and storms is already destroying opportunity and reinforcing inequality. There is a window of opportunity for avoiding the most damaging climate change impacts. Actions taken—or not taken—in the years ahead will have bearing on the future course of human development. As the Human Development Report 2007/2008 argues, climate change poses challenges at many levels. In a divided but ecologically interdependent world, it challenges all people to reflect upon how we manage the environment of the one thing that we share in common: planet Earth. It challenges us to reflect on social justice and human rights across countries and generations. It challenges political leaders and people in rich nations to acknowledge their historic responsibility for the problem, and to initiate deep and early cuts in greenhouse gas emissions. Above all, it challenges the entire human community to undertake prompt and strong collective action based on shared values and a shared vision. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	Yes, it is clear and we are makin emphasis in this. W are trying to ilustrate how vulnerability and risk are problems of development and sustainability
33	2	0	0	0	0	Chapter 2 includes a lot of useful materials; however it lacks structure, organization, formal definitions, and a formal PRA framework. It lacks appropriate sources and does not include risk analysts among the contributing authors to ensure accuracy and completeness. A disconnect exists between Chapter 1 coverage of risk and the content of this Chapter 2. I thought that Chapter 1 has set the grounds for using PRA, and then Chapter 2 proceeded to cover it in a disorderly manner without drawing on key sources in the field. I recommend a complete rewrite of Chapter 2. It should start by a PRA framework that is suitable for the problem at hand, followed by sections corresponding to all the PRA steps as presented in the framework. Examples frameworks are provided by Ayyub (2003) Ayyub, B.M., Risk Analysis in Engineering and Economics, Chapman & Hall/CRC Press, 2003. (Ayyub, Bilal, University of Maryland)	OK, done, the definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions. Unfortunately, the structure is defined in advance and the lead authors of the chapter can not change it.
34	2	0	0	0	0	Capacity and capacity assessment should be accommodated in the discussion of risk assessment. (Abrahamsj, Jonathan, World Health Organization)	Ok, done. It has been included in the section of coping and adaptation capacities. The PVI was included to illustrate how to measure not only vulnerability but resilience and capacities
35	2	0	0	0	0	While I am not an expert in social science aspects, I have the feeling that there is a lot of overlap between chapters 1 and 2. There could be ample cross references. Even a merging of the two chapters could be considered, probably merging chapter 1 into chapter 2. (Ulbrich, Uwe, Freie Universitaet Berlin)	OK, done, the definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions. Unfortunately, we can not change the structure of chapters and sections of the chapters because they were defined in advance
36	2	0	0	0	0	This is a very complete overview of some of the hard conceptual issues and a good list of all the systems that interact (and must be taken into account) (Longstaff, Pat, Syracuse University)	OK
37	2	0	0	0	0	Ecosystems: wetlands? (Cisse, Gueladio, Swiss Tropical and Public Health Institute)	ecosystems addressed in 2.5, more specifics to be addressed in chapter 4

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38	2	0	0	0	0	Health and Well-Being: Schistosomiasis and Malaria? (Cisse, Gueladio, Swiss Tropical and Public Health Institute)	more on health included in 2.5/2.7, but focused on context of extremes
39	2	0	0	0	0	Comments – Chapter 2 Determinants of Risk: Exposure and Vulnerability General: 1. The text is too repetitive; some concepts/definitions are given repeatedly; some points are made several times – the whole text needs drawing together. 2. The text needs careful editing with regard to spelling and grammar but also content, some sentences make no sense or are simply wrong (e.g. “risk can be reduced through vulnerability” – what is that supposed to mean?) 3. The general structure is odd. E.g. why is capacity not integrated into the risk/vulnerability equation the first time this is explained rather than taking the point up again later and only integrating it then; why are coping and adaptive capacity only explained on pages 14/15 when they should have been defined two pages earlier? 4. Both structure and style make this difficult to read; in places it is very difficult to understand what is meant. 5. The reference section is incomplete, not all sources cited are listed. 6. One of the goals of this report is stated as: “...bridging the gap between the disaster risk management and climate change communities as regards conceptions, objectives and approaches to managing risk, including development of a concerted multi- and interdisciplinary approach useful to both.” This is not apparent in either structure or content of chapter 2 – on the contrary, the sections hop around between disaster management and climate change (with a main focus from the traditional natural hazards paradigm) without serious attempts at integration or ‘bridging the gap’. 7. The structure is misleading by claiming a separate section for the social dimensions of exposure and vulnerability and then only having sub-sections on education and health & well-being in that section. Even though the introduction to the section (2.5.4) makes this point there should be greater acknowledgement of the importance and multi-faceted character of the social dimensions. Again, this implies a focus on the natural hazards paradigm. 8. The text is very, very repetitive (probably because of multiple authorship). (O’Keefe, Phil, Northumbria University)	OK, improvements have been made. The definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions. Unfortunately, we can not change the structure of chapters and sections of the chapters because they were defined in advance.
40	2	0	0	0	0	Specific: Section/Page/Line Comment 2.3.3/11/4 “vulnerability signifies a lack or deficit of sustainability” – Of course, there can be a link between lack of sustainability and the vulnerability of the community but this does not necessarily have to be true (communities can be sustainable and still highly vulnerable). 2.3.3/11/10-12 This is formulated as an original conclusion...it is not, so would need references. 2.4.1/13/44-46 This makes the point I noted the other day (that vulnerability is too negative, doesn’t include capacity, etc.). Why does this point need to be made here when the whole text should address exactly that through the content and structure of the chapter from the outset? 2.4.2/15/36-37 ‘capacity diminishes in communities/locations where recurrent hazards occur’ – again, this may be the case but does not necessarily have to be so. The text quotes Greg Bankoff elsewhere, so the authors should be familiar with his ‘cultures of disaster-cultures of coping’ argument where recurrent extreme events lead to integration of disaster into normalcy and to the development of highly specific (and effective) adaptations. This goes hand-in-hand with the sustainability point above. 2.4.3 Very clear section (and easy to read after the earlier tosh) 2.4.4 ‘From capacity to action.’ This section should be longer. There must be more literature than is cited here (again, Bankoff comes to mind for examples on ‘history of adaptations taking place across time and space’). This is an important section if we are looking for workable solutions and should be expanded considerably. 2.5 Good section as an introduction to the dimensions of vulnerability 2.5/20/26-29 Former and latter used the wrong way around (I know, it’s nitpicking and should be picked up in the final edit of the text anyway...just adds to the confusion in reading it at the moment) 2.5.1 Good and needs only minor revision/editing 2.5.2 & 2.5.3 Both good, particularly 2.5.3 – the other authors should write like this (clearly structured, clearly formulated and explaining specific terms) 2.5.4.1 The education section is too focused on school building damage/construction, which is not necessarily a social issue; there is too little mention of access to education and the importance of access to information and knowledge (there must be an expansive literature on those issues, why is it not used?) 2.5.4.2 Similar to education, the health section is lacking...many things; it does not state what health impacts it is referring to and there is no real content; most of the space is taken up by highly specific examples (which are relevant but need to back up textual content – they are not useful as standalone text) 2.5.5 Good & clear section; needs some revision as it is obviously not quite finished; however, I’m not sure that the examples (lines 19-33) can really be classed as cultural 2.5.6 OK ish; agree with you Phil that Twigg’s ‘characteristics’ need to be clearer/more expansive; the whole section should be longer – there are many more points to be made with regard to institutions and governance 2.5.7 Section not finished 2.5.7.1 Good & clear 2.5.8 Needs editing (bit clumsy in formulation and structure) – otherwise mainly fine; lines 24-27 (p 31) need to be deleted as repeated in lines 38-41; the	OK, improvements have been made in several issues pointed out. The definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions.

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40.2	2	0	0	0	0	Padang study (p 30 line 52 to p 31 line 12) is a bit lengthy as an example and should also be pulled together in one paragraph (not two) 2.5.9 The section on spatial and functional scales is a bit murky and should include examples and be broken up into paragraphs to make it clearer Box 2-2 p 32 Ah, the box is actually there; I just didn't see it when first scanning the text, which is not surprising as it's really short; this could be a bit longer and give some of the examples it refers to 2.6.1 (introduction) Apart from the first paragraph, this section repeats a lot of points that we already know from earlier sections; it needs to concentrate more on vulnerability profiles and on introducing section 2.6 rather than defining the term vulnerability again (even if slightly differently...); furthermore, I think the difficulties and problems with vulnerability profiling should be discussed and it should be pointed out that the following subsections are indicative and by no means exhaustive in their discussion of vulnerability profiles with regard to factors, indicators, etc. (otherwise there is a danger that readers think they know how to do a vulnerability profile and what needs to be included) – what is the objective of this section?? 2.6.2 Reference-poor – relies too heavily on FAO; otherwise not too bad 2.6.3 Wahey, yet another definition of vulnerability...the first sentence can be deleted (we know by now what vulnerability is!) otherwise I really like this section (well structured and written); however, it desperately needs more references and I'm not quite sure what it has to do with vulnerability profiles... 2.6.4 Not finished 2.6.5 Not finished 2.6.6 Not bad overall but lacking references; this discusses some of the problems of vulnerability profiling in practice (which should have been done in the introduction to the section, not in one of the sub-sections); Box 2-3 is useful as not too prescriptive but providing a good example of (albeit environmental) profiling 2.6.7 Not very well written and lacking references; too focused on critical infrastructure considering the general heading 'industry and settlements' 2.7.1 Not too bad but, again, reference-poor; the first sentence in paragraph 3 is not strictly necessary as we have already heard of the 'dynamic nature of exposure and vulnerability' several times 2.7.2.2 First sentence needs a reference; needs slight editing but otherwise very good 2.7.3 Does not address the key issue that people choose risk environments because they judge the benefits outweigh the risk and therefore comes over as deterministic. 2.7.4 Poverty is central to DRR mainstreaming where the effort should start from poverty alleviation rather than risk assessment. UNLESS THIS IS THE CORE MESSAGE, DRR MAINSTREAMING WILL FAIL. 2.7.5 The social dimensions are poorly expressed and reflect an engineering perspective. Yes demographics are important not least because, even if the MDGs are achieved, demographic change will mean there is at least another 1.5 billion people on under US \$ per day. UNICEF would not enjoy the down playing of education. The health and well being is very narrowly constructed. 2.7.6 Again a narrow focus 2.7.7/ 8 Better addressed in other chapters 2.8/2.9 Again, rather like 2.7, these sections seem to be by a different writer. In general, they read accurately but in emphasising risk assessment lose sight of the vulnerability argument. The boxes detract as they are packed into the last two pages. On overall reflection, the confusion is not just because of multiple authorship but because of differing interpretations of vulnerability. Exposure is not really addressed and risk assessment is confused with vulnerability analysis. The chapter needs to focus on the value of vulnerability analysis to mainstreaming DRR. Phil O'Keefe (O'Keefe, Phil, Northumbria University)	
41	2	1	1	1	21	Inconsistency between chapter heading and section heading - the word hazard is mentioned in the latter (Kumar, Ritesh, Wetlands International - South Asia)	Unfortunately, we can not change the structure of chapters and sections of the chapters because they were defined in advance.
42	2	1	0	83	0	included in the commentaire to Chapter 1 (Greminger, Peter, Federal Office for Environment)	chapter 1-2 coordination has been improved
43	2	1	0	0	0	Somewhere in this chapter, it needs to be made clear that the broad definition of disasters includes some events (e.g. earthquakes) which are not climate-related and thus fall outside IPCC's domain. (Trewin, Blair, Australian Bureau of Meteorology)	DRM is broader than CCA. Then in some cases definitions or comments are related to all kind of disasters although the focus of the Chapter is CCA in the context of DRM
44	2	2	39	0	0	Executive Summary: Many statements in the Executive Summary appear rather vague and methodological. Can they be made more specific? (Fuessel, Hans-Martin, European Environment Agency)	We have tried to address this remark by rephrasing several of the findings in the executive summary. Some aspects of this chapter are methodological however, and part of the quantitative underpinning of dimensions and trends in vulnerability and exposure that are laid out in this chapter will only be provided in chapter 4 (mainly on global and regional scale) or in the management chapters (for specific applications).
45	2	2	41	3	27	The Executive summary is written in a very clear style and seems to be very helpful. However, it is noted that subchapters 2.9 related to risk accumulation and the Nature of Disasters and 2.10 (research gaps) are not reflected in the executive summary. Given the relevance of both topics the authors are kindly requested to close those gaps in the executive summary. (Radunsky, KLaus, Umweltbundesamt GmbH)	We have included key messages from both sections in the revised executive summary
46	2	2	45	2	49	These definitions are slightly different from those introduced in chapter 1. The same comment also applies to later uses of concepts. (Gaillard, JC, The University of Auckland)	We have tried to address this; the current terminology should be consistent.

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47	2	2	51	53	2	This one is probably one of the best chapters of the document. I found it coherent taking into account the complexity of it's subject... Once again I think that in some points could be good to be humble about the "non stationarity" of the conceptual framework that we are using (Linayo, Alejandro, Research Center on Disaster Risk Reduction CIGIR)	Thanks -- changing conceptual framing now explicitly mentioned in 2.2.
48	2	3	2	3	2	It could be considered to exchange the word "partly" with "mainly". (Schmidt-Thome, Philipp, Geological Survey of Finland)	Whether it is "partly" or "mainly" depends on the specific risk at hand, and also on what is included in the "the approaches taken in dealing with hazards and change", namely if this includes non-action rather than only planned approaches. We have rephrased to avoid the risk of too general interpretation of the word "partly" which may indeed be signaling too weak an influence.
49	2	3	7	3	10	This paragraph should also refer to the distribution of power within the society. (Gaillard, JC, The University of Auckland)	we believe this is partly captured by "institutional and governance dimensions" -- distribution of power in society is also addressed in earlier points which point to the differentiated nature of vulnerability, including by issues such as wealth, gender, race, caste, etc. (specific mention of distribution of power within society may be interpreted as focus solely on local level -- at aggregate levels this seems better captured by governance). (this para is specifically about trends -- difficult to point to secular trends in power relationships in society other than by shifts in institutional or governance)
50	2	3	12	3	15	Also suggest that climate change can result in increased exposure or in new areas exposed (e.g., changes in SLR (Street, Roger B, UK Climate Impacts Programme))	The SLR-exposure connection relates to increased exposure due to the changes in hazards (SLR is discussed in SREX in the context of high sea level events, which are discussed in chapter 3). The point of this paragraph is to point specifically at the indirect effects (e.g. SLR leading to salinization in rural coastal areas, people migrating to informal settlements around urban centres in search of other livelihoods, and then being exposed and vulnerable to urban flooding). The latter aspect is now hopefully better captured through the slightly expanded list of elements.
51	2	3	12	3	15	Consider rephrasing "Climate change has the potential to affect...", consistent with the conclusions of Chapters 3 and 4. Climate change is already linked to changes in the frequency and intensity of some extremes, and in vulnerability and exposure in some areas. (IPCC WGII TSU)	Have rephrased. Have used same language as chapter 3 in terms of changes plus included confidence language (mainly based on AR4 information; may eventually need further references in 2.7)
52	2	3	18	3	23	Participatory vulnerability and capacity analysis, instead of top-down/academic approaches, should be highlighted here. (Kull, Daniel, International Federation of Red Cross and Red Crescent Societies (IFRC))	we have added a sentence here, and more references in the methods section later.
53	2	3	25	2	27	This links to the previous comment on lines 18-23 of page 3: it should be highlighted that participatory vulnerability and capacity analysis is a key vehicle to facilitate this up-down information flow, for example an avenue to bring scientific information to communities, and to compile community information for upstream decision-making. It might be interesting for the authors to look at the discussions on community-based risk assessment at the recent Understanding Risk conference. (Kull, Daniel, International Federation of Red Cross and Red Crescent Societies (IFRC))	the suggestion has been inserted
54	2	3	25	3	27	Another impediment is limited experience of and understanding how to incorporate changing baselines for exposure and vulnerabilities into risk management. (IPCC WGII TSU)	good point, has been added



No	Ch	From Page	From Line	To Page	To Line	Comment	Response
55	2	3	32	3	41	When mentioning "many adaptation efforts.." in line 32, examples should be given. I suspect it is not so much that many efforts take into account the potential changes but rather that many discourses do so. In a 2009 study we did in Central America of more than 65 interventions that went under the name of climate change adaptation we found almost all dealt with already existing changed climate contexts, but few looked at and dealt with "potential change in frequency and intensity.." Moreover, I would tend to broaden the mention of extreme events to include other potentially damaging events of smaller size so as to be consistent with the view that disaster is not only about extreme events but also many times more relevantly about extreme exposure and extreme vulnerability. Seems somewhat contradictory to start the chapter emphasising only extreme events when the whole chapter is on exposure and vulnerability as causal contributors to risk. In line 37, I would include the 2009 GAR report from UNISDR as this makes out , even if somewhat discussably, that a good part of the increase in risk over the last decades is due to increased exposure and that vulnerability has in fact dropped in many cases and places. Line 41- I would tend to use the notion of disaster risk reduction as opposed to risk reduction on its own. This applies throughout this study. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	we feel adding examples here may be a bit much given that this is an introductory section. It is true that many of the interventions labeled climate change adaptation actually address current risks only, but they are still initiated with the objective to address potentially changing risks. We have rephrased so say "aim to address" instead of "address". In addition, we have explicitly unpacked the notion of "extreme events" (the notion of smaller -size events leading to dramatic impacts is discussed later). We have added the UNISDR GAR reference, and now say "changes" instead of "trends" in V&E-- it's certainly not linear and definitely not linearly upwards on both fronts. We've added "disaster" to "risk reduction".
56	2	3	32	3	41	excellent, and essential first paragraph. It states the pivotal point of the entire SREX very well. (Jeggle, Terry, University of Pittsburgh)	OK
57	2	3	32	3	54	The first two paragraphs could be exchanged (put the second one first). Improved risk management on extreme events is currently lacking in many parts of the world that experience disasters, including rich countries in Europe. (Schmidt-Thome, Philipp, Geological Survey of Finland)	something to say for both orders (see previous comment); we've left it as is.
58	2	3	32	0	0	'address the implications of potential changes in the frequency and intensity of extreme events' -> and location? (Thalmann, Philippe, EPFL Swiss Federal Institute of Technology Lausanne)	true, changes in two locations may mean a change of the risk of the event from one location to the other. However, we've adopted ch3 language (and for that reason actually added "duration" rather than "location"). The issue of location is addressed in the exposure dimension, and quantitatively in chapter 4.
59	2	3	35	3	37	Should be said that for the past and little warming exposure and vulnerability have been stronger drivers of impacts , with projected strong warming things would likely look different. (Mechler, Reinhard, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	good point, now added
60	2	3	36	3	39	I would suggest that it is not just trends in risk, but changes in risk. I would also also suggest that changes in exposure and vulnerability can be either positive and negative. Is a proper assessment of trends in thosed dimension sufficient or would projections/scenarios of change be more informative? (Street, Roger B, UK Climate Impacts Programme)	true, have modified accordingly
61	2	3	36	3	51	Are the points raised in lines 35-37 consistent with that raised in line 52 (Street, Roger B, UK Climate Impacts Programme)	the response to comment 59 may partly help address this. Also, lines 35-37 mainly make the point that changes in V&E are probably more important than changes in climate as drivers of chagnes in risk. That does not mean that changes in climate are insignificant, so line 52 can also be true at the same time.
62	2	3	43	4	2	This paragrah requires editing as it starts with a discussion of the difficulties of influencing development parameters in general, but then takes up somewhat abruptly on information, transparency, the public sphere and public goods which are all of course important but seem here to just pop up in detriment to many other particular things that could also be mentioned. If emphasis is to be placed here on these aspects maybe best to do it in a separate paragraph following on from the general statement on the difficulties of tackling development based causes of risk. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	section now split in two
63	2	3	47	3	47	... clarifying and communicating the risks ... (Jeggle, Terry, University of Pittsburgh)	done
64	2	3	48	3	49	Can vulnerability (in the DRM sense of susceptibility to damage) to be increasing throughout said to be true and be supported by one reference only? The literature (such as the Global Assessment Report) shows that is rather exposure and risks increasing, and vulnerabilities have and can be reduced. Also, ch.4, p.4 line 4 considers vulnerability to be "fairly stable". (Mechler, Reinhard, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	to be done
65	2	4	1	4	1	Need to be clearer as to which issues are to be explored? (Street, Roger B, UK Climate Impacts Programme)	done (rephrase as "risk management challenges")

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
66	2	4	4	4	13	I am not sure we can talk of "conceptual determinants of risk" in line 4 but rather "concepts that help to define and understand risk" I dont thing concepts determine things as causal processes although they may "cause" or justify the types of intervention applied. Also I dont see coping and adaptive capacities as being "determinants of risk". Rather, they are limitations to the operation of risk and the development of furhter adverse effects. Coping is a way of dealing with disaster or crisis and adaptive capacities are a means for achieving adaptation when faced with new risk. We must I feel distinguish between primary causal factors and the act of limiting or controlling, getting on top or overcoming something etc. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	done
67	2	4	16	12	9	Sections 2.2 and 2.3 have a great deal of very important analysis and information but are rather too overloaded, and also rather too short on detail and repetitive at times. The sections tend to distract from the central themes indicated in their titles or subtitles at times. The sections are biased towards vulnerability whilst hazard and exposure are much less well covered. If section 2.2 talks of three determinants of risk should there not be three following sub sections one on each topic, and not just one on vulnerability factors? Overall, a good editing and shortening of these two sections is required from my perspective. This is also required with the chapter as a whole which, which, whilst being asked to taking on a great deal, is maybe somewhat too long as it is now for easy consumption, repetitive on various occasions and variable in terms of the level of analysis and depth of information provided in its different parts. As yet the different perspectives and detail provided by different authors has not been woven into an homogenous story tale. Some authors go into great detail on one aspect and others just say that such and such was studied but give no more factual or substantive information. This problem of homogenization of the levels of analysis section by section, chapter by chapter, author by author has to be dealt with by some general editing mechanism throughout the study. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, improvements have been made. The definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions.
68	2	4	16	0	0	The notion of disturbance (see among others: Gunderson, L., Folke, C. 2004. Of thresholds, invasions, and regime shifts. Ecology and Society 9(2): 15. [online] URL: <a href="http://www.ecologyandsociety.org/vol9/iss2/art15/">http://www.ecologyandsociety.org/vol9/iss2/art15/</a> , should also be discussed as well as the concepts of hysteresis (Hysteresis is a situation "where one-time disturbances permanently affect the path of the economy." (Romer Advanced Macroeconomics, 2001, page 471) and of elasticity, as they apply to human systems and socioeconomic analysis (See Environment and Development Economics (1998), 3:2:221-262 Cambridge University Press Copyright © 1998 Cambridge University Press, Resilience in natural and socioeconomic systems (SIMON A. LEVIN et al) (Zapata-Marti, Ricardo, United Nations Economic Commission for Latin America and the Caribbean (ECLAC))	This chapter make special emphasis in vulneability and exposure. Disturbance is more related to hazards and can be useful mainly in Chapters 3 and 4
69	2	4	18	4	20	It is problematic to cite only one definition of risk when many different definitions are used in practice. For example, Villagran (2006, pp. 9-10, <a href="http://www.ehs.unu.edu/file/get/3904">http://www.ehs.unu.edu/file/get/3904</a> ) quote 8 different formal definitions or risk. (Fuessel, Hans-Martin, European Environment Agency)	Risk is a polysemic word and there are many approaches and references. Improvements have been made. The definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions.
70	2	4	18	4	29	Reference to UNISDR in line 20 should be UNISDR 2009a not 2009b I think as it is the first mention of an ISDR publication in the chapter and both mentioned are 2009 anyway. Lines 25 to 29 dealing with DRM seem to be unnecessary here and out of place. There are more recent references that could be quoted from Lavell on latency of risk and hazard and risk prevention, but much of this and other arguments we have put forward in the ICSU-LAC STUDY WHICH IS QUOTED OFTEN IN THIS CHAPTER SO MAYBE WE CAN JUST USE THAT AS A COMMON SOURCE OF ARGUMENT AS TO LATENCY AND RISK. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, corrections made accordingly
71	2	4	18	6	22	The section is also purportedly on exposure but there is very little on this and most is on vulnerability and hazard. On the other hand, the text tends to take up on topics that dont necessarily fit here as yet--disaster as such and disaster risk management, for example. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, the section has beenn reduced
72	2	4	26	4	26	that searches "to predict, control and reduce ..." is more logical. I do think that the use of "predict" assumes an overly precise capability of foresight, and that either "forecast" or anticipate" would be a preferred and more accurate word choice. (Jeggle, Terry, University of Pittsburgh)	OK, corrections made accordingly
73	2	4	31	4	33	Somewhere it may be worth noting that some disasters (e.g. hailstorms) have limited human impact but very large financial costs. (Trewin, Blair, Australian Bureau of Meteorology)	OK, done
74	2	4	31	4	37	it is necessary that these definitions - as well as others to follow - are consistent and compatible with concepts, definitions or discussions already presented in Chapter 1, as (for "disaster") those on page 19, lines 13-27. (Jeggle, Terry, University of Pittsburgh)	OK, done, the definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions.



