#	Ch	From Page	From Line	To Page	To Line	Comment	Response
1	8	0	0	0	0	Very good messages. The issue is that it presents argument without considering the "socio political" conditions that have substantial influence over risk. (Jegillos, Sanny, UNDP)	The importance of socio-political risk emphasized more in the SOD Key points
2	8	0	0	0	0	The challenge with this chapter is to much more closely integrate it with the previous ones so that is offers a clear conclusion to the report (even if not the final chapter). In particular, it would be great if it could more explicitly address the 3 major challenges introduced in Ch 1 (p. 4, lines 11-19). At the moment, the Executive Summary especially needs attention so that it provides a clear conclusion to the whole report rather than a disjointed series of points. (Rickards, Lauren Amy, University of Melbourne)	Executive Summary has been revised, integrated with SPM and Ch 1
3	8	0	0	0	0	Excellent synthesis, integration and development of key messages from earlier chapters (Glavovic, Bruce, Massey University)	The comment is appreciated!
4	8	0	0	0	0	In explaining the drivers and root causes of vulnerability, and what might be done to overcome these, attention could be focused on the notions of 'path dependency', 'social traps', and 'lock-in' that perpetuate unsustainable, risky outcomes. (Glavovic, Bruce, Massey University)	The root causes of vulnerability are discussed in earlier chapters; we indirectly address this when discussing the role of socio-technical systems and transformation in 8.6.3.3.
5	8	0	0	0	0	The chapter is too technical; freqiuent references to discussions in the disaster risk community and ist discussions only illustrate a rather one-sided approach. More than once, political science, ecological economics and other disciplines have contributions to the same issues. When discussing resilience, the body of research on industrial ecology is ignored, the references to system analysis deserve systematic improvement, and the issue of extreme impacts is rateher completely ignored. The UNEP concept of adaptive (eco-)system management is not mentioned, despite the numerous examplea how it contributes to desaster mitigation, moderation or even prevention. Managing the vegetation cover has huge impacts on the micro climate, partly buffering larger scale CC impacts (CC impact mitigation this might be called).Overall, there is a unsystematic treatment of the issues of scale: local impacts and measures are emphasised, but (ecosystem) tipping points are only mentioned as large scale, mostly global phenomena. However, they occur on the local scale as well, and directly affect local, in particularly rural livelihoods. The special vulnerability of the poor is mentioned frequently, but not the fact that they depend for their survival on the free access to ecosystem goods and services ("the GDP of the poor" is up to 50% and more consisting of such free goods), see the TEEB reports on www.teebweb.org. Risk management cost can be significantly reduced by a stronger focus on ecosystem management (IUCN, CBD) approaches or adaptive system management (UNEP). (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	We have revised and added to section 8.5.2 on ecosystem services, and discussed adaptive management in 8.6.3.1.
6	8	0	0	0	0	This is a very interesting and profoundly researched chapter that will be useful and necessary for policymakers and stakeholders. Bringing together the climate change and risk management literatures is particularly relevant and appealing for developing contexts. The suggestion that linking the two can be a good strategy for promoting a sustainable and resilient future is also extremely useful and valid. My main issue with the chapter is that many of the sections lack internal cohesion and do not seem to address the paper's overall thesis. Overall, I suggest making sure that sub-titles and content for the different sections match and that they either support or somehow engage with the chapter's main argument. What is most lacking is a section towards the beginning of the chapter that will be explicitly discuss the intellectual inter-relations between risk, adaptation and development. At the moment this discussion spread throughout the chapter in different sections which means that there is no clear logic to the chapter's argument. This would help focus the rest of the chapter and improve its readability. (Iglesias, Ana, Universidad Politecnica de Madrid)	We have reorganized the chapter to make it more coherent and have tried to raise the issue of development in the introduction and 8.2.1.
7	8	0	0	0	0	No particular observations except care in consistency across definitions along the chapters (Bosello, Francesco, Fondazione Eni Enrico Mattei, Milan University \)	Consistency of terminology has been addressed (this chapter stresses the varying definitions interpretations as part of the challenge in 8.2.1).
8	8	0	0	0	0	FOCUS: This Chapter contains many lengthy text passages with too much description and not enough assessment. If the information is not there to make an assessment, the Chapter should say so. (Stocker, Thomas, IPCC WGI TSU)	We have tried to assess a diverse literature, recognizing the multitute of perspectives and approaches that are influenced by values and perceptions.
9	8	0	0	0	0	CHAPTER OVERLAP: There is quite some overlap with Chapter 7, especially in Section 8.2.4 on technologies. These redundancies should be addressed in cross-chapter meetings (Stocker, Thomas, IPCC WGI TSU)	We have tried to reduce overlap, particularly in section 8.5.5, and revised section 8.2.4.
10	8	0	0	0	0	This is an important chapter and support the idea of scenarios particularly for pre-disastr planning - have not had sufficient time to review this properly but like to add one comment on page 11 line 14-16. Have done some research on sheltered housing in UK on building in a resilient energy system as part of pre disaster planning - we know we have to adapt buildings and other infrastructure to a new energy reality - this sees climate mitigation (GHG reduction) as adaptation to a new reality where the use of conventional fuels exacerbates an existing problem. Ref: O'Brien, G. Hope, A. (2010) Localism and Energy: Negotiating approaches to embedding resilience in energy systems, Energy Policy. Available online at http://dx.doi.org/10.1016/j.enpol.2010.03.033 (O'Brien, Geoff, Northumbria University)	This is an excellent conceptual point that we have tried to capture in 8.4.
11	8	0	0	0	0	No comments. The significance of disaster risk reduction as the adaptation to climate change can not be emphasized enough. (Simonovic, Slobodan, University of Western Ontario)	Agree! No response required.
12	8	0	0	0	0	Here and elsewhere, if the report is to deal only with extreme events, it should be so stated and focused. The discussion of CCA brings more clearly into focus. "Development for whom?" and what constitutes development at present. (Bender, Stephen Bender, Organization of American States (retired))	We have attempted to raise these questions in section 8.2 and in the conclusion.
13	8	0	0	0	0	It is - maybe - good choice that this chapter came at the end of the chapters before the case studies. I might add to it the concept of "Green Cities and Green Architecture", " Sustainable Cities" as much as they offer ideas about dealing with environment. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	We have addressed urban sustainability issues in 8.4.2.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
14	8	0	0	0	0	Considering the different types of users of this report Ch.8, the chapter should contain more than the currently predominant deliberations. A more systematic approach regarding section and/or thematic summaries would make the material more accessible. Similarly, more use of tables, flow charts and graphs to summarise or exemplify key concepts is recommended. (Perrels, Adriaan, Finnish Meteorological Institute)	We recognize that the lack of figures and tables is a weakness in the chapter, but with the exception of Triple Loop Learning, we were not able to come up with any that added to the content.
15	8	0	0	0	0	Cross-references to other chapters should be used systematically. Currently there are rather few of them. (Perrels, Adriaan, Finnish Meteorological Institute)	We will emphasize cross linkages in the final draft, based on the content of the SODs.
16	8	0	0	0	0	May I start of with congratulating the authors for their excellent effort in the challenging task of shaping a comprehensive and profound picture on chapter 8 (toward a sustainable and resilient future). It was a pleasure to read such a well-structured and formulated chapter. (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	Comment appreciated!
17	8	0	0	0	0	The chapter switches between DRR and DRM. It is unlikely that readers will understand the difference. It would be good to harmonize across the chapter. (IPCC WGII TSU)	This is a good point: we have used both, with disaster risk reduction as the end goal, and disaster risk management as the means.
18	8	1	0	28	0	References to literature and examples are used frequently throughout the text. Generally we think that readability could be enhanced if extract from these sources are used more frequently in the body text. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We agree, but have not used extracts to save on space.
19	8	1	0	56	0	Terms "cost"use in several parts of the text often needs to be rephrased by "economic loss", since the concept of opportunity cost has been emphsized in previous chapters. (Kondo, Masahide, University of Tsukuba)	We have tried to qualify the use of "cost", which most often refers to economic costs (but it is not always considered a loss.
20	8	1	1	30	13	Chapter 8 is superb. It is very comprehensive, very balanced in its consideration of attributes and limitations and provides an incisive and extremely wide review of knowledge with thorough documentation. It is also a model of clarity in presentation (except in Section 8.6. as noted in comment 110). (Jeggle, Terry, University of Pittsburgh)	Comment appreciated!
21	8	2	4	0	0	References to the underlying chapters is missing. (Radunsky, KLaus, Umweltbundesamt GmbH)	We will develop references and links to other chapter based on the SOD.
22	8	2	4	0	0	Executive Summary: The current text is often vague. Can more concrete statements be made? (Fuessel, Hans-Martin, European Environment Agency)	We have revised the executive summary to reflect the content and key points of the text.
23	8	2	4	0	0	Executive Summary: To the extent possible, consider opportunities to present specific key findings, as well as the degree of certainty your author team has in those findings, per the new uncertainty guidance that will be available at LAM3. For example, terms currently used to qualify statements could be replaced with calibrated uncertainty language. (IPCC WGII TSU)	We have revised the executive summary to reflect the content and key points of the text.
24	8	2	4	0	40	This Executive Summary was very short, and should in our view, rather present the actual findings than the challenges. We believe the chapter includes very important findings, and therefore suggest adding text from page 3, l. 45 to page 4 l. 4 in the ES. In our understanding, this paragraph includes general results and findings of the chapter. Text on main findings from the chapter on options for Proactive, Long-Term Resilience to Future Climate Extremes (8.6) should also be added, as well as ch 8.7 on Synergies between DRR and CCA. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have revised the executive summary to reflect the content and key points of the text.
25	8	2	6	38	18	I found most of this chapter, to much theorical and very weak in terms of practical applications.. In some parts It seems to me as a disertation prepared by a novel postdegree student… probably a very good student and a very good person, but still whitout any experience in the real wolrd... (Linayo, Alejandro, Research Center on Disaster Risk Reduction CIGIR)	We recognize that discussion of a sustainable and resilient future tends to be theoretical, and we have attempted to include more "real world" examples. However, measuring sustainability and resilience in the long-term is challenging.
26	8	2	9	2	29	The authors correctly describe that transormational changes of society will be inevitable to be able to adapt to climate extremes. In line 26 they also describe that institutions and governance arrangements need to be strenghtened. Both sentences could be interpreted as incompatible: are the conventional institutions and governance arrangements fit to deal with this (from the text, I had the opposite idea)? Or do the prevailing processes (governance, institutions) also have to transform? I would suggest to make it clear that we both need a content wise (knowledge integration) transformation and a process wise (governance strategies, habits etc) transformation, (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	This is a very good point -- "strengthen" has been changed to "reassess and transform" governance and institutions.
27	8	2	10	2	10	It is noted that the term "transformational changes" is unclear as it it only used in the executive summary but not else in the underlying chapter. (Radunsky, KLaus, Umweltbundesamt GmbH)	Transformational change has been covered more extensively in 8.6.
28	8	2	19	2	21	Contextual issues such as poverty and basic needs must be factored into the understanding of a culture of prevention. People and governments may want to lead lives and secure sustainable livelihoods which make them safer and more resilient, but they often have more pressing needs, even though they know actions to meet such daily needs may make them less safe in the medium to long term. Legislation prohibiting risky behaviour is often ignored due to more urgent needs. (Kull, Daniel, International Federation of Red Cross and Red Crescent Societies (IFRC))	This is covered in the section 8.3.1 on short-term / long-term tension, and in 8.5.4 on human security.
29	8	2	21	2	21	You could add that choices today could facilitate or constrain future ability to adapt. (IPCC WGII TSU)	This has been added to the key messages.
30	8	2	24	2	24	You could add something about differing time scales. (IPCC WGII TSU)	This has been added to the key message.
31	8	2	37	0	0	Here and elsewhere in the report it would appear the use of the word "disaster" should be replaced by the phrase "natural hazard" or "climate hazard." (Bender, Stephen Bender, Organization of American States (retired))	We are aware of the need for consistency and care in terminology and have tried to be both precise and consistent.
32	8	2	42	0	0	It seems what is said here has no echoes in previous chapters. "Resilience of Social Ecological Systems" and "Sustainable Development" are-to me- some important key words in this chapter. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	We have coordinated with the first chapter to foreshadow the discussion in this chapter.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
33	8	2	42	4	4	Section 8.1. Introduction is an excellent example of both the balanced integration, as well as the trade-offs necessary looking to the future. It is one of the few SREX chapters read so far, whose comments pursue a necessary synthesis by adopting the broad and accommodating perspectives that transcend singular or predominant interests. The fact that the text (present and following) also refers to other Chapters demonstrates a strong appreciation of internal consistency and avoids the need of unecessary duplication, or worse, countervailing examples or conflicting definitions. As drafted, it is also an appealing and accessible presentation and therefore considerably more appealing than some other parts of the SREX. It may therefore serve an internal purpose as a guiding model. (Jeggle, Terry, University of Pittsburgh)	Comment appreciated!
34	8	2	42	4	4	Section 8.1: No explicit objective is formulated for Ch.8. For example, it could be something like this: Identification of the building blocks and prerequisites for adaptive management of adaptation planning such as to adequately and timely account for existing and emerging climate and climate change related risks for major disruptions and diminishing resilience of societies. (Perrels, Adriaan, Finnish Meteorological Institute)	Objectives have been made more explicit in 8.1.