No	Ch	From Page	From Line	To Page	To Line	Comment	Response
75	2	4	31	4	43	Seeing as the section is on risk and its causal factors and not disaster as such, I would eliminate this paragraph or change its text to put the emphasis on risk not disaster. Thus, one could talk of the fact that risk may be associated with differing levels of potential loss and damage and that these may at times reach the level of a catastrophe or at others the level of a small disaster; or that risk may be seen as a continuum in constant evolution and where dealing with it requires different tactics and instruments at different times. That is to say, I would avoid the abrupt introduction of a discussion on disaster and make it more consequent with the section title on risk, vulnerability and exposure which are all prior to, even if they announce future disaster. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, corrections made accordingly
76	2	4	45	4	50	Here the notion of hazard is introduced for the first time and defined generally. But when mentioning types of hazard--natural, socionatural and technological-- it is necessary once and for all to define these, going beyond the preliminary skeleton definitions that are in chapter 1. At the end of the paragraph, natural hazards are defined, but socionatural and technological are not, so there is an imbalance here, even though socionatural hazard is defined later on in the text. Also again, to define hazard only in terms of extreme events is contradictory with the idea that extreme exposure and vulnerability can convert lower level events into hazards of great significance. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Ok, done
77	2	4	48	4	48	May be worth adding the speed of onset of the hazardous phenomenon. (Gaillard, JC, The University of Auckland)	OK, done
78	2	4	53	4	53	Here hazard is described as the event itself whereas the major line of argument put forward earlier is that hazard is the latent threat and not the event as such. This one is going to be difficult to resolve as the debate still goes on as to whether we use hazard to depict the event itself or its associated latent threat. In chapter 1 it is defined as latent threat not the event itself following the argument that if hazard is part of the definition and formula for risk ( $R=h.v$ , for example), and risk is latent, then obviously hazard is latent as well, as opposed to being a consummated reality, in the same way as vulnerability, seen as a factor of risk, is a latent "predictor" of future damage and loss. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, done
79	2	4	0	12	0	Much of this essentially repeats what is in chapter 1 in a different way. Work with chapter 1 to make both discussion more succinct and less repetitive. (Wuebbles, Donald, University of Illinois)	OK, done, the definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions.
80	2	4	0	19	0	Having struggled (as more of a physical scientist) to fully understand all the nuances of the rather theoretical and conceptual discussion in Chapter 1, I found it rather hard to determine whether or not some of the Chapter 2 material is repetitive of Chapter 1, or rather provides more specific definitions and interpretations. Although Chapter 1 includes resilience in the title and Chapter 2 does not, there seems to be more discussion of resilience in Chapter 2. (Goodess, Clare, Climatic Research Unit)	OK, done, the definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions. However in some cases Chapter 2 is disaggregating or enhancing the concepts with more details and explanations
81	2	4	0	0	0	The concept of hazards should also include biological hazards. (Abrahamsj, Jonathan, World Health Organization)	Ok, done
82	2	5	2	5	4	The notion of impacts, when dealing differentially with natural and human systems, must be clarified and specified I believe. A hurricane that impacts a natural ecosystem and leads to change in that system--loss of vegetation, fauna, etc can not really be considered as an "adverse effect" in the same way as loss of livelihoods and human life when faced with the same event. Rather, it is part of the natural evolution of our planet and as such, if dealing with a natural event and natural systems, unavoidable. Another thing is where ecosystems have been intervened and vulnerabilized and then an event has greater impacts or effects than would otherwise be the case--that is more convincingly, "adverse effects". In the end one has to ask"ADVERSE" FOR WHOM OR WHAT? SO THE IMPACT IS ADVERSE FOR HUMANS GIVEN THEY VALUE THE LOST RESOURCES, BUT FOR THE ECOSYSTEM THE IMPACT IS POSSIBLY BENEFICIAL AS IT FORMS PART OF THE NATURAL CYCLE OF RENOVATION AND ONE WAY OR ANOTHER LITTLE CAN BE DONE ABOUT IT IF IT IS NATURE AGAINST NATURE. One has never seen attempts to retrofit trees in river basins to resist seismic shocks or shoring up of mangroves to resist hurricanes! (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, done
83	2	5	5	5	8	Best advance this definition to previous page, when defining natural hazards (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, done
84	2	5	10	5	10	In an insurance context exposed elements include assets, such as buildings, infrastructure etc. (Spiegel, Andreas, Swiss Re)	OK, done
85	2	5	10	5	12	This is vulnerability as defined in teh context of the DRR community. Should include vulnerability in the context of climate change adaptation as defined by the IPCC AR4 (Street, Roger B, UK Climate Impacts Programme)	ch2 is following ch1 here
86	2	5	13	0	0	) is missed at the end of the references (Saad-Hussein, Amal, National Research Centre)	OK, done
87	2	5	13	0	0	Lack the end of the bracket after "Thywissen, 2006". (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	Ok, done
88	2	5	14	0	0	Vulnerability of assets, such as exposed infrastructure is not a result of defined social processes but rather a result of chosen technology and material. (Spiegel, Andreas, Swiss Re)	OK, done

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
89	2	5	19	5	24	And how are people able to access available means of protection? (Gaillard, JC, The University of Auckland)	the list is not complete, we'd need to add another reference, what's there seems to be a set of key examples that are most important
90	2	5	23	5	23	the use of "their" is ambiguous. Presumably it relates to humans, even though that is not a subject in the sentence. The intended meaning should be made explicit. (Jeggle, Terry, University of Pittsburgh)	OK, done
91	2	5	26	5	27	"The term vulnerability ..."; It is suggested to reference a work on the development of the vulnerability concept (1) as well as one on the networks (2); full citations: (1) Weichselgartner, J., 2001: Disaster mitigation: the concept of vulnerability revisited. Disaster Prevention and Management, 10(2), 85-94. and (2) Janssen, M.A., M.L. Schoon, W. Ke, and K. Börner, 2006: Scholarly networks on resilience, vulnerability and adaptation within the human dimensions of global environmental change. Global Environmental Change, 16(3), 240-252. (Weichselgartner, Juergen, GKSS Research Center)	OK, done
92	2	5	26	5	38	Suggest reference to Klein paper that refers to the multiple definitions of vulnerability (also for line 41 and 42). How does this differ from page 6, lines 51-54 and page 7, lines 1-5 (Street, Roger B, UK Climate Impacts Programme)	This can be seem as a repetition but indeed we are trying to make a disaggregation of the concepts and given a better conceptual support
93	2	5	26	5	38	this discussion of vulnerability is limited to only the social contexts and uses of the term, whereas some of its earliest attributions related to disasters were given to the physical vulnerability of engineered structures. Early references to this may be found in DHA documents specifically from the Disaster Mitigation Branch, from the late 1980s to about 1995 and in writings of John Tomblin and his associates there at the time. I believe this meaning of vulnerability was also recorded in the initial DHA Glossary of Disaster Terms of about 1993-94. While this particular aspect of vulnerability need not be dealt upon here, as this paragraph does discuss both the multiple connotations of vulnerability it may be useful to mention this earlier physical characterization of the term at least in passing, particularly as it was employed with specific reference to disaster mitigation practice of the day. It would also be desirable to do so too, seeing that physical vulnerability is later referred to below (Chapter 2, page 6, line 3) without prior introduction or reference. By expanding the discussion slightly in this respect, it will also indicate how some of the most critical words have evolved in professional usage in a relatively short period of time, and therefore why confusion may still remain in some professional quarters as the professional audience associated with drm and cca expands beyond their own respective specialists. (Jeggle, Terry, University of Pittsburgh)	OK, done
94	2	5	29	5	38	The text says "without hazard, no vulnerability". I partly agree with that, but clearly it also exists an intrinsic vulnerability as influential factors are embedded in social, economic, cultural... features. Then even if the hazard doesn't occur, a vulnerability "in a latent state" exist which cannot be neglected. Notwithstanding, in the context of climate change, basic environmental conditions are supposed to progressively change over time and then induce new conditions for societies. For example on coastal areas, the fact that storms will probably be more frequent and more intense will induce that parts of territories that are not for the moment at risk would be in the future, and then their respective vulnerabilities will be revealed ; and in fact, their future "vulnerability features" are embedded in present conditions (localisation of houses, rules and laws, living conditions...). Another point is that currently, territories are not always prepared to cope with combinations of hazards (which will be very active with climate change, as some parts of this chapter emphasize) ; one recent example is the consequences of the storm Xynthia in France in February 2010 (high tides + storm surge). Then, could the authors be more nuanced on these lines ? (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK, certainly future configuration of risk is a potentiality due to new hazards but the condition of vulnerability is also potential. It is important to make difference with exposure
95	2	5	30	5	31	How does the concept if there is no hazard it is not feasible to be vulnerable fit with the definition of vulnerability associated with climate change - vulnerability under projected climate change (Street, Roger B, UK Climate Impacts Programme)	Risk can be a future condition
96	2	5	52	5	52	I believe this means "evidence of "(or perceptions of) disaster risk and "the occurrence of" disasters have been continuously on the rise ... (Jeggle, Terry, University of Pittsburgh)	OK, done.
97	2	5	52	5	54	I would eliminate this phrase as we are not yet dealing with trends in disaster and DRM and their subtleties. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, done
98	2	5	52	5	54	This, as stated in the previous sentence, is an existing trend over the last 5 decades. As such, how can actions in the future exacerbate that trend. Suggest that this trend could continue and be further enhanced in the future as a result of projected climate change. (Street, Roger B, UK Climate Impacts Programme)	OK, done
99	2	5	52	5	54	The reference should be to Chp 3. (IPCC WGII TSU)	OK, done
100	2	6	2	6	5	This phrase seems to just pop up from nowhere. Moreover, physical vulnerability is mentioned as a notion but not explained to the reader as to its essence or constitution. And, when dealing with social science contributions mention is made of their use for "understanding ..... the types of intervention experienced" Here should it not be that it is the types of vulnerability and not types of intervention we are seeking to understand? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, noted

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
101	2	6	3	6	3	Climatology is blatantly missing from this list, ie, (in terms of climatology, geomorphology....) (Stocker, Thomas, IPCC WGI TSU)	Ok, done
102	2	6	7	6	22	Although this debate and the considerations made are very important it seems to me it should not be here in this section, which is purely on defining hazard, vulnerability and risk. Rather it should go in the section on approaches to the study of risk, hazard and vulnerability, which comes later. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, done. It was moved to 2.9
103	2	6	7	6	22	This is another very important, well reasoned and clearly presented paragraph of particular value for bridging understanding between diverse professional interests and communities of practice. (Jeggle, Terry, University of Pittsburgh)	OK it will be maintain
104	2	6	7	6	7	check if the term "applied sciences" is defined above (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	OK, the concept of applied sciences usually do not need to be defined se refiere a ingenieria, planficacion
105	2	6	7	6	7	meaning of applied sciences in this context? (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	Engineering, planning
106	2	6	8	6	9	"However, basic ..."; it is suggested to add: "However, basic scientific information is not enough; research-based knowledge must be considered relevant, true, unbiased, and applicable in order to have impact on decision makers in policy and practice (Mitchell et al. 2006, Weichselgartner and Kasperson 2010)." Full citations: (1) Mitchell, R.B., W.C. Clark, D.W. Cash, and N.M. Dickson, 2006: Global environmental assessments: Information and influence. MIT Press, Cambridge. and (2): Weichselgartner, J. and R.E. Kasperson, 2010: Barriers in the science-policy-practice interface: toward a knowledge-action-system in global environmental change research. Global Environmental Change, 20(2), 266-277. (Weichselgartner, Juergen, GKSS Research Center)	OK, done
107	2	6	10	6	10	Also an enabling environment to provide those in need with access to means of protection. (Gaillard, JC, The University of Auckland)	OK, done
108	2	6	20	6	22	The author states that some authors suggest "...." however the suggestions is just quoted with one author (Cardonna, 2004). Suggest might also not be the right word in the context - maybe state or highlight - might be better. (Ammann, Walter J., Global Risk Forum GRF Davos)	OK , done
109	2	6	27	6	54	Repeated elsewhere. (IPCC WGI TSU)	Where? May be it is an explanation
110	2	6	27	7	11	This introduction to vulnerability factors is in fact an introduction to risk and could easily be in the previous section. It is in fact an amplification of what is said there. I would put it there and here get straight into sub sections 2.3.1-2.3.3 (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Ok, done
111	2	6	31	6	34	Should also reference the IPCC definition of risk (Street, Roger B, UK Climate Impacts Programme)	Reference has been made to definition of vulnerability
112	2	6	36	6	37	"The conceptual frameworks ..."; the two suggested literature can be also referenced here. Another important reference is (Gallop, 2006); full citation: Gallop, G.C., 2006: Linkages between vulnerability, resilience, and adaptive capacity. Global Environmental Change. 16(3). 293-303. (Weichselgartner, Juergen, GKSS Research Center)	OK, done
113	2	6	39	6	39	Decisions need to be appraised through consideration of criteria other than just efficiency and cost effectiveness (e.g., equity, legitimacy, sustainability, flexibility, incremental implementation, etc.) (Street, Roger B, UK Climate Impacts Programme)	OK, done
114	2	6	45	6	45	is human intervention always necessary for creating a hazard? (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	Hazard for whom?
115	2	6	48	6	49	Vulnerability can be extended beyond human systems to include ecosystem/species vulnerability (Chambers, Lynda, Australian Bureau of Meteorology)	Yes, but if the ecological or environmental vulnerability means potential effects on environmental services or function useful for societv
116	2	6	51	3	11	This paragraph attempts to shed light on the different interpretations of "vulnerability", in particular in IPCC Assessment Reports and by the UNISDR. While this is useful in principle, the current text achieves this objective at best partly. All conceptual discussions about "vulnerability" and other key terms should be presented in one location rather than in bits and pieces in different places. The most natural place would be the beginning of Chapter 1 (currently Section 1.1.3). Other chapters should reference to that section and state its main conclusions. It appears particularly important to state explicitly that the concept of vulnerability (to any external hazard, in particular extreme weather events) in this report is different from the concept of vulnerability (to climate change) as defined in the IPCC Assessment Reports. (Fuessel, Hans-Martin, European Environment Agency)	OK, done
117	2	6	51	6	54	The intrinsic predisposal would be within the degree of sensibility ( susceptibility ). Seeing comment number 4. (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology , meteorology and environmental studies))	OK, done

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
118	2	6	53	0	54	Terms resistance and resilience are used in a way that is not consistent with other parts of the paper - again I recommend the Resilience Alliance definitions. (Longstaff, Pat, Syracuse University)	There are many approaches and this is recognized. The use of resistance related to susceptibility and resilience are indeed consistent
119	2	7	2	7	3	The IPCC AR4 definition of vulnerability is different from the one used in this report. It comes from natural hazards research that defines vulnerability as the residual after everything else has been taken into consideration, but this conceptualization does not apply to most sectors. It is important to have a clear discussion of the difference in definitions and the reasons for it, coordinated with Chapter 1 and the glossary team. (IPCC WGII TSU)	OK, done, the definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions. However in some cases Chapter 2 is disaggregating or enhancing the concepts with more details and explanations
120	2	7	3	7	4	Are these characteristics and circumstances different than those included in IPCC 2007. (Street, Roger B, UK Climate Impacts Programme)	Yes, the SREX is an effort to make compatible DRM and CCA
121	2	7	5	7	5	Reference for many who believe that it is not possible to assess vulnerability. How does this relate to vulnerability assessments as identified in IPCC AR4 WGII, chapter 2 and line 35-43 below? (Street, Roger B, UK Climate Impacts Programme)	It is mentioned but the main objective is to illustrate that vulnerability can be evaluated
122	2	7	14	7	14	A conceptual framework for vulnerability and for risk are two different things. This section is on vulnerability so I don't see why risk is being dealt with as such, beyond it being an obvious critical point of reference. Frameworks for dealing with risk should be elsewhere, not in a section dedicated to "vulnerability factors". Given the synergic and dialectic relations between hazard and vulnerability in constructing the resulting risk I know it is difficult to separate things out analytically and conceptually and maybe it is best to offer a conceptual framework for risk which includes both hazard and vulnerability and not attempt to get to a conceptual framework for vulnerability, hazard, exposure and risk one by one. Inevitably, a great deal of repetition will be ensuing if you do so, as is the case in these sections. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, done
123	2	7	14	8	49	Section needs a concluding paragraph. Since several conceptual models have been mentioned, key factors comprising vulnerability and disaster risk could be culled out and summarized. Similarly, assessment procedures, highlighting coupled socio-ecological systems could be highlighted. (Kumar, Ritesh, Wetlands International - South Asia)	OK, done
124	2	7	14	0	0	in chapter 2 (maybe here or elsewhere) the concepts of vulnerability, resilience, resistance etc. should be explained and separated from each other (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	OK, done, the definitions were made accordingly with Chapter 1 and coordination has been made to avoid repetitions. However in some cases Chapter 2 is disaggregating or enhancing the concepts with more details and explanations
125	2	7	14	0	0	Section 2.3.1: This section, and/or other parts of this chapter, should reference and discuss the findings of Villagran (2006): Vulnerability - A Conceptual and Methodological Review, <a href="http://www.ehs.unu.edu/file/get/3904">http://www.ehs.unu.edu/file/get/3904</a> . (Fuessel, Hans-Martin, European Environment Agency)	Ok, done
126	2	7	16	7	16	Vulnerability describes a condition of people that derives from political, social and economic context as defined earlier and below. (Street, Roger B, UK Climate Impacts Programme)	OK, done
127	2	7	16	7	19	Repeated elsewhere. (IPCC WGII TSU)	OK, done
128	2	7	16	8	44	This section is difficult to comprehend as it has no clear structure and seems to go from one thing to another in rather unfluid and haphazard fashion at times. Quoting or summarizing author after author with little detail on each does not allow one to really comprehend what they are saying and how they differ - a lay man reading this would be completely confused I feel. Strikes me that if we want to deal with frameworks then we should identify the 3, 4, 5 or whatever principle ones around and then describe them well ascribing authors to them to greater or lesser degree and not do it inductively quoting author after author, requiring the reader to derive general conclusions as to who is in agreement with whom. The section requires editing, another structure and a division into clearcut paragraphs. The section deals with literature that summarizes different approaches and literature that proposes different approaches but this is dealt with in somewhat haphazard fashion it seems. Maybe the section should first lay out the dominant approaches and describe them, then deal with the literature that reviews and compares different schemes and then get to the nitty gritty of comment and critique of each different framework. At present it is somewhat a pot pourrie of detail and then overly summarised phrases, one topic then another popping up all of a sudden. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Ok, done
129	2	7	16	0	0	'political and economic context' -> also cultural, etc? (Thalmann, Philippe, EPFL Swiss Federal Institute of Technology Lausanne)	OK, done
130	2	7	28	7	33	This seems out of place. Magnitude, scale and development planning integration should be considered at the end after looking at analytical frameworks--magnitude and scale are parameters, not frameworks as such. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Ok, done

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
131	2	7	35	7	43	This paragraph does not really tell us anything (except with reference to the Adger quote). With the rest of the authors that are quoted the text just says they reviewed things but with no conclusions as to what they said. Moreover, ideas are introduced that the reader, if not familiar with the literature, will have no idea what they refer to-Pressure and Release model, coupled systems etc. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Ok, done
132	2	7	35	7	43	Detailed history not needed. (IPCC WGII TSU)	Ok, done
133	2	7	45	8	2	It is difficult to see what this paragraph has to do with frameworks for vulnerability and disaster risk analysis and understanding and should I think be elsewhere in the text. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Ok, done
134	2	7	45	8	2	An important new publication on this issue (co-authored by one of the contributing authors to this chapters) is: E. Romieu • T. Welle • S. Schneiderbauer • M. Pelling • C. Vinchon. Vulnerability assessment within climate change and natural hazard contexts: revealing gaps and synergies through coastal applications. Sustain Sci (2010) 5:159–170. DOI 10.1007/s11625-010-0112-2 (Fuessel, Hans-Martin, European Environment Agency)	The paragraph has been eliminated
135	2	7	48	7	49	Due to historical experience, but is this still true about future events? (Street, Roger B, UK Climate Impacts Programme)	And projected changes
136	2	8	1	8	1	Is this underlying causes or determinants of vulnerability and adaptive capacity (Street, Roger B, UK Climate Impacts Programme)	Yes, among many
137	2	8	4	8	4	what does PAR stand for? (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	Important reference of a framework of DRM
138	2	8	4	8	49	This is a never ending paragraph that is very difficult to absorb and understand due to a lack of structure and cohesion. The notion of coupled environmental and human systems is attributed to three different authors and all are dealt with at different places and moments instead of all together, for example. There is also an imbalance between frameworks for vulnerability and risk analysis as such--this comes back to a previous comment we have made, that risk should be dealt with elsewhere or simply we should look at frameworks for risk analysis and merge vulnerability and hazard into this. Not really sure what we can hope to achieve with this type of very short discussion on different ideas from different authors, which will never be complete as such as we are all restricted to quoting the authors we know and have read, but we also know there are many more out there we don't know exist and whom we have never read for one reason or another. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, done
139	2	8	4	8	49	This paragraph is much too involved and definitely must be broken up into more digestible, and comparable, smaller paragraphs for better comprehension. (Jeggle, Terry, University of Pittsburgh)	Ok, done
140	2	8	4	8	49	Detailed history not needed. (IPCC WGII TSU)	Ok, done
141	2	8	5	8	5	Referencing Adger is when mentioning the PAR framework is odd. (Gaillard, JC, The University of Auckland)	OK, done
142	2	8	12	8	16	Is this mixing up the concept of risk and vulnerability. For example, as defined within the IPCC vulnerability is a function of exposure, sensitivity and adaptive capacity. (Street, Roger B, UK Climate Impacts Programme)	Not exactly. IPCC definition is similar but not the same
143	2	8	15	0	0	"d" to remove on the first word of line 15 (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK, done
144	2	8	21	8	21	I believe the expression "disaster and risk reduction" community used here is analogous to the "disaster risk management" community expression used in Chapter 1. If so, then the one expression (probably disaster risk management community) should be used consistently throughout so as to avoid uncertainty as to whether they are one in the same or different professional communities. (Jeggle, Terry, University of Pittsburgh)	OK, done
145	2	8	23	8	23	The hazardousness of place framework should be attributed to Hewitt and Burton in the eponym book published in 1971. (Gaillard, JC, The University of Auckland)	OK done
146	2	8	42	0	0	make a space between above and mentioned (Saad-Hussein, Amal, National Research Centre)	OK done
147	2	8	52	8	52	Spell out as there are several MOVE projects when it comes to DRR. (Gaillard, JC, The University of Auckland)	It was mentioned in line 44 before
148	2	9	2	10	15	In sub-section 2.3.2. some of the language gets pretty specific in both reasoning and expression to the world inhabited by the author, and it should be reviewed and edited for wider access and easier accessibility for readers who may not deal as easily with some of the concepts or necessarily assumed knowledge. A particular example of this is the text on page 10, lines 1-15, but it also is evident elsewhere in this discussion. (Jeggle, Terry, University of Pittsburgh)	It has been eliminated

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
149	2	9	4	10	15	Rather than on interactions between society and hazard this section is on exposure as one facet of that relationship, the sine qua non for interaction--that is to say, if society is not exposed then there can not be an interaction with hazard. Two points. Previously there was a section on vulnerability , hazard and exposure but nothing was written there on exposure--maybe part of this discourse should be put there. Secondly, it is not quite clear why a subsection on exposure and location should be in a section on vulnerability, if it is considered to be a separate aspect--the authors talk of vulnerability , hazard and exposure as different if related things, which is correct. Finally, interactions between hazards and society goes beyond the sine qua non of being exposed and are also determined or typified by the vulnerability characteristics of population and livelihoods--but this sub section only deals with location and exposure and no other society-hazard interaction. A good part of this section takes up on discussion in the ICSU-LAC document and this should perhaps be quoted instead of Lavell, who participated in the writing of that document. However the actual cites to him are not correct as he does not deal with the matter of contrasting location decisions in them. Finally lines 49 to 51 repeat exactly lines 18-19. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, done
150	2	9	4	0	0	The authors are talking about "resources", but could they shortly precise what "resources" are in this context, because we can consider assets and persons as resources, e.g.. Perhaps they can change "by persons, resources, infrastructure, production, goods, services and ecosystems" by "by persons, environmental resources, material and immaterial human assets and productions, and ecosystems". It's just a proposition, of course. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	We are avoiding to mention specific resources because there are different views, the proposal is similar
151	2	9	7	9	8	The authors wrote "If population and economic resources were not placed in potentially dangerous locations, no problem of disaster risk would exist." I think here again they should nuance what they say because we also have to consider ecosystems that are on the territory, that are not directly correlated with human settlements or crop production e.g., but that indirectly are necessary elements for survival. E.g. water sources in mountain regions: a hazard can damage the resource and induce serious indirect implications for human communities located downstream. In the sentence of the SREX, the notion of "dangerous location" must be considered in a large sense (all the components of the territory which participate, directly or indirectly, to the survival conditions for humans; means both where human are living and producing, but also ecosystems providing uncounterable services, as glaciers and forests, e.g.). This reflection on "indirect territorial components" is also relevant when considering patrimonial and culturel aspects. On possibility for the authors could be to write "If population, economic, environmental and cultural resources were not placed in potentially dangerous locations, no problem of disaster risk would exist." (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	This paragraph was eliminated
152	2	9	9	9	9	"Increasing population growth" should read "population dynamics". Ditto line 14 p. 11. (Gaillard, JC, The University of Auckland)	Ok, done
153	2	9	17	9	18	Why only focus on land use? There are lots of other factors. More references needed. (IPCC WGII TSU)	This paragraph was eliminated
154	2	9	21	9	22	Need to recognise that these determinants change with time. (Street, Roger B, UK Climate Impacts Programme)	This paragraph was eliminated
155	2	9	22	9	22	Remove 'base' in 'hazard base'. (Gaillard, JC, The University of Auckland)	Ok, done
156	2	9	35	9	37	The economically weel-off can also believe they will be bailed out by government or they believe that the real risk is low based on perceptions of risk based on recent history or incomplete information. (Street, Roger B, UK Climate Impacts Programme)	This paragraph was eliminated
157	2	9	35	9	42	There also are new hazards that can arise with climate change, such as flooding in new areas. (IPCC WGII TSU)	This paragraph was eliminated
158	2	9	49	9	51	Sentence "Migration, development models, regional commerce, economic dependency, global trends and transitions, among others, are also key issues related to exposure and physical susceptibility at local level." has already been used in lines 18 and 19 of the same page. To delete ? (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK, it was eliminated
159	2	9	49	9	52	Changes have increased vulnerability of existing infrastructure with significant implications if moved. (Street, Roger B, UK Climate Impacts Programme)	This paragraph was eliminated
160	2	10	1	10	15	Not sure that this mention of sciences and their participation is best placed here. Nor the following paragraph on information and stakeholders. Seems rather abrupt and out of place given the rest of the content of the section. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, eliminated
161	2	10	8	10	8	Only between the sciences or also between science and stakeholders (decision and policy makers)? (Street, Roger B, UK Climate Impacts Programme)	OK, done
162	2	10	10	10	10	This may be too slow and suggests a different relationship between research and policy/decision making. (Street, Roger B, UK Climate Impacts Programme)	OK, this was eliminated



No	Ch	From Page	From Line	To Page	To Line	Comment	Response
163	2	10	18	12	9	Sub-section 2.3.3. is rather involved, over-wrought in some explanations, repetitive in others, and probably too academically expressed for meaningful access for many readers who may not be so inherently familiar with all of the concepts. Needs to be tightened up and expressed more concisely for the valid issues to become more evident. (Jeggle, Terry, University of Pittsburgh)	Ok, done
164	2	10	20	12	9	This section is a further example it seems of unnecessary duplication or uncertainty as to where to put things and how to divide them up. Much of the content could easily be in section 2.2 or 2.3.1. Part is on vulnerability factors, conditions and characteristics and part on frameworks. The discussion of causal factors attributed to Cardona et al is another example of frameworks, and could be in section 2.3.1 where Wisners and others frameworks are discussed. The inclusion of things on indicator systems seems to be beyond the needs of this section and should rather be in a section on measuring or evaluating risk and risk management. (Lavell, Allan. Programme for the Social Study of Risk and Disaster (FLACSO))	Ok, done
165	2	10	21	10	22	The meaning is blurred here, as " ... that predispose them to such damage, loss and (also) difficulties in recovery". As stated it appears that all of the consequences occur "in recovery". (Jeggle, Terry, University of Pittsburgh)	OK, done
166	2	10	26	10	35	Another explanation of vulnerability duplicating much of what has already been presented. (Street, Roger B, UK Climate Impacts Programme)	This explanation attempts to illustrate that there are factors of vulnerability and it is not a new definition
167	2	10	26	11	33	Nearly all of this is repeated elsewhere and should be deleted. (IPCC WGII TSU)	This explanation attempts to illustrate that there are factors of vulnerability and it is not a new definition
168	2	10	27	10	27	concrete ? Maybe "particular", "specific" or "evident" (Jeggle, Terry, University of Pittsburgh)	OK, done
169	2	10	37	10	43	How does this relate to points on lines 1-16? (Street, Roger B, UK Climate Impacts Programme)	OK, eliminated
170	2	10	45	10	49	Section needs clearer exposition - the focus on role of poverty and other factors in enhancing vulnerability is important and thereby should be elaborated. Importantly, the livelihood capitals framework itself could be interpreted interlinking with risks as one of the defining elements of capital structure. (Kumar, Ritesh, Wetlands International - South Asia)	Details and more explanations are out of the scope of the section
171	2	10	45	11	2	Repeats much already presented in earlier section. (Street, Roger B, UK Climate Impacts Programme)	This explanation attempts to illustrate that there are factors of vulnerability and it is not a new definition
172	2	10	52	0	0	Maybe adding among the references: Adger WN (2006) Vulnerability. Global Environmen-tal Change 16:268-281. doi:10.1016/j.gloenvcha.2006.02.006 (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK
173	2	11	10	11	12	Should related these to sustainability (Street, Roger B, UK Climate Impacts Programme)	This has been eliminated
174	2	11	14	11	17	The manner in which urbanisation occurs is the problem not just urbanisation. Is line 17 suggesting that population controls may be required? Is it population increases or the manner in which populations increase that is the problem (Street, Roger B, UK Climate Impacts Programme)	OK, done
175	2	11	14	11	19	In this paragraph, urbanization is mentioned, but it might comprise not only processes and rapidity but also sprawling characteristics and street patterns. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	Better inappropriate urban development
176	2	11	15	0	0	After "international financial pressures" and before "environmental degradation", I would add "increase in socioeconomic inequalities". (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK, done
177	2	11	16	11	16	Could you develop this idea? (Gaillard, JC, The University of Auckland)	OK, done
178	2	11	17	11	17	Twice "increase" in the same sentence. (Gaillard, JC, The University of Auckland)	OK, done
179	2	11	21	11	33	Need to consider this definition in terms of exposure, sensitivity and adaptive capacity, the later of which is more than lack of resilience or the ability to anticipate, cope and recover. (Street, Roger B, UK Climate Impacts Programme)	OK, done, but the idea is not to include only the view of CCA but also of DRM in a way to useful for both communities. Capacity to anticipate is related to capacity to adapt
180	2	11	24	11	26	Susceptibility/exposure was previously differentiated from vulnerability (Gaillard, JC, The University of Auckland)	Yes, in the case of exposure, but to get compatibility with CCA, exposure is also considered a factor of vulnerability in the sense that it is not possible to be vulnerable if it is not exposed
181	2	11	24	11	26	The analysis of susceptibility should be different from the exposition. They are two concepts and different conditions. Inherent conditions ( sensitiveness ) are Susceptibility ( rock, ground, vegetation, inclination, etc.) Seeing comment 4. (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology , meteorology and environmental studies))	Exposure could be considered a factor- Susceptibility is related here to society because SREX in attempting to use concepts of DRM and CCA
182	2	11	30	11	33	The difference between vulnerability and resilience is unclear. Is resilience a component of vulnerability or something different as suggested before? Ditto for the first paragraph p. 12. (Gaillard, JC, The University of Auckland)	Lack of resilience is not the inverse of vulnerability but a factor

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
183	2	11	30	11	53	Some conflict regarding if the definition of vulnerability should include natural systems (e.g. lines 30-33 compared to lines 51-53). (Chambers, Lynda, Australian Bureau of Meteorology)	In the SREX vulnerability is related to society and vulnerability of natural systems is used with the sense of environmental services for society
184	2	11	35	11	38	It is recommended to identify and dimensioning the vulnerability in comparable units. It is the only way of could have done references between countries and inside the regions. Otherwise, they would have concepts that a considerable number of difficulties represent to the future. In any case, what's minimal that should get to have they are categorical analysis. (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology , meteorology and environmental studies))	This is clear and considered later in section 2.8
185	2	11	37	11	37	Is it exposure and susceptibility or susceptbility (exposure)? Here it reads like susceptbility is used instead of fargility in the previous list. It is a bit confusing. (Gaillard, JC, The University of Auckland)	Ok, done
186	2	11	39	11	39	Need to clearly identify which approach is being referred to. (Street, Roger B, UK Climate Impacts Programme)	text no longer there
187	2	11	45	11	53	The importance of scale may be developed further in this paragraph as well as the dynamic nature of vulnerability. (Gaillard, JC, The University of Auckland)	This is clear and considered later in section 2.8
188	2	11	51	11	53	Should provide a reference for those who argue as such. (Street, Roger B, UK Climate Impacts Programme)	This has been eliminated
189	2	11	51	0	0	Is the "s" at the end of "the concepts" to delete? (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	Ok, done. Eliminated
190	2	11	52	11	54	This needs to be an assessment, not a review of what others have said. (IPCC WGII TSU)	This has been eliminated
191	2	11	53	11	53	what is an "eco-sphere" ? Is it clearly or commonly understood ? (Jeggle, Terry, University of Pittsburgh)	This has been eliminated
192	2	12	4	12	6	Adaptive ability/capacity should consider more than the capacity to anticipate, cope and recover (see definitions of resilience and adaptation in the IPCC. (Street, Roger B, UK Climate Impacts Programme)	OK, done, but the idea is not to include only the view of CCA but also of DRM in a way to useful for both communities. Capacity to anticipate is related to capacity to adapt
193	2	12	9	12	9	Ranking of vulnerability - first time mentioned and requires more consideration within this chapter. (Street, Roger B, UK Climate Impacts Programme)	This is clear and considered later in section 2.8
194	2	12	14	12	38	Consequent with what has been commented in the previous point this does not seem a very good way to start this section as it is full of incognitos in terms of what it deals with-ideas on vulnerability and capacity are put forward but not resolved, and also ideas as to coping capacity and adaptive capacity, but we are not sure if they are the same or not. In particular, as the paragraph ends with the statement that "There is no consensus on whether capacity to cope and adapt are the same...the two are often used interchangeably" we are left with indefination as to how to deal with the topic. At least if coping and adaptation were defined at the beginning we could arrive at a conclusion as to whether they are the same or different. This problem of different definitions and understandings in a volume that must weigh and synthesise the different approaches and understandings is extremely complex to manage. It really means that in this section and others where such differences of definition or use of notions are apparent, the authors should discuss capacities as pertaining to each different way of seeing the coping and adaptation problematic. But this is not done in this section where implicitly or explicitly a particular understanding of what capacities, coping and adaptation are assumed and this must be interpreted as being how the authors understand the problem. On another note, the quote to Lavell 2005 is not really consonant with the position taken in the mentioned book. Lavell, whilst recognizing the pedagogic virtues of the disaster cycle model when it was produced, has consistently rejected the notion for conceptual and pragmatic reasons, and has continually argued for a notion of a risk continuum or process. Finally, the last two paragraphs are somewhat confusing and even repetitive in places. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Based on our discussions at LAM3, it is clear that we need to have a more practical approach in general - this section clearly contributes to the overall concern by reviewers - that we say there are too many different ways of thinking about concepts. This entire section will be revised with this in mind. I will also discuss with Chapter 1 how they are planning to revise their Chapter 1 section on this, because they also got a lot of comments. - THE FIRST PART OF THIS HAS BEEN DELETED AND THE WHOLE SECTION HAS BEEN SIMPLIFIED
195	2	12	14	20	11	As this section is on coping and adaptive capacities and this is the first time in this chapter the notion of coping, adaptation and capacity are introduced it would seem necessary from the very outset to offer a definition of what is being understood by coping and adaptation for which capacities are needed, or simply explicitly accept the definitions in chapter 1, for example. In fact when getting to subsection 2.4.1 page 14 lines 22 onwards the authors then take up on defining or not defining these aspects--this should be right at the beginning. Here we find, and will find that there are discrepancies with definitions and delimitations in other chapters including chapter 1. Moreover, when discussing adaptive capacities throughout section 2.4 it seems necessary, when defining adaptation, to point out and deal with the distinction as regards capacities for adaptation in natural and human systems (are there human or natural capacities for supporting adaptation of natural systems that should be dealt with in this section and are not dealt with?); and capacities to deal with already manifest climate change as opposed to projected change--this difference is not taken up on in the text, but would seem important as the circumstances and needs are very, very different. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Again, there will be more co-ordination with Chapter 1 (although this was already the case) and there will be a revision bearing in mind comment 194. MORE SPECIFIC REFERENCE TO CHAPTER 1 IS INCLUDED NOW

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196	2	12	15	12	15	Are resilience and capacity the same? There are different views in other chapters, especially chapter 1. (Gaillard, JC, The University of Auckland)	Resilience can be removed, this entire discussion needs to be revisited based on comments later in the section: <b>ALREADY REMOVED</b>
197	2	12	15	0	0	This also has been discussed already in Chapter 1; I suggest to refer also to that chapter (Willems, Patrick, Katholieke Universiteit Leuven)	Same as the previous comments.
198	2	12	23	12	25	It would be useful to include some indication of why and/or why not this is good/problematic (Street, Roger B, UK Climate Impacts Programme)	Revisited based on other comments
199	2	12	24	12	25	There should be an explanation of the differences between coping and adaptive capacity. See, for example, publications by Roger Jones and Nick Brooks. (IPCC WGII TSU)	YES THIS IS NOW INCLUDED
200	2	12	26	12	26	letter "f" to be erased. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	formatting error
201	2	12	26	0	0	f must be deleted (Saad-Hussein, Amal, National Research Centre)	formatting error
202	2	12	27	12	38	Need to merge these two paragraphs (Street, Roger B, UK Climate Impacts Programme)	THIS HAS NOT BEEN DONE, BUT LARGE PARTS OF BOTH PARAGRAPHS HAVE BEEN REWRITTEN TO REFLECT THE COMMENTS
203	2	12	37	12	38	As copying capacity is not the same as adaptive capacity, the distinction should be maintained throughout this and other chapters. (Street, Roger B, UK Climate Impacts Programme)	Yes, point taken and will be fixed based on overarching comments on lack of clear message
204	2	12	41	15	23	This section is too long, with too much historical detail, that does not support the chapter key messages. It should be reduced to a page. (IPCC WGII TSU)	OK, vital points will be retained
205	2	12	43	12	43	To which "previous generation of risk studies" are we referring? Should it not read " A previous generation of risk studies prevalent prior to the 1990s, focused on hazards..." Or something like that. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	YES
206	2	12	43	12	45	Reducing vulnerability - reflects that risk can be reduced by reducing consequences and/or likelihood. (Street, Roger B, UK Climate Impacts Programme)	Not clear what is meant but sentence was revisited
207	2	12	50	12	51	Here, as in line 14, the notion that coping occurs when faced with risk (latent condition) as opposed to when being faced with disaster (crisis itself) goes against much thought on the topic and should be weighted by other interpretations and considerations. Moreover, with adaptive capacity, when this refers to proactive or anticipatory adaptation it clearly is a reaction to risk (future probable loss and damage) but when the adaptation is to already changed climate then it is not adaptation to risk but rather to already changed circumstances, new realities. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This is VERY IMPORTANT and has now been updated to reflect the language used in Chapter 1, ie ex post and ex ante.
208	2	12	53	12	54	Something missing in this sentence in order to be able to understand it. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Changed
209	2	12	0	0	0	The use of the term Risk Management is preferable to risk reduction. (Abrahamsj, Jonathan, World Health Organization)	This is an overarching issue in the report and cannot be addressed only by this comment
210	2	13	6	13	8	Should point 1 not read "Vulnerability is amongst other things the result of a lack of capacity": and point 3 should it not read " Lack of capacity is one element of vulnerability" (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK
211	2	13	6	13	8	High vulnerability is normally associated with low adaptive capacity. Vulnerability can also be associated with a high level of exposure and/or a high level of sensitivity. (Street, Roger B, UK Climate Impacts Programme)	Yes, that is what these three points are trying to say. Maybe another way of saying it is better
212	2	13	6	13	8	And 4) vulnerability is different from capacity. (Gaillard, JC, The University of Auckland)	Considered
213	2	13	10	13	28	How does all of this related to changes in climate suggest that adaptation will likely mean moving beyond coping. (Street, Roger B, UK Climate Impacts Programme)	This needs to be revised so that it is clear why climate change means that adaptation is more than coping
214	2	13	15	13	16	"Resilience is also seen as ..."; the other view should be mentioned as well; "Resilience is also seen as part of vulnerability (Turner et al., 2010) and as the opposite of vulnerability (Gaillard, 2010)"; full citation: Turner, B.L., R. Kasperson, P. Matson, J.J. McCarthy, R. Corell, L. Christensen, N. Eckley, J. Kasperson, A. Luers, M. Martello, C. Polsky, A. Pulsipher, Schiller, A., 2003: A framework for vulnerability analysis in sustainability science. PNAS, (100), 8074-8079. (Weichselgartner, Juergen, GKSS Research Center)	This whole section on resilience has been deleted to avoid confusion and in response to other comments about confusion due to too many different definitions
215	2	13	21	13	28	There are different definitions in chapter 1. (Gaillard, JC, The University of Auckland)	This has been revisited with Chapter 1.
216	2	13	48	13	53	How is adaptive capacity seen now within the climate change approach? How does this text link to page 15 lines 13-20? (Street, Roger B, UK Climate Impacts Programme)	THIS HAS NOT BEEN DONE, BUT LARGE PARTS OF BOTH PARAGRAPHS HAVE BEEN REWRITTEN TO REFLECT THE COMMENTS

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
217	2	14	9	14	14	Does this not also reflect that components of a system may have high adaptive capacity (low vulnerability) whereas others do not. Other possibility is that when viewed as a system the vulnerability is high (adaptive capacity is low)? Are vulnerability and adaptive capacity being defined for an individual, family, community, organisation or a larger social grouping (e.g. sub-national, national or region)? (Street, Roger B, UK Climate Impacts Programme)	OK, this can has been used in the argument
218	2	14	22	15	23	As commented above this whole discussion of what adaptive and coping capacities are seems out of place in this section on vulnerability and capacity, and should be right at the beginning of the dealings with the topic. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	OK, whas been aligned with Chapter 1
219	2	14	24	14	24	"whereas in other cases the sitinction between them is considered large" - please provide a reference. (Street, Roger B, UK Climate Impacts Programme)	This has been changed so this comment is no longer relevant
220	2	14	30	0	0	And mitigation tends to be used differently in the climate change community, i.e., mitigation in terms of reduction of greenhouse gas emissions. (Goodess, Clare, Climatic Research Unit)	Yes
221	2	14	40	0	0	Dore and Etkin, 2003 should be delated. (Incecik, Salahattin/Selahattin, Istanbul Technical University)	OK
222	2	14	50	14	52	This is where adaptive capacity comes into play (i.e. Moving beyond coping capacity) (Street, Roger B, UK Climate Impacts Programme)	OK
223	2	15	26	19	12	This section is too long, and more clearly needs to incorporate climate change issues. (IPCC WGII TSU)	OK, this section has been reduced. The FOD divisions were based on disaster thinking (response, anticipate, recover) but has been framed more in climate change terms, as appropriate
224	2	15	28	15	33	Here is clear that the distinction between the capacity to anticipate and, on the other hand, the capacity to deal with disaster, is necessary. But, coming back to a previous point we have made, is it not also necessary to distinguish between capacity to deal with already existing risk, whether we are in the DRR or CCA fields, and the capacity to anticipate future risk and take prospective risk prevention or adaptive measures? Why are coping capacities not mentioned in this opening phrase? And why are risk reduction initiatives seen to only use adaptive capacities as a baseline and not existing risk reduction and prevention capacities? Or is it that coping and adaptation and adaptation and risk reduction are seen to be the same things, without the authors making this explicit? As we point out in many other comments to the study, the lack of any clear notion as to what does in fact constitute an adaptation instrument, method or strategy and what constitutes a good old fashioned or newly imagined disaster risk reduction instrument causes all sorts of indefinision and uncertainty throughout the tome. Reducing the distinction to the difference between coping and adaptation or short and long term actions is obviously incorrect and a misunderstanding of what things are all about and how they have evolved over time. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Points taken and have been integrated as much as possible. Difficult here is that the difference between coping and adapting are indeed more subtle, but that will possibly add to the confusion for the reader who is looking for a clear message.
225	2	15	30	15	32	Similarly for consideration of measures that move beyond coping. Similarly for consideration/appraisal of other adaptation options and when dealing with options that require consideration of potential conflicts or synergies. (Street, Roger B, UK Climate Impacts Programme)	ok, not really relevant to this section
226	2	15	35	15	37	Is it really that capacities diminish or is it that existing capacities become less and less able to manage new risk and disaster situations such that the diminishing is relative but not necessarily absolute? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Yes
227	2	15	40	15	43	What about the stage of dealing with adaptation beyond the extremes (beyond anticipation of the extreme as identified) and may be outside the disaster cycle? Is consideration of adaptation within the disaster cycle sufficient in the context of climate change? (Street, Roger B, UK Climate Impacts Programme)	This is a larger issue for the entire report, and better clarified in Chapters 3 and 4
228	2	15	46	14	46	I would suggest that adaptive capacity also varies among the different actors that should be involved considering the scale of adaptation required. (Street, Roger B, UK Climate Impacts Programme)	OK
229	2	15	47	15	47	I would remove "between developed and developing countries". (Gaillard, JC, The University of Auckland)	OK
230	2	15	48	0	0	Maybe adding the reference: Magnan A (2010) For a better understanding of adaptive capacity to climate change: a research framework. Analyses. Institute for sustainable development and international relations, Working paper 2/2010. <a href="http://www.iddri.org/Publications/Collections/Analyses/AN_1002_Magnan_framework%20adaptive%20capacity.pdf">http://www.iddri.org/Publications/Collections/Analyses/AN_1002_Magnan_framework%20adaptive%20capacity.pdf</a> . (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	Yes
231	2	15	49	15	50	Need to understand adaptive capacity at teh scale of the required response, which can often be beyond the local scale (relate to points under page 16, lines 1-5) (Street, Roger B, UK Climate Impacts Programme)	OK
232	2	16	4	0	0	Maybe adding the reference: Haddad BM (2005) Ranking the adaptive capacity of nations to climate change when socio-political goals are explicit. Global Environmental Change 15:165–176. doi:10.1016/j.gloenvcha.2004.10.002 (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	Looked at this, found it not relevant
233	2	16	11	16	11	Should read Kelman. (Gaillard, JC, The University of Auckland)	Yes

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
234	2	16	12	16	12	There is only on reference to J. Dekens' work in the list at the end of the chapter. (Gaillard, JC, The University of Auckland)	OK
235	2	16	17	16	18	Is a discussion of capacity at different stages in the disaster continuum sufficient considering the projected changes of climate change? (Street, Roger B, UK Climate Impacts Programme)	This is similar to comment 227
236	2	16	21	17	11	How about emergence of new financial products as micro-insurance being an indicator of capacity to anticipate (Kumar, Ritesh, Wetlands International - South Asia)	Is there any evidence that these mechanisms work in this way and/or are meant to?
237	2	16	23	16	23	This is one definition of disaster but not the only one--many will dissent to the idea that disasters are principally defined by the lack of capacities to "cope". Disasters are not necessarily defined by their ability to overwhelm peoples capacities, rather disaster is that overwhelmed capacity--seems here that the word disaster is used as a synonym for the hazard event as such and the phrase should maybe really read "Disasters are defined by conditions where a hazard event has overwhelmed peoples immediate capacities to....." (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This is according to one source, but will take reviewer's suggestion into account
238	2	16	23	16	34	An interesting study of the capacity of institutions to anticipate and respond to climate signals is provided by: Lonsdale, K.G., Downing, T.E., Nicholls, R.J., Parker, D., Vafeidis, A.T., Dawson, R.J. and Hall, J.W. Plausible responses to the threat of rapid sea-level rise for the Thames Estuary, Climatic Change, 91(1-2) (2008): 145-169. (Hall, Jim, Newcastle University)	OK
239	2	16	24	16	24	Are we able to ensure that disasters do not engulf people's ability to manage, especially considering the uncertainties associated with historical and projected extremes? Is all that can be done is reduce their vulnerability and risk? (Street, Roger B, UK Climate Impacts Programme)	No, but it is one of the ways.
240	2	16	28	16	30	And provide people with a sustainable and secured access to livelihoods. (Gaillard, JC, The University of Auckland)	OK
241	2	16	30	0	0	Cardona, 2001, 2010 could be corrected. (Incecik, Salahattin/Selahattin, Istanbul Technical University)	yes
242	2	16	36	16	43	Not sure why Tsunami has been used to exemplify early warning systems. Would be much more effective (given the focus of SREX) to use a climate related example. (Stocker, Thomas, IPCC WGI TSU)	It is used because it is an extreme example, and because the work was done thinking not so much about the hazard, but about the vulnerability and resilience side of the Risk equation
243	2	16	0	0	0	Section 2.4.2.1. addresses a lot of issues but not dig deep into most of them. Could you expand it a bit and also touch upon knowledge? (Gaillard, JC, The University of Auckland)	This contradicts the TSU request to cut the entire section down
244	2	16	0	0	0	Section 2.4.2. is a bit confusing as it covers different scales, stakeholders, actions and stages of action. (Gaillard, JC, The University of Auckland)	Yes, this has been revised
245	2	16	0	0	0	While different risk management measures are identified, the sense that these measures should be joined as a systemic approach or programme appears to be missing. (Abrahamsi, Jonathan, World Health Organization)	Yes, because they are often disconnected, however this point has been taken into account
246	2	17	1	17	3	Changes in teh area (and people/communities) that need to anticipate as well as changes in the perception of risk in a changing climate. Also lack of knowledge of their vulnerability. (Street, Roger B, UK Climate Impacts Programme)	OK
247	2	17	23	17	25	Could you provide an example? (Gaillard, JC, The University of Auckland)	OK
248	2	17	41	17	49	Implications for long-term sustainability in the context of climate change - related to the need to build adaptive capacity rather than coping capacity. (Street, Roger B, UK Climate Impacts Programme)	Yes
249	2	17	44	17	49	The statement is missing a references. Where has it been noted that e.g. ffw programmes are mid term solutions? As well as a reference to the ethiopian adult generation that has been nourished by aid food. (Ammann, Walter J., Global Risk Forum GRF Davos)	OK will look
250	2	17	0	0	0	This section could include description of the local and national response capacities to manage risks, including the prepartdness measures required to develop them. (Abrahamsj, Jonathan, World Health Organization)	This section has been changed, but there is no space to talk about this
251	2	18	3	18	3	What are the underlying drivers Wisner refers to? This is not made explicit and leaves the reader in the dark. Wisner does in fact reject the notion of "driver" due to its mechanistic connotations so I am not sure he really refers to "drivers" in the quoted text--maybe he does!! (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This refers to 'At Risk' so it is not just Wisner's work, but maybe the reference should be Blaikie et al 1994 instead. In any case it is made more explicit
252	2	18	14	18	18	The reference is missing. Which global research effort has.....? (Ammann, Walter J., Global Risk Forum GRF Davos)	EACH-FOR
253	2	18	24	18	26	Return to normalcy may also not address the risk, thereby retaining the level of risks when future events occur. (Street, Roger B, UK Climate Impacts Programme)	Yes, normalcy was not what was implied, but a return to the daily attempt to improve well-being
254	2	18	33	18	24	Need to include consideration of social isolation which may or may not be associated with poverty. There is evidence (e.g., US overheating in urban areas) that suggests that social isolation is a determinant of vulnerability and this is not always associated with poor. (Street, Roger B, UK Climate Impacts Programme)	OK
255	2	18	33	18	33	Replace "risks" by "natural hazards".? (Gaillard, JC, The University of Auckland)	Yes
256	2	19	3	19	4	Resilience can be taken as an end in itself and as a means for reducing vulnerability (socio-economic). (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	This section was cut

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
257	2	19	15	19	15	Are these drivers or determinants of capacity as seems to be the discussion in this section? (Street, Roger B, UK Climate Impacts Programme)	OK terminology was streamlined
258	2	19	15	19	53	This section is too long and can easily be condensed. (IPCC WGII TSU)	OK main points retained
259	2	19	15	20	1	Does the variability of adaptive capacity within a specific location/community and the role that plays within adaptation and DRR need to be considered in this or another section of this chapter? Is there further consideration of location specific aspects of adaptive capacity within the subsection or elsewhere? (Street, Roger B, UK Climate Impacts Programme)	The entire discussion on scales was removed so this was also not included
260	2	19	15	20	1	may be "architecture" should be added after - or before- urbanization in this part as a decisive factor for adaptive living. And we actually are aiming at better "quality of life" in any case. So, taking advantage of any sort of change, we move towards that better - than before- quality of life. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	Not sure what is meant here, but will consider architecture in revision
261	2	19	17	19	17	Chapter 1 uses a different acronym for TAR. (Gaillard, JC, The University of Auckland)	OK
262	2	19	17	20	1	It is a pain that this aspect about barriers for capacity is very weak, very theoretical and very general... I think that could be better to mention more specific examples that shows the kind of this drivers and barriers... About this point I want to offer a few lines showing some important results that we have found in our researchs about disasters and climate change perception in Latinamerica... (Linavo, Alejandro, Research Center on Disaster Risk Reduction CIGIR)	OK - this was condensed and only a few points retained
263	2	19	17	0	0	Maybe adding the reference: Magnan A (2010) For a better understanding of adaptive capacity to climate change: a research framework. Analyses. Institute for sustainable development and international relations, Working paper 2/2010. <a href="http://www.iddri.org/Publications/Collections/Analyses/AN_1002_Magnan_framework%20adaptive%20capacity.pdf">http://www.iddri.org/Publications/Collections/Analyses/AN_1002_Magnan_framework%20adaptive%20capacity.pdf</a> . (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK
264	2	19	28	0	0	I think it is really important to add a sentence like the following (e.g.): "One must also be aware about a shortcut often made and taht induces majors biases in the analysis of adaptive capacities. This shortcut consists in systematically link vulnerability with a low level of development, based on the assumption that the latter includes other determinants. This view encourages a very reductionist vision, according to which the poorest communities are most vulnerable to climate change because they have the weakest ACs. Yet, there is no evidence to suggest that communities of developing countries lack ability to adapt (because adaptation is not soleley a matter of economic wealth), or that, conversely, industrialized countries do have this ability. Consequently, developed countries will also have to cope with impacts that are potentially very damaging for their development, which also make them relatively vulnerable." (extract from: 10. Magnan A., 2010. Two key concepts of the society/climate change interface: vulnerability and adaptation. Iddri' Syntheses, 02/10, Paris, <a href="http://www.iddri.org/Publications/Collections/Syntheses/Two-key-concepts-of-the-society-climate-change-interface-vulnerability-and-adaptation">http://www.iddri.org/Publications/Collections/Syntheses/Two-key-concepts-of-the-society-climate-change-interface-vulnerability-and-adaptation</a> ) (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK good point
265	2	19	39	19	41	Is the point about vulnerability or adaptive capacity? Factors may indeed be diferent. (Gaillard, JC, The University of Auckland)	Important, revised
266	2	19	47	19	53	Develop. This is crucial! (Gaillard, JC, The University of Auckland)	Yes, this will be put up front
267	2	19	47	0	0	To add into brackets "availability of resources (economic, but also environmental, social and cultural) is considered...". (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	Yes, this has been expanded
268	2	19	48	0	0	Maybe adding the reference: Vincent K (2007) Uncertainty in adaptive capacity and the importance of scale. Global Environmental Change 17(1):12-24. doi:10.1016/j.gloenvcha.2006.11.009 (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	Was considered, but not used (in light of need to cut rather than expand)