35	8	2	52	2	54	Mention of development trajectories as well as lives and livelihoods again brings into focus the issue of development and its specialized agencies and bodies as not only impacted by, but also contributors to, growing vulnerability. This is particularly telling when stating the need for the MDGs and the unresolved basic development issues of nutrition, health care, access to water and sanitation, education, shelter, employment, etc. (Bender, Stephen Bender, Organization of American States (retired))	Agreed - we have captured this in a key message, that disasters are both a problem of and for development.
36	8	2	53	2	53	There are also slowing developing disasters, such as drought. (IPCC WGII TSU)	We have added this point in a separate sentence in the same paragraph.
37	8	3	3	3	4	I would prefer "underlying conditions of exposure and vulnerability" as opposed to risk, given that the events are part of the risk equation (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	The text has been changed.
38	8	3	6	3	6	And institutions. (IPCC WGII TSU)	This has been added.
39	8	3	22	3	24	This statement regarding extreme events and greenhouse gases is much to general and therefore problematic. It needs to be reworded in a way that acknowledges that for many extreme weather events, no confident link with anthropogenic warming has been established. Suggest possible wording such as: "For many extreme weather and climate events for which an increase in frequency and/or magnitude has been attributed to anthropogenic warming (see Chapter 3), future changes can to some extent be managed as part of ____" (Stocker, Thomas, IPCC WGI TSU)	The text has been modified as suggested.
40	8	3	22	4	4	Greenhouse gas emissions are part of development as it is now in policy and practice. Betterment can be brought about in an number of economic and social societal constructs (socialist, capitalist, etc.) by producing and employing adaptation and other risk reduction actions, but the winners and the losers will be different than today. (Bender, Stephen Bender, Organization of American States (retired))	We have tried to capture this in section 8.5.3.
41	8	3	31	3	32	Here Mark Pellings new book in preparation will be an important citation soon. Of course the argument goes the other way as well and with transformative social, economic and environmental changes, adaptation will be facilitated. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	The reference and point about transformation facilitating adaptation has been added into the text.
42	8	3	34	0	0	The first sentence in this line appears somewhat incomplete and out of context. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	The sentence has been modified with "for a sustainable and resilient future" to make it more clear how it links with the previous paragraph.
43	8	37	15	37	16	It is suggested to provide the original study and another recent example by adding the sentence: "Likewise, Mitchell et al. (2006) and Weichselgartner and Kasperson (2010) argued for a more locally embedded and joint production of actionable knowledge to enhance effectiveness of research-based knowledge" Full citations: Mitchell, R.B., W.C. Clark, D.W. Cash, and N.M. Dickson, 2006: Global environmental assessments: Information and influence. MIT Press, Cambridge. and: 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)	We have removed this text.
43	8	3	34	3	43	In this paragraph it may be wise to point out right from the beginning the fact that if to date we have had only limited success with DRM reduction and prevision of risk and disaster, the future, with added stressors, can not seem to be that bright. If we can not manage climate variability under stationary conditions given existing exposure and vulnerability levels etc what can we expect from the future? What are the major factors we should heed to see change if we are to advance--governance, ethics, morality, ? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have discussed this in the section on human security (8.5.4).
44	8	3	48	3	49	This sentence may lead to misintepretation as "these outcomes" may be read to refer to what is mentioned in the previous sentence!! Moreover beyond suggesting that climate change increases will make sustainabiity and resilience more difficult, maybe we should add also that this will be so due to increases in exposure and vulnerability thus avoiding the intepretation that it is the physical factors that reduce options for sustainability, falling thus into the physicalist trap!! (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Agree - the sentences have been modified: "extreme climate change, combined with increases in exposure and vulnerability" and "While this chapter indicates that resilient and sustainable futures are possible, the potential diminishes as the magnitude of climate change increases".
45	8	4	0	6	7	This section is very interesting, particularly in its description of exposure, vulnerability and hazard and how they relate to risk. However, the section does not really discuss how disaster risk reduction and sustainable development are related (which is included in the section title). The last chapter of the section begins to deal with this, but ends abruptly: it only mentions in passing that "development can be risk reducing or risk increasing" (lines 34-35). (Iglesias, Ana, Universidad Politecnica de Madrid)	We have revised this section so that it does not overlap, and focuses more on the links to sustainable development.
46	8	4	3	4	3	And thus, effective management is a cornerstone? (IPCC WGII TSU)	No; we have revised the sentence.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
47	8	4	10	4	12	Stated in an alternative way, DRR and CCA can become how development takes place to address risk, often by those least able to confront vulnerability, but it requires modifying development policies, mechanisms, tools, and those who gain and those who loose from living with and creating risk. (Bender, Stephen Bender, Organization of American States (retired))	We have added this point to the text.
48	8	4	15	4	17	The concepts of exposure, vulnerability and hazards (Chapter8, 8.2.1 p.5, line 20-53) are also broadly explained in the Chapter 1 from p. 6 line 41 to p.7, line 48. (Vilima, Olga, UNISDR)	We have shortened this section and referred to chapter 1.
49	8	4	20	0	0	This section could be condensed considerably, with appropriate references to other chapters. (IPCC WGII TSU)	We have shortened this section and referred to chapter 1.
50	8	4	20	7	45	Without having read this section yet one can imagine that if what is said is generally acceptable then this section should be in chapter 1 and hold for the whole study. If it is contradictory with other statements on the relations made in other chapters, then we have a real problem. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We will check for consistency across the SOD.
51	8	4	23	4	24	Not sure that this is the official definition given and it certainly contrasts with other quotes to the same source in other parts of this study. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This refers broadly to one IPCC definition - recognizing that there are many.
52	8	4	23	4	31	It is convenient to take into account that the adaptation also or serve to confront the climatic variability, not only for the climatic change. Seeing the comment Number 4. (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology , meteorology and environmental studies))	We have taken this into consideration in the text.
53	8	4	29	4	31	This would seem to be an obvious conclusion as all adaptation must be development if it permits survival and increased welfare. If we dont define what is an adaptation action and what is a development action (and also what is the difference between an adaptation action and a DRM action) we will be going round in circles with the argument. Some even say that adaptation as defined by IPCC is so wide in its scope and coverage that it does in fact substitute for the very notion of development. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We recognize that not all adaptations are development for everyone -- some people or groups's adaptations create vulnerability for others and detract from development.
54	8	4	33	4	35	Overlaps of text in p.4 line 33-35 with p.6 line 19-20. (Vilima, Olga, UNISDR)	We have addressed this.
55	8	4	36	4	36	"Taking risks" is a very different context for the use of the word risk as compared to talking of "disaster risk" specifically. Thus, if disaster risk is the probability of future loss and damage or some such definition , one can in fact "take a risk" with that risk and land up winning--but that is a double use or connotation of the word risk. So here disaster risk should be clearly defined as one thing and taking risk as another. As it is put in this paragraph one may insinuate that taking risk is the same as suffering disaster risk and this is just not true. The phrase should maybe read "certain levels of disaster risk are unavoidable and such risk may under certain circumstances be associated with gains and benefits for determined social actors" (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Good point - we have removed "taking risk" sentence.
56	8	4	44	4	45	This is a partially true statement and belies the idea that exposure is not vulnerability and risk per se. When the ISDR report states that increases in risk can be most associated with increases in exposure the proviso should be made that this is exposure under conditions of vulnerability not just exposure per se. If we dont make this proviso then people will be led to believe that exposure to the event is in itself risk and this is just not true. In fact such an assertion would suggest that it is the physical event that is the cause of risk given that if you are exposed to a hurricane for example you are presumed to be automatically at risk to a degree governed by the intenisity of the event itself--this physicalist argument has been debunked years ago. Given that exposure to physical events per se is almost impossible to avoid almost anywhere on the planet at some time, we have to deal with exposure by ameliorating the vulnerability factors that transform exposed society into risk societies. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have modified the sentence to refer to exposure of vulnerable people and economic assets.
57	8	5	5	6	48	It should be clearly stated that present development is successful, that it creates winners as well as puts others at risk. (Bender, Stephen Bender, Organization of American States (retired))	We have addressed this in 8.5.3.
58	8	5	15	0	18	This comment seems irrelevant to the section. It also needs a reference. (Iglesias, Ana, Universidad Politecnica de Madrid)	It has been removed.
59	8	5	15	5	18	References are missing (Vilima, Olga, UNISDR)	This text has been removed.
60	8	5	20	5	21	This statement is not easy to comprehend. Exposure is really a function of how and why people locate in hazard prone areas--many explanations are valid and these include those deriving from poverty and wealth. Then the level of risk they suffer will be a function of the social and economic context that is associated with vulnerability levels. Physical geography may modify exposure conditions but will also influence hazard expression. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Need consistency in terminology - risk, outcomes, costs, benefits etc.
61	8	5	22	5	22	What is a "vulnerable area" as opposed to a vulnerable population or livelihood? Can areas be vulnerable or is it that areas, seen as geographical spaces , are exposed to different types of event , and the population or economy that occupies them are vulnerable? Or are we referring to vulnerability of the physical environment which is a very different use of the notion of vulnerability as compared to its use with reference to human systems and elements and this distinction and difference in use and connotation must be highlighted? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have revised for better consistency in terminology - risk, outcomes, costs, benefits etc.
62	8	5	30	5	31	This phrase again leads to unfair conclusions. Really what increased exposure does is potentiate or reveal potential vulnerability conditions but it cant cause them as such. Thus, the notion of "contributed to " if used to signify causality is incorrect, but if used to signify an increase in potential or the discovering of vulnerability in situ, this is better one feels. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This text has been revised.
63	8	5	48	5	51	References are missing (Vilima, Olga, UNISDR)	References added.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
64	8	5	53	6	5	When saying hazards consist of physical phenemenon one is implying the hazard is the event as such , but when later in the same paragraph one says "hazards associated with floods..." one is implying hazards are characteristics or qualities of physical events. It is best to be precise here and establish that hazard is the latent danger associated with potential future events. As hazard is part of the formula for risk --R equal to some combination of hazard and vulnerability, then as risk is latent it is obvious hazard and vulnerabiity are latent conditions that announce future loss, but hazard is not the event given an event is not latent but real. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have revised for consistency in terminology - risk, outcomes, costs, benefits etc.
65	8	6	7	6	8	This phrase again is too physicalist. Maybe it should better read "Climate change, through changes in the .....of weather related hazards will many times contribute to changes and increases in present risk patterns..." Also to suggest vulnerability increases due to changing climate signifies a deviation from the acceptance of the social nature of vulnerability and the processes that generate it. Changing climate means may reveal or potentiate preexisting social conditions that may then conform vulnerability but they certainly dont lead directly and causally to increases in vulnerability. Of course if changing means lead to decrease in livelihood options and this leads to more poverty etc then indirectly changes in averages will have contributed to vulnerability and risk, but that is not the same argument as is to be found in this phrase. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have revised for consistency in terminology - risk, outcomes, costs, benefits etc.
66	8	6	7	6	8	Check for consistency with what Chapter 3 & 4 of SREX has to say about the increasing frequency, magnitude and spatial coverage, etc. Include a citation to chapter 3, after 'weather-related hazards'. (Stocker, Thomas, IPCC WGI TSU)	We have referred to Chapter 3 and sought consistency and a citation.
67	8	6	19	6	19	Risk is not strictly linked to those factors but is constructed or exists because of them. Linking something to something seems to imply the independence of the two things. That is not true with risk as a derivation of the play off of hazard and vulnerability under conditions of exposure. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have revised for consistency in terminology - risk, outcomes, costs, benefits etc.
68	8	6	25	6	28	References are missing (Vilima, Olga, UNISDR)	We are looking for the appropriate references to include in the final draft.
69	8	6	30	6	38	Mentioning urban settlerments not nesserily be concentrated on "Informal " ones. Having temperature elevated by 2-4 degrees, buildings' designs - well to do as poor- will face the same problem. Latent heat within the buildings will accumilate in time, and will surpass the "Ccomfort Zone" of people. So, we might look after this issue in our report. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	We agree with the point have not considered this in relation to DRR issues.
70	8	6	30	6	38	Redundant information - this has been mentioned in various chapters before (e.g. 2 and 5) (Ammann, Walter J., Global Risk Forum GRF Davos)	We have deleted this.
71	8	6	40	6	40	Given development planning is not very prevalent it is maybe better to state that risk is a symptom of failed or skewed development and absence of rational development planning schemes. After decades of development planning from the 30s to 70s this disappeared in essence under the thrust of liberalization throughout the world. Only now is it starting to come back with force in some places. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	It is not obvious that one can eliminate the hazard causing process altogether. It is quite possible that even "rational development planning" leads to mal-adaptive outcomes under changing baselines. Treatment needs to be balanced between "physicalist" and "institutionalist" perspectives
72	8	6	44	6	48	References are missing (Vilima, Olga, UNISDR)	The text has been deleted.
73	8	6	47	6	47	But they can reduce the magnitude and extent of damage, and prevent subsequent impacts. (IPCC WGII TSU)	This text has been deleted.