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269	2	19	54	20	1	comment 2 is applicable here, too: An analysis of 104 empirical studies of barriers to change showed the following barriers, that could refine the discussion of barriers: Issues of resourcing (76%), for instance, “not enough resources” (Post and Altman 1994), “lack of adequate resources such as time and staff” (Adams and McNicholas 2007), limited or no budgeting (e.g. Harris 2000 and Anumba et al. 2006), access to capital and lack of time (Rohdin and Thollander 2006). Issues of capabilities (75%), for instance, “low technology literacy” (Stewart, Mohamed and Marosszeczy 2004), “ill-equipped in terms of training and expertise” (Whitaker 1987), “employees are not trained” (Tamimi and Sebastianelli 1998), “lack of understanding” (Waldron 2005), “lack of technical skills” (Rohdin and Thollander 2006), “lack of skill, knowledge and expertise” (Kirkland and Thompson 1999), etc. Issues of communication (64%), for instance, “communication barriers” (Heide, Grønhaug and Johannessen 2002), “communication overload and distortion” (Allen 2002), “lack of communication within the team” (Attaran and Nguyen 1999), “lack of communication among those sharing responsibility for different aspects” (Kunda and Brooks 2000), “poor communication practices that damaged employee commitment to projects” (Jacobs et al. 2006), “tension among departments arising from the incompatibility of actual or desired responses” (Aggarwal 2003), etc. Issues of organizational structure (62%), for instance, bureaucracy (e.g. Molinsky 1999; Borins 2000; Abdul-Hadi, Al-Sudairi and Alqahtani 2005), “salary structure” (Al-Qirim 2007), “complexity, centralization, and formalization” (e.g. Allen 2002), “rigid organizational boundaries” (Butler 2006), “departmental fortresses” (Cicmil 1999), and organizational structure (e.g. Scarbrough and Lannon 1988; McGaughey and Snyder 1994; Yauch and Steudel 2002). Abdul-Hadi, N., Al-Sudairi, A. und Alqahtani, S. (2005): Prioritizing barriers to successful business process re-engineering (BPR) efforts in Saudi Arabian construction industry, In: Construction Management & Economics, Vol. 23, Nr. 3, S. 305-315. Adams, C.A. und McNicholas, P. (2007): Making a difference: Sustainability reporting, accountability and organisational change, In: Accounting, Auditing and Accountability Journal, Vol. 20, Nr. 3, S. 382-402. Aggarwal, N. (2003): Organizational Barriers to Market Orientation, In: Journal of Management Research, Vol. 3, Nr. 2, S. 87-97. Allen, R.Y.W. (2002): Assessing the impediments to organizational change: A view of community policing, In: Journal of Criminal Justice, Vol. 30, Nr. 6, S. 511-517. Al-Qirim, N. (2007): The adoption and diffusion of E-commerce in developing countries: The case of an NGO in Jordan, In: Information Technology for Development, Vol. 13, Nr. 2, S. 107-131. Anumba, C.E.H., et al. (2006): Understanding structural and cultural impediments to ICT system integration: A GIS-based case study, In: Engineering Construction & Architectural Management, Vol. 13, Nr. 6, S. 616-633. Attaran, M. und Nguyen, T.T. (1999): Design and implementation of self-directed process teams, In: Management Decision, Vol. 37, Nr. 7, S. 553-561. Borins, S. (2000): What Border? Public Management Innovation in the United States and Canada, In: Journal of Policy Analysis and Management, Vol. 19, Nr. 1, S. 46-74. Butler, J.C. (2006): Ten Lessons Learned: Data Warehouse Development Project, California Department of Fish and Game, In: CrossTalk: The Journal of Defense Software Engineering, Vol. 19, Nr. 10, S. 16-20. Cicmil, S. (1999): Implementing organizational change projects: impediments and gaps, In: Strategic Change, Vol. 8, Nr. 2, S. 119-129. Harris, L.C. (2000b): The organizational barriers to developing market orientation, In: European Journal of Marketing, Vol. 34, Nr. 5, S. 598-624. Heide, M., Grønhaug, K. und Johannessen, S.	No idea what Comment 2 is. This is a list of interesting references

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
269.2	2	19	54	20	1	(2002): Exploring barriers to the successful implementation of a formulated strategy, In: Scandinavian Journal of Management, Vol. 18, Nr. 2, S. 217-231. Jacobs, G., et al. (2006): The fatal smirk: Insider accounts of organizational change processes in a police organization, In: Journal of Organizational Change Management, Vol. 19, Nr. 2, S. 173-191. Kirkland, L.-. und Thompson, D. (1999): Challenges in designing, implementing and operating an environmental management system, In: Business Strategy and the Environment, Vol. 8, Nr. 2, S. 128-143. Kunda, D. und Brooks, L. (2000): Assessing organisational obstacles to component-based development: a case study approach, In: Information \& Software Technology, Vol. 42, Nr. 10, S. 715-726. McGaughey, R.E. und Snyder, C.A. (1994): The obstacles to successful CIM, In: International Journal of Production Economics, Vol. 37, Nr. 2-3, S. 247-258. Molinsky, A.L. 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So definition and metrics barriers could occur for renewable energies to, especially when measuring environmental performance and experience curve effects) Matus, K. J. M.; Anastas, P. T.; Clark, W. C.; Itameri-Kinter, K.: Overcoming the Challenges to the Implementation of Green Chemistry. CID Working Paper No. 155. Center for International Development at Harvard University, December 2007 1. An analysis of 104 empirical studies of innovation to change showed the following barriers, that could refine the discussion of barriers: Issues of resourcing (76%), for instance, "not enough resources" (Post and Altman 1994), "lack of adequate resources such as time and staff" (Adams and McNicholas 2007), limited or no budgeting (e.g. Harris 2000 and Anumba et al. 2006), access to capital and lack of time (Rohdin and Thollander 2006). Issues of capabilities (75%), for instance, "low technology literacy" (Stewart, Mohamed and Marosszeky 2004), "ill-equipped in terms of training and expertise" (Whitaker 1987), "employees are not trained" (Tamimi and Sebastianelli 1998), "lack of understanding" (Waldron 2005), "lack of technical skills" (Rohdin and Thollander 2006), "lack of skill, knowledge and expertise" (Kirkland and Thompson 1999), etc. Issues of communication (64%), for instance, "communication barriers" (Heide, Grønhaug and Johannessen 2002), "communication overload and distortion" (Allen 2002), "lack of communication within the team" (Attaran and Nguyen 1999), "lack of communication among those sharing responsibility for different aspects" (Kunda and Brooks 2000), "poor communication practices that damaged employee commitment to projects" (Jacobs et al. 2006), "tension among departments arising from the incompatibility of actual or desired responses" (Aggarwal 2003), etc. Issues of organizational structure (62%), for instance, bureaucracy (e.g. Molinsky 1999; Borins 2000; Abdul-Hadi, Al-Sudairi and Alqahatani 2005), "salary structure" (Al-Qirim 2007), "complexity, centralization, and formalization" (e.g. Allen 2002), "rigid organizational boundaries" (Butler 2006), "departmental fortresses" (Cicmil 1999), and organizational structure (e.g. Scarbrough and Lannon 1988; McGaughey and Snyder 1994; Yauch and Steudel 2002). Abdul-Hadi, N., Al-Sudairi, A. und Alqahatani, S. (2005): Prioritizing barriers to successful business process re-engineering (BPR) efforts in Saudi Arabian construction industry, In: Construction Management \& Economics, Vol. 23, Nr. 3, S. 305-315. Adams, C.A. und McNicholas, P. (2007): Making a difference: Sustainability reporting, accountability and organisational change, In: Accounting, Auditing and Accountability Journal, Vol. 20, Nr. 3, S. 382-402. Aggarwal, N. (2003): Organizational Barriers to Market Orientation, In: Journal of Management Research, Vol. 3, Nr. 2, S. 87-97. Allen, R.Y.W. (2002): Assessing the impediments to organizational change: A view of community policing, In: Journal of Criminal Justice, Vol. 30, Nr. 6, S. 511-517. Al-Qirim, N. (2007): The adoption and diffusion of E-commerce in developing countries: The case of an NGO in Jordan, In: Information Technology for Development, Vol. 13, Nr. 2, S. 107-131. Anumba, C.E.H., et al. (2006): Understanding structural and cultural impediments to ICT system integration: A GIS-based case study, In: Engineering Construction & Architectural Management, Vol. 13, Nr. 6, S. 616-633. Attaran, M. und Nguyen, T.T. (1999): Design and implementation of self-directed process teams, In: Management Decision, Vol. 37, Nr. 7, S. 553-561. Borins, S. (2000): What Border? Public Management Innovation in the United States and Canada, In: Journal of Policy Analysis and Management, Vol. 19, Nr. 1, S. 46-74. Butler, J.C. (2006): Ten Lessons Learned: Data Warehouse Development Project, California Department of Fish and Game. In: CrossTalk: The Journal of Defense Software Engineering. Vol. 19. Nr. 10. S. 16-20. Cicmil, S. (1999): Implementing	
269.3	2	19	54	20	1	Harris 2000 and Anumba et al. 2006), access to capital and lack of time (Rohdin and Thollander 2006). Issues of capabilities (75%), for instance, "low technology literacy" (Stewart, Mohamed and Marosszeky 2004), "ill-equipped in terms of training and expertise" (Whitaker 1987), "employees are not trained" (Tamimi and Sebastianelli 1998), "lack of understanding" (Waldron 2005), "lack of technical skills" (Rohdin and Thollander 2006), "lack of skill, knowledge and expertise" (Kirkland and Thompson 1999), etc. Issues of communication (64%), for instance, "communication barriers" (Heide, Grønhaug and Johannessen 2002), "communication overload and distortion" (Allen 2002), "lack of communication within the team" (Attaran and Nguyen 1999), "lack of communication among those sharing responsibility for different aspects" (Kunda and Brooks 2000), "poor communication practices that damaged employee commitment to projects" (Jacobs et al. 2006), "tension among departments arising from the incompatibility of actual or desired responses" (Aggarwal 2003), etc. Issues of organizational structure (62%), for instance, bureaucracy (e.g. Molinsky 1999; Borins 2000; Abdul-Hadi, Al-Sudairi and Alqahatani 2005), "salary structure" (Al-Qirim 2007), "complexity, centralization, and formalization" (e.g. Allen 2002), "rigid organizational boundaries" (Butler 2006), "departmental fortresses" (Cicmil 1999), and organizational structure (e.g. Scarbrough and Lannon 1988; McGaughey and Snyder 1994; Yauch and Steudel 2002). Abdul-Hadi, N., Al-Sudairi, A. und Alqahatani, S. (2005): Prioritizing barriers to successful business process re-engineering (BPR) efforts in Saudi Arabian construction industry, In: Construction Management \& Economics, Vol. 23, Nr. 3, S. 305-315. Adams, C.A. und McNicholas, P. (2007): Making a difference: Sustainability reporting, accountability and organisational change, In: Accounting, Auditing and Accountability Journal, Vol. 20, Nr. 3, S. 382-402. Aggarwal, N. (2003): Organizational Barriers to Market Orientation, In: Journal of Management Research, Vol. 3, Nr. 2, S. 87-97. Allen, R.Y.W. (2002): Assessing the impediments to organizational change: A view of community policing, In: Journal of Criminal Justice, Vol. 30, Nr. 6, S. 511-517. Al-Qirim, N. (2007): The adoption and diffusion of E-commerce in developing countries: The case of an NGO in Jordan, In: Information Technology for Development, Vol. 13, Nr. 2, S. 107-131. Anumba, C.E.H., et al. (2006): Understanding structural and cultural impediments to ICT system integration: A GIS-based case study, In: Engineering Construction & Architectural Management, Vol. 13, Nr. 6, S. 616-633. Attaran, M. und Nguyen, T.T. (1999): Design and implementation of self-directed process teams, In: Management Decision, Vol. 37, Nr. 7, S. 553-561. Borins, S. (2000): What Border? Public Management Innovation in the United States and Canada, In: Journal of Policy Analysis and Management, Vol. 19, Nr. 1, S. 46-74. Butler, J.C. (2006): Ten Lessons Learned: Data Warehouse Development Project, California Department of Fish and Game. In: CrossTalk: The Journal of Defense Software Engineering. Vol. 19. Nr. 10. S. 16-20. Cicmil, S. (1999): Implementing	

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
269.4	2	19	54	20	1	and Game, in: CrossTalk: The Journal of Defense Software Engineering, Vol. 19, Nr. 10, S. 18-20. Giermi, S. (1999): Implementing organizational change projects: impediments and gaps, In: Strategic Change, Vol. 8, Nr. 2, S. 119-129. Harris, L.C. (2000b): The organizational barriers to developing market orientation, In: European Journal of Marketing, Vol. 34, Nr. 5, S. 598-624. Heide, M., Grønhaug, K. und Johannessen, S. (2002): Exploring barriers to the successful implementation of a formulated strategy, In: Scandinavian Journal of Management, Vol. 18, Nr. 2, S. 217-231. Jacobs, G., et al. (2006): The fatal smirk: Insider accounts of organizational change processes in a police organization, In: Journal of Organizational Change Management, Vol. 19, Nr. 2, S. 173-191. Kirkland, L.-. und Thompson, D. (1999): Challenges in designing, implementing and operating an environmental management system, In: Business Strategy and the Environment, Vol. 8, Nr. 2, S. 128-143. Kunda, D. und Brooks, L. (2000): Assessing organisational obstacles to component-based development: a case study approach, In: Information \& Software Technology, Vol. 42, Nr. 10, S. 715-726. McGaughey, R.E. und Snyder, C.A. (1994): The obstacles to successful CIM, In: International Journal of Production Economics, Vol. 37, Nr. 2-3, S. 247-258. Molinsky, A.L. (1999): Sanding down the edges: Paradoxical impediments to organizational change, In: Journal of Applied Behavioral Science, Vol. 35, Nr. 1, S. 8-24. Opportunities, In: Journal of Organizational Change Management, Vol. 7, Nr. 4, S. 64-81. Rohdin, P. und Thollander, P. (2006): Barriers to and driving forces for energy efficiency in the non-energy intensive manufacturing industry in Sweden, In: Energy, Vol. 31, Nr. 12, S. 1836-1844. Scarbrough, H. und Lannon, R. (1988): The successful exploitation of new technology in banking, In: Journal of General Management, Vol. 13, Nr. 3, S. 38-52. Stewart, R.A., Mohamed, S. und Marosszeky, M. (2004): An empirical investigation into the link between information technology implementation barriers and coping strategies in the Australian construction industry, In: Construction Innovation, Vol. 4, Nr. 3, S. 155-171. Tamimi, N. und Sebastianelli, R. (1998): The barriers to total quality management, In: Quality Progress, Vol. 31, Nr. 6, S. 57-60. Waldron, M. (2005): Overcoming Barriers to Change in Management Accounting Systems, In: Journal of American Academy of Business, Cambridge, Vol. 6, Nr. 2, S. 244-249. Whitaker, M. (1987): Overcoming the barriers to successful implementation of information technology in the U.K. hotel industry, In: International Journal of Hospitality Management, Vol. 6, Nr. 4, S. 229-235. Yauch, C.A. und Steudel, H.J. (2002): Cellular manufacturing for small businesses: key cultural factors that impact the conversion process, In: Journal of Operations Management, Vol. 20, Nr. 5, S. 593-617. 2. A Harvard workshop on barriers to Green Chemistry added definition and metrics barriers (Confusion as to what defines something as being "green chemistry", difficulty with optimizing over multiple dimensions, lack of widely applicable metrics for measuring level of "green"). So definition and metrics barriers could occur for renewable energies to, especially when measuring environmental performance and experience curve effects) Matus, K. J. M.; Anastas, P. T.; Clark, W. C.; Itameri-Kinter, K.: Overcoming the Challenges to the Implementation of Green Chemistry. CID Working Paper No. 155. Center for International Development at Harvard University, December 2007 (Guenther, Edeltraud, Technische Universität Dresden)	
270	2	20	1	20	1	Develop with examples. (Gaillard, JC, The University of Auckland)	OK
271	2	20	1	20	1	All analysis suggests otherwise - refers to connectedness at multiple scales and institutions (Kumar, Ritesh, Wetlands International - South Asia)	I think there is a misunderstanding here, probably due to poor phrasing in the text. Location-specific is talking about conditions in one community and how they are specific.
272	2	20	1	20	1	The statement stands by itself - without further explanation nor examples. (Ammann, Walter J., Global Risk Forum GRF Davos)	Will be expanded
273	2	20	1	0	0	Is this isolated sentence to delete ? (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	No, this is a mistake.
274	2	20	6	20	11	This section, given its importance, requires more detail and development. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Yes, agreed
275	2	20	7	0	0	Maybe adding the reference: De Menocal PB (2001) Cultural responses to climate change during the late Holocene. Science 292:667-673. doi: 10.1126/science.1059827 (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK
276	2	20	10	20	11	There are some references in the anthropological literature and in the studies of societies adaptation to deeper changes as the consequence of the industrial revolution, modern transportation, widespread neoliberalism, etc (Gaillard, JC, The University of Auckland)	OK
277	2	20	14	32	32	Section 2.5: Integration of various dimensions is inadequately covered. Impacts are felt by individuals and systems on many dimensions simultaneously. Risk and Vulnerability in various dimensions therefore integrates to manifest as a resultant risk for individual and systems. (GARG. AMIT. INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	This is what we deal with in the interactions and integration issues at the end

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
278	2	20	14	32	34	Section 2.5. in its entirety is very well reasoned and presented , and in many respects may serve as a crucial or pivotal understanding of the dynamics between drm and cca. This includes the inherent complexities and also the vast range of interests that need to be brought to bear on the issues concerned and which are indeed very comprehensively addressed in the following sections 2.6 through 2.9. This latter point is particularly important in casting the discussion and wider understanding in a much wider range of professional, academic and political interests beyond those institutions more typically associated with either "disasters" or "climate change". This understanding needs to infuse the entire SREX and this section (and the following elaborating sections of the chapter) is a fine introduction to the importance of the subject. I hope its contents do not get lost nor are eroded by the particularities of later chapters. (Jeggle, Terry, University of Pittsburgh)	Noted. Thanks for the comments
279	2	20	14	32	37	The focus of this section appears to be on vulnerability with little mention of the dimensions of exposure. This could be the result of vulnerability being a function of exposure and the authors finding it difficult to separate the one from the other. (Street, Roger B, UK Climate Impacts Programme)	agreed - more work on this has been done
280	2	20	14	36	26	Section 2.5 & 2.6 are repetitive for through reading and may be looked into (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	We have been revisitng both sections
281	2	20	16	20	21	Improved expression required with this paragraph. The notions of exposure and vulnerability to disaster as such may need some elaboration as it is not common to talk of this. The last sentence should maybe read "and the distinction between them is often not made explicit". Further development of this idea is probably needed as the fact that some see exposure as being a part of vulnerability or as a vulnerability in itself, as opposed to being a risk factor or conditioning factor, has its consequences. Although the statement that exposure has not received as much attention as vulnerability is correct, this does not mean there is not a considerable literature out there on exposure, location etc, some of this in territorial, urban and rural planning studies as opposed to risk studies. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	agreed. Definitional aspects have been dealt with in the early part of the chapter - following the lead of Chapter 1
282	2	20	23	20	52	Nearly all of this is repeated elsewhere and should be deleted. (IPCC WGII TSU)	This is an introductory section for the dimensions subsection however it has been edited with this coment in mind
283	2	20	23	21	6	This first introductory section could be better constructed. It seems to try to deal with three aspects. First, classification of generic vulnerability types; second, details of themes taken up on under the different types; third, ideas as to vulnerability to what and key types of vulnerability. There is no explicit dealing with similar questions as regards location or exposure--at least something should be there. And, when asking the question vulnerable to what, others have also asked the very pertinent question "What is vulnerable". Cannon for example insists that it is humans and their livelihoods that are vulnerable and that this more precise delimitation of what is vulnerable serves to limit the at present wide range of confusing and heterogenous uses given to the term. Something should be there on this question as not all use O'Briens, Cutters or Wilches Chau's schemes for understanding and classifying vulnerability. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	agreed. Have amended in various places
284	2	20	26	20	29	Seems the use of "former" and "latter" is around the wrong way. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	corrected

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285	2	20	48	20	52	The vulnerable to what question is of great significance and could be taken further in debate. For example if the idea is that people are vulnerable to the "product" that is OK as an idea, but some consideration should be given to the contradictory nature of such arguments and the contradiction it establishes with other more process oriented ideas on vulnerability and its latent quality. Famine analysed as a "product" refers to a situation that exists and is not a potential situation, whereas vulnerability, in DRM, is normally seen to be an announcer or predictor of future impacts and loss. And the idea that that "situation"--famine--affects people could be rephrased or reconsidered. They suffer famine, therefore they simply cant be vulnerable to famine because they themselves are part of the definition of a famine situation. You can be vulnerable to drought and one of the consequences (the disaster) maybe famine, but not necessarily so--it could be undernutrition or other forms of deficit. If we use vulnerability to depict the product, as opposed to being the stressor or predictor, then we are clearly in in another field of enquiry and using another logic and definition of the notion. This also applies to human and eco-systems. To use the word or notion of vulnerability in these two very different cases, as if we are talking of the same thing, is confusing because such systems are so different and the notion "vulnerability" has very different connotations for each. You suffer food insecurity and hunger and famine and your vulnerability to these situations is implicit in the product itself. This is the same case as when we define vulnerability--does it incorporate in itself the notion of capacity or not? To some it does, to others it doesnt. But in the end when we talk of total vulnerability or high levels of vulnerability it is obvious we are talking of low or non existent levels of capacity. In the same way, when we are talking of famine we are talking of a group of people suffering extreme hunger and their vulnerability is expressed in that very condition--why they are suffering famine is another matter and relates to the factors that contribute to explaining vulnerability to drought, flooding, war or what ever. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	agreed. However, I think some of the points raised here are precisely what the Dilley and Boudreau paper seeks to address. It seems there needs to be some more clarity of expression though to get this across. Have cnsidered in the re-write
286	2	20	51	20	51	Famine is a consequence of people's vulnerability in facing political and economic stresses. It is not a hazard. (Gaillard, JC, The University of Auckland)	the text does not say it is a hazard. LEAVE AS IS
287	2	21	1	21	1	"Key vulnerabilities" for whom? (Gaillard, JC, The University of Auckland)	this is an introductory section for the sub section as a whole. Further elaboration is not needed at this point. It is only to highlight some of the complexities of the concept of vulnerability. LEAVE AS IS
288	2	21	1	21	6	The notion of "many possible vulnerabilities" comes up over and over and can be contrasted with the more precise idea of "many dimensions or causes of vulnerability". In general I think we are more likely to be talking of factors or contexts or causes of vulnerability, as opposed to vulnerabilities as such. But that is just one of the discrepancies in interpretation that must be dealt with amongst us. Here it seems as if more than an evaluation and balancing of the literature and the different approaches, the authors have opted for one approach with which others may and will most certainly disagree at times. Thus, for example, the division that follows between physical and social vulnerability approaches is valid for some and completely invalid for others and this should be recognised. As to the classification presented in order to organize the discussion, this follows on from the statement that the classification combines physical and social approaches. The question then is why we have a list that includes "physical" and "social" as headings and where the others fit in--is it that physical includes physical and environmental and social all the others although it is also presented as an independant category? Should the list not be divided into physical and social elements in order to be consistent? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	this is a valid comment/question but it was a pragmatic choice based on word limits and expected audience
289	2	21	1	21	6	This is not really accurate. (IPCC WGII TSU)	a matter of interpretation but I think it could be expressed more clearly - it suggests a temporal diemnsion has to be there in order for it to be key which was not the original intention. Deleted
290	2	21	4	21	6	Will there be consideration of the temporal variability of vulnerability as a result of changes in exposure, sensitivity and/or adaptive capacity? (Street, Roger B, UK Climate Impacts Programme)	this fits better under trends
291	2	21	11	21	16	for the social vulnerability political and legal systems are also relevant; the political dimension is already partially integrated in the institutional dimension, whereas the legal dimension is not (Guenther, Edeltraud, Technische Universität Dresden)	not sure quite what is meant by legal here and so it has not been developed further
292	2	21	23	21	29	Is the physical dimension of vulnerability different from exposure? It is unclear. (Gaillard, JC, The University of Auckland)	the first part could be explained as exposure but the later parts cannot.