74	8	7	13	0	0	The section on sustainable development deserves reformulation as well. SD has become part of the CC discussions is a pretty particular view as SD is the broader issue, and Agenda 21 (cited in the text) frames CC as one of the important SD issues. Open questions refer not only to how sustainable growth is to be achieved, but - more fundamentally - to what this would mean. The text goes at some length to explain what the Brundtland definition implies. It would be easier to complement the quotation with ne very next sentence in the text: “Sustainable develop¬ment is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. I contains within it two key concepts: 1. The concept of “needs”, in particular the essential needs of the world’s poor, to which overriding priority should be given, and 2. The idea of limitations imposed by the state of technology and social organisation on the environment’s ability to meet present and future needs.” What is said about inter-species relations is a very partial view; using the Millennium Ecosystem Assessment would give reason to argue quite differently, as would the increasing body of literature on ecosystem services. (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	This section has been revised, and the chapter now gives more attention to ecosystems and ecosystem services.
75	8	7	22	7	27	Even tough it is refered to in the following paragraph for the understanding of the reader it would be useful to mention that sustainability itself should not only cover economic sust. but also ecological (environmental) and social sustainability. (Ammann, Walter J., Global Risk Forum GRF Davos)	This section has been revised.
76	8	7	24	7	27	References are missing (Vilima, Olga, UNISDR)	This statement has been removed.
77	8	7	30	0	31	It should be explained what inter-species considerations should include in addition to concerns for biodiversity and ecosystem services. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	This text has been deleted.
78	8	7	34	7	34	Maybe best to put "economic growth" and not "development" and thus avoid the obvious comment that development can not or should not generate excessive disaster risk-development can never be interpreted as being something that actually increases societies propensity to loose, suffer damage or be killed!! (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This text has been deleted.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
79	8	7	42	7	45	It is a dated example. It can be considered to insert a recent example from from the following paper: Garg, A., R. C. Dhiman, Sumana Bhattacharya and P. R. Shukla (2009). Development, Malaria and Adaptation to Climate Change: A Case Study from India. Environmental Management. Published on-line January 2009 and in hard copy April 2009, 43(5), 779-789. (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	Sentence revised and reference has been included.
80	8	7	48	0	0	When discussing the role of valuesin decision making it might be helpful to refer to situations when not only "stakes are high" (line 50) but when also facts are uncertain, values disputed and decisions urgent: this is the definition of situations for post-normal science as a basis for decision making (Funtowicz, S., Ravetz, J. 1993. Science for the Post-Normal Age. Futures 25(7):735-755) and the decision preparation by deliberative processes and MCA, MCDA etc. methods (see Munda et al.) (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	We have modified the sentence accordingly but not made reference to post-normal science.
81	8	7	50	9	12	It would help to make sure that this sub-section is argued within the context of the overarching section " Disaster risk reduction as adaptation: Relationship to sustainable development planning". (Iglesias, Ana, Universidad Politecnica de Madrid)	We have reformulated the introduction to make the links with sustainable development more clear.
82	8	7	50	9	12	A very balanced discussion of the role of technology and appropriately skeptical of it as the answer to all problems - pointing out possibility for maladaptation. Needs to discuss who will bring this point to the attention of policy makers who are always being "sold" tech. (Longstaff, Pat, Syracuse University)	This is one goal of the report -to make policy makers aware of this point.
83	8	7	51	7	52	Sentence formulation: to invest in scarce resources?? Please check (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	This was a misreading, but "scarce" has been replaced with "limited"
84	8	8	3	8	5	References are missing (Vilima, Olga, UNISDR)	References added.
85	8	8	7	8	45	It should be made clear that in dealing with values and risk, whose risk and how it comes about, how it is reduced and who pays and who benefits is the work of societies promoting development. CCA and DRR are tools not presently used to their potential, and risk reduction is not work of specialized agencies, but of development in general. (Bender, Stephen Bender, Organization of American States (retired))	Comment applies more generally to the key points of the chapter and will be integrated.
86	8	8	18	8	18	You might consider adding the complexity of the temporal consequences of decisions. (IPCC WGII TSU)	We have added this point to the text.
87	8	8	36	0	45	This paragraph argues that economic rationality is not enough to evaluate risk. Although this is certainly a mechanism for "valuing" and shaping response, as it is written, the paragraph seems to stand alone and does not fit in with the rest of the discussion in the section. Perhaps making explicit that economic rationality is also a way in which responses are evaluated and perceived would help. Alternatively this could serve as a starting point for the section and serve as a counter-argument/introduction. (Iglesias, Ana, Universidad Politecnica de Madrid)	Have modified the introduction of the paragraph as recommended.
88	8	8	36	8	45	To relate the issues of perceptions, values and moral behaviour to the discussion of the economic rationality and its inherent limitations is a good point. However, it does not clarify what we can learn from such a analysis. In order to come to some conclusion on what to do I think one should add a sentence that gives some concrete hints in the following sense: “Due to these limitations related to the application of mainstream economic rationality, mainly in developing countries monetary evaluations must be complemented by looking at the cost and benefits related to other economic rationalities much more adequate to non-western societies. A good entry point is to evaluate effects of and responses to climate change related risks and disasters toward the rationality of “moral economy” (Scott 2000 & 2003) yet it is part of the collective memory and identities of people living in non-western cultures in many parts of the world (Rist 2000, Hughes 2001, Jeffry & Sundar 199, Trawick 2001). Rist S. 2000. Linking Ethics and Market - Campesino Economic Strategies in the Bolivian Andes. Mountain Research and Development 20 (4) 310-315. McDermott Hughes D. 2001. Cadastral Politics: The Making of Community-Based Resource Management in Zimbabwe and Mozambique. Development & Change 32 (4) 741-768. Scott JC. 2000. The moral economy as an argument and as a fight, in: Randall, A and Charlesworth, A (eds). Moral economy and popular protest: crowds, conflict and authority. New York, St. Martin's Press, p.xiii, 280. Scott JC. 2003. The moral economy of the peasant: rebellion and subsistence in Southeast Asia. New Haven (Conn.); London, Yale University Press. Trawick P. 2001. The moral economy of water: Equity and antiquity in the Andean commons. American Anthropologist 103 (2) 361-379. (Rist, Stephan, Centre for Development and Environment (CDE))	The point has been added, as well as some of the references.
89	8	8	51	0	0	A change from "indigenous groups" to "local citizens" or "marginalized groups" might better reflect the main message in this context. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	"Indigenous" has been changed to "marginalized."
90	8	9	4	9	7	These notions of unquitable social-spatial distribution of disaster risk can be seen as part of a larger body of literature regarding environmental justice. References, e.g. Roberts R.G. "ENVIRONMENTAL JUSTICE AND COMMUNITY EMPOWERMENT: LEARNING FROM THE CIVIL RIGHTS MOVEMENT" (http://www.wcl.american.edu/journal/lawrev/48/pdf/roberts.pdf?rd=1) and Sacoby M. Wilson, Roland Richard, Lesley Joseph, Edith Williams (2010), Climate Change, Environmental Justice, and Vulnerability: An Exploratory Spatial Analysis, in Environmental Justice, Vol. 3(1), pp. 13-19. doi:10.1089/env.2009.0035 (and various works of Adger et al) (Perrels, Adriaan, Finnish Meteorological Institute)	Environmental justice and Sacoby reference added.
91	8	9	13	9	13	Section 8.2.2: a text patch could be added stating that the above notions (in 8.2.2) boil down to the need for formulating a vision which makes explicit what constitutes a fair coping range for a particular society. (Perrels, Adriaan, Finnish Meteorological Institute)	We considered this but could not fit it in as the section was revised.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
92	8	9	15	0	0	Why 'scenarios or narrative storylines'? In the SAS approach (storyline and simulation) underlying the SRES scenarios, a scenario cosnists of both. Here the term scenarios is used synonymously with simulations, which is not helpful. Other language issues include that maodels are "if ... then" mechanisms, never predictions (i.e. no crystal balls). (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	We may need to streamline the whole scenario discussion. I think we were not interested in scenarios in general, but rather as one of the tools / approaches for envisioning the future. I do not think we should get into construction of scenarios as such
93	8	9	15	10	43	This whole section seems to have been written forgetting that the developing world and poverty exist--how do you plan with such scenario measures in poorer contexts? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have added a sentence to capture this important point: "This is particularly important given the existence of poverty, inequity, and injustice in the world, which is recognized by many as as incompatible with a sustainable future (St. Clair 2010; Redclift...)"
94	8	9	17	10	43	Again, it should be makde explicit how this sub-section engages with risk reduction and sustainable development (particularly the latter). (Iglesias, Ana, Universidad Politecnica de Madrid)	This has been added into the introductory paragraph, and the conclusion.
95	8	9	17	10	45	The whole chapter 8 does not pay attention to the important role of companies for adaptation, especially when planning for the future is discussed, the role of companies should be stressed. Their locations might be impacted by climate change, their production processes, but also their customers and suppliers. For example M. Winn, M. Kirchgeorg, A. Griffi ths, M. K. Linnenluecke and E. Günther: Impacts from Climate Change on Organizations: a Conceptual Foundation, Business Strategy and the Environment, 2010. (Guenther, Edeltraud, Technische Universität Dresden)	This is an important point that we have mentioned in section 8.5.5.
96	8	9	29	9	30	Provide reference to IPCC SRES scenarios (Stocker, Thomas, IPCC WGI TSU)	We still need to add this.
97	8	9	48	9	52	To expand upon this 'large uncertainty' that you discuss, at least from the climate science perspective, you should add a sentence regarding the key message coming from Chapter 3 of SREX , ie, that uncertainty relating to extreme observations and projections is highly variable, depending on the type of weather and climate extreme, the region, and the season (Chapter 3 SREX). (Stocker, Thomas, IPCC WGI TSU)	This text has been deleted.
98	8	10	7	10	8	You do not take interdependencies between neighbouring regions and the principle of subsidiarity into account. If " how the region sees itself" is only self-centered, decisions may be made that conflict heavily with actions / plans / ... of neighbouring regions. It is also possible that measures at place X enlarge risk at another place. Being "informed" is not enough, e. g. "guidance" would often be better. (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	We emphasize this point in the section on tradeoffs and multiple objectives, and in the section on values.
99	8	10	17	10	17	This is a place where you could add something on how past and current choices will affect future flexibility. (IPCC WGII TSU)	We will add this to the conclusions.
100	8	10	21	10	22	Maybe best to make this conclusion more explicit describing how dealing with smaller scale frequent events could lead to more risk when faced with larger, extreme or non recurrent events. This seems, as it is, to be counter intuitive. Of course we could also argue that not dealing with frequent lower level events in areas dominated by poor population would lead to the argument becoming redundant as the continual erosion of livelihood options associated with an increase in the numbers and recurrence of small and medium events, combined with a lack of access to support during crisis would probably mean that a good number of those affected would in the short or medium term , prior to the incidence of the extreme event, have left the area!!! Little has been said in the literature and in research as to the possible behaviour of smaller and medium scale events as opposed to extreme events under climate change--but one would have to assume they will grow at least proportionally or more probably at faster rates making dealing with them even more important. One way or another a statement like that made in the text should be widened or corroborated with more info and argument as it goes against much current thought as to the importance of recurrent medium and small scale events. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Our treatment of the issue of chronic vs acute and medium probability-medium consequence events vs. low probability high consequence events needs to be looked at carefully based on the ISDR report (seek input from Andrew Maskrey here).
101	8	10	23	8	28	References are missing (Vilima, Olga, UNISDR)	We have deleted this.
102	8	10	25	10	26	This idea that in developing countries most risk is in the informal sectors is just not true. Most disaster may be there but not most risk. Look at Mitch and its impact on the regional advanced economy; look at the modern tourist developments in the Caribbean and Central America; look at the 2 million school rooms that OAS estimates could fall with a moderate quake in Latin America; look at the Central American electricity system and its levels of risk etc etc. We should moderate this type of wide sweeping statement that is clearly not true in many instances and cases. One thing is that disaster most affects the poor, another is that risk is only informal- a dangerous conclusion under any type of situation. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have deleted this.
103	8	10	28	10	28	A reference is needed. (IPCC WGII TSU)	A reference has been added.
104	8	10	36	0	43	Backcasting scenarios do not redefine sustainability as traget free discoursive process: they are - as the author states earlier - normative processes, bound to sustainability targets derived from the full text of the Brundtland definition of SD (see above). Discourses which are not constrained by this framing are maybe interesting, but not sustainability discourses, nor backcasting sustainability scenarios (for a deatiled description of the differences between the different defintions see Spangenberg JH (2005) Die ökonomische Nachhaltigkeit der Wirtschaft. Berlin, edition sigma publ. (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	Revise scenarios treatment
105	8	10	46	12	16	It would be good to also address access to risk information in this section. Too much risk analysis is done on a self-contained project basis with too little attention to making the risk information open and accessible to wider audiences. There is reference to open source tools on p. 30 line 52 - p. 31 line 5, but it would also fit well in this section on technology and access. (O'Donnell, Ian, Asian Development Bank)	We have added more discussion of information in 8.2.4.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
106	8	10	48	11	8	Indeed highly centralised systems mainly depending on one (imported) fuel are usually considered to be risky regarding (big) failures with large scale effects. Yet, for some problems (e.g. snow/ice load on overland power lines) technical solutions exist or are tested (e.g. Kirkinen, J., Martikainen, A., Holttinen, H.,Savolainen, I., Auvinen, O. and Syri, S. 2005. Impacts on the energy sector and adaptation of the electricity network business under a changing climate in Finland. FINADAPT Working Paper 10, Finnish Environment Institute Mimeographs 340, Helsinki, 43 pp.: http://www.environment.fi/print.asp?contentid=228121&lan=en&clan=en). Yet, various risks for technical structures may still be not or misunderstood, e.g. Makkonen L. (2010): The use of order-statistics in extreme value analysis. Journal of Applied Meteorology and Climatology (in press).http://journals.ametsoc.org/doi/pdf/10.1175/2010JAMC2533.1 (Perrels, Adriaan, Finnish Meteorological Institute)	Good suggestion, but we did not find a way to incorporate into the SOD.