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293	2	21	23	21	39	Infrastructure is material ,physical, human and social and cant be typified in the same way as environmental elements are as being non human or social. Really the notion of physical vulnerability is so imprecise that it only leads to confusion- is it not better to talk of exposure, inadequately built structures and infrastructures, locational factors, ecosystem fragility or things like that, than refer to the pot pourrie of things lumped under the same notion or category of "physical dimensions". Moreover categories such as place, geography and location are dynamic combinations and synergies between human and physical elements so they cant really be classified as physical-- geography and regional planning texts on territory, space, place deal with this. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have tried to address somewhat in the re-write
294	2	21	23	25	37	This section is too long and can easily be condensed. (IPCC WGII TSU)	have reduced
295	2	21	25	21	26	This could also begin with the recognition of a link between an anomalous or changing situation not just an extreme phenomenon. (Street, Roger B, UK Climate Impacts Programme)	it could but the focus of the report is on extremes, hence its use here
296	2	21	25	21	27	Why is it that the physical dimension of vulnerability begins with "the physical event to human vulnerability link"? Is this not the definition of risk itself ? And certainly it does not need just an extreme event, but can also be seen with other non extreme events. Geography, location and place are one type of category, and settlement patterns and infrastructure are completely different notions, such that putting them together under the same umbrella of "physical dimensions" seems inappropriate. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	it was to broaden a rather simple notion of 'the physical' and make a link to extremes -have tried to make it clearer
297	2	21	25	21	39	repetition from Section 2.3 on Vulnerability? Will need some coordination. (Stocker, Thomas, IPCC WGI TSU)	check latest version
298	2	21	44	21	52	The authors are talking about "simplification" (line 47) regarding the thinking that "the poor are the most vulnerable". Notwithstanding this conception must be strongly nuanced (see my comment No. 13), they nevertheless describe the results of the analysis of Dilley et al. (2005) who have identified disaster hotspots taht are indirectly correlated to the level of (economic) development. If this kind of conclusions must be presented, could the author bring some nuance ? For example by saying something like "these results are interesting because they allow starting talking with national and regional stakeholders, but also with international organisation; but one must be aware that they only represent a part of the whole influential factors of vulnerability, namely the part which is the most easily measurable. Consequently, these results must be considered as major tools, but discussions and strategies to cope with risk do not be limited to economic dimensions". This is correlated with what the authors wrote in chapter 2, section 2.8.2., p.47, lines 1-8 (e.g. "The usefulness of indicators depends on how they are employed"). (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	agreed. have considered in elaboration but needs more work
299	2	21	44	21	52	Also, some physical phenomena leading to disasters (e.g. tropical cyclones) disproportionately occur in less developed regions. (Trewin, Blair, Australian Bureau of Meteorology)	agreed - perhaps still needs emphasising
300	2	21	45	21	45	Should read "the most vulnerable people in greater number". (Gaillard, JC, The University of Auckland)	agreed (although will express slightly differently)
301	2	21	47	21	47	Bankoff's ideas on vulnerability may be worth a short paragraph. (Gaillard, JC, The University of Auckland)	Bankoff is mentioned and a summary sentence included
302	2	22	4	22	6	A lengthening of the growing season (rather than a reduction as stated here) has been observed. E.g. Menzel A, Estrella N, Heitland W, Susnik A, Schleip C, Dose V (2008) Bayesian analysis of the species-specific lengthening of the growing season in two European countries and the influence of an insect pest. International Journal of Biometeorology 52(3), 209-218. OR Christidis, Nikolaos, Peter A. Stott, Simon Brown, David J. Karoly, John Caesar (2007) Human Contribution to the Lengthening of the Growing Season during 1950–99. J. Climate, 20, 5441-5454. (Chambers, Lynda, Australian Bureau of Meteorology)	agreed. Have revised
303	2	22	10	22	13	Here, in putting biophysically vulnerable locations along with vulnerable populations we can see the dangers of using vulnerability to cover natural and social elements and location. Really what we are talking about when we look at places or locations that are more susceptible to suffer the impacts of a physical event, is exposure not vulnerability. Then if those areas are occupied by people they may be analysed in terms of different levels of vulnerability when faced with rising sea levels and flooding. Exposure is not vulnerability as clearly you can have two persons exposed to the same physical event and they will react or be affected differentially, differently, maybe due to different levels of vulnerability. Same with houses and roads etc.. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	agreed
304	2	22	10	22	13	Could you provide an example? (Gaillard, JC, The University of Auckland)	do not feel it is necessary just here
305	2	22	11	0	0	A "l" miss in the name "Nicholls 2004". (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	done
306	2	22	15	22	20	Maybe this should be the first para of this sub section. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	yes, good idea
307	2	22	19	22	19	Should read " Hewitt and Burton's (1971) Hazardousness of place framework". (Gaillard, JC, The University of Auckland)	no, this is another one; Cutter's own



No	Ch	From Page	From Line	To Page	To Line	Comment	Response
308	2	22	23	23	11	I dont think this subsection really deals with settlement patterns and development trajectories but rather with the built environment and cities as such. Settlement patterns refers more to the urban hierarchy, urban distribution, size of urban centres and relative location etc and undoubtedly there are things in this that increase disaster risk. In a 1996 article we identified eight contexts of cities that increased or contributed to disaster risk and vulnerability: the synergic nature of the city and the interdependency of its parts; the lack of redundancy in its transport, energy and drainage systems; territorial concentration of key functions and density of building and population; mislocation; social-spatial segregation; environmental degradation; lack of institutional coordination and the contrast between the city as a unified functioning system and its administrative boundaries that many times impede coordination of actions. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have included a reference on this
309	2	22	23	23	11	The subtitle "Settlement Patterns.." with its paragraph are not enough expressingly written. Urbanization and architecture are two elements in one holistic approach of built environment. Cities areas, texture and character, streets, building design and building material should be coping with -adapting - climate conditions and extremes. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	I don't understand this one and am not sure how to answer
310	2	22	28	22	28	I dont think it is rapid urbanization that is vulnerable to disaster risk but rather some cities or towns that are the product of rapid urbanization processes. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	agreed
311	2	22	30	0	0	The first bracket is missing before "Uitto 1998)". (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	done
312	2	22	32	21	34	Would not social isolation also play a role? (Street, Roger B, UK Climate Impacts Programme)	yes - have included
313	2	22	39	23	2	General comments: inadequacy of building and infrastructure is often reflected in the current design in developing countries, it is also reflected in the design of building and infrastructure in developed countries that did not taken into an account changing climate. For example, there would be increasing vulnerability of concrete infrastructure to deterioration due to elevated carbon dioxide concentration, temperature and the change of relative humidity [3]. There is also increasing vulnerability of building energy performance to the global warming [4], which may expose carbon reduction schemes. [3] Wang, X., Nguyen, M., Stewart, M. G., Syme, M., Leitch, A. (2010). Analysis of Climate Change Impacts on the Deterioration of Concrete Infrastructure – Part 1: Mechanisms, Practices, Modelling and Simulation – a Review; Part 2: Modelling and Simulation of Deterioration and Adaptation Options; Part 3: Case Studies of Concrete Deterioration and Adaptation. Published by CSIRO, Canberra. [4] X Wang, D Chen and Z Ren (2010). Assessment of Climate Change Impact on Residential Building Heating and Cooling Energy Requirement in Australia. Building and Environment, 45(7), pp.1663-1682. (Wang, Xiaoming, Commonwealth Scientific and Industrial Research Organisation (CSIRO))	this has not been included at this stage and requires greater expertise in building construction/engineering
314	2	22	43	22	43	()--? Start of the line (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	this has not been included at this stage and requires greater expertise in building construction/engineering
315	2	22	43	0	0	Must the brackets within nothing is written be deleted or completed? (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	removed
316	2	22	46	22	48	Agree that this is necessary, but there is also a need to recognise the complexity of the vulnerability in this situation. It is more than the facility and includes all the supportive infrastructure (allowing access to the facility and the services necessary to operate the facility) that are needed to continue operation of the health response capability. (Street, Roger B, UK Climate Impacts Programme)	done
317	2	22	53	23	1	The wording needs to make it clear that Japan is only being used as an example here - presumably this is an issue in other countries too. (Trewin, Blair, Australian Bureau of Meteorology)	agreed
318	2	23	1	23	1	What about 'building for safety'? (Gaillard, JC, The University of Auckland)	deleted
319	2	23	4	23	21	Could you develop this section on rural areas? (Gaillard, JC, The University of Auckland)	word limits preclude further development
320	2	23	4	23	5	Inhabitants of rural areas are also often dependent on urban areas for health care and emergency services and the dependence of cities also includes many ecosystem services. (Street, Roger B, UK Climate Impacts Programme)	done
321	2	23	14	23	47	In this page on, may be we should take care of "energy". May be it is hidden within the infrastructure, but I would rather make it clear to discussions. With disasters usually energy cuts off, and multiple problems might spring out. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	word limits preclude another inclusion so this has not been included

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
322	2	23	14	23	47	The "ecological" impacts discussed are limited to impacts on populations, or to impacts of populations on ecosystems (and how this relates to the increase in risk). I suggest to largely extend this section, and add details on the potential impact of climate change on ecosystems itself, on the importance of preserving ecosystems (e.g. role of wetlands as regulators, avoid loss of biodiversity). One example is that an increase in the flood frequency due to climate change may change vegetation along the floodplains; another example (same cause) is that the polluted river water may contaminate the floodplain areas more frequently, hence affecting vegetation, groundwater resources, etc. (Willems, Patrick, Katholieke Universiteit Leuven)	this section still requires some work - this will be considered in a subsequent re-write
323	2	23	16	23	47	This subsection demonstrates the problems of distinguishing between hazard, exposure and vulnerability. At times it deals with vulnerability as such but at others seems to touch more on exposure and hazard whilst the relations of what is being described as vulnerability are not always clear. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	I have reviewed this section and made a couple of minor adjustments but it stands as it is because the brief for the chapter is precisely the mix of hazard, exposure and vulnerability
324	2	23	22	23	30	It may good to have a discussion of the causes of environmental degradation to show that they often are similar to those for vulnerability. (Gaillard, JC, The University of Auckland)	lack of space has prevented this
325	2	23	27	23	27	Could use more recent (and significant) fire event/location: Melbourne 2009 (will then be consistent with Box 4.2, Chapter 4, page 13) (Chambers, Lynda, Australian Bureau of Meteorology)	have referred to the box
326	2	23	27	23	28	The same landslide/deforestation citations used on page 11 (line 18) should be cited again here. (Stocker, Thomas, IPCC WGI TSU)	done
327	2	23	29	23	30	Urbanisation and decreases in the quality of urban environments (blue and green) can increase the UHI. (Street, Roger B, UK Climate Impacts Programme)	still needs to be included
328	2	23	32	23	41	Is it the right place for this paragraph? (Gaillard, JC, The University of Auckland)	it is making the human-environment link - have left it in but acknowledge the comment
329	2	23	38	23	41	Should be some consideration of the transfer of risk (as a result of protection measures) from failure during low consequence events to failures during high consequence events. (Street, Roger B, UK Climate Impacts Programme)	have referred to this
330	2	23	52	23	52	Hazard is here described as the "trigger" for an extreme event. Not sure what that means--what would be the trigger for a hurricane--warm water? Or for a flood--heavy rainfall? Or a bust dam? Is the hazard the trigger or the potential for an event to occur? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Have added soemthing to clarify
331	2	23	53	0	0	Instead of "a condition of vulnerability", I wouls write "one of the conditions of vulnerability". (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	I have left as it is because it is not meant to be inclusive, more a stylistic matter
332	2	23	0	25	0	2.5.3 The discussion of economic vulnerability seems dated. Most of the references are from before 2005. Some of these references - e.g. Rose 2000, Mechler 2004 - are also missing from the reference list. Over the past 5 years, there have been a number of studies of economic vulnerability for specific sectors - e.g. tourism, (Leichenko, Robin, Rutgers University)	have revised somewhat in collaboration with Reinhard Mechler
333	2	23	0	25	0	agriculture, insurance and for specific regions. Some of this literature is identified in Chapter 5, but it also needs to be included here. (Leichenko, Robin, Rutgers University)	this still needs to be considered
334	2	24	1	24	3	This deals with impacts not vulnerability as such. Impacts are what vulnerability helps explain but not sure that impacts should be dealt with in a one off phrase like this one. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	ok
335	2	24	1	24	3	I think the quotation of Tol is unuseful here, because in fact it says nothing concrete. This sentence should be deleted. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	ok
336	2	24	6	24	6	"Low and high human development" is awkward. (Gaillard, JC, The University of Auckland)	this is a quote from elsewhere
337	2	24	7	24	7	People are not exposed to and killed by disasters, rather they are exposed to physical events and killed by them or associated phenomenon. Being killed is part of the disaster!! (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	this is a quote from elsewhere
338	2	24	10	24	12	Here economic vulnerability is defined both as susceptibility to loss and as ability to absorb or cushion the damage. That cant be so!! Should it be "inability to cushion damage"? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	yes, clumsy sentence
339	2	24	10	24	12	Need to be clearer as to how economic vulnerability relates to exposure, sensitivity and adaptive capacity of these economic systems? (Street, Roger B, UK Climate Impacts Programme)	this remains to be done
340	2	24	13	24	15	How does this statement relate to the impacts of extreme events on SMEs (i.e. The high number of SMEs that close down and never reopen as a result of extreme events? (Street, Roger B, UK Climate Impacts Programme)	this remains to be done
341	2	24	17	24	18	The reference "(Otero and 18 Marti, 1995)" is incorrect. The authors are Rómulo Caballeros-Otero and Ricardo Zapata-Marti. (Zapata-Marti, Ricardo, United Nations Economic Commission for Latin America and the Caribbean (ECLAC))	this remains to be done
342	2	24	17	24	20	Although in some cases post-disaster reconstruction may increase GDP (which in turn points to the weaknesses of GDP as an indicator of economic health; I do not have a citation to hand but imagine there are many in the economics literature) (Trewin, Blair, Australian Bureau of Meteorology)	this remains to be done
343	2	24	18	24	20	Along with poor access to land and many more factors. (Gaillard, JC, The University of Auckland)	this remains to be done

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
344	2	24	22	24	22	"Natural disasters" should read "natural hazards". Ditto line 34 as in line 44. (Gaillard, JC, The University of Auckland)	done
345	2	24	25	24	27	In the first sentence it says aversion means the ability to financially absorb risks and in the second it is where an agent cant easily absorb losses. Something wrong here--the two statements are contradictory. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	this remains to be done
346	2	24	35	24	35	Vulnerability is defined here and in other places as the ability to do something and not the inability to achieve something. I dont think financial vulnerability can be described as the "ability to access domestic and foreign savings..." but rather as the inability or low level of access to these... (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	this remains to be done
347	2	24	47	24	48	Economic growth can increase exposure (value of goods exposed) and thus increase vulnerability. (Street, Roger B, UK Climate Impacts Programme)	this remains to be done
348	2	24	49	2	50	There are other opinions than Richard Tol's on whether mitigation activities will reduce economic growth. The assessment needs to reflect the viewpoints in the literature. A more comprehensive literature review is required. (IPCC WGII TSU)	this remains to be done
349	2	24	0	0	0	Economic dimensions - mention the imperative to keep 'recovery dollars' in disaster affected areas rather than this investment leaving affected area. (Glavovic, Bruce, Massey University)	interesting point, yes but not included yet
350	2	25	1	25	20	Not sure if livelihoods are best dealt with under economic vulnerability given livelihoods have many non economic facets that lead to vulnerability and which are not dealt with here. One way or another the topic of livelihoods is so important in disaster risk and climate change adaptation work that dedicating 20 lines to it seems a little sparse. The mention of GDP loss under Sterns estimates seems out of place here. Moreover this has been questioned severely by some. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	agree - it is more of a placeholder. Have removed the Stern reference
351	2	25	1	25	37	Sustained work and livelihood leads to wealth creation and thus their vulnerability to climate change would have and these linkages may be suitably captured by additional paragraph. (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	this remains to be done
352	2	25	4	25	25	"can induce dependency and weaken local economic and social systems" (Street, Roger B, UK Climate Impacts Programme)	agree
353	2	25	8	25	10	This is also consistent with post-extreme event assessments that identified a significant number of SMEs shutting down and never reopening following an extreme event (North American experience) (Street, Roger B, UK Climate Impacts Programme)	this remains to be done
354	2	25	19	25	20	"damage costs" should be just "damage" from the veiwpoint of economic terminology. This sentence is an inappropriate citation. The original sentence in The Stern Review they are referring to is "If a wider range of risks and impacts are taken into account, the estimates of damage could rise to 20% of GDP or more.". Stern made clear distinction between "damage" and "cost", and did not use the term "damage cost". (Kondo, Masahide, University of Tsukuba)	Have checked this again. Stern does use 'damage costs' on several occasions eg p. Viii, pp 78-79, p. 464 to name a few
355	2	25	19	25	20	This is out of place here and should be deleted. (IPCC WGII TSU)	agree
356	2	25	23	25	37	The last paragraph deals with wealth of persons and also with rich countries. Wealth exists in all countries as does poverty and talking of wealth of individuals and wealth of nations in the same section seems out of place as the mechanisms and processes, levels etc are so different, if related along the way. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	this remains to be done
357	2	25	30	25	32	A reference from a Reinsurance company with some examples could be helpful to underline the statement with examples. (Ammann, Walter J., Global Risk Forum GRF Davos)	this remains to be done
358	2	25	34	25	37	What defines a rich country? An important issue in this context is the vulnerability of the financial sector. With respect to the financial services sector, there is an issue of contingency plans during and following a disaster (during times of disruptions due to extremes). There are concerns of migration of the disrupted service should incidence or conditions become too high. (Street, Roger B, UK Climate Impacts Programme)	an interesting point but not developed yet
359	2	25	40	25	52	This first paragraph illustrates how difficult it is to deal with "social dimensions" and then things like culture, livelihoods, and many other things that are also social , in another section. Maybe best to talk of Social infrastructure and services or something like that instead of social dimensions as such, which in itself covers so many other things. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	social dimensions was agreed early on
360	2	25	40	0	0	A specific gender perspective is required when dealing with the social dimension (see: Gender Perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation. Good Practices and Lessons Learned (2008) ( <a href="http://www.unisdr.org/eng/about_isdr/isdr-publications/17-Gender_Perspectives_Integrating_DRR_CC/Gender_Perspectives_Integrating_DRR_CC_Good%20Practices.pdf">http://www.unisdr.org/eng/about_isdr/isdr-publications/17-Gender_Perspectives_Integrating_DRR_CC/Gender_Perspectives_Integrating_DRR_CC_Good%20Practices.pdf</a> ) (Zapata-Marti, Ricardo, United Nations Economic Commission for Latin America and the Caribbean (ECLAC))	although I agree on the importance of gender, there are other dimensions of vulnerability and exposure that also need to be included and so it was decided to address these through intersectionality later. I have added a reference as suggested when gender is mentioned

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361	2	25	45	25	48	psychological trauma in and after disasters, including related to family breakdown and loss (Street, Roger B, UK Climate Impacts Programme)	done
362	2	25	0	25	0	Consideration of perceptions of risks changing with changing climate (change, variability and extremes), including willingness to adapt. (Street, Roger B, UK Climate Impacts Programme)	an interesting point but not developed yet
363	2	25	0	0	0	Section 2.5.3.1. This is a corrupt view of the concept of livelihood which actually emerged as an alternative to the concept of work to explain how people rely on the wide range of resources to make a living. The entire 2.5. section is actually about livelihoods in its larger acceptance. I would therefore suggest to reframe section 2.5. around this concept. (Gaillard, JC, The University of Auckland)	not sure I agree with this. The two are put together precisely to make the point about livelihoods meaning so much more
364	2	25	0	0	0	Section 2.5.3.2. Develop with examples. (Gaillard, JC, The University of Auckland)	an interesting point but not developed yet
365	2	26	1	26	23	Role of informal / traditional knowledge systems could be discussed - particularly their relevance in changing baselines. (Kumar, Ritesh, Wetlands International - South Asia)	this sub-section still needs development
366	2	26	1	26	23	Specificly in this part, education comprises one of the most decisive elements beside knowledge, which is "Critical mind, or critical thinking" wich helps in such times - disasters. Please add it within this paragraph. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	this sub-section still needs development
367	2	26	1	26	46	These two sections seem very sparsely treated and need more analysis and range of contexts one feels. Half of the short statement on health and well being is dedicated to heat concerns whereas there are dozens of health related vulnerability concerns and more so with climate change. It would be nice to know how Klinenberg explained the greater male death rate in Chicago (in one of the case studies this work is quoted and reasons for the difference are in fact given). In the section on education the problem of unsafe schools is touched on but in the health section the unsafeness of hospitals and clinics is not dealt with, thus leading to a problem of consistency in coverage and concerns. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have amended second section
368	2	26	4	26	4	Should read "and also sharing and access to information and knowledge". (Gaillard, JC, The University of Auckland)	agree
369	2	26	12	26	19	This belongs in the section on infrastructure. (IPCC WGII TSU)	it was more to underline impacts on education that occur alongside impacts to educational structures
370	2	26	22	26	22	A reference is needed. (IPCC WGII TSU)	ok.
371	2	26	26	26	46	This section needs to be rewritten to provide a more balanced and comprehensive assessment. Ebi can provide some text. (IPCC WGII TSU)	have done
372	2	26	28	26	28	Effects of what? (Gaillard, JC, The University of Auckland)	section re-written
373	2	26	28	26	46	Uses a very narrow definition of human health. The analysis could be braodended using a more systems based interpretation of human health and well-being (Kumar, Ritesh, Wetlands International - South Asia)	section re-written
374	2	26	33	0	0	"The health dimensions of disasters are" SOMETIMES or OFTEN "difficult to measure.." There are also many direct health effects (like number of deaths after flooding) which can quite easily be "measured" or estimated. (Koppe, Christina, Deutscher Wetterdienst)	section re-written
375	2	26	37	26	40	Other aspects that should be included are loss of access or inability to travel to health facilities during and following an extreme event. These have implication for access to pharmaceuticals and surgeries, as well as implications for the utilities (e.g., ambulance and supplies) for health facilities (see Street et al 2005) (Street, Roger B, UK Climate Impacts Programme)	section re-written
376	2	26	49	28	11	This section is too long and can easily be condensed. (IPCC WGII TSU)	have done
377	2	26	49	0	0	Section 2.5.5. This section mixes issues pertaining to culture per se and the so-called 'culture of safety/prevention' which is a fuzzy concept and different from the issue of culture. (Gaillard, JC, The University of Auckland)	section re-written
378	2	26	51	28	11	I think that could be good to mention in this chapter a few words about the complexity that is involved in the comun intention of "make culture of risk"... An empty phrase that is very often used in the disaster risk reduction... (Linayo, Alejandro, Research Center on Disaster Risk Reduction CIGIR)	I don't understand this one and am not sure how to answer
379	2	26	0	0	0	Section 2.5.4.1. Should mention at least (among many other references worth a quotation) B. Wisner's 2006 report for UNESCO "Let our children teach us!". (Gaillard, JC, The University of Auckland)	agreed
380	2	26	0	0	0	Section 2.5.4.2. This sub-sectin should also mention access to health care and facilities. (Gaillard, JC, The University of Auckland)	agreed

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381	2	26	0	0	0	The reference to health dimensions are spread across different sections and I would like to propose some consolidation. As far as Page 26 is concerned, there are significant health dimensions of climate risk which require more detailed description in the Health and Well-being section. More details are provided in subsequent sections. Public health risks and impacts, loss of health systems and infrastructure, and the health emergency risk management capacities required across multiple disciplines in health and different sectors ought to be described eg reproductive health, communicable disease prevention and control, primary health care, nutrition, mass casualty management, protection of health infrastructure, etc. . Texts such the Public Health Consequences of Disasters (edited by EK Noji) could be helpful. (Abrahamsj, Jonathan, World Health Organization)	section re-written
382	2	27	2	27	3	Should we not say " extreme risks associated with disasters and climate change" as opposed to extreme risks of natural disasters and climate change? The natural disaster one does not lie easily today whilst even the notion of risks of climate change pushes us to the physicalist side of understanding as it seems to imply the risk is more to do with climate than vulnerability and exposure. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	agreed
383	2	27	4	27	10	The list includes some very different usages of the term culture. Maybe best to refer to "aspects of culture that pertain to differing risk perceptions, attitudes towards humanitarian response, types of risk prevention, insitutional and organizational arrangements and safety", for example. Also some have argued against using the notion of "culture of risk or prevention" preferring to see different attitudes to risk as part of culture in general, but not a separate "culture" as such. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	section re-written
384	2	27	4	27	10	And the role of culture per se in shaping people's behaviour in facing natural hazards (see for example the ICIMOD report of 2009 "Culture and Risk". (Gaillard, JC, The University of Auckland)	section re-written
385	2	27	5	27	5	What does "negative culture of danger/vulnerability/fear" mean? It is a weird statement. (Gaillard, JC, The University of Auckland)	section re-written
386	2	27	13	27	18	This is a very important and valid observation and example. But, it also demonstrates a certain looseness or indefinision as regards where in the chapter to use reference to climate change and adaptation and when to refer to DRM and its strategies. At times DRM is referred to, at others climate change adaptation and at others both together, throughout the chapter. This is disconcerting. Moreover in this example we are not told how their responses were different or if this does in fact find a parallel in the two communities behaviours when faced historically with disaster risk without climate change. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	agreed
387	2	27	13	27	18	There are many studies as well in the disaster literature. See for example Bolin, B. (2007) 'Race, class, ethnicity, and disaster vulnerability', in H. Rodríguez, E.L. Quarantelli and R.R. Dynes (eds) Handbook of Disaster Research, New York: Springer / Gaillard et al in Natural Hazards, vol. 47(1) in 2008 / and tens of others. (Gaillard, JC, The University of Auckland)	these not included this time - (need to reduce number of references) but can consider subsequently
388	2	27	18	27	18	Neilson et al. (2008) is not in the list of references. (Gaillard, JC, The University of Auckland)	have accidentally missed this out -- will be included in next iteration
389	2	27	19	27	25	The reference to local level risk management culture is of course a completely different use to that employed when discussing ethnicity. Moreover, here it is used in reference to disaster risk and management and not to climate change, thus illustrating a point made in my previous comment. Furthermore, if a comparison was to be made to the previous case of culture, where the two communities were compared, here some effort should be made to compare how culturally different communities in fact work out the organization thing and its permanence--there are cases where because of culture such organizations and responses have become ingrained and permanent. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have been unable to include this
390	2	27	26	27	33	This is not a case of cultural conflict as I see it but clearly of the workings of the dominant capitalist economy and its working out of short term gains and losses and to whom these accrue--more pertinent it would seem is the economic and social notion of risk being the product, many times, of private actions and gains whilst losses tend to be socialised amongst others. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	broadly agree but a case for the cultural dimension can also be made here
391	2	27	30	27	30	avoid direct speech: "Neil Adger ... note that..." (Stocker, Thomas, IPCC WGI TSU)	have considered individual appropriateness
392	2	27	32	27	33	This is true, but also need to consider the in most cases there is a need to broaden the scope of players that should be part of the decision and implementation processes to include the required scale (include those that have or should have a stake in the processess). (Street, Roger B. UK Climate Impacts Programme)	agreed. Not included here but elsewhere the point is made
393	2	27	33	0	0	"et al." is missing after "Adger". (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	this is a different reference