107	8	10	48	12	17	Although it may be quite evident, this section does not discuss how technology has implications for sustainable development. (Iglesias, Ana, Universidad Politecnica de Madrid)	We did not have the space to make this explicit in the text.
108	8	10	49	0	0	Technology can also add to adaptation challenges because of the interdependency between innovation processes and the institutional context through so-called 'lock-in of unsustainable practices'. A good example for this is the " carbon lock-in". See: Unruh G.C. 2000. understanding carbon lock-in, Energy policy 28:817-830 (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	The issue of lock-in is well covered in mitigation & energy - will need to look for literature in CCA and DRR
109	8	10	53	0	0	Here, it may be advantageous to refer to new upcoming technological innovation approaches such as biomimicry (which looks for solutions in nature that are far more elegant and sustainable that the conventional heat, beat and treat practices). See www.biomimicry.net for instance. (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	Very interesting suggestion but we could not fit it into the text.
110	8	11	7	11	8	A reference to case study 9.19 should be made here, where more discussion is found relating to seasonal forecasting. (Stocker, Thomas, IPCC WGI TSU)	We need to refer to this based on the SOD.
111	8	11	8	11	8	Added could be the point that advanced assessment methods and information technology is barely accessible for poor countries. Without intent knowledge & technology transfer policies these innovations may (unintently) widen the gap in climate change resilience between rich and poor societies. (Perrels, Adriaan, Finnish Meteorological Institute)	We have noted this in the text.
112	8	11	14	0	0	"...consider potentials for lower-cost desalination technologies with green energy..", these words are very important to me. They express the need for aquantance of appropriate technology of the place at risk. So beside "New Technologies and Technology Transfer" we might consider local solutions. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	We deleted this text, but it is a good point to add into the final order draft.
113	8	11	21	11	21	There are adaptations that are adaptive today but not adaptive in the future. (IPCC WGII TSU)	This text has been revised - but the point is good and perhaps can be made elsewhere.
114	8	11	33	0	0	There are many researchers investigating this through a systems approach, e.g. Technological Innovation Systems. See for instance: Functions of innovation systems as a framework to understand sustainable technological change: Empirical evidence for earlier claims Author(s): Hekkert MP, Negro SO Source: TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE Volume: 76 Issue: 4 Special Issue: Sp. Iss. SI Pages: 584-594 Published: MAY 2009 (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	We discuss socio-technical change and innovation in section 8.6.3 but do not have the space to review all the literature.
115	8	11	33	0	0	The word 'are' between 'that' and 'nonetheless' may be deleted. (Iqbal, Muhammad Mohsin, Global Change Impact Studies Centre (GCISC))	This text has been deleted.
116	8	11	36	11	39	References are missing (Vilima, Olga, UNISDR)	This text has been deleted.
117	8	11	41	0	0	Hypothetical considerations like these should be deleted, in particular as the evidence seems to falsify this hypothesis (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	This text has been deleted.
118	8	11	41	12	12	The discussion on economic aspects of vulnerability and resilience links also to the technology choices discussed in the first parts of section 8.2.4, e.g. regarding import dependence as well as balancing between engineering risks and risks owing to natural variability in renewable energy supply. (Perrels, Adriaan, Finnish Meteorological Institute)	We have deleted this discussion from this section.
119	8	11	41	12	12	As regards best economic recovery strategies and trade-off between quick repair and foregone renewal options, there are quite some factors at stake. For example, also the availability (or temporary reallocation flexibility) of local and import labour force and of alternative material supplies is important. Market information availability and transparency for different agents (workers, suppliers, investors, etc.) plays a role, which could be even tried to be ensured as part of emergency support systems (Perrels et al, 2010 (2010), The Implications of Climate Change for Extreme Weather Events and their Socio-economic Consequences in Finland, VATT Research report 158 (esp. pp.76-78), Helsinki; http://www.vatt.fi/file/vatt_publication_pdf/t158.pdf) (Perrels, Adriaan, Finnish Meteorological Institute)	We have deleted this discussion from this section.
120	8	12	12	12	12	You also could mention the importance of having the right incentives. The most obvious example is how insurance in developed countries distorts rebuilding towards sustainability, with rebuilding in flood-prone areas subsidized by other insurance holders (IPCC WGII TSU)	We have deleted this discussion from this section.
121	8	12	14	0	16	To improve readability of the draft, text that is not intended for use in the final report should be labelled. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have removed this "draft" note.
122	8	12	19	0	0	Section 8.3. Could be considerably shortened. (Stocker, Thomas, IPCC WGI TSU)	We have shortened this section and moved the discussion of Thresholds and Tipping Points to 8.4.3.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
123	8	12	19	0	0	Although I do agree that we need to find and promote these ST and LT synergies, I suspect that in some instances, there are no synergies between ST and LT adaptation. How to deal with that? (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	We have revised the discussion to focus on the integration of short-term and long-term responses, rather than synergies.
124	8	12	19	0	37	it might be interesting to discuss the synergies with mitigation too (Thalmann, Philippe, EPFL Swiss Federal Institute of Technology Lausanne)	We discuss the synergies with mitigation in section 8.4.
125	8	12	19	20	46	Section 8.3: Notwithstanding the draft status most of the Ch.8 text is (fairly) well written, but regrettably section 8.3 is an exception to this. The phrasing and editing look messy, as does the structure. Sometimes phrases are (next to) incomprehensible, e.g. page 13 lines 26-26; page 15 lines 19-20; page 15 lines 23-32 (Perrels, Adriaan, Finnish Meteorological Institute)	We have substantially revised section 8.3.
126	8	12	22	12	24	"Up until recently" is rather vague--what is recent? In Central America since Mitch parameters and concepts have changed to embrace the disaster risk reduction and disaster risk management notions. Is that recent and is it that continent to continent there are substantial differences in advances and approach and timing of changes in discourse and finally practice?. Early warning does not I think mitigate lossses when disaster happens. Rather it avoids disaster losses, especially human, by preemptive action prior to disaster. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have deleted this.
127	8	12	40	14	42	For the title and the content of this part(8.3.1) I would put " Quality of Life" in place of " Well Being". It is more profound and more expressive for communities. So solutions could be easier to reach. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	We discussed this and concluded that well-being includes quality of life aspects, but is broader.
128	8	12	48	0	0	We think that a reference without quotation to specific examples in a report is rather non-informative, since users will not easily be able to obtain the information in that specific report. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We phrased it this way to save space, directing people to the reference instead.
129	8	12	49	12	49	It is somewhat inaccurate, or rather historically and conceptually forgetful, to refer to an "adaptive solution" in such a case of the levees when over 70 years ago Gilbert White on analysing the Tenessee Valley levees to control floods considered them inadequate and talked of the levee effect in other terms. He also at that time recommended non structural solutions through land use planning, river basin management etc combined with hard engineering solutions. The US had to wait to the great Mississippi floods of the early 90s to realise he was right and right decades before anyone spoke of adaptation!! This is another case of the lack of our historical memory and where much that is now called adaptation, and what White called adjustment, was once also simply called disaster or disaster risk prevention or mitigation. As has been pointed out previously in this overall comment, to date there really is no convincing discussion and decision as to what in prospective terms can be called an adaptation mechanism or instrument as opposed to a DRM instrument when looking at extreme events and disasters. The only pervasive notion that tends to run through this FOD is still the clearly erroneous idea that coping is DRM (all of DRM it seems from certain uses of the notion) and adaptation is adaptation and that DRM is short term and adaptation long term. Here it is clear there is misunderstanding of the fact that DRM is not Emergency Management or Disaster Management and thus short term response and rehab. Moreover, adaptation is not all long term as there is adaptation one presumes to already changed climate as the IPCC definition of adaptation makes clear. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We agree, and have corrected the perpetuation of "coping vs. adapting" as short and long-term phenomina that was in the title to section 8.3. The "adaptive solution" should be qualified as "perceived adaptive solution" in the next revision.
130	8	13	1	13	14	There seems to be a contradiction between the first way coping is described or conceptualised in this part and the second way it is described. Thus the notion of adjustment to changing climatic-environmental conditions- is not the same as alleviating the impacts or living with the costs of a specific event. Seems to me the first description is maybe adequate for adaptation but not for coping. The example supports the notion that coping is post impact and a way of getting by that may increase future vulnerability. Adjustment to changing climate conditions is something completely different and may be described as adaptation, adjustment, or in DRM terms, mitigation, reduction or even prevention. This point is important because we have too many definitions and applications of the notion of coping in the different chapters and this is very apparent. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	As above
131	8	13	14	13	16	Here I am not sure what evidence exists for this general , widesweeping statement on the fundamental role of perception in developing countries. Although it is most certainly true that longer term risk issues are postponed in order to tackle short term quotidianne risk contexts (this was pointed out by Maskrey in 1989 and many others since with regard to disaster risk and this does not vary much in comparison with climate change risk--same risks, different uncertainties), a good part of this is not necessarily a problem of perception but simply of life and the daily struggle to get by. Even with good old fashioned disaster risk and possible future events known to the population as being a possibility, they also postponed doing things as they needed to dedicate energies to daily, chronic risk - see Amyrtya Sen. So I would be very, very wary of ascribing causality for inaction to "perception" as opposed to necessity. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	I think we are using perception in a broad way. It includes aspects of salience. Many risks may not be perceived because they are crowded out by the here and now of getting by.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
132	8	13	18	13	23	This is another case where what was traditionally called disaster prevention and mitigation and is now widely called prospective or proactive disaster risk management is now called adaptation. All the qualities given in this phrase to actions pre, during and post impact are exactly the same as are applied to proactive-prospective risk management--so how do we distinguish adaptation from prospective risk management when in both cases anticipation of the future is in play when faced with potentially future damaging events? This is another one that is not resolved throughout the study and keeps cropping up although to date noone has really taken the bull by the horns and elaborated on the fact and contradiction. Ignoring the fact wont make it go away!! The essence of the matter is that for some reason someone has decided that the binomio to be considered in contrasting terms is coping and adaptation as if coping was the principle DRM strategy. This is of course completely false. It also seems to assume that coping is disaster risk reduction, prevention or mitigation which of course is also completely false. Why in fact do we not compare, contrast and see relations between commonly called prospective or proactive disaster risk reduction and adaptation--that comparison would be more valid. By contrasting coping and adaptation we are comparing apples and pears!! This does not of course mean that we cant compare them and see how they interact as clearly there is much to be said about the relations between a short term getting by action and longer term concerns of adaptation. But that is no substitute for really defining what is prospective disaster risk management and adaptation and then contrasting them--this one is avoided throughout the study because in reality it is probably true to say that in many instances there is no difference!! (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have tried to reformulate the discussion of short-term vs. long-term and for reactive vs proactive, as the distinction was creating more trouble than clarity.
133	8	13	31	13	33	Another classic case of things discussed for the last 50 years from a disaster management and now DRM perspective and which are now coined under the terminology of adaptation instead of disaster prevention or risk prevention as is the case in DRM studies--as well as urban relocation studies from the 60s onwards. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	The chapter is trying to capture the challenge to our perspectives because of the new context that climate change introduces, which is not always useful.
134	8	13	44	13	44	There is also a rich health literature on the life course impacts of childhood malnutrition, etc. that is applicable. (IPCC WGII TSU)	We have not been able to access that literature yet.
135	8	14	1	14	2	Can we not be a little more precise than "which may be the case in less developed countries"? Are we talking of middle or low income countries, Brasil or Sierra Leone? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We kept it vague because it is so context specific, rather than income specific.
136	8	14	20	14	20	Are you at risk and exposed to hazard or can you also be exposed to risk? If so what is exposure to risk as opposed to exposure to hazard or to the potential physical event? What is the difference between being exposed to risk and living with or at risk? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We will change "risk" to hazard in the final draft.
137	8	14	24	14	26	Another (larger) example is Iceland, notably the Mist Hardships following the eruption of Mount Laki in 1783 and the deteriorating living standards in 19th century, which invoked the Danish king to even invite all Icelanders over to Denmark. (Perrels, Adriaan, Finnish Meteorological Institute)	The example was deleted.
138	8	14	28	14	30	This is a misinterpretation as what he argues for is the transition from short term response, preparedness and coping to more lasting, development based disaster risk prevision and reduction, not "adaptation", which is a notion not used in that particular study. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We will correct the misinterpretation in the final draft, changing "adaptation" with "risk and vulnerability reduction"
139	8	15	0	0	0	See suggestion above re greater / more explicit emphasis on 'politics' and 'political economy of disasters and climate change. E.g., thesis by Naomi Klein re deliberate exploitation of disaster situations by 'free market' interests / idealogues. (Glavovic, Bruce, Massey University)	We have tried to emphasize this, including in the conclusions, but agree that it could be made more explicit.
140	8	15	15	15	15	This is a very important proviso and maybe should be advanced before discussing particular technology and financial things that limit DRM. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We decided to leave this.
141	8	15	15	15	17	More elaboration on 'the lack of synergy between institutional and legislative arrangements for disaster risk reduction', through a box would be desirable. (GARG, AMIT, INDIAN INSTITUTE OF MANAGEMENT AHMEDABAD)	This was a good suggestion but we did not have the space for a box.
142	8	15	15	15	18	A reference is needed. (IPCC WGII TSU)	We still need to find a reference for the final draft.
143	8	15	19	15	21	This sentence is badly constructed. Also should it not be that proactive and reactive modes are put the other way around--that is to say financing impedes shift from reaction to proaction, not the reverse? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Agree - this sentence will be revised in the final draft.
144	8	15	20	15	20	regimes not regions? (IPCC WGII TSU)	Yes - that is it and we will revise this in the final draft.
145	8	15	29	0	34	Although you mention the historical evolution of disaster risk management, you do not do the same for adaptation to climate change. (Iglesias, Ana, Universidad Politecnica de Madrid)	We noted this but did not have time to address it in the SOD.
146	8	15	29	15	29	This is a rather all encompassing and imprecise statement--more than "historical evolution" comes into play I fear when it comes to explaining the difference. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We will revise this in the SOD.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
147	8	15	29	15	34	While the basic point is valid that disaster-related issues and climate change approaches have different historical evolutions and tend to be pursued through different departments/agencies within government, I do not believe it is correct to say that disaster RISK management has emerged from humanitarian assistance efforts, except in the most general sense of a shared association with "disasters". It is certainly true that emergency or disaster management activities associated with immediate emergency relief, and later various aspects of preparedness measures (but seldom, for example early warning practice or systems management) was coincident with humanitarian actions, but the aspects of earlier disaster "prevention" and "mitigation" were seldom, if ever seen to exist within emergency management, humanitarian response or similar relief/assistance programmes or agencies. It is also noteworthy that during the UN reform in 1998 which created the UN OCHA and the Office of the Emergency Relief Coordinator (ERC), (UNGA Res. 46/182) the previous Disaster Mitigation Branch that existed within the preceding UN Department of Humanitarian Affairs (DHA) as well as the functions which it pursued were dropped from the responsibilities of UN-OCHA. Similarly, the functions assigned to the ERC referred to no disaster prevention or mitigation roles or responsibilities. Disaster RISK considerations (and without any functional description as "diaster risk management" of the day) were historically evolved much more from the academic pursuit of "hazards studies", engineering practice, flood plain management (e.g. Gilbert White et al), contingency and regional or systems planning, human and political geography, and even drawing on the fundamentals of epidemiology and preventive or primary public health care considerations and practice. Well into the mid-1990s, and even into the 2000's one can see scant disaster RISK considerations or manifestations (i.e. prevention, mitigation) practice or activities evident within many international "humanitarian assistance" NGOs or UN agencies, which still remained largely dedicated to emergency preparedness and response endeavors in any association with "disasters" or "humanitarian actions". In the historical record, such as for example the early years of documentation in Disasters journal throughout the 1980s-1990s one will find very few articles or disaster RISK-related commentary provided from or through international, or even national, "humanitarian agency" or "emergency	This point is important and we will give this proper treatment in the SOD.
147.2	8	15	29	15	34	management" practitioners. Indeed, one of the important developments from the later 1990s was the emerging recognition among some national emergency management/disaster management agencies (e.g. Singapore Civil Defence Agency, Australia's Emergency Management Agency) that disaster risks had a significant impact on their previously more focused roles in providing specialized relief and rescue skills at the time of crisis events. The USA's FEMA's first distinctive Disaster Mitigation Bureau was created only around 1996-97. The fact that today in 2010, national disaster management agencies have become the locus of placing fledgling disaster RISK considerations only highlights the still prevailing uncertainties in many government authorities how to integrate wider risk, exposure and vulnerability issues into their "whole of government" responsibilities. The prevalence of this difficulty remains as one considers the problematic of where and how to situate "recovery" responsibilities in Government, as there are certainly few "disaster management agencies" that have the range of capacities to rebuild schools, coordinate or undertake reconstruction of housing or infrastructure, nor to rewrite land-use and environmental management legislation or regulations. Hence the opening statement in line 30 may have some limited accuracy if the phrasing were modified to refer to "emergency/disaster management", but not as presented in terms of disaster RISK management. DRM interests may now be seen to be converging with those of humanitarian agencies, but the interests did not evolve from them. Some of these antecedents of DRM are discussed in Jeggle, T. The Evolution of Disaster Reduction as an International Strategy: Policy Implications for the Future. In Managing Crises: Threats, Dilemmas, Opportunities (2001) ed. by Rosenthal, U, Boin, R.A., Comfort, L.K. Charles C. Thomas Publisher Ltd, Springfield, Illinois USA. (pp. 316-341). (Jeggle, Terry, University of Pittsburgh)	
148	8	15	41	16	33	There is nothing here on the idea that poorer populations tend to displace longer term concerns when faced with daily needs and risks. Neither is this mentioned in the rest of this subsection although it is mentioned in the previous section (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We move here into the more individual aspects rather than the socio-political, and should have a stronger transition in the final version.
149	8	15	46	0	0	Other important barriers include: 1) value-action gap (also known as the attitude-behaviour gap); 2) dissonance and denial (lack of knowledge, lack of trust); 3) scapegoating & projection (it is other people's responsibility, passive bystander effect); doubt in the ability or desirability to change (other priorities, no time to think of these things, institutional barriers) and so on. A good overview can be found in chapter 6 of this report: http://www.zerocarbonbritain.org/ (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	We were not able to be comprehensive for space but should direct readers to the overview in Chapter 6 in the final draft
150	8	15	46	15	54	There is also an aspect in which climate risks are treated as inevitable (not probablistic) by many people that we are not yet capturing. Thus the current psychology in responding to climate risks seems fundamentally different from that for other types of disaster risks. Whereas there may be a a 60% chance that a sizable earthquake will strike a certain region in the next 30 years, major climate change impacts in the next 30 years seem inevitable to people even if particular events (like large floods) associated with those climate change impacts are also still probablistic in nature. This difference in risk perception has implications for people's readiness to act. (O'Donnell, Ian, Asian Development Bank)	This is a good point about risk perception / voluntary vs. involuntary risk that needs to be strengthened in the final draft.
151	8	16	4	16	33	Basically an interesting list, but it could be set up more systematically and with other effects added. (Perrels, Adriaan, Finnish Meteorological Institute)	We can refer to Chapter 6 or strengthen this in the final draft.
152	8	16	10	0	0	It's not simply that individuals are not skilled in making trade-offs. In fact they make trade-offs all of the time. The real issue is the lack of alignment between costs and benefits and the lack of incentives for shifting this alignment in more postive directions. (O'Donnell, Ian, Asian Development Bank)	The lack of skill refers not to making trade-offs, but to making tradeoffs between costs and benefits because of incomplete information.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
153	8	16	20	16	25	The text does not agree with the opening statement. (IPCC WGII TSU)	We have revised this text.
154	8	16	21	0	25	First (economics expectation) and last sentence (experience) of the para seem to contradict each other (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	We have revised this text.
155	8	16	21	16	25	There seems to be a contradiction in this paragraph--it starts saying people who expect relief dont invest in DRR and then the example at the end says those that receive more relief undertake more efforts to reduce losses from future events. The Kunreuther quote tells us nothing of the result of this situation--do they or do they not then take more action? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have revised this text.
156	8	16	21	16	25	There are quite disparate messages between the sentences in this paragraph. Is there supposed to be a common thread or conclusion from the paragraph? (O'Donnell, Ian, Asian Development Bank)	We have revised this text.
157	8	16	21	16	25	The examples you bring show exactly the opposite of what you call "Samaritan's Dilemma". Please clarify. (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	We have revised this text.
158	8	16	31	0	32	The first sentence in these lines appears somewhat incomplete and out of context. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have revised this text.
159	8	16	31	16	32	Doesn't this example belong to the "Samaritan's Dilemma" paragraph above? (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	We have revised this text.
160	8	16	34	0	0	There could also be a similar paragraph on project cycle orientation and the way that development and humanitarian organizations are also led into making a series of trade-offs that prioritize outputs over outcomes and short-term results over longer-term impacts. (O'Donnell, Ian, Asian Development Bank)	A good point, but we have not been comprehensive in this section, but rather have given examples.
161	8	16	35	16	44	This is a rather general and widesweeping statement with no quotes to back up the whole assertion. I would tend rather to think that explanation should be cut to particular situations, contexts etc (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This pragraph has been deleted.
162	8	16	43	16	44	This sentence should also relate such long-term strategies to incentives. (O'Donnell, Ian, Asian Development Bank)	This has been deleted.
163	8	16	46	16	48	Here the authors have turned from talking of adaptation strategies to talking of risk management strategies--are we to conclude that they are the same? Or is there a difference? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We need to clarify this in the final draft.
164	8	16	52	16	52	Am concerned with this general comment that suggests uncertainty relating to climate will increase with climate change. This general comment appears throughout SREX but never with any scientific basis. It is true that for SOME extreme weather events, variability might increase with climate warming, but this is different than uncertainty. We can for example have high confidence (low uncertainty) that future variability of a given extreme event will increase in a given region . The key message coming from chapter 3 is that uncertainty relating to future climate projections depends upon the extreme, the region, and the season. Note that Chapter 2 speak simply of 'conditions of uncertainty' in the future, without implying an increase. Similar wording should be used here. (Stocker, Thomas, IPCC WGI TSU)	We have deleted this sentence.
165	8	16	53	16	54	This general statement relating to precipitation is an overstatement, and distorts the fact that there is actually high confidence in projections of extreme rainfall. Should be changed to: "For instance, in SOME regions climate models do not agree.....". You should also add a sentence recognising that the overall assessment provided in the AR4 and here in Chapter 3 of SREX, projects a 'very likely' increase in frequency of heavy precipitation in most areas of the globe. (Stocker, Thomas, IPCC WGI TSU)	We have deleted this sentence.
166	8	17	0	0	0	Reference work on resilience by scholars in psychology (Glavovic, Bruce, Massey University)	We have added a reference to the psychology literature.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
167	8	17	0	20	0	I fully agree with the text 'sections of 8.3.3 and 8.3.4' emphasizing ecosystem resilience and the existence of threshold responding to the environmental changes and human disturbances. Ecosystem influences on the disaster occurrences are highly underestimated even among scientists, however. Debates continue about forest effects on flood for example (eg., FAO-CIFOR, 2005; Bradshaw et al., 2007; Laurance, 2007). Although many studies on model predictions have suggested irreversible and devastating influences of deforestation on climate since Nobre et al. (1991) in Amazon. Since effects of such huge spatial scale deforestation cannot be actually examined, validating the predictions is difficult. Nevertheless, they should be rationally endorsed against possible field observations, and filed evidences supporting the predictions have been only recently obtained. I would like to include such recent field evidences and resilient effects of forest ecosystem on the water cycle in two typical tectonic regions in the world should be highlighted in the text. First, one of the resilient systems was detected from vapor flux studies in an inland area of large continent. The important finding is believed from a long-term observation on evapotranspiration from a larch forest in west Siberia. Ohta et al. (2008) demonstrated that annual evapotranspiration amount was steady every year compared with the wide range in annual precipitation. According to their nine-year continuous observation by an eddy-covariance method, the water used for transpiration by larch trees in a summer with a small amount of rainfall was supported by the rainwater fallen in the previous summer through the freezing and melting processes of soil water in winter. The observed interannual variation of the precipitation was certainly wide but the range may be narrowed by water supply from the steady annual evapotranspiration by larch trees. The deforestation in Siberia has to cause a reduction of evapotranspiration especially in dry summer, resulting in a much smaller water recycle between land surface and the atmosphere. This must contribute to an amplification of the interannual variation of summer rainfall. We can easily predict a much drier climate causing a drastically large damage in agricultural productions in east Asia (Makarieva and Gorshkov, 2007). The fact that evapotranspiration is much larger from forest than any other shorter vegetation was classically understood both from hydrological (eg. Bosch and Hewlett, 1981) and meteorological observations (eg. Wright et al., 1992). However, the new finding from a long-term observation by Ohta et al. has firstly provide a detailed causal connection in an estimation of the climate change derived from a deforestation at a continental scale. Secondly, an ecosystem consisting of forest and soil is described as a resilient system causing a stable river-runoff regime. This is important in tectonically active region although the first effect through an evapotranspiration process is critical in an inland region of a huge continent. As described in the opening sentences, intense debates are continuing about forest and flood. However, the uncertainty included in the forest effects may mainly depend on a classical methodology of forest hydrology. Traditionally, an evidence on forest change was derived from a comparison of runoff for a catchment with a vegetation change to that for its adjacent standard catchment without change (Bosch and Hewlett, 1982). This comparison can only elucidate a short-tem dependency of runoff on vegetation changes such as forest clearing and thinning, and soil is not drastically disturbed within a short period by these operations although the runoff buffering potential depends on the soil properties (Tani, 2008). Runoff changes to be now predicted in related to the current climate change issue are clearly generated from severe land-use changes with a reduction or disturbance of the soil layer underlying a forest (Zehe and Sivapalan, 2008). However, a standard catchment is difficultly employed for the comparative analysis because most of the catchments in a local region entirely suffered from a perennial accumulation of soil disturbances by human activities. A historical experience in Japan such as a formation of bare land in granite mountains and a reduction of soil in mountains with other geologies caused by intense forest uses for housing, fuel and fertilizer can provide a useful evidence for the soil effect on flood. Tani et al. (accepted) compared seven small catchments with different soil conditions in the granite and sedimentary-rock mountains showed effects of soil conditions on runoff in each geology. Because soil particles produced by bedrock weathering are easily eroded by heavy rainstorm in a steep slope characterized by a high tectonic activity (Takei et al., 1981), the development of soil layer against a frequent erosion pressure can be made only by the vegetation root system (Tsukamoto, 2001; Shimokawa, 1984). Even though only above-ground vegetations are used, soil has to be changed because of an interdependent system consisting of vegetation and soil (Zehe and Sivapalan, 2008). History in Japan demonstrates that either a virgin forest with thick forest soil layer or a bare land without soil layer resiliently existed under the same climate and tectonic conditions once the bare land was created by perennial human disturbances (Tani et al., accepted). Reduction and degradation of the soil layer are now being yielded everywhere in the world caused by a poor management of forestry, and a coupling of these soil problems and more frequent heavy rainstorms due to the global climate change must cause severe disasters in near future. Hence, the report should put more emphasis on the impacts derived from the loss of resilient system consisting of forest and soil. References Bosch JM, Hewlett JD. 1982. A review of catchment experiments to determine the effect of vegetation changes on water yield and evapotranspiration. Journal of Hydrology 55: 3-23. Bradshaw CJA, Sodi NS, Peh KSH, Brook BW. 2007. Global evidence that deforestation amplifies flood risk and severity in the developing world. Global Change Biology 13: 2379–239. FAO-CIFOR, 2005. Forests and Floods – Drowning Fiction or Thriving on	An important point, but perhaps more relevant to Chapter 4, rather than for the largely conceptual discussion in 8.3.3.