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394	2	27	35	27	37	The general statement is true but the examples given dont substantiate it as well as could be the case. With the exception of the first example where we are informed how culture did in fact specifically inform different responses, the other two cases are "final products" with no idea given of how cultural contexts did in fact lead to that result. We are given the result but not the culture!! (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have revised section
395	2	27	39	27	41	Local or indigenous knowledge can also be a barrier reducing adaptive capacity where change goes beyond traditional knowledge (see Arctic Impact Assessment). (Street, Roger B, UK Climate Impacts Programme)	have revised section although this particular reference was not included at this time
396	2	27	41	27	41	reference to Gaillard incomplete (Stocker, Thomas, IPCC WGI TSU)	ok
397	2	27	41	27	41	See Gaillard et al. (2008) in Natural Hazards 47(1) and Gaillard et al. (2010) in Human Geography 3(1). (Gaillard, JC, The University of Auckland)	ok
398	2	27	41	0	0	"2007" is missing after "Gaillard". (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	ok
399	2	27	43	27	43	"Cultural dimensions to the perception..." is unclear. (Gaillard, JC, The University of Auckland)	ok
400	2	27	43	27	51	Not sure why these two paragraphs are ahead of what follows and not integrated into them as they deal with the same type of analysis. What follows from line 53 to line 11 page 28 is a much better point to start analysis with than the list of cultural contexts and the examples put above, from line 2 to 33. Line 6 page 28 just cuts out without ending. One last thing to reiterate relates to how much do we know as to how different cultural settings respond to historical disaster risk contexts and how they now respond to CCA contexts-do they coincide or are they different and why?. Nothing comparative is said in this section or elsewhere in this chapter on this but it does seem to be a critical aspect--either as empirical knowledge or as an indication of research needs. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have revised section
401	2	27	50	27	51	Could you develop? (Gaillard, JC, The University of Auckland)	deleted
402	2	27	50	27	51	What are the factors that were identified? (IPCC WGII TSU)	deleted
403	2	28	1	28	2	And in facing natural hazards. See for example Gaillard and Texier in Religion 40(2) in 2010. (Gaillard, JC, The University of Auckland)	have revised section although this particular reference was not included at this time
404	2	28	6	28	6	The line seems to be cut. (Gaillard, JC, The University of Auckland)	ok
405	2	28	6	28	6	the last sentence stands by itself and is out of context without further explanation what cultural theory is and means. Hence further explanation needed. (Ammann, Walter J., Global Risk Forum GRF Davos)	ok
406	2	28	6	28	6	Sentence "While cultural theory ..." is not complete (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	ok
407	2	28	16	28	19	This sentence is inadequately constructed or unfinished, as is the date in the reference cited. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	ok
408	2	28	16	28	19	Initial thoughts that hopefully will be further developed in this chapter (Street, Roger B, UK Climate Impacts Programme)	it is interesting but lack of space precludes elaboration
409	2	28	21	28	30	The mention to Twigg is important but we are only told what he does, but not the essence of his results and conclusions. In an evaluation which searches to inform policy makers the conclusions arrived at are important to note. The next two paras do in fact detail conclusions as to what was found in the commented research. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have omitted to do this - will revise subsequently
410	2	28	24	28	25	How do these characteristics compare with the characteristics of a community that has high adaptive capacity (or that is seen to be adapting well). (Street, Roger B, UK Climate Impacts Programme)	have been unable to find a suitable example(s) as yet
411	2	28	38	28	50	Very important points (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	thanks
412	2	28	46	28	50	This point on social capital should go in the section on livelihoods. (Gaillard, JC, The University of Auckland)	let here because more to do with bridging social capital & institutions
413	2	29	5	29	16	Nearly all of this is repeated elsewhere and should be deleted. (IPCC WGII TSU)	This is an introductory section for the dimensions subsection and is there to underline the connections rather than focusing on the individual specifics
414	2	29	10	29	10	Not sure the examples given are "social vulnerability characteristics" as such but rather different contexts or conditions that lead to social vulnerability with different characteristics. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have omitted to do this - will revise subsequently
415	2	29	11	29	12	Is ethnicity only a matter of language? (Gaillard, JC, The University of Auckland)	no but that was how that author presented it
416	2	29	16	29	18	This is an important point. Maybe interesting to comment how this context is also typical of why communities affected by regular hazards are not willing many times to relocate--another form of forced migration if movement is enacted without community agreement and support. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	are these page numbers correct? The comment does not seem to fit



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417	2	29	32	29	38	I am not sure that previous sections have really contrasted and indicated the different results from the different communities of research. As I pointed out before, mention is variously made to climate change adaptation and disaster risk, and poverty at different times, but not consistently. The last sentence is not complete. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	section has been revised
418	2	29	40	29	43	This statement is unclear. (Gaillard, JC, The University of Auckland)	section has been revised
419	2	29	40	29	44	Issues mentioned are only very briefly touched upon, without explanations. To avoid that the reader has to consult the references cited to better understand what is mentioned, I suggest to add more explanations (e.g.: why are "natural disasters not natural at all"?). Elaborate more on how disciplinary boundaries were crossed in food security/vulnerability analysis. (Willems, Patrick, Katholieke Universiteit Leuven)	word limits have precluded further elaboration
420	2	29	40	29	47	This is a good example and very clear (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	section has been revised
421	2	29	49	29	49	This is not a sentence. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	it is a placeholder
422	2	29	49	29	49	Is it a sub-title? (Gaillard, JC, The University of Auckland)	it is a placeholder
423	2	29	49	29	49	Hanging Line (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	it is a placeholder
424	2	29	49	0	0	Is this isolated sentence to delete? (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	it is a placeholder
425	2	29	49	0	0	Topic on "coupled human/social-environment systems" needs to be extended (Willems, Patrick, Katholieke Universiteit Leuven)	it is a placeholder
426	2	29	51	29	53	Can be deleted. (IPCC WGII TSU)	it is a placeholder
427	2	30	2	30	30	I feel this section fits not well within the 2.5.7. section (why talking about migrations here?). And in parallel, a 2.5.7.2. section is missing. Thyen perhaps the best is simply to delete the current 2.5.7.1. section. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	this section was felt to fit here. The numbering issue should be resolved next time
428	2	30	2	30	30	Although migration is often used in the social sciences to cover the whole continuum from forced to voluntary movement, the legal community and others will distinguish forced displacement (which has a different status in law) from voluntary migration. You may want to consider using both terms in several places to avoid associations to merely "voluntary" migration. The term "environmental refugee" has been heavily criticized and you may consider substituting with (environmentally) displaced person. Most importantly, it is legally inaccurate as "refugee" is a term of art in law and most people displaced across an international border due to climate change and disasters are not likely to be considered refugees in the legal sense. There are many actors and authors who disagree with Myers' views and presentation of the issue. You could consider including other views and/or citations. See e.g. the report Kolmannskog, Future Floods of Refugees, NRC, April 2008, available at <a href="http://www.nrc.no/arch/_img/9268480.pdf">http://www.nrc.no/arch/_img/9268480.pdf</a> ; and peer-reviewed article Kolmannskog, "Climates of displacement", Nordic Journal of Human Rights, 26(4), pp 302-320, 2008. While data on climate-related displacement is incomplete, there have been some first important steps to answer basic questions and an expert group was established in 2008 under the humanitarian platform Inter-Agency Standing Committee (IASC). The following submissions from humanitarian agencies to the UNFCCC specifically address migration and displacement: a) Change, Migration and Displacement: Who will be affected? Working paper submitted by the informal group on Migration/Displacement and Climate Change of the IASC – 31 October 2008 to the UNFCCC Secretariat, available at <a href="http://unfccc.int/resource/docs/2008/smsn/igo/022.pdf">http://unfccc.int/resource/docs/2008/smsn/igo/022.pdf</a> b) Climate change, migration and displacement: impacts, vulnerability and adaptation options, Submission by the IOM, UNHCR and UNU, in cooperation with NRC and the RSG on the Human Rights of IDPs, 6 February 2009, available at <a href="http://unfccc.int/resource/docs/2008/smsn/igo/031.pdf">http://unfccc.int/resource/docs/2008/smsn/igo/031.pdf</a> c) Forced displacement in the context of climate change: Challenges for states under international law, Submission by UNHCR in cooperation with NRC, the RSG on the Human Rights of IDPs and UNU, 15 May 2009, available at <a href="http://unfccc.int/resource/docs/2009/smsn/igo/049.pdf">http://unfccc.int/resource/docs/2009/smsn/igo/049.pdf</a> d) Climate change and statelessness: An overview, Submission by UNHCR supported by IOM and NRC 15 May 2009, available at <a href="http://unfccc.int/resource/docs/2009/smsn/igo/048.pdf">http://unfccc.int/resource/docs/2009/smsn/igo/048.pdf</a> OCHA and the Internal Displacement Monitoring Centre of NRC (IDMC) carried out a study to start addressing the question of how many people are displaced. More than 20 million people were displaced due to climate-related sudden-onset disasters in 2008 alone. See OCHA and IDMC/NRC, 2009, Monitoring Disaster Displacement in the Context of Climate Change, available at <a href="http://www.internal-displacement.org/8025708F004BE3B1/(httpInfoFiles)/12E8C7224C2A6A9EC125763900315AD4/\$file/monitoring-disaster-displacement.pdf">http://www.internal-displacement.org/8025708F004BE3B1/(httpInfoFiles)/12E8C7224C2A6A9EC125763900315AD4/\$file/monitoring-disaster-displacement.pdf</a> (Kolmannskog, Vikram, Norwegian Refugee Council)	have omitted to do this - will revise subsequently
429	2	30	16	0	0	Is the word "leaving" missing after "When people are forced"? (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	no
430	2	30	33	31	54	This section is too long and can easily be condensed. (IPCC WGII TSU)	section has been revised

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
431	2	30	41	30	42	Is clarification sufficient? There may be a need for further consideration of the implications for actions (adaptive capacity) as a result of the uncertainty about our existing/real exposure to risk, as well as the implications of changes in the various determinants of vulnerability. This is particularly important for DRR in the context of climate change where a better understanding of the occurrence of extremes and enhancing the ability of dealing with our existing adaptation deficit is important (Street, Roger B, UK Climate Impacts Programme)	this has not been included at this time. For consideration next time
432	2	30	44	0	0	In fact most projections (especially regional projections and of extremes) are out to the end of the century, i.e., less than 100 years. (Goodness, Clare, Climatic Research Unit)	this has not been included at this time. For consideration next time
433	2	30	50	31	17	The 'daily' variation in exposure of different social groups to CLIMATE related extreme events is not well described here, and i am struggling to think of an example where this might be relevant. This may well be relevant for geophysical events with minimal or no warning time (earthquakes, Tsunami etc), but it is hard to imagine a climate related disaster occurring so unexpectedly that exposure becomes significantly determined by the different daily activities of social groups. A climate related example needs to be given here to put this idea into context. The Setiadi et al. citation is missing from the reference list, but I assume this paper (and figure 2-3 used here) is concerned with Tsunami risk, so is not really a good example to use here. (Stocker, Thomas, IPCC WGI TSU)	yes - but have not found a good climate related example
434	2	30	50	31	17	This is an interesting example; there are, however, other types of disasters in which women/children would be less exposed than men (e.g. a cyclone hitting a mining settlement). The question of how the timing (time of day, day of week) of a disaster can affect its impact might also be worth exploring here, perhaps in the context of the recent Christchurch earthquake (where many of the most severely damaged buildings in the central city were empty because it happened at 0430 on a Saturday morning) (Trewin, Blair, Australian Bureau of Meteorology)	yes - but have not found a good climate related example
435	2	30	50	31	9	The example of Padang is very illustrative and detailed. This allows us to understand the results of research. But it also serves to illustrate a previously made point relevant to the whole chapter and that is that the level of information given on different authors and their conclusions varies enormously, from the very detailed, as here, to just a quick mention with no real information elsewhere. Standardization has to be achieved throughout the chapter and clear guidelines are needed as to how much detail is the required detail--maybe the Padang example is too long but what is sure is that in many previous cases the detail is too little or non existent. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	chapter revision aims to do this
436	2	30	53	30	53	Setiadi et al. (2010) is not in the list of references. (Gaillard, JC, The University of Auckland)	awaiting this reference
437	2	30	53	30	54	Similarly recent evidence following various extreme events supports the concept of the temporal variation of vulnerability during the day (differences in exposure when at work, school, or at home) - see reports associated with recent extreme events during which there was less or more of an impact depending on whether the population was at work/school or home in bed. (Street, Roger B, UK Climate Impacts Programme)	ok also picked up in Figure 2.3
438	2	31	6	31	12	"... of which about 30% are conducted at home" what is the reference (Doocy et al., 2007) in line 12? (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	yes
439	2	31	12	31	12	Doocy et al. (2007) is not in the list of references. (Gaillard, JC, The University of Auckland)	have omitted to do this - will revise in next iteration
440	2	31	17	31	17	There needs to be a reference. (Gaillard, JC, The University of Auckland)	revised
441	2	31	24	31	27	In contrast to the previous paragraphs, this statement does not really tell us anything substantive--it mentions time scales in CCA and DRR but not what they are--an external reader unfamiliar with the literature will not really know what is being concluded or talked about. I fear. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	revised
442	2	31	24	31	27	It could be important to mention explicitly the issue of discounting. Damages in the future are perceived less worrisome than today damages (pure rate of time preference), and accordingly there is a bias in willingness to devote resources to adapt (spend money today) to avoid a damage tomorrow. (Bosello, Francesco, Fondazione Eni Enrico Mattei, Milan University \)	section has been revised
443	2	31	26	31	26	Birkmann and Teichman (2010) is not in the list of references. (Gaillard, JC, The University of Auckland)	Done
444	2	31	29	31	46	Lines 38 to 41 exactly repeats the previous paragraph. The last lines 41 to 46 contain very important considerations in this debate and maybe should be given more time and be separated as a paragraph and put up front. The general gist of the argument in this paragraph is subject to debate and precision. Climate change induced changes in the rythm of extreme events is one thing (as regards their time scales) but this can be managed using the idea of hazard return periods as is now prevalent in DRM, although with the necessary modifications of course. Moreover, although the physical event may be undetermined time wise and vary according to historical patterns, vulnerability still grows and explains risk more than the events themselves. This is not dealt with. On the other hand, the other aspect of climate change, the constant and slow change in averages, is not dealt with here at all--this aspect really is new and presents tremendous challenges for decision makers. The last 6 lines are also argued by Lavell extensively in a 2010 IUCN in press publication in Spanish with English version available. (Lavell, Allan, Programme for the Social Study of Risk and Disaster	section has been revised

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445	2	31	34	31	34	Famine is the effect while desertification may be the hazard. These are different. (Gaillard, JC, The University of Auckland)	changed famine to drought to make the same point
446	2	31	37	36	26	What is the purpose of this section? The subsections are inconsistent. The text is too long and repeats what is in Chp 4. Vulnerability does not need to be defined for each sector. (IPCC WGII TSU)	i think the pages may be wrong here. Is it the profiles section that is being referred to? Pages 32 to 36?
447	2	31	51	0	0	"ü" is missing in "Füssel, 2005). (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK
448	2	31	52	31	54	Was this survey taken before or after Hurricane Katrina? If before, was there any follow-up work indicating whether these perceptions were changed after Katrina? (Trewin, Blair, Australian Bureau of Meteorology)	not sure, to be checked
449	2	32	9	32	9	What are these traditional indicators? (Gaillard, JC, The University of Auckland)	to be done
450	2	32	15	32	15	As for other chapters, terms differ from disaster risk reduction in some places to disaster management in others. This is confusing. (Gaillard, JC, The University of Auckland)	to be done
451	2	32	15	32	16	Could you provide an example? (Gaillard, JC, The University of Auckland)	to be done
452	2	32	25	0	0	Box 2-2: is this box needed? It seems not to be adding much to the Chapter. Suggest to delete it. (Stocker, Thomas, IPCC WGI TSU)	added detail to clarify relevance
453	2	32	25	0	0	Box 2.2. may be a bit more elaborated as it is interesting. (Gaillard, JC, The University of Auckland)	added detail to clarify relevance
454	2	32	27	32	32	Box 2.2 is clearly incomplete. (Trewin, Blair, Australian Bureau of Meteorology)	added detail to clarify relevance
455	2	32	37	36	28	Section coverage is confusing, it is not clear why only specific sectors have been chosen for defining vulnerability profiling (Kumar, Ritesh, Wetlands International - South Asia)	We've struggled with this given mandated outline. Will revisit in next iteration
456	2	32	37	0	0	Section 2.6. I would suggest to integrate 2.6 into 2.5. (Gaillard, JC, The University of Auckland)	see above
457	2	32	41	32	42	A description of the vulnerability situation or landscape would also include when (as per discussions on page 31). (Street, Roger B, UK Climate Impacts Programme)	For consideration in the next version
458	2	32	46	32	50	This has already been written in previous sections and then has here to be deleted. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	Okay
459	2	32	46	33	2	This whole paragraph has been elaborated elsewhere in this chapter and is probably best put elsewhere. The idea that disintegration of the western antarctic ice sheet is a case of vulnerability is somewhat debatable from many vulnerability perspectives and perhaps out of place here. The disintegration of the sheet is the result of one physical process affecting an existing physical unit and using the notion of vulnerability to describe or understand this is really not necessary one feels as it introduces a concept of vulnerability that is so different to that applied to human systems, beings or social elements and livelihoods, although people will be exposed to the effects of the disintegration and vulnerable to them. Really the disintegration constitutes a case of the creation of new hazard circumstances. But, reiterating a previous argument we have made, the principle problem here is that the multi use of the word and notion of vulnerability leads to all sorts of problem. In this section in one place when using the notion of vulnerability we are dealing with a clearly defined thematic aspect like food security or health, then next we deal with a physical context such as ecosystems, then a location or place context such as coastal areas and then a functional area such as industry and settlements, and vulnerability is used to cover all of them. And, finally, the concerns discussed are not all inclusive of the relevant profiles needed. So, if we look at coastal scenes, looking at their natural and human contexts, why not also look at upland mountain basin or plateau scenarios, or large river basins or any other significant location or area on the planet that is densely or sparsely populated? And, if looking at industry and settlement why not look at tourism and settlement, or service provision and settlement etc etc? What criteria is used to consider some locations or types of zone or types of economy, and not others? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	needs to be revisited in next iteration
460	2	32	50	32	51	The used term "Key vulnerability" is related to the article 2 of the UNFCCC?. See (Schneider et al, 2007 at the IPCC FAR Chapter 19). (Suarez, Avelino, Institute of Ecology and Systematic, Cuban Environmental Agency)	The key vulnerability is related to key vulnerability of IPCC-WG2, 2007
461	2	32	52	33	2	Citations would be good (Suarez, Avelino, Institute of Ecology and Systematic, Cuban Environmental Agency)	Will work on this
462	2	33	5	33	40	The definition of exposure and sensitivity is not clear. For example, is a "water stress" element or factor of "exposure" or "sensitivity"? It has both aspects of biophysics and socio-economic including infrastructure improvement level. Though Figure 2-4 is introduced to show the points of this section, its scheme is unfortunately not consistent to this section. "IMPACTS" in the figure is one of key component, while it is not mentioned in the sentences of this section. There should be explanation about relation between impacts and vulnerability. (Watanabe, Tsugihiko, Research Institute for Humanity and Nature (RIHN))	Noted, for next iteration
463	2	33	7	33	7	Does sensitivity refer to susceptibility as defined before? (Gaillard, JC, The University of Auckland)	rephrased
464	2	33	8	33	11	This statement is not easy to understand and does not seem to capture the idea of exposure as developed earlier and elsewhere. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	rephrased

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
465	2	33	8	33	9	Here again, the idea behind the sentence "Exposure can be expressed in terms of the biophysical impacts of the hazards, which in this context would be the changing patterns of extreme events" has already been expressed in previous sections. This sentence has to be deleted. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	rephrased
466	2	33	13	0	0	Propose to include the following ref: Giordano, M. and K.G. Villholth (Eds.), 2007. The Agricultural Groundwater Revolution: Opportunities and Threats to Development. CABI, in ass. w. IWMI. 419 pp. ISBN-13: 978 1 84593 172 8. (Villholth, Karen G., GEUS, Geological Survey of Denmark and Greenland)	Still need to get hold of the the document
467	2	33	16	33	17	Investment in and effectiveness of research and development in agriculture is a crucial component of adaptive capacity to mention, especially as it is significant gap in almost all countries now following decades of declining interest in the area. (Rickards, Lauren Amv. University of Melbourne)	For consideration in the next version
468	2	33	19	33	26	Would also suggest that consideration should be given to implications of limiting access to energy and water, limiting access to markets and limiting access to fields and to labour. (Street, Roger B, UK Climate Impacts Programme)	Will try to find references to these topics
469	2	33	28	33	33	I would also suggest the need to consider in the vulnerability assessment the implications of the reliance on local compared to imported food. (Street, Roger B, UK Climate Impacts Programme)	Will try to find references to these topics
470	2	33	33	0	0	different definition of exposure (Thalmann, Philippe, EPFL Swiss Federal Institute of Technology Lausanne)	rephrased, need doublechecking
471	2	33	45	34	36	The content of this subsection and the detail given contrasts strongly with a previous sub section on health aspects where we commented on the very short and non detailed discussion given, with over emphasis on drought and heat aspects. Some balance and discrimination is required between this sub section and the former one mentioned. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Duly noted
472	2	33	45	0	0	The reference of the National Research Council 2001 is not reported in the final bibliography. And from which country is this council? However, before modifying, please refer to the next comment. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	will check references again
473	2	33	46	33	47	Why is there a new definition of vulnerability here? This is confusing. (Gaillard, JC, The University of Auckland)	will delete
474	2	33	46	33	47	The idea behind the sentence "...vulnerability as the "extent to which a population is liable to be harmed by a hazard event, and depends on the populations' exposure to the hazard and its capacity to adapt or otherwise mitigate adverse impacts" has already been expressed in previous sections, even if here it specifically deals with health issues. This sentence has to be deleted. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	will delete
475	2	34	1	34	2	Also access to health services (pharmaceuticals, surgery, nurses/doctors, midwives, etc.) with disruptions during and/or loss following extreme events (Street, Roger B, UK Climate Impacts Programme)	okay, thanks
476	2	34	2	34	4	Please give a proper reference that there is high confidence for this statement on health, or cross refer to IPCC AR4 WG2. (Bouwer, Laurens, Institute for Environmental Studies)	noted
477	2	34	3	34	3	"Very high confidence" - is this statement coming directly from an earlier IPCC report? If not, the use of such 'likelihood' language needs to be treated very carefully and in accordance with IPCC guidelines. Otherwise a similar terminology, without using the words 'confidence' or 'uncertainty' should be used. (Stocker, Thomas, IPCC WGI TSU)	OK, accepted
478	2	34	9	34	17	Often the effects of interrupted infrastructure on health are forgotten. E.g. even in developed countries ambulances can't reach people with serious illness (that not necessarily needs to be connected with the disaster) in time if roads are blocked after a windstorm. I think this point should be mentioned somewhere in the report. (Koppe, Christina, Deutscher Wetterdienst)	okay
479	2	34	15	34	17	This sentence is policy prescriptive, and outside the mandate of this chapter (or report). The sentence sticks out as very odd here and should be removed. In any case, air pollution is not a climate extreme addressed in this report. (Stocker, Thomas, IPCC WGI TSU)	will be rephrased
480	2	34	34	34	35	What does "vulnerability to migration" mean? (Gaillard, JC, The University of Auckland)	Should be "such as migration"
481	2	34	39	0	0	Section 2.6.4: Needs developing. Could include a discussion of conflicts between water extraction for human, agricultural and ecosystem provision; algal blooms and water quality; salinity. All of which are exacerbated by extreme events, such as drought. Eg. Lake PS 2003. Ecological effects of perturbation by drought in flowing waters. Freshwater Biology 48, 1161-1172. Murdoch PS, Baron JS, Miller TL 2000. POTENTIAL EFFECTS OF CLIMATE CHANGE ON SURFACE-WATER QUALITY IN NORTH AMERICA. JAWRA Journal of the American Water Resources Association 36, 347-366. Oude Essink GHP 2001 Salt Water Intrusion in a Three-dimensional Groundwater System in The Netherlands: A Numerical Study . Transport in Porous Media 43, 137-158. Khan S 2004 Integrating hydrology with environment, livelihood and policy issues: the Murrumbidgee model . Water Resources Development 20, 415-429. (Chambers, Lynda, Australian Bureau of Meteorology)	true, needs further work (but space is an issue for the chapter at large)
482	2	34	41	34	41	TBD? (Gaillard, JC, The University of Auckland)	to be done

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
483	2	34	47	34	51	Section 2.6.5 is too light and short. Since the next section is on coastal systems, may be it would be good to add in section. 2.6.5 few lines on coastal ecosystems. I am not too familiar with the literature, but there is a very good review and synthesis that could be used here: Harley et al., 2006: The impacts of climate change in coastal marine systems. Ecology Letters, 9, 228-241. doi: 10.1111/j.1462-0248.2005.00871.x. Figures 2 and 3 from this article show conceptual models of abiotic changes associated with climate change, and potential ecological responses to climate change, respectively. (Cavazos, Tereza, CICESE)	Partly considered (but space is limited). Reference to be considered in next iteration.
484	2	34	47	34	51	This section on ecosystems clearly does not do justice to the vast amount of research on how climate change is already affecting the vulnerability of ecosystems! It should address both how ecosystems are becoming more vulnerable to extreme events and how ecosystems may have less capacity to protect human settlements from extreme events. Key issues to be mentioned should include (1) sea-level rise inundating coastal wetlands, which either can not migrate inland quickly enough or else are limited in their migration due to coastal development; (2) stronger storms/heavier rainfall events exceeding the natural resilience of ecosystems, especially in places where non-native species have been introduced; (3) extreme heat/drought leading to wildfire vulnerability and the possibility of major reorganizations in ecosystems, possibly in ways that reduce the resilience of water supply or fire resistance in the future. (Staudt, Amanda, National Wildlife Federation)	Partly considered (but space is limited) -- should be covered more in-depth in ch4
485	2	34	47	34	51	And so what? This section is definitely too short and must be extended (because ecosystems is a key component). (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	Partly considered (but space is limited) -- should be covered more in-depth in ch4
486	2	34	47	0	0	Section 2.6.5: Needs expansion. E.g. could discuss extreme temperatures influence on coral ecosystems, on sex ratios in reptiles, increased heat related mortality etc. E.g. Janzen FJ 1994 Climate change and temperature-dependent sex determination in reptiles. PNAS 91, 7487-7490. Walther et al. 2002 Ecological responses to recent climate change. Nature 416, 389-395. McKechnie AE, Wolf BO 2010 Climate change increases the likelihood of catastrophic avian mortality events during extreme heat waves. Biology Letters 6, 253-256. (Chambers, Lynda, Australian Bureau of Meteorology)	Partly considered (but space is limited) -- should be covered more in-depth in ch4
487	2	34	49	34	51	This is very short and incomplete. Also the mixture of ideas on vulnerability of physical systems and of human activities or contexts is very uncomfortable if not confusing, as we are not dealing with the same thing at all. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	still to be addressed
488	2	34	49	34	51	"high confidence probability"? -- not a term to be used in IPCC (see the IPCC Uncertainty Guidance Note); need to separate confidence from likelihood/probability. (Stocker, Thomas, IPCC WGI TSU)	noted, thanks
489	2	34	49	34	51	I suggest to elaborate more on this topic of climate change impacts on reducing biodiversity and damaging ecosystems (e.g. overview of the different types of impacts and their importance to society) (Willems, Patrick, Katholieke Universiteit Leuven)	for consideration
490	2	35	1	0	0	Section 2.6.6: this section is mostly general background information which could easily be referred to a relevant textbook in order to reduce the overall length of the Chapter (Stocker, Thomas, IPCC WGI TSU)	noted, thanks
491	2	35	7	35	7	"which can result in..." should be "which can contribute towards.....". Should also add a reference to Section 3.5.3 of Chapter 3 (sea level extremes) at the end of this sentence. (Stocker, Thomas, IPCC WGI TSU)	noted, thanks
492	2	35	9	35	14	How do these differ from those classes associated with the other types of vulnerabilities? (Street, Roger B, UK Climate Impacts Programme)	The point that "other classifications could exist" as raised by the reviewer in 42 can also be applied to this comment.
493	2	35	9	35	15	This is interesting, but other classifications could exist. I propose to add the one I've developed with a french colleague (but of course the SREX authors could prefer to present other examples). Then what could be added is: "But other classifications could exist. For example, another work, focused on coral archipelagos, had identified seven key factors that influence the vulnerability to natural hazards: (i) The configuration of the territory (territorial scattering, morphology and instability of coral islands); (ii) Its exposure to natural hazards; (iii) Resources limitations and the sensitivity of ecosystems; (iv) The living conditions of the population (demography, location of settlements, housing, health, education, transportation...) (v) Societal cohesion (relationships between individuals, and between communities); (vi) The degree of (economic and non-economic) activities' diversification; and (vii) The political and institutional organisation (territorial coherence, governance issues...)." The reference is: Duvat V., Magnan A. (forthcoming). Des archipels en péril? Les Maldives et les Kiribati face au changement climatique. Vertigo, vol. 10, No. 3, <a href="http://vertigo.revues.org">http://vertigo.revues.org</a> . (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	noted, to be considered in next version
494	2	35	9	35	9	Are classes similar to what you call dimensions before? (Gaillard, JC, The University of Auckland)	not fully -- needs alignment
495	2	35	9	0	0	In the text: Kaiser 2006. In the final bibliography: Kaiser 2007. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	It's 2006
496	2	35	17	35	18	Resilience is used with different meanings throughout the chapter. (Gaillard, JC, The University of Auckland)	will harmonize
497	2	35	22	35	22	What does development status mean? (Gaillard, JC, The University of Auckland)	"Developing" or "least developed"

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498	2	35	37	0	0	Box 2-3: is this box needed? It seems not to be adding much to the Chapter. Suggest to delete it. (Stocker, Thomas, IPCC WGI TSU)	I think it is needed
499	2	35	41	35	41	Who are 'they'? (Gaillard, JC, The University of Auckland)	The stakeholders who did the profiling
500	2	36	1	36	26	This section seems to deal more with infrastructure and cities or urban areas as such than industry and settlements. Moreover it runs parallel to a previous section in the chapter such that duplication is seen--this is a problem throughout the chapter--see health, food insecurity, etc etc (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	true, partly addressed but needs further attention
501	2	36	1	36	26	This section could benefit from the more detailed analysis in the IPCC AR4 WG2 chapter on industry and settlements, and should at least refer to it. (Bouwer, Laurens, Institute for Environmental Studies)	to be done
502	2	36	1	36	26	This gives some attention to the importance, economically and socially, to the vulnerability of industry, commerce and critical infrastructure (public or private). This point generally is missing in the report. (Wright, Richard, American Society of Civil Engineers)	to be done
503	2	36	1	36	26	Most of this is covered elsewhere and can be deleted. (IPCC WGII TSU)	to be done
504	2	36	3	36	6	Vulnerability and risk also results from limited adaptive capacity as suggested by lines 7-9 and 11-24 (Street, Roger B, UK Climate Impacts Programme)	agree
505	2	36	7	36	7	explain the term "informal settlements" (Stocker, Thomas, IPCC WGI TSU)	squatters
506	2	36	13	36	13	I don't particularly like the use of "South and North" here given the possible confusion with geographic indicators - would prefer "developed and less developed countries" or similar. (Trewin, Blair, Australian Bureau of Meteorology)	to be done
507	2	36	13	36	14	Cities are certainly locations of concentrated vulnerability, but is there evidence that they are more vulnerable on, for example, an impacts per capita basis? (Trewin, Blair, Australian Bureau of Meteorology)	to be addressed
508	2	36	14	36	14	the word in "sewage systems" to be "sewage systems". (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	I do not understand the comment.
509	2	36	19	36	26	All five references here are not in the list of references. (Gaillard, JC, The University of Auckland)	Will check on the references for inclusion to the next version
510	2	36	29	36	54	Is this trends in exposure and vulnerability or just vulnerability? Most of the sections speaks to vulnerability with little to no indications of trends in exposure. (Street, Roger B, UK Climate Impacts Programme)	should be both -- needs further attention
511	2	36	29	43	19	Sorry, but I feel the whole section 2.7. doesn't bring substantial new elements comparing to the two previous ones. It can clearly be reduced to the points 2.7.1. and 2.7.8., and perhaps the main elements of the sub-sections 2.7.2. to 2.7.7. could be reintroduced in corresponding parts of the section 2.5? Anyway, I feel (but that just my point of view) that this 2.7. section cumbersome the whole document. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	difficult to address without changing mandated outline, but should be considered in final iteration
512	2	36	29	43	19	These sections have to be checked against Chp 4 and redundancy reduced. The sections have very few references; more comprehensive literature reviews are required. (IPCC WGII TSU)	partly addressed, but needs further attention
513	2	36	29	0	0	Section 2.7: we note the substantial change in writing style before and after section 2.7... (Stocker, Thomas, IPCC WGI TSU)	true, improved but also still needs further work
514	2	36	33	36	34	Vulnerability can also be with respect to projected changes, but also the degree to which there is exposure and sensitivity to potential events (as well as the capacity to adapt/cope with these events) (Street, Roger B, UK Climate Impacts Programme)	
515	2	36	33	36	36	Can be deleted. (IPCC WGII TSU)	done
516	2	36	38	36	44	This (and similar) information is repeated several times throughout the report; it would be good to avoid such repetitions and to refer more to previous sections. (Willems, Patrick, Katholieke Universiteit Leuven)	section has been tightened, further alignment with 2.5, 2.6 and other chapters is possible
517	2	36	41	36	41	Is not physical susceptibility or resistance to damage sensitivity? (Street, Roger B, UK Climate Impacts Programme)	changed in rewrite
518	2	37	3	0	0	Section 2.7.2. This sub-section is very good but why excluding rural settlements as they become marinalized in the future and therefore more vulnerable? (Gaillard, JC, The University of Auckland)	to be done
519	2	37	10	38	13	As commented previously, the discussion here seems to be on urban areas or cities as opposed to settlement patterns and development trajectories. Clearly there are trends in exposure and vulnerability related to settlement patterns where consideration may be given to such things as the differential growth rates and density functions of small versus large, medium versus mega cities in the territory. Also settlement patterns, as opposed to urban structure and form, relates to new or changing locations--growth of cities in transborder situations, growth on flood plains and coastal zones etc. Also in this section part of the discussion is around new or increased hazard patterns due to urban growth and asphalt--this is not vulnerability or exposure as such but rather socially induced hazard trends. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	addressed in rewrite
520	2	37	10	38	13	How does this sub-section relate to the earlier discussions on this matter? Does this duplicate that earlier text? (Street, Roger B, UK Climate Impacts Programme)	section has been tightened, further alignment with 2.5, 2.6 and other chapters is possible



No	Ch	From Page	From Line	To Page	To Line	Comment	Response
521	2	37	10	38	13	In this chapter, when thinking of urban patterns and vulnerability, one is very inclined to consider architecture and building design. For instance applying principles of Green Architecture would be very useful in this field. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	considered, but too specific (fits more with management chapters)
522	2	37	12	37	12	Please provide a reference for this 60% statistic. (Stocker, Thomas, IPCC WGI TSU)	more statistics and UN reference added
523	2	37	19	37	19	See Hall et al (2010) for an introduction complex systems approach to the integrated assessment of climate change in cities: Hall, J.W., Dawson, R.J., Barr, S.L., Batty, M., Bristow, A.L., Carney, S., Dagoumas, A., Ford, A., Harpham, C., Tight, M.R., Walsh, C.L., Watters, H. and Zanni A.M. City-scale integrated assessment of climate impacts, adaptation and mitigation. In R.K. Bose (ed.) Energy Efficient Cities: Assessment Tools and Benchmarking Practices, World Bank, Washington DC, 2010 pp.43-64. (Hall, Jim, Newcastle University)	considered
524	2	37	32	37	33	explain the term "floods of folly" (Stocker, Thomas, IPCC WGI TSU)	removed
525	2	37	32	37	33	It is suggested to explain the term "floods of folly" to make the report more user-friendly. (Radunsky, Klaus, Umweltbundesamt GmbH)	removed
526	2	37	33	37	38	The perspective of insurance companies on how they tackle moral hazard can be included (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	noted, thanks
527	2	37	35	37	35	explain the term "moral hazard" (Stocker, Thomas, IPCC WGI TSU)	to be done
528	2	37	40	37	47	Introduction/Background to "urban heat island" lacks references. In particular the statement on "urban heat is likely to become a serious issue..." needs to be backed up. (Stocker, Thomas, IPCC WGI TSU)	done
529	2	37	43	37	44	Please, provide a reference for the numbers cited. The values given in the report are a bit confusing ... . On (annual) average a city of 1 000 000 inhabitants is around 2K warmer than its surroundings, but during night time the urban heat island effect can go up to 15K. In addition, the UHI depends on the geographical location of the city. Therefore, it should be specified if the 7-10K given here refer to which kind of setting. (Koppe, Christina, Deutscher Wetterdienst)	changed
530	2	37	43	37	48	The relative intensity of the urban heat island (i.e., relative to rural areas) may not, however, increase, unless there are large changes in heat emissions in the urban areas. E.g., McCarthy, M.P., Harpham, C., Goodess, C.M., Jones, P.D., 2010. Modelling climate change in UK cities. International Journal of Climatology, submitted. (Goodess, Clare, Climatic Research Unit)	changed
531	2	37	44	37	44	Add "under certain conditions" after "nearby rural areas". This statement needs a citation. (Trewin, Blair, Australian Bureau of Meteorology)	changed
532	2	37	48	37	48	These references aren't in the reference list so I was unable to check them. There are also examples of stable urban heat islands in well established cities (e.g. PD Jones and DH Lister, 2010, The Urban Heat Island in Central London and urban-related warming trends in central London since 1900, Weather, 65, in press) (Trewin, Blair, Australian Bureau of Meteorology)	changed
533	2	38	1	38	2	Not clear what this is trying to say? Is this saying that ill-informed urban development and adaptation studies could increase the vulnerability of urban areas? (Street, Roger B, UK Climate Impacts Programme)	removed
534	2	38	2	38	3	clarify "attempts are made to localise global climate science to small-scale urban situations" -- we don't understand this. (Stocker, Thomas, IPCC WGI TSU)	removed/
535	2	38	2	38	3	This statement needs more explanation. (Trewin, Blair, Australian Bureau of Meteorology)	removed
536	2	38	2	38	4	I don't think that this rather negative statement can/should be made without supporting references. Perhaps it would just be better to say that currently there are rather few climate projections specifically tailored for urban areas. Certainly the spatial scale required for say flash flooding and urban drainage is very demanding. (Goodess, Clare, Climatic Research Unit)	removed
537	2	38	10	38	10	"exposed to a variety of geophysical AND HYDROMETEOROLOGICAL hazards...." (Stocker, Thomas, IPCC WGI TSU)	rephrased
538	2	38	10	38	10	Geophysical and hydrological hazards. (Gaillard, JC, The University of Auckland)	rephrased
539	2	38	16	39	20	Seems to me that environmental degradation, loss of environmental services etc does not as such increase vulnerability but rather reveals and makes apparent important existing social and economic conditions that may then be transformed into vulnerability variables given an increase in hazard incidence and exposure related to such degradation processes. One way or another the debate on whether a change in a physical parameter constitutes an increase in vulnerability will go on and the camp is divided. Clearly, ascribing to this idea puts one in the school of thought that vulnerability can be physically created--I don't subscribe to that idea, as many others don't either. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	considered in rewrite
540	2	38	19	38	19	Could include pollination as a supporting service (Chambers, Lynda, Australian Bureau of Meteorology)	section reframed
541	2	38	30	38	31	shifts in the vulnerability profiles, particularly for those most affected. (Street, Roger B, UK Climate Impacts Programme)	section reframed

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
542	2	38	33	38	44	This section is again (as was section 2.5.2) strongly focused on human impacts, while the loss of biodiversity and climate change impacts on ecosystems are too briefly discussed. Given that also section 2.6.5 was too brief, the report should in general elaborate much more on that environmental dimension. (Willems, Patrick, Katholieke Universiteit Leuven)	this is covered in chapter 4 -- ch2 is focused on human impacts (possibly moderated through the environment)
543	2	38	34	38	35	This does not fit well in this "environmental dimension" section. (Willems, Patrick, Katholieke Universiteit Leuven)	section reframed
544	2	38	35	38	36	"many communities have suffered considerable loss due to extreme weather events" -- such general statements need to be backed up with references. (Stocker, Thomas, IPCC WGI TSU)	section reframed
545	2	38	37	38	38	Could you provide evidences and references? (Gaillard, JC, The University of Auckland)	section reframed
546	2	38	45	38	46	Only "diminution of genetic pools" is given as example, which is already very specific; more extensive discussion and additional examples need to be added. (Willems, Patrick, Katholieke Universiteit Leuven)	removed
547	2	39	1	39	1	(ECE) abbreviation is not needed. It is not used elsewhere in this chapter or report. (Stocker, Thomas, IPCC WGI TSU)	removed
548	2	39	1	39	1	The acronym ECE pops out of the blue and is not used elsewhere in the chapter. (Gaillard, JC, The University of Auckland)	removed
549	2	39	7	39	37	The acronyms used in this section need to be defined. (Trewin, Blair, Australian Bureau of Meteorology)	removed
550	2	39	13	39	13	What do exported and imported vulnerability mean? What about Lewis' concept of derivative vulnerability (see Shima 3(1) in 2009) (Gaillard, JC, The University of Auckland)	section reframed
551	2	39	23	39	38	Here the economic dimension is limited to poverty whilst in an earlier section other things were considered such as economically vulnerable countries, income distribution and inequality, wealth etc. Reducing economic aspects to poverty considerations is rather limiting in itself but also contrasts with other sections where it is dealt with in wider terms. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	section reframed
552	2	39	45	39	45	"Population growth" should be replaced by "population dynamics". (Gaillard, JC, The University of Auckland)	done
553	2	39	45	39	48	Do factors such as population density and diversity of demographics also play a role? (Street, Roger B, UK Climate Impacts Programme)	done
554	2	39	45	40	5	These ideas have already been developed before. (Gaillard, JC, The University of Auckland)	removed
555	2	39	47	39	48	It is suggested to simplify language: More often factors such as .... are important in determining vulnerability. (Radunsky, Klaus, Umweltbundesamt GmbH)	modified
556	2	39	50	39	51	Population groups that are socially isolated, including those temporally isolated, can also be more vulnerable than others (e.g., some of the evidence associated with recent heat waves). (Street, Roger B, UK Climate Impacts Programme)	done
557	2	39	53	40	5	It seems that exposure due to poverty factors or lack of income permitting location in safe areas is here being interpreted as vulnerability per se. Vulnerability between people or livelihoods can only legitimately be compared in like circumstances. We cant, I dont think, compare people living on slopes with those not living on slopes and then conclude because there is more risk in the former than the latter, that this is due to vulnerability. It is due to increased or higher hazard contexts that then reveal existing vulnerability conditions--before they were only the existing socio-economic, organizational, cultural etc characteristics of a population. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have removed this materla
558	2	39	0	0	0	Impact of poverty is important; but arguably more so is inequity which is one of the underlying drivers of vulnerability. (Glavovic, Bruce, Massey University)	touched on equity
559	2	39	0	0	0	2.7.4 The discussion of economic dimensions of vulnerability trends needs to be expanded. In addition to poverty, the section should also discuss economic trends that influence vulnerability such as globalization (see Leichenko and O'Brien. 2008. Environmental Change and Globalization: Double Exposures, Oxford UP), changing industry structure, labor market dynamics etc. (Leichenko, Robin, Rutgers University)	have added material but need to deal with some of the factors mentioned by reviewer in next draft
560	2	40	7	40	11	This paragraph may be developed. For example why are migrants unable to understand extreme event information? (Gaillard, JC, The University of Auckland)	have expanded on this
561	2	40	13	40	15	Restricted access to information that could be used to modify their risk is also a problem (Street, Roger B, UK Climate Impacts Programme)	incorporated in education section
562	2	40	18	40	29	2.7.5.2. Education - please coordinate with Case Study 9.14 (Hama, Angela Michiko, United Nations International Strategy for Disaster Reduction)	yet to do this
563	2	40	20	40	20	Why do you mean by "Environmental education programmes"? (Gaillard, JC, The University of Auckland)	no explanantion required
564	2	40	20	40	29	Education in the section on dimensions of vulnerability deals with unsafe educational facilities and disaster in curricula at schools. Here this section deals only with environmental education and nothing else. Also there is really nothing on trends and changes in this factor. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	have modified in line with comments

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
565	2	40	27	40	29	It is suggested to simplify language: Because environmental education has clear benefits for increasing environmental awareness amongst children and adults funding of education is important and should be considered for determining trends in the public understanding of some of the controlling factors of exposure and vulnerability related to extreme climate events. (Radunsky, KLaus, Umweltbundesamt GmbH)	modified language
566	2	40	32	41	2	Public health infrastructure should be mentioned. (IPCC WGII TSU)	now included
567	2	40	39	40	40	Requirement for regular access to health services can also increase vulnerability. (Street, Roger B, UK Climate Impacts Programme)	included
568	2	40	50	40	51	A reference should be included here to Section 3.5.8 of chapter 3, which provides more clarity regarding trends in dust storm frequencies. (Stocker, Thomas, IPCC WGI TSU)	link to chapter three made
569	2	40	50	40	52	This reference to and on changes in dust storm frequency could be better placed in chapter 3, and cross-referenced. (Bouwer, Laurens, Institute for Environmental Studies)	see above
570	2	40	0	0	0	Injury and disability, mental health, nutrition should also be included here. (Abrahamsj, Jonathan, World Health Organization)	yet to do this
571	2	41	1	41	2	also access to health services (pharmaceuticals, surgery, nurses/doctors, midwives, etc.) with disruptions during and/or loss following extreme events (Street, Roger B, UK Climate Impacts Programme)	nothing on trends in this but is mentioned elsewhere in 2.7
572	2	41	5	41	37	Another reference is the international agriculture assessment (IAASTD). You might find their coverage of science and technology informative and helpful. (IPCC WGII TSU)	done
573	2	41	5	41	5	The acronym S&T should be introduced right here. (Gaillard, JC, The University of Auckland)	done
574	2	41	7	41	7	S&T can help reduce or INCREASE vulnerability as well. (Gaillard, JC, The University of Auckland)	done
575	2	41	7	41	9	Not sure if this statement is mixing vulnerability and risk. S&T can act as a double-edged sword by increasing exposure and/or sensitivity for some hazards but increasing exposure and/or sensitivity to others. It can also act as such through increasing or decreasing adaptive capacity. (Street, Roger B, UK Climate Impacts Programme)	have modified in line with comments
576	2	41	7	41	9	General comments: 'Double-edged sword' of S&T is not only related to its contribution to environmental change, but also related to the fact that designs without enough consideration of changing climate may increase the risk, such as structural failure by increasing deterioration (see above comments). (Wang, Xiaoming, Commonwealth Scientific and Industrial Research Organisation (CSIRO))	see above
577	2	41	15	41	17	The issue of access should be developed. (Gaillard, JC, The University of Auckland)	done and included with education
578	2	41	17	41	20	Need to appraise and evaluate proposed and introduced (respectively) measures. In the later case, how does one evaluate introduced S&T as to continued viability. Also an issue for lines 30-33. (Street, Roger B, UK Climate Impacts Programme)	done
579	2	41	30	41	37	This language creates a false dichotomy between hard (S&T) and soft (called EbA in chapter 6) measures for adaptation. Neither are panaceas. They must be skillfully integrated to achieve effective adaptation measures. Don't cite examples of poor S&T to imply that all S&T is useless. (Wright, Richard, American Society of Civil Engineers)	modified the language accordingly
580	2	41	30	41	37	The perspectives of developing countries should be represented. (IPCC WGII TSU)	yet to do this
581	2	41	33	41	37	Need for wide-based strategy/solutions - strategic and policy-based, technical and structural, and non-technical and non-structural measures, along with an informative monitoring and evaluation programme. Also linked to lines 49-51. (Street, Roger B, UK Climate Impacts Programme)	done
582	2	41	40	0	0	Section 2.7.7. addresses many issues but not really access as stated in its title. (Gaillard, JC, The University of Auckland)	this has been fixed - seems arose due to a cut and paste/editorial error
583	2	41	49	42	44	This does not seem to be very much about information access, rather it talks of governance, science and technology, types of solution for risk and other things in somewhat free flow fashion. In fact it is difficult to find a singular train of thought here as the topics change in each paragraph. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	see above
584	2	42	1	41	5	How does this differ from that raised on page 40? (Street, Roger B, UK Climate Impacts Programme)	removed
585	2	42	7	42	12	These are valid points, but it is unclear as to how they relate to access to information. Should this be placed elsewhere in the chapter? Similarly for lines 14-19, 21-24, 31-38 (relates to subsection 2.7.6) and lines 40-44. (Street, Roger B, UK Climate Impacts Programme)	done see above in relation to editorial error
586	2	42	47	43	19	What is the purpose of this section? The discussion is imprecise, and it also does not have any references. Lines 4-5 seem to equate hazard and exposure, which does not fit definitions adopted for the report. There is a reference to Chapter 3, without being specific to a section or table. This section should probably be cut. (Bouwer, Laurens, Institute for Environmental Studies)	see above
587	2	42	49	42	53	Delete and refer to Chp 3. (IPCC WGII TSU)	done

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
588	2	42	49	43	19	The idea of gradual climate change is not clear here as the whole section talks only of extreme events but there is nothing on changing averages or norms of climate, which is what one considers is gradual change. How can one have a gradual change in an extreme event? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	this section has been modified
589	2	42	49	43	4	This paragraph is unclear and vague. "Climate change is expected to increase the climatology...." What does this mean? The increase in 'storminess' is questionable - there has been a shift in extratropical storm tracks but not necessarily any change in frequency. This entire paragraph is not needed and should be deleted. There is no need to have here a badly worded mini-summary of what can be found in the executive summary of Chapter 3. This section could simply begin at the second paragraph, with a reference to chapter 3 inserted in the second sentence eg, "element of exposure....Therefore current and predicted trends in extremes (see Chapter 3) are likely to increase....." (Stocker, Thomas, IPCC WGI TSU)	see above
590	2	42	49	0	0	I would rephrase this as 'an increase in the frequency, intensity and spatial extent of' (Goodess, Clare, Climatic Research Unit)	see above
591	2	42	49	0	0	Should be "changes in the climatology" not "increase in the climatology" (Staudt, Amanda, National Wildlife Federation)	see above
592	2	42	52	42	53	I would say 'Insufficient observational evidence is available to identify changes in some extreme climate events (e.g., ' (Goodess, Clare, Climatic Research Unit)	see above
593	2	43	4	43	19	I suggest merging with the Introduction as the concepts discussed are similar. (IPCC WGII TSU)	noted, thanks
594	2	43	5	43	5	Please replace the word "predicted" by "projected" (Bouwer, Laurens, Institute for Environmental Studies)	done
595	2	43	8	43	11	I would avoid the phrase 'most likely' given the very specific likelihood language used in Chapter 3. I also suggest deleting from 'as a result of changes' to the end of the sentence - leaving such detail for Chapter 3. (Goodess, Clare, Climatic Research Unit)	done
596	2	43	12	43	12	explain the term "climatology of extreme events" (Stocker, Thomas, IPCC WGI TSU)	removed
597	2	43	14	43	15	This sentence is unclear. (Gaillard, JC, The University of Auckland)	modified
598	2	43	14	43	19	Consideration of introduction of new areas/communities to extremes (areas that previously were not exposed). In addition, the changing nature of hazards making today's extremes normal in the future under projected changes in climate (Street, Roger B, UK Climate Impacts Programme)	done
599	2	43	22	51	8	This section is too long and covers some of the same material as Chp 1; please harmonize and reduce redundancy. The section only has a fraction of relevant citations; please include the perspectives of and citations from the adaptation community. (IPCC WGII TSU)	being addressed (WIP)
600	2	43	22	0	0	Section 2.8: this section lacks to large extent the connection with the overarching topic "climate change and climate extremes". Parts of the section read more like a general introduction to DRM. It seems that large parts of the section could be cut, also helping to reduce the overall length of the Chapter. Also it's unclear to us how much the various Boxes actually contribute to the Chapter and some of those could probably be removed as well. (Stocker, Thomas, IPCC WGI TSU)	more adaptation references have been added. Idea of boxes is to provide specific applications contexts of interest to policy makers that illustrate the context in which some of the concepts described in the section are applied in practice (see also comment 605)
601	2	43	24	43	35	The first paragraph repeats exactly the second. Adaptation is discussed in these repeated sentences but in the next paragraph talk is of disaster risk management and its strategies or instruments. What distinguishes one type of intervention from the other, this is never really clear or clarified here or in this study as a whole ? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	para removed; difference more explicitly addressed (WIP)
602	2	43	24	43	35	Paragraphs are repeated (Street, Roger B, UK Climate Impacts Programme)	removed
603	2	43	24	43	35	These two paragraphs seem to be the same. (Gaillard, JC, The University of Auckland)	removed
604	2	43	24	43	35	It is noted that lines 24 to 27 are repeated verbatim in lines 32 to 35. It is suggested to delete therefore lines 32 to 35. (Radunsky, KLaus, Umweltbundesamt GmbH)	removed
605	2	43	24	50	32	Once again I think that in addition to the good theoretical background offered here could be good incorporate some concrete initiatives and tools that exist today in order to deal with the vulnerability and risk assesment... probably a table with some mayor projects available on internet could be interesting.. (Linayo, Alejandro, Research Center on Disaster Risk Reduction CIGIR)	provided some more detail in boxes to do this
606	2	43	37	43	42	Consideration of the evaluation of responses is an important aspects of risk assessment that is often missed. (Street, Roger B, UK Climate Impacts Programme)	added this point
607	2	43	37	0	0	Refers only to public policies when discussing risk management, the private sector (households and business) is an actor as well. (Mechler, Reinhard, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	They are more objectives (or components) of DRM than public policies, but they are usually recognized as policies in the country's DRM legislations
608	2	43	38	43	38	"Objective evaluation of risk" for whom? (Gaillard, JC, The University of Auckland)	OK, done