167.2							

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
167.3						Facts? RAP Publication 2005/3, Food and Agriculture Organization of the United Nations, Rome, 30pp. Laurance WF. 2007. Forests and floods. Nature 449: 409-410. Makarieva AM, Gorshkov VG.. 2007. Biotic pump of atmospheric moisture as driver of the hydrological cycle on land. Hydrology and Earth System Sciences 11: 1013-1033. Nobre CA, Sellers PJ, Shukla J. 1991. Amazonian deforestation and regional climate change. Journal of Climate 4: 957-989. Ohta T, Maximov TC., Dolman AJ, Nakai T, van der Molen MK, Kononov AV, Maximov AP, Hiyama T, Iijima Y, Moors EJ, Tanaka H, Toba T, Yabuki H. 2008. Interannual variation of water balance and summer evapotranspiration in an eastern Siberian larch forest over a 7-year period (1998–2006). Agricultural and Forest Meteorology 148: 1941-1953. Shimokawa E. 1984. A natural recovery process of vegetation on landslide scars and landslide periodicity in forested drainage basins. Proceeding of Symposium on Effects of Forest Land Use on Erosion and Slope Stability, East-West Center, University of Hawaii, Honolulu, 99-107. Takei A, Kobashi S, Fukushima Y. 1981. Erosion and sediment transport measurement in a weathered granite mountain area. In: Erosion and Sediment Transport Measurement, IAHS Publ. 133: 493-502. Tani M. 2008. Analysis of runoff–storage relationships to evaluate the runoff-buffering potential of a sloping permeable domain. Journal of Hydrology 360: 132-146. Tani M, Fujimoto M, Katsuyama M, Kojima N, Hosoda I, Kosugi K, Kosugi Y, Nakamura S. accepted. Predicting the dependencies of rainfall-runoff responses on human forest disturbances with soil loss based on the runoff mechanisms in granite and sedimentary-rock mountains. Hydrological Processes. Tsukamoto Y. 2001. Devastation process of forests and surface soils by human impacts. - Devastation and denudation of low relief mountains in Japan -. Journal of Japan Society of Erosion Control Engineering 54(4): 82-92 (in Japanese with English abstract). Wright IR, Gash JHC, Da Rocha HR, Shuttleworth WJ, Nobre CA, Maitelli GT, Zamparoni CAGP, Carvalho PRA 1992. Dry Season Micrometeorology of Central Amazonian Ranchland. Quarterly Journal of Royal Meteorology Society 118: 1083-1099. Zehe E, Sivapalan M. 2008. Threshold behavior in hydrological systems and geo-ecosystems: manifestations, controls and implications for predictability. Hydrology and Earth System Sciences	
168	8	17	7	19	17	This section could easily be condensed, pointing out key issues with less repetition. (IPCC WGII TSU)	We have reduced the length and removed repetition.
169	8	17	9	18	8	This is a good statement on resilience . In chapter 1 and 2 there are other elements put forward and this is another case of deciding how much should be in one chapter and taken for granted in others and how much is there a need for each chapter to reiterate, with the danger of contradiction. On another front it would seem necessary to comment and document those that object to the use of resilience as an idea and notion for DRM and adaptation--see Wisner et al, and Gaillard, Kelman and Wisner forthcoming for example. Despite the critique of resilience made by many other authors, in this section the authors seem to take a stance and conclude that it is the way to go--is this the correct stance for this type of study or should the pros and cons of this and other approaches be laid out without policy prescriptive conclusions being built into the discussion? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We discuss the critiques in the last paragraph of the section, but because "resilient" is in the title of the chapter, we thought that it would be best to discuss the concept and its contributions.
170	8	17	9	19	17	A discussion of the work of the Resileince Alliance that is generally fair and balanced until the end when it's critics are cited without attribution (yet). I do not think the contention that their work does not support adaptive mangament is correct since I have used it for that very purpose. I wondered why other work cited in the paper does not generally include critism. (Longstaff, Pat, Syracuse University)	We have tried to be more reflexive than critical in the discussion, pointing to some of the limitations that need to be addressed.
171	8	17	12	17	23	This should be included in the Chp 1 discussion of resilience and referred to. (IPCC WGII TSU)	We kept it in this section for now because it is important to the chapter (but if Chapter 1 defines it similarly, then we can refer to it).
172	8	17	14	17	14	There is another stream of literature on resilience in social systems: Janssen,M.A., Schoon, M.L., Kee, W., Börner, K. (2006): Scholarly networks on resilience, vulnerability and adaptation within the human dimensions of global environmental change, in: Global Environmental Change 16 (2006) 240–252. Gallopin, G.C. (2006): Linkages between vulnerability, resilience, and adaptive capacity, in: Global Environmental Change 16 (2006) 293–303. Sussmann, F.G., Freed, J.R. (2007): Adapting to climate Change: A Business Approach. Berkhout, F., Hertin, J., Arnell, N. (2004): Business and Climate Change: Measuring and Enhancing Adaptive Capacity The ADAPT project, Tyndall Centre for Climate Change Research Technical Report 11. Linnenluecke, M., Griffith, A., Winn, M. (2008): Organizational adaptation and resilience to extreme weather events. Conference Proceedings, Academy of Management 2008. Breda, M., Shackley,S. (2005): The formation of belief in climate change in business organisations: a dynamic simulation model, Tyndall Centre for Climate Change Research Working Paper 68. (Guenther, Edeltraud, Technische Universität Dresden)	We will add the references to resilience of social systems to the final draft.
173	8	17	19	17	10	It also thus erroneously "concludes" that DRM is short term and adaptation long term. This is clearly not true but given the bias towards accepting coping as a strategy and the conclusion that coping is DRMs principle strategy we are falsely led to the conclusion that DRM is short and adaptation long term. This is a very uncomfortable conclusion and will bring all sorts of criticism. (Lavell, Allan,	We have been trying to dispel this idea in the chapter.
174	8	17	30	17	34	References are missing (Vilima, Olga, UNISDR)	We have added a reference.
175	8	17	43	0	0	a return to the previous situation is never possible, as ecosystems (like social systems) are dynamically evolving: by the time of return, the situation/status will have changed. A meaningful definition would be that resilience means that the development trajectory remains within the same attractor basin. (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	We have revised this section.
176	8	17	43	17	53	Much of this is repeated elsewhere; please delete. (IPCC WGII TSU)	We have deleted this text.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
177	8	18	37	0	44	This paragraph presents some very interesting and valid counter-arguments to resilience thinking. However you do not address them at all, doing so would greatly strengthen your argument since these counter-arguments have direct implications for sustainable development (in particular from a rights-based or capacity-based approach (see Amartya Sen's (1999) Development as Freedom) (Iglesias, Ana, Universidad Politecnica de Madrid)	We have elaborated on these arguments and added some examples.
178	8	18	37	18	44	References are missing (Vilima, Olga, UNISDR)	We have added references.
179	8	19	20	0	0	Section 8.3.4. Please make it clear throughout this section that these are potential tipping points. (Stocker, Thomas, IPCC WGI TSU)	We have revised this section to include small-scale regime shifts, and added "potential" to modify tipping points.
180	8	19	20	19	20	This section repeats information in other chapters; please refer to these chapters and highlight only the key issues that need to be included in this chapter. (IPCC WGII TSU)	We have revised this section and will check for repetition with other chapters from the SOD:
181	8	19	20	20	46	A good part of this section should maybe be in chapter 3 and 4 as it looks at causes and impacts. What is in play in this chapter is somewhat different--how to use these things and past DRM experience to progress in the future--there are parts on this but much is of another order of debate. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have revised this section and moved it to 8.4 in order to contextualize what is at stake.
182	8	19	20	20	46	It could be worth it to mention the potential hysteresis effect in such contexte, or retroaction that occur in meteorological processes as well as within the interaction between physical and social spheres. For instance land clearing for cultivation may have inadvertently decreased suitability for growing crops ("Challenges to estimating carbon emissions from tropical deforestation", N Ramankutty, HK Gibbs, F Achard, ... - Global Change, 2007) or irrigation in India that increase vapor flows and thus the moonsoon devastating effects ("Changes in moisture and energy fluxes due to agricultural land use and irrigation in the Indian Monsoon Belt", EM Douglas, D Niyogi, S Frolking,...- Geophys. Res., 2006). (leblois, antoine, CIRED)	This is an interesting point - but we have revised and shortened this section and could not include such detail.
183	8	19	22	20	14	Further examples can be found on the Mountain Research Institute web site http://mri.scnatweb.ch/networks/mri-amercian-cordillera/events-mri-american-cordillera.html with an appropriate case study from Ecuador. (Bender, Stephen Bender, Organization of American States (retired))	We appreciate the example but had to condense the section.
184	8	19	22	20	46	This section does not quite fit in with the idea of "synergies between short-term coping and long-term adaptation", the link should be made more explicit or perhaps included in section 8.4 (Iglesias, Ana, Universidad Politecnica de Madrid)	We have taken this advice and moved this to be section 8.4.3.
185	8	19	23	19	35	The current flood situation in Pakistan and likely longer-term consequences may provide a useful example to be elaborated, with the expected benefit of recent and explict experience. (Jeggle, Terry, University of Pittsburgh)	We agree but we have not yet seen the literature on this, and it may be picked up in Chapter 9.
186	8	19	26	19	26	Change to: "Example of POTENTIAL tipping points include....." (Stocker, Thomas, IPCC WGI TSU)	We have added this to the text.
187	8	19	30	19	32	This statement regarding tipping points and future hazards needs to be supported by more than just one reference. Tipping points are not discussed in chapter 3, and therefore you need to very strongly support any statements you make here with available scientific literature. (Stocker, Thomas, IPCC WGI TSU)	We have revised this section to include small-scale regime shifts and other non-linear effects, but will look for more references for large-scale tipping points (e.g. related to drought?)
188	8	19	37	20	2	Social tipping point are, in low income areas, linked to poverty traps and sub-optimal equilibrium that happening through specific capital accumulation dynamics that are precipitated and enhanced by extreme weather events driving income shocks. Such point is evoked in the last paragraph of the section... (leblois, antoine, CIRED)	It is an excellent point, and we recognize that we could elaborate on this, but it is a question of space.
189	8	19	42	19	43	When talking of one disaster triggering another we cant use physical event examples to illustrate this given that physical events are not disasters. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	That is a good point -- We can be more precise that physical events can lead to disasters because of the same underlying contextual conditions in a given place in the final draft.
190	8	20	9	20	9	Please add a cross-reference to Chapter 3 here, which is almost entirely devoted to an assessment of the ''fat tails" of the PDF. May be advisable to explain what "fat tails" are for the less expert reader (Stocker, Thomas, IPCC WGI TSU)	We overlooked this and will make the cross-reference in the final draft.
191	8	21	12	0	24	We think that this paragraph should include more examples and a discussion of dilemmas and trade-offs as regards urban planning and form (For example "compact energy efficient heat-islands" versus " urban sprawls with many green areas and buildings only in the safest locations") (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have revised this paragraph and inluded examples.