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609	2	43	38	43	42	Disaster Risk Management will include risk identification, reduction and transfer. The first three points can be considered a part of disaster management. The following link of world bank also recognizes this: <a href="http://siteresources.worldbank.org/CHINAEXTN/Resources/318949-1217387111415/Disaster_Risk_en.pdf">http://siteresources.worldbank.org/CHINAEXTN/Resources/318949-1217387111415/Disaster_Risk_en.pdf</a> (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	Indeed, disaster management refers to actions related to cope with disaster itself, not to risk. That means: preparedness (ex ante), response, rehabilitation, recovery, reconstruction (ex post)
610	2	43	39	43	39	Risk reduction can also be achieved by reducing exposure and hazardous circumstances or processes--if we reforest and this reduces landslide hazards then we have also reduced risk without directly touching vulnerability. Or if we move people from one place to another this reduces exposure but does not necessarily change any vulnerability levels-it eliminates the need to talk of them maybe and reconverts vulnerability conditions into simple socio-economic and organizational conditions. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FIACSO))	OK, done
611	2	43	39	43	39	Could you differentiate prevention and mitigation? (Gaillard, JC, The University of Auckland)	They are not sinonims. Prevention is to avoid or impede, e.g. relocation of dwellings of prone area, mitigation is reduce or diminish the effects, e.g. building code requirements
612	2	43	39	43	40	Is the difference between risk reduction and risk transferuseful or is the later part of risk reduction? (Gaillard, JC, The University of Auckland)	Yes, because risk reduction is related to diminish or avoid damage, whilst risk transfer does not reduce damage, only distribute the economic loss (i.e. it is related to risk of insolvency)
613	2	43	41	43	45	Is disaster preparedness an ex post action? (Gaillard, JC, The University of Auckland)	OK, done. Any way this is an ex ante action but with the objective of a effective emergency response
614	2	43	44	43	45	Disaster Management is not necessarily post disaster. Preparedness (Ref Ch 2 Pg 43 L 41) cannot happen post a disaster. Definition UNISDR given in Ch 1 Pg 19 L 41-45 also talks about ex ante actions comprising disaster risk management. (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	OK, done. See above
615	2	43	0	0	0	The statement related to Disaster Risk Management could benefit from reference to Emergency Management Australia's guidance on Emergency Risk Management (Abrahamsj, Jonathan, World Health Organization)	In Australia Emergency Management is equivalent to Disaster Risk Management which can be confusing --specifics on this reference merit discussion in chapters 5, 6
616	2	44	13	44	13	What is a "culture of adaptation and resilience"? (Gaillard, JC, The University of Auckland)	rephrased
617	2	44	19	44	37	Would have expected to see knowledge of adaptive capacity status and limitations. (Street, Roger B, UK Climate Impacts Programme)	added
618	2	44	39	44	41	Too many references? (Gaillard, JC, The University of Auckland)	it's also a whole set of bullets
619	2	44	54	44	54	Should read "with potential increasing frequency". (Gaillard, JC, The University of Auckland)	OK, done
620	2	45	1	45	3	It is not within the mandate of chapter 2 to be making generalised projections concerning green-house gases and future probabilities of extreme events. Such statements can only come from the detection and attribution assessment given within Chapter 3. (Stocker, Thomas, IPCC WGI TSU)	removed
621	2	45	1	45	3	Please provide a reference that shows that past emissions will lead to a further increase in extreme weather events. Else cut this statatement. (Bouwer, Laurens, Institute for Environmental Studies)	removed
622	2	45	2	45	2	Should read "in the atmosphere may imply". (Gaillard, JC, The University of Auckland)	OK, done
623	2	45	8	45	8	Recognise that vulnerability and risk assessments are iterative processes (continuing improvement) and as such include monitoring and evaluation as a basis for future iterations (e.g., see Willows and Connell, 2003) (Street, Roger B, UK Climate Impacts Programme)	to be discussed in more detail
624	2	45	8	0	0	Section 2.8.2. This section sounds very technocratic. What about the participatory approaches to risk assessment and climate change adaptation (see Participatory Learning and Action Vol. 60 in 2009). (Gaillard, JC, The University of Auckland)	Indicators techniques (in some cases use subjective qualifications). They usually are participatory and can be community base approaches.
625	2	45	10	45	10	How do you define "risk analysis" and "risk assessment"; "risk analysis" and "risk evaluation" are often summarized as risk assessment (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	It is possible to use only risk assessment however there are acceptable sinonims in the literature and legislations of the countries
626	2	45	20	45	22	How is this similar or different from how these are viewed by the climate change community (see IPCC AR4 WGII, chapter 2) (Street, Roger B, UK Climate Impacts Programme)	the contrast here is not with the climate versus DRR perspective, rather two perspectives on decision-making in a general disaster risk context
627	2	45	30	45	30	I would question whether communication with the assessment is sufficent, suggesting that engagement within the assessment is necessary. (Street, Roger B, UK Climate Impacts Programme)	to be done
628	2	45	30	45	30	What is "ISO 31000"? (Gaillard, JC, The University of Auckland)	It is the standard on risk of the International Standards Organization, ISO

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629	2	45	37	45	37	Risk assessment in this definition would be Risk Analysis; what's the difference to line 10 (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	Only will be used risk assessment
630	2	45	38	45	38	What is "a culture of disaster resilience"? (Gaillard, JC, The University of Auckland)	it is clear that this is taken from Hyogo Framework, not our assessment
631	2	45	47	45	50	Confusing usage of deductive and inductive approaches. Inductive commonly refers to using a large historical sample, deductive on drawing inferences from established rules or axioms (Mechler, Reinhard, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	OK, this has been eliminated
632	2	46	4	46	10	In line 5, "trees" as a word is mentioned. Perceiving what is behind it cannot be acquired. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	Indeed, event or fault trees are methods for risk assessment
633	2	46	4	0	0	In a narrow sense risk analysis IS probabilistic, as risk usually defined to be a probabilistic metric, and this needs to be clarified somewhere early on. The paragraph is a bit unclear on how risk analysis can be conducted, and the fault tree is one method that would be part of a deductive approach. Taking an inductive approach and using observed impacts is another way. (Mechler, Reinhard, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	OK. Done. There are several approaches (not probabilistic) to risk. The paragraph is making reference to methods used based on probability (assigned or calculated)
634	2	46	22	46	51	The discussion on probabilistic analyses should also (shortly) mention the challenges created by climate change in terms of non-stationarity, as prominently discussed in chapter 1, and refer to this chapter. (Mechler, Reinhard, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	The intensity or loss exceedance curves (probabilistic) can include at present with out problem future scenarios (events) obtained of the climate change models. The challenge is for the CC models not for the probabilistic risk models
635	2	46	28	0	0	Must the word "are" be deleted? (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	OK, done
636	2	46	29	46	39	To include it is appropriate, given facility and better understanding, the characterization of sensitiveness ( susceptibility ), which allows dimensioning vulnerability. With regard to this matter, the protection of such characteristics ( soil, vegetation, sea level, etc.) They are essential to determine the actions of adaptation. (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology, meteorology and environmental studies))	these aspects are taken apart in more detail earlier in the chapter -- to keep this section brief, we have chosen to keep the shorter version only.
637	2	46	0	0	0	Risk assessment should include capacity assessment, or else the concept of capacity is not being addressed under the general heading of "assessment". As such, risk assessment and DRR programming in general may focus only on "susceptibilities, weaknesses and gaps", not on the "current capacities, the strengths and opportunities" evident in every community - these are the basis of risk management and capacity development programmes. (Abrahamsj, Jonathan, World Health Organization)	The lack of capacities (to response, anticipate, recover) or the lack of resilience are factors of vulnerability
638	2	47	12	0	0	The discussion on the disaster deficit index should also relate to the discussion on economic and financial vulnerability: p. 24, lines 10-42. (Mechler, Reinhard, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	OK, done. The box is cited in p. 24 due to certainly the topic is mentioned in the economic and financial dimension of vulnerability
639	2	47	14	47	14	The sentence: "Future disasters are contingency liabilities that must be included in the balance of each nation" is policy prescriptive and not appropriate for an IPCC report at all as IPCC reports can only include assessments of the literature. The following wording is suggested: "Future disasters have been identified as contingency liabilities and have been included in the balance of some countries." (Radunskv. Klaus, Umwelthundesamt GmbH)	OK, done
640	2	47	34	47	41	Please provide examples of where this has been used, the challenges to use, lessons learned, etc. (IPCC WGII TSU)	tbd
641	2	48	18	48	26	The adaptation literature needs to be cited. (IPCC WGII TSU)	yes
642	2	48	23	48	26	This has already been said. (Gaillard, JC, The University of Auckland)	removed
643	2	48	24	0	0	here exposure is defined as part of vulnerability, contrary to rest of text where it is a separate concept (Thalmann, Philippe, EPFL Swiss Federal Institute of Technology Lausanne)	rephrased
644	2	48	28	48	33	Repeated elsewhere. (IPCC WGII TSU)	removed
645	2	48	45	48	49	Identification of policy responses is necessary but not sufficient. Firstly, there is a need for policy response options will require some means of appraisal against identified criteria. Secondly, policy options by themselves can be lacking. In addition to strategic and policy responses, there is also a need to consider technical and structural options and non-technical and non-structural options. (Street, Roger B, UK Climate Impacts Programme)	yes, added these elements
646	2	49	3	49	29	It would be useful to explore the challenges of changing baselines for exposure and vulnerability. (IPCC WGII TSU)	It is a composite relative (not absolute) index for progress and regression monitoring of vulnerability to provide warnings to the national governments
647	2	49	5	49	16	Would be interesting to have a discussion of the validity (positives and negatives) of the applicability of the PVI in the context of vulnerability to existing and projected climate change (Street, Roger B, UK Climate Impacts Programme)	Country vulnerability proxy obtained by this method is not sensitive to CC but provides an important message on why vulnerability is related to the development problems



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648	2	49	24	49	25	how does this statement relate to the determinants of vulnerability identified in the earlier parts of this chapter. This sentence should be accompanied by a reference. Vulnerability can be addressed through "adequate" development processes, but I would like to see further evidence that the causes of vulnerability can be "corrected" by means of adequate development processes. (Street, Roger B, UK Climate Impacts Programme)	OK, done; certainly there is evidence that the reduction, for instance, of poverty, inequality and a better governance reduce vulnerability
649	2	49	27	49	29	Are there any limitations or disadvantages associated with the PVI. Also a reference supporting this statement would be helpful. (Street, Roger B, UK Climate Impacts Programme)	OK, done
650	2	49	33	49	38	Opportunities to evaluate the continued viability of responses and/or identify the need for further adaptation/response measures or reconsidering the appropriateness of existing response measures. (Street, Roger B, UK Climate Impacts Programme)	in our view, this is captured in the second half of this paragraph
651	2	49	33	49	44	This paragraph needs to take climate change into account. (IPCC WGII TSU)	included more explicitly now
652	2	49	43	49	44	The assessment that "Until now, many post-disaster processes and strategies have failed to integrate aspects of climate change adaptation and long-term risk reduction" should be included in the executive summary provided it is a robust statement. (Radunsky, KLaus, Umweltbundesamt GmbH)	good point, but our section primarily relates to ex-post assessment. The statement that deserves attention may better fit the risk management chapters (unless we rephrase this around assessments)
653	2	49	46	49	49	I am not sure if drought can be considered as a sudden-onset hazard. (Gaillard, JC, The University of Auckland)	removed
654	2	49	50	49	51	Are their not also appraisal criteria for consideration of proposed adaptation/response measures? (Street, Roger B, UK Climate Impacts Programme)	WIP
655	2	49	0	0	0	BLANK (Abrahamsj, Jonathan, World Health Organization)	?
656	2	50	1	50	2	Is this evaluation prior to implementation (appraisal of proposed adaptation options) or post implementation? (Street, Roger B, UK Climate Impacts Programme)	Clearly risk and vulnerability assessments are techniques useful to envision what to do.
657	2	50	7	50	7	Reference for this statement should be provided. (Street, Roger B, UK Climate Impacts Programme)	OK, done
658	2	50	10	50	11	Does transparency also relate to the ability to follow the decision-making process and understand the rational/basis for decision made during and resulting from the process? (Street, Roger B, UK Climate Impacts Programme)	Yes, but the transparency we refer here is the transparency of the evaluation method not related to the decision-making derived
659	2	50	20	50	22	Would also suggest referencing from the climate change perspective Willows and Connell, 2003. (Street, Roger B, UK Climate Impacts Programme)	done
660	2	50	37	0	0	Section 2.8.3. This section pops out of the blue here. Would it be better to integrate in previous sections? (Gaillard, JC, The University of Auckland)	changed intro, renamed to only "communication"
661	2	50	39	0	0	I suggest to refer to previous sections as well (Willems, Patrick, Katholieke Universiteit Leuven)	see previous comment
662	2	50	45	50	45	The following language is suggested for greater clarity: Knowledge on factors that determine how people perceive and respond to a specific risk is key for risk management and climate change adaptation effectiveness. (Radunsky, KLaus, Umweltbundesamt GmbH)	rephrased
663	2	50	45	50	53	References are needed. (IPCC WGII TSU)	section expanded and references added
664	2	50	45	51	2	This is an unidirectional view of communication which should be balanced to emphasize dialogue between stakeholders. (Gaillard, JC, The University of Auckland)	included
665	2	50	45	51	2	This section discussing risk perception and risk communication is - given its high importance - far too limited (at current far too general). (Willems, Patrick, Katholieke Universiteit Leuven)	added more detail
666	2	50	47	50	47	"... People identify (spelling) and assess risk..." Here risk assessment is risk evaluation (Bründl, Michael, WSL Institute for Snow and Avalanche Research SLF)	done
667	2	50	47	50	48	Is communication sufficient? Should this not be engagement of the different stakeholders in the risk assessment process? (Street, Roger B, UK Climate Impacts Programme)	true, and we have added some further suggestions along these lines in the text (various places in 2.8). More details about stakeholder engagement are to be discussed in chapter 5 (local risk management)
668	2	51	13	51	44	This overlaps with some of the information in Chp 5; please align and reduce redundancies. The last paragraph can be deleted. (IPCC WGII TSU)	we have flagged the overlap with chapter 5 and removed emphasis on risk management in second paragraph. OK to keep some redundancy to ensure completeness in both contexts (ch2 on context/methods/assessment, ch5 on risk management). Final para removed.
669	2	51	34	51	35	The following language is suggested: perhaps the most important aspect of risk reduction is to support community processes amongst most of the ..... (Radunsky, KLaus, Umweltbundesamt GmbH)	rephrased accordingly
670	2	51	37	51	37	The language should read: .. Which are rapidly going ... (Radunsky, KLaus, Umweltbundesamt GmbH)	rephrased

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671	2	51	40	51	44	What about this paragraph? (Gaillard, JC, The University of Auckland)	removed
672	2	51	49	51	49	The language should read: This chapter highlights how risk .... (Radunsky, Klaus, Umweltbundesamt GmbH)	done
673	2	52	1	52	8	There is, however, often strong public/political pressure to restore the status quo ante as soon as possible post-disaster (e.g. New Orleans post-Katrina, Victoria after the February 2009 fires) (Trewin, Blair, Australian Bureau of Meteorology)	good point, added
674	2	52	11	52	11	Understanding how to include transformation and transitional adaptation options appraisal and evaluation into decision-making processes (i.e. Moving beyond merely coping) (Street, Roger B, UK Climate Impacts Programme)	included
675	2	52	11	53	2	The mechanisms through which ecosystems reduce disaster risk is an important research gap. More research on ecosystem services delivery would help support integration of ecosystems in climate related disaster risk reduction approaches. (Kumar, Ritesh, Wetlands International - South Asia)	included the role of ecosystems -- but the main discussion on risk management options should be included in chapters 5. 6. 7
676	2	52	11	0	0	Section 2.10 on Research Gaps: would this information be better placed earlier in the text, e.g., in the Introduction? Here it comes like an afterthought that is somewhat unconnected to the rest of the chapter. (Stocker, Thomas, IPCC WGI TSU)	We believe most common standard chapter structure has it at the end. We have tried to rephrase to make it connect more strongly to the end of the chapter
677	2	52	13	52	25	Repeated elsewhere and should be deleted. (IPCC WGII TSU)	We acknowledge the overlap with earlier substantive text and have shortened these paragraphs -- however we do feel that as part of a "research gaps" section it is important to point out the research gaps in characterization of vulnerability and exposure as a missing piece of the understanding of risk in light of climate change.
678	2	52	27	52	28	This is unclear. (Gaillard, JC, The University of Auckland)	rephrased
679	2	52	27	52	33	A research gap is related to understanding and improving the engagement process in the context of risk and vulnerability assessments, as well as in adaptation appraisal and evaluation. (Street, Roger B, UK Climate Impacts Programme)	included
680	2	52	30	52	30	The following language is suggested: ..., a key challenge remains to link information .... (Radunsky, Klaus, Umweltbundesamt GmbH)	done
681	2	52	35	52	40	in addition to the inherent unknowns and the need for robust decisions, there is a need for improving the decision making process where uncertainties are high. This includes not only robust decisions, but also flexible and incremental options This is linked to improving decisions making under uncertainty and the role of monitoring and evaluation. (Street, Roger B, UK Climate Impacts Programme)	included
682	2	52	42	53	2	I feel this paragraph could fit better after the second one of the 2.10 section. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	suggestion considered in rephrasing of the section as a whole (including changes in the first two sections that <u>made moving this one less logical</u> )
683	2	52	44	53	2	I'm not sure if the 2007-08 food crisis is a good example to use here as there is a strong argument that climatic factors were only a marginal contributor to it. (Trewin, Blair, Australian Bureau of Meteorology)	We have rephrased to clarify that the point was certainly not that climate was the main cause behind the crisis. However, it has often been suggested as a potential contributing factor to one of the (many) aspects, namely droughts in parts of the world. In addition, there an indirect climate change related aspect, namely the role of biofuels production. In any case, we still feel it is a good illustration of the complex nature of systemic risk, and the additional research that should be done to facilitate a better understanding and eventually possibly better prediction of these episodes so that appropriate policy responses may be considered (which may go beyond traditional disaster preparedness and response mandates).

No	Ch	From Page	From Line	To Page	To Line	Comment	Response
684	2	52	53	52	53	The following statement" the fact that human behaviour is often the prevailing risk factor" should be included in the executive summary provided that it is a robust one. (Radunsky, Klaus, Umweltbundesamt GmbH)	this reference relates specifically to systemic risks and was not in the context of climate change. It is probably true that patterns in risk generally appear due to human behavior, but it is difficult to separate conscious choice from inadvertent causality. in the case of population growth, urbanization, governance challenges, etc. it may come across rather pedantic to state that these problems are human choices.
685	2	52	0	0	0	Comments above reflect possible gaps which need to be addressed. (Abrahamsj, Jonathan, World Health Organization)	included several elements that contain health dimensions
686	2	53	1	53	1	Should read "natural hazards". (Gaillard, JC, The University of Auckland)	done
687	2	55	14	55	21	Three references are noted for the same book "Measuring vulnerability to Natural hazards - towards disaster resilient societies". I suggest either to delete the two chapters references and keep the whole book reference, or to delete the latter and keep the two former. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	We feel it is helpful to be able to refer to specific book chapters rather than only to the book at large, so we have kept the different references.
688	2	56	42	57	43	Too many references of a same author (total of 20), which can be interpreted by the future readers as an oriented-chapter. (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	He is one of the main authors with the view of South from middle 1980's The references are not included only by the CLA, but many other lead authors and from other references
689	2	57	21	57	23	"Wisner (1993) then suggests that the notion of vulnerability could be expanded to include also processes and effects of marginalization. Wisner (2003) defines guidelines to generate vulnerability profiles, taking into consideration sources of environmental, social and economic marginality". Reviewers' comment: Both marginalization and economic marginality of some communities has been the basis of socio-political crisis, which in turn in drought-prone areas like the Sudano-Sahelian zone of Africa have been a cause of increased vulnerability with respect to extreme events due to fights to access limited natural resources by an increasing population. It's some kind of feedback loop. (Ben Mohamed, Abdelkrim, University of Niamey)	point seems to refer to text rather than references. Have passed onto section authors -- not sure where it fits. The general point on accumulation of disasters is raised in section 2.9.1; relation to conflict has explicitly been added there.
690	2	58	51	59	6	source mentioned twice: Cutter, S. L. and C. Finch, 2008: Temporal and Spatial Changes in Social Vulnerability to Natural Hazards. Proceedings of the National Academy of Sciences of the United States of America. 105(7), 2301-2306. (Guenther, Edeltraud, Technische Universität Dresden)	thanks, removed duplicates
691	2	64	15	64	54	McCarthy et al. (2001) appears twice. (Gaillard, JC, The University of Auckland)	thanks, removed duplicates
692	2	66	19	66	28	Once again, two references are noted for the same which seems to be quite the same. I suggest to delete either the first one (Oliver-Smith 1999) or to second one (Oliver-Smith and Hoffman 1999). (MAGNAN, Alexandre, Institute for Sustainable Development and International Relations (IDDRI))	one is reference to the whole book, one to a specific chapter
693	2	73	0	74	0	Table 2.1 has a lot of theoretical concepts. It can be abridged and formatted ( Removing "domain" as column and putting it as a row) for making it more reader friendly. (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	table has been removed
694	2	74	0	0	0	Table 2.2 needs more explanation - presumably these percentages are the percentage of a global total and there is a middle category. It would be useful to state the number of countries in each category. (Trewin, Blair, Australian Bureau of Meteorology)	the purpose is not a full overview but rather illustration -- adding more categories could be considered but would add length.
695	2	75	0	75	0	Table 2.3 is also very big, The content can be abridged and the various dimensions be put as rows instead of columns to make it more reader friendly. (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	wip
696	2	75	0	75	0	Hanging table between Table 2.4 and Table 2.5 (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	removed
697	2	75	0	0	0	Table 2 - 3: Please re-think the order of groups as displayed in the table. Is "gender" really so paramount that it warrants to be given here in the first place? (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	we feel it deserves a cell (although it is no longer the first one)
698	2	75	0	0	0	Table 2 - 3: Gender, point "g)": please rephrase. An under-researched group is not vulnerable because it is not thoroughly investigated, their vulnerability or lack thereof is just not evident / known. (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	done
699	2	75	0	0	0	Table 2 - 3: Children: delete "their" following "fare better than" (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	done
700	2	76	0	0	0	Table 2 - 4, top part: "Well density" is just another not-so-helpful buzzword like "well spacing", meaningless if no basis is given. Do you mean number of wells per capita, per square kilometre, ...? (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	Refer to original source for details.
701	2	76	0	0	0	Table 2 - 4, top part: without reference to number of people concerned, area of effect or else, these indicators are meaningless (and this table is, too). (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	True, in terms of description of an actual problem this only becomes meaningful in specific context, but we feel the table still provides a useful sense of the sort of indicators that could then be applied.

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702	2	77	2	77	10	"Culture is variously used to describe many aspects of extreme risks from natural disasters or climate change, including the: • Cultural aspects of risk perception • Negative culture of danger/ vulnerability/ fear • Culture of humanitarian concern • Culture of organizations/ institutions and their responses • Culture of preventive actions to reduce risks, including the creation of buildings to resist extreme climatic forces • Ways to create and maintain a 'Risk Management Culture' or a 'Safety Culture'." Reviewer's comment: There could be a need to add to the list "Cultural aspects of adaptation", which could be associated with a necessity to adopt other food habits when traditionally consumed crops can't no more be grown as a result of climate change. This will in addition, be in line with sentence "Traditional behaviours tied to local (and wider) tradition and cultural practices can increase vulnerability" (line 39). (Ben Mohamed, Abdelkrim, University of Niamey)	added "adaptation culture"
703	2	77	0	0	0	Table 2 - 5, dry lands: desertification, not deserti-r-fication (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	done
704	2	79	0	0	0	Figure 2 - 2: The text to this figure needs improvement as it does not explain enough to allow to understand the figur as stand-alone. (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	need to balance length and detail -- hopefully the revised text clarified, otherwise figure may need to be simplified (for discussion)
705	2	82	0	83	0	Figures 2-6 to 2-8. What is the meaning of the different columns. Are there columns missing? The way they are displayed now ( I think it is just a graphical problem), they do not provide very helpful information. (Koppe, Christina, Deutscher Wetterdienst)	We have reduced the number of figures and added clearer captions
706	2	82	0	0	0	Figure 2 - 6 is not legible, legend is missing / insufficient. (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	We have reduced the number of figures and added clearer captions
707	2	82	0	0	0	Figure 2.5 looks like it only includes South and Central America. Does comparable data exist for other countries? (Trewin, Blair, Australian Bureau of Meteorology)	This figure was produced only for these countries; it is meant as an example only. We have reduced the number of figures and added clearer captions
708	2	83	0	0	0	Figure 2 - 7 is not legible, legend is missing / insufficient. ES = ? (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	We have reduced the number of figures and added clearer captions
709	2	83	0	0	0	Figure 2 - 8 is not legible, legend is missing / insufficient. (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	We have reduced the number of figures and added clearer captions
710	2	233	21	33	21	"Natural disasters" should read "natural hazards". (Gaillard, JC, The University of Auckland)	done