192	8	21	12	0	40	The content of this section does not address the topic of "adaptation, mitigation, and disaster management interactions" in a broad sense. Instead it discusses adaptation only in urban settings and mitigation only in rural settings. This section needs much more work. (Iglesias, Ana, Universidad Politecnica de Madrid)	We acknowledge that this section is still weak.
193	8	21	12	21	24	Very convincing paragraph. Lots of items were said. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	Comment appreciated; we have added to the paragraph in any case!
194	8	21	26	21	36	The interaction between mitigation and adaptation policy is imortant and would deserve even more space in chapter 8, not the least because up to now mitigation measures tend to have the upper hand in urban planning and building activities. Apart from the issue discussed here (speed of repair vs. attaining BAT levels; see also comment no.9) new building codes and compact city policies may sometimes - inadvertently - entail maladaptation regarding (future levels of) climate change risks. (Perrels, Adriaan, Finnish Meteorological Institute)	We have tried to elaborate on this in the following section, 8.4.2.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
195	8	21	43	23	3	Section 8.4.2: The on (mega)urbanisation in developing countries deserves extension: - climate change vulnerability and (mal)adaptation of urban areas in OECD countries - also because these may provide good and bad examples for developing countries; - countryside - especially in conjunction with rapid urbanisation the countryside may suffer from adverse selection for those staying in the countryside (elderly, poor, less educated, etc.) and therefore will have also its own problems regarding adaptation; - city hierarchy merits attention in its own right; next to accomodative policies regarding emergence of very large cities it is probably also important to try to develop the regional centers (near to / amidst the countryside). Medium sized cities are often less difficult to manage, whereas a network of medium sized cities may better facilitate the resilience needs of the countryside as well. (Perrels, Adriaan, Finnish Meteorological Institute)	We have tried to capture the importance of responses in urban areas, although we don't have a section on urbanization to elaborate in great detail.
196	8	21	45	0	46	Since this sentence is more like a summarizing conclusion, we propose that it is move further down in the text or discussed in more detail. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	This is indeed a key theme of the chapter, and we refer to underlying causes, drivers, context, etc. throughout the chapter.
197	8	21	45	23	3	This section as it is is very fragmented with paragraphs two and three discussing the environmental concerns of urbanization and paragraph five discussing how rural livelihoods are integrated into a broader world system. Only paragraph four discusses interactions between urban and rural contexts and it is very limited. Moreover, these paragraphs discuss interactions between different socio-economic sectors and not between responses. (Iglesias, Ana, Universidad Politecnica de Madrid)	We recognize the fragmentation and have tried to emphasize the interaction between responses with more examples.
198	8	22	2	0	0	"More than half of the world's population WAS living in cities and towns" - We think that this sentence should be reformulated to present tense or reference to year should be included in the body text. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have deleted this sentence.
199	8	22	14	0	10	Confusing sentence, please reword. (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	We are not sure which sentence was considered confusing and why.
200	8	22	23	0	0	Urban-planning decsion-making most manifests itself in decisions concerning land use development by the public and private sectors alike, and the functioning of the land markets. (Bender, Stephen Bender, Organization of American States (retired))	Good point. However, we have removed the paragraph.
201	8	22	23	22	30	Here concentrates the idea of quality of life. We might stress on its eleven indicators to show up the system how to deal with. (Yasseen, Adel, Ain Shams University - Institute of Environmental Research and Studies)	We have removed the paragraph but have reference to quality of life in the section.
202	8	22	36	0	39	The sentence is incomplete. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have deleted this sentence.
203	8	22	41	22	52	Can also refer to the International Agriculture Assessment (IAASTD) (IPCC WGII TSU)	We have revised this paragraph but did not include a reference to the IAASTD (not sure if it is a report or a process!).
204	8	23	6	30	13	Some of the issues from the previous section as commented above could be solved by integrating section 8.5 more explicitly with section 8.4. By keeping them in distinct sections the flow of the argument is impeded and it becomes more difficult to demonstrate how risk reduction management, climate change adaptation, and sustainable development link together. (Iglesias, Ana, Universidad Politecnica de Madrid)	We have tried to clarify the distinction between the two sections, the first emphasizing the interactions, and the second focusing on the wider significance.
205	8	23	20	23	20	This section also could mention the problem of land tenure in Africa. Another issue that could be mentioned in this chapter is that most of the world lacks access to legal recourse. There was a UN report released on that a couple of years ago; the advisory panel included Madeleine Albright and Mary Robinson. (IPCC WGII TSU)	It is a useful point, but we focused more on the capacity and resources of groups than on the underlying drivers in this section (we have mentioned the importance of legal frameworks in other sections).
206	8	23	25	0	0	References should include "United Nations Conference on the Human Environment - the Stockholm Declaration." 1972; "Natural Disaters: Acts of God or Acts of Man." Wijkman, Anders and Timberlake, Lloyd, 1984; "Prevention Better than Cure." Hagman, Gunnar, IFRC, 1984; "Disasters, Planning, and Development: Managing Nattural Hazards to Reduce Loss." Organization of American States, 1990 http://www.oas.org/dsd/publications/classifications/publicationstitlea.htm (Bender, Stephen Bender, Organization of American States (retired))	We have cross-referenced earlier chapters that discuss these factors.
207	8	23	29	0	0	Not sure whether this is correct (creating social vulnerability). Please check. (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	We have removed this sentence.
208	8	24	18	24	40	The difference presented in the document is very subtle. It is recommended to leave more obvious the proposal for the authors. As example the proposal can look presented in: http://www.cambioclimatico.gov.co/segunda-comunicacion.html (Lamprea Quiroga, Pedro Simon, Ideam - Advisor (Colombian institute of hydrology , meteorology and environmental studies))	It is not clear how the comment relates to childern's relative vulnerability.
209	8	25	22	25	29	A part of the answer to diminished access to (financial) resources for women is the establisment of micro-credit systems. (Perrels, Adriaan, Finnish Meteorological Institute)	We have elaborated on this point.
210	8	25	32	0	0	Although they may seem obvious, including the full names of DRR and CCA may help readers. (Iglesias, Ana, Universidad Politecnica de Madrid)	This is unintentional and we hope to remove all of these shortened versions in the final document (it remains in the table of contents)
211	8	25	32	26	31	This is the one page in the draft dedicated to the interaction of natural and anthropogenic systems. Although essentially correct, it is of course much too short, and too isolated, to create the link which is necessary for substantial scientific as much as for political reasons. (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	We have revised the section but recognize that it does not do the topic justice.
212	8	25	34	25	34	A cross reference to Chapter 4, and also Box 6-4 of Chapter 6 should be mad here. (Stocker, Thomas, IPCC WGI TSU)	We will add the cross-reference in the final draft.
213	8	25	34	26	31	Although all very relevant to the topic in general this approach and information is also in other chapters, once more leading us to a discussion as to what goes where and in what measure does one chapter build on another. Or is each chapter an independant domain? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We will improve cross-referencing in teh final draft, but we do think it is important to underscore this as important to a sustainable and resilient future.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
214	8	25	35	25	36	See "Primer on Natural Hazard Management in Integrated Regional Development Planning, Chapter 3 Resource Evaluation and the Role of Ecosystems in Mitigating Natural Hazards." Organization of American States, 1991 http://www.oas.org/dsd/publications/classifications/publicationstitlea.htm (Bender, Stephen Bender, Organization of American States (retired))	We will refer to this reference in the final draft (see http://www.oas.org/dsd/publications/unit/oea66e/begin.htm#Contents)
215	8	26	12	0	19	While the introduction to this paragraph mentions that effects can be both positive and negative, only negative effects are listed as examples. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have been looking for positive examples that are beyond the implicit benefits of mitigation for biodiversity and will modify in the final draft.
216	8	26	15	26	15	A reference is needed. (IPCC WGII TSU)	We still need to find a reference for the final draft.
217	8	26	16	0	17	The linkage between large hydropower schemes and mercury pollution should be explained, since this is not obvious. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We will address this in the final draft.
218	8	26	21	26	27	In this case, it is important also to mention a term of “no regret investments” and additional co-benefits that are obtained implementing ecosystem based approach as it is shown further with the following example p.26 from line 22 to line - 27. (Vilima, Olga, UNISDR)	We mention co-benefits earlier in a discussion of REDD, and will elaborate on it in the final draft.
219	8	26	34	0	0	How about current time (ST) winners versus future time (LT) losers? (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	Added discussion of gains and losses in present and future.
220	8	26	34	27	26	The whole debate on winners and loosers and also on costs of disasters seems to suppose that this is something that can be looked at from the moment of impact onwards forgetting the history of risk construction and what that involved in terms of gains and losses, winners and loosers. Thus, when we analyse the costs of a particular event once it has happened and contributed to disaster we should also analyse how much was made, who made it etc when the conditions of risk that finally were converted into disaster were constructed. Thus if 9 billion dollars was the cost of Mitch how much was made by deforesters in Honduras and elsewhere, commercial agriculture that forced persons to live in cities on unstable slopes, etc etc during the 50 years prior to Mitch when vulnerability was being built up? This should be discounted from losses to get to a final balance of gains and losses. But as usual we tend to think disaster has no causes beyond nature and then calculate from impact onwards forgetting the history of the social construction of risk and recognising that risk is constructed through the acting out of many private and public decisions that lead to gains for many private actors, while disasters losses are consumed socially. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	Added discussion of winners prior to Hurricane Mitch.
221	8	26	50	26	50	What about situations where what appears to be ideal today is less than ideal in future decades because of further climate change or other factors? (IPCC WGII TSU)	We have added mention of this issue.
222	8	26	52	27	6	This discussion goes from an initial benefit to a final state of abrupt climate change. It would be advisable to consider the more likely scenario where an initial benefit turns into a negative without reaching a tipping point. (Stocker, Thomas, IPCC WGI TSU)	We have removed this from the text.
223	8	27	1	27	1	References must be cited to support this claim that Canada, Northern Europe, and Russia will see initial benefits from climate change - if no robust references can be cited, these specific examples should be deleted. (Stocker, Thomas, IPCC WGI TSU)	Deleted mention of country names (Canada, Northern Europe etc.) and deleted mention of the gulf stream
224	8	27	1	27	6	To my understanding the majority of geophysicists and oceanographers seems to regard the probability of a very substantial reduction or vanishing of the Gulf Stream in this century rather unlikely: Consider the use of another example (e.g. severe drought in the Mediterranean) (Perrels, Adriaan, Finnish Meteorological Institute)	We have removed this from the text.
225	8	27	2	27	3	This sentence relating to gulf stream should be put into appropriate context by adding something like: "(Lenton et al. 2008).....but considered 'very unlikely' to occur during the course of the 21st Century (cite Solomon et al. AR4 SPM). (Stocker, Thomas, IPCC WGI TSU)	Deleted mention of country names (Canada, Northern Europe etc.) and deleted mention of the gulf stream
226	8	27	4	27	11	Check for redudancies! One sentence is doubled. (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	We have revised the section.
227	8	27	8	0	0	This argument should be explained in the body text. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have removed this from the text.
228	8	27	27	27	27	What lacks here is the important reference to the critical character of the definition of what a winner and loser is. I suggest to include this as follows: “Moreover, research showed that the concept of winners and losers are rather critical social categories. They can either be understood as naturally affected people by ecological or economic development, or they can be understood as part of a social construction in which power relations shape actor-specific levels of inclusion and exclusion. It is therefore important to make explicit the epistemological perspective applied for defining what a loser or winner is and to avoid viewing winners and losers through a single, static lens, research aimed at identifying winners and losers should incorporate multiple scales of analysis and should take in account the possibility that the identities of winners and losers from global change may shift over time (O’Brien & Leichenko, 2003)”. O'Brien KL, Leichenko RM. 2003. Winners and Losers in the Context of Global Change. Annals Of The Association Of American Geographers 93 (1) 89 - 103. (Rist, Stephan, Centre for Development and Environment (CDE))	Added further discussion of the concept of winners and losers , and the need for attention to scales of analysis and the possibility of shifts over time.
229	8	27	47	27	49	Please cite some references in relation to these 'widely discussed' humanitarian and human security issues. (Stocker, Thomas, IPCC WGI TSU)	We have added references.
230	8	27	51	27	51	A reference is needed. (IPCC WGII TSU)	We have removed this sentence.
231	8	28	3	0	0	East Asia is repeated twice in this breakout of numbers. (O'Donnell, Ian, Asian Development Bank)	We have removed this sentence.
232	8	28	3	28	3	I don't follow the statistics -- 223 million in East Asia and the Pacific, and 394 in East Asia; it sounds like the numbers should be reversed. (IPCC WGII TSU)	We have removed this sentence.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
233	8	28	13	28	27	For a pilot study on numbers of people displaced in the context of climate change, see OCHA and IDMC/NRC, 2009, Monitoring Disaster Displacement in the Context of Climate Change, available at http://www.internal-displacement.org/8025708F004BE3B1/(httpInfoFiles)/12E8C7224C2A6A9EC125763900315AD4/$file/monitoring-disaster-displacement.pdf More than 20 million people were displaced due to climate-related sudden-onset disasters in 2008 alone. (Kolmannskog, Vikram, Norwegian Refugee Council)	We decided not to mention specific numbers of climate displaced people..
234	8	28	30	28	34	The example is faulty. The German BMU is responsible for NUCLEAR safety, environmental and nature conservation-related issues only, all society-related security issues are within the responsibility of the Ministry of the Interior, Ministry of Defense, Ministry of Labour and Social Affairs, Ministry of Health and the Ministry of Family Affairs, Senior Citizens, Women and Youth. The Ministry of the Interior would be THE security-responsible Ministry in Germany. BMU recognized the thread mainly because they are responsible for the environment and thus also for dealing with climate change, not security. (Rock, Joachim, Johann Heinrich von Thuenen-Institute)	We have removed this example.
235	8	28	40	28	40	What was concluded about the concerns raised? (IPCC WGII TSU)	We discuss the concerns as part of the larger discourse on climate change and security.
236	8	29	9	29	11	Please present evidence and references to support the assertion in this paragraph about the interest of the security policy and research communities having a powerful effect on climate science. (Stocker, Thomas, IPCC WGI TSU)	We have removed this sentence.
237	8	29	24	0	25	Is the Convention on Biodiversity an example or the only environmental agreement relevant in this context? (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We haveremoved this sentence.
238	8	29	30	29	51	This has been covered many times elsewhere in the chapters; condense. (IPCC WGII TSU)	We have condensed this paragraph.
239	8	29	42	29	43	I dont think it is fair to say the relationship is not clear--debate over the last 20 years has made it clear that the story goes both ways--disasters affect development and skewed development leads to disaster risk and finally disaster. More than debate on that point the question raised by some including this commentator is whether the argument that disasters affect development distracts from the fundamental problem which is that skewed development creates disaster risk conditions. The argument that disaster throws back development leads to arguments in favour of corrective risk management; the argument that development creates disaster is an argument in favour of prospective or proactive DRM integrated with development planning. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	We have removed this sentence and not gotten into this debate.
240	8	30	16	33	50	It would help to provide a rationale for the choice of bridging practices, tools and approaches that are to be reviewed/assessed. This rationale could be done in terms of their relevance to risk reduction, adaptation to climate change and/or sustainable development (measures that are relevant for all three would be most valuable). (Iglesias, Ana, Universidad Politecnica de Madrid)	We have revised this section and tried to make the structure more clear.
241	8	30	16	34	37	Section 8.6. contains much useful information, almost perhaps too much. Unfortunately the section is extremely dense, covering many issues, with detailed information that is rushed through at a speed and familiarity that is unlikely to be shared by most readers (e.g. subsection 8.6.2. but other places, too). The Section reads more as a rapid academic lecture speeding on quite ahead without too much apparent regard as to whether the readers (or even interested students) are necessarily keeping up with the pace. The haste of the author(s) is further demonstrated by the many grammatical lapses and disjunctive phrases or incompleted thoughts. I recognize the breadth of the material covered and in most cases the relevance to the section topic, but clearly the author(s) have a much greater facility in dealing with the issues than I suspect will be the case with many readers (e.g. page 33, lines 1-31). Some asides are more decorative and supplemental than necessary (e.g. page 37, lines 10-15) and other items (e.g. addressing multiple scales, page 35, line 51 to page 36, line 41) have been covered previously and better elsewhere in the chapter. Several of these issues are repetitive, as are the listing of the five priority areas of the HFA (page 30, lines 35-39). Hence much, but probably not all, of this useful information needs to be lightened up, spread out, and more deliberately presented if it is to become more accessible and beneficial in realizing the objectives of the chapter. Shorter and less involved (or more restrained) sentences would also help the insights draw this fine chapter to a succesful close. Now they rather overwhelm, with less effect. (Jeggle, Terry, University of Pittsburgh)	These are very useful comments and reflect the hasty completion of this section. It has been revised substantially and we have tried to make it less dense and overwhelming.
242	8	30	16	38	18	The chapter provides a usefull sequence of various mechanisms for options to future events, however it could give more examples to underline the long list of potential options. Good practices could be highlighted more detailed. (Ammann, Walter J., Global Risk Forum GRF Davos)	We have tried to include more examples to illustrate the way forward.
243	8	30	18	30	18	The first sentence is policy-prescriptive; rephrase to be policy-neutral (Stocker, Thomas, IPCC WGI TSU)	We have tried to make this more neutral, reflecting the underlying point of departure for the report.
244	8	30	30	33	50	Section 8.6.1: please separate institutional frameworks for action from assessment tools (i.e.2 sub-sections (Perrels, Adriaan, Finnish Meteorological Institute)	We have separated modelling tools from institutional approaches.
245	8	30	32	30	39	For a discussion of HFA implementation, see "ISDR and OAS Regional Platform for Disaster Risk Reduction in the Americas - Reflection and Analysis Surronding the Commitments and Initiatives to Support Implementation of the HFA from a Regional Perspective." Bender, Stephen, 2009 http://www.eird.org/wikien/images/HFA_Regional_Study.pdf (Bender, Stephen Bender, Organization of American States (retired))	We have deleted this discussion of HFA.
246	8	30	35	30	39	This can be deleted. (IPCC WGII TSU)	We have deleted this.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
247	8	30	50	0	0	It might be advantageous to refer to transition management (TM) approaches as you did in the beginning of the chapter. Some strategies of TM include 'building shared problem definition' across stakeholders, setting up transition arena's etc. Inspiration can be found in the publication section on this website: http://www.drift.eur.nl/ (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	We have added a section on transformation that covers some of this literature.
248	8	31	1	31	5	A better co-ordinated and coherent data collection on damages caused by natural extreme events is a key building block. It could be added that also standardisation data formats, included variables, etc. should be further developed, as well as thorough ex-post analysis of interrelations between natural extremes, physical and social capital, and eventual damage and recovery. (Perrels, Adriaan, Finnish Meteorological Institute)	We will consider stressing this in the conclusions of the final draft.
249	8	31	5	31	5	reference (DesInventar 2010) does not show in literature list (Perrels, Adriaan, Finnish Meteorological Institute)	We have included the website.
250	8	31	9	31	14	References are missing (Vilima, Olga, UNISDR)	This paragraph has been delted.
251	8	31	24	0	35	This paragraph is somewhat unclear as regards the distinction between the mitigation- and adaptation aspects related to urban planning. It is our understanding that compact cities are beneficial as regards mitigation (reduced emission). But it is not entirely obvious that the same is true for adaptation, which might be more focused on security and human wellbeing in a narrower sense. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	This text has been removed.
252	8	31	24	31	25	Note should be made that almost all countries add no more than 2% to their capital stock each year (schools, hospitals, bridges, housing, commercial buildings, etc.), and thus it can be said that 98% of all vulnerable econmic and social infrastructure vulnerable tomorrow exists today. Thus while concern with urban planning is warrented, dealing with existing risk and vulnerability is paramount. (Bender, Stephen Bender, Organization of American States (retired))	This text has been removed.
253	8	31	24	32	6	This whole section is where we should be going and is well put together. I ask if in the urban part some consideration could be given to the differential growth rates of different size cities in the future where the debate on risk reduction in megalopolis and metropolis could be contrasted with the need in rapidly growing as yet still small cities, for example. Large cities need much correction and smaller rapidly growing cities more prospection etc etc. (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This text has been integrated into section 8.4.2.
254	8	31	24	32	6	Should there be something (before, during, or after this section) on the rural dimensions, particularly as it relates to the high concentration of poverty (still) in many developing countries, most notably in the Asia-Pacific region? While agreeing that urban should be the focus, rural dimensions, particularly as it relates to poverty, still (or should) matter in terms of climate adaptation (Park, Jacob, Green Mountain College)	We have moved this text to section 8.4.2 which also includes a discussion of rural dimensions.
255	8	31	30	0	31	This sentence indicates that high density cities are, per se, preferable to low-density cities, but we find no argument underpinning this. Might for example high density cities also lead to more people exposed to, for example, landslide- and flood hazards? (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have moved this text to 8.4.2 and mentioned that more research is being done on this point. We will look for literature on this paradox of urban development.
256	8	32	29	0	0	ECHO should be mentioned along with the OAS as ECHO was the funding support for the OAS work. (Bender, Stephen Bender, Organization of American States (retired))	We have removed this text.
257	8	32	32	0	0	DRR explained earlier? (Thalmann, Philippe, EPFL Swiss Federal Institute of Technology Lausanne)	We have removed this text.
258	8	33	1	33	33	Please present evidence and references to support the assertion about huge accummulations of climate risk. (Stocker, Thomas, IPCC WGI TSU)	We have removed this text.
259	8	33	1	33	50	In co-operation with other chapters it could be considered to generate an Annex in which various tools are discussed slightly more elaborately (e.g. per tool half page text + references to further literature). Mentioning of tools happens in this chapter and elsewhere (e.g. section 2.8 a bit more elaborately), but overall it gives a scattered somewhat unsystematic impression. Included tools could concern: (1) risk assessment (also in the context of participatory decision making) such as event tree analysis, bayesian networks, influence diagrams, etc. (2) scenario development, incl. storylines, backcasting, bouncecasting, etc, (3) MCA and CBA, (4) GIS based tools, (5) economic impact assessment (I/O, CGE, etc.) (Perrels, Adriaan, Finnish Meteorological Institute)	This is a good suggestion and we agree that it is currently scattered and we will consider a table or box in the final draft.
260	8	33	14	0	0	This statement points out the isolation in which CCA and DRR exists outside of development actions. (Bender, Stephen Bender, Organization of American States (retired))	This issue is discussed in earlier chapters, and we have removed this from the text.
261	8	33	16	0	0	Of course are computer simulations usually linear, but they can be complemented with shock scenarios which introduce sudden changes of the development trajectory and analyse their impacts. This illustrates the diversity of possible results beyond the linear scenarios and simulatneously serves as a sensitivity analysis for the standard scenarios (see Spangenberg JH, Carter TR, Fronzek S, Jaeger J, Jylhä K, Kühn I, Omann I, Paul A, Reginster I, Rounsevell M, Stocker A, Sykes MT, Settele J (in press). Scenarios for investigating risks to biodiversity. Global Ecology and Biogeography; Spangenberg JH (2007). Integrated scenarios for assessing biodiversity risks. Sustainable Development 15(6): 343-356) (Spangenberg, Joachim H., Sustainable Europe Research Institute SERI Germany)	That is an interesting point that we will incorporate into the final report.
262	8	33	16	33	31	Some references would be appropriate. (IPCC WGII TSU)	References added.
263	8	33	21	33	22	Disasters may be short term occurrences--but this may be debated as a notion given the effects of disasters as such may continue for years if not a decade-but risk is certainly a long term process and thus subject to scenario building and analysis (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This is a good point - but the text has been removed. The complex relationship between our understandings of short-term and long-term is at he heart of this chapter.
264	8	33	28	33	31	See "Primer on Natural Hazard Management in Integrated Regional Development Planning, Chapter 2 Natural Hazard Risk Reduction in Project Formulation and Evaluation." Organization of American States, 1991 http://www.oas.org/dsd/publications/class for a discussioni on cost/benefit analysis. (Bender, Stephen Bender, Organization of American States (retired))	We appreciate the reference and will add it to the final draft. http://www.oas.org/dsd/publications/unit/oea66e/begin.htm#Contents

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
265	8	33	42	33	50	Some references would be appropriate. (IPCC WGII TSU)	This text has been removed.
266	8	33	44	33	46	The private sector should be mentioned as one set of potential partners as well. (O'Donnell, Ian, Asian Development Bank)	We mention this superficially in section 8.5.5.
267	8	34	0	0	0	Increased emphasis on imperative to develop effective processes and institutions to resolve conflicting interests, framed by reality of inequality, power, etc. (Glavovic, Bruce, Massey University)	We have incorporated this discussion into section 8.6.2 on Facilitating Transformational Change.
268	8	34	1	35	6	This section could be more relevant for section 8.2 and would help focus the discussion by providing an intellectual background to the linkages between risk, adaptation and development. (Iglesias, Ana, Universidad Politecnica de Madrid)	We have moved the discussion of multiple objectives in general to 8.2.5.
269	8	34	3	0	9	This list need to include some of the strategies for bottom-up learning - discussed so carefully in section 8.6. 4 (which is very good!) (Longstaff, Pat, Syracuse University)	We have moved the discussion of multiple objectives in general to 8.2.5 and will add bottom-up learning to the list in the final draft.
270	8	34	51	35	6	Learning and societal memoery are important and interlinked issues. There is also some literature available indicating that sociological concepts as 'societal memory' (which deteriorates quicker when demographic and economic dynamics are strong) can be linked to economic analysis (e.g. hedonic price functons) of risk discounts of real estate in risk prone areas. This also links to policy advice regarding transparenct regulation in real estate markets (information on risks of the buildings and the area accessible to potential buyers and current owners/occupiers). (Perrels, Adriaan, Finnish Meteorological Institute)	We will consider adding references on societal memory in the final draft (the discussion is now box 8.2)
271	8	35	2	35	3	I think there is a lot of experience in learning while doping in sports. (IPCC WGII TSU)	After two drafts of this chapter, we have finally decided that learning-by-doing is more effective than learning-by-doping (but this alone has been a painful learning process!)
272	8	35	4	0	0	Real time, on the ground experimentation with new approaches, new processes to build shared problem definitions, publicly owned transition pathways etc is indeed of great importance. The fact that these experiments can fail, makes it very hard to find appropriate budget and time commitments. Yet a failed experiment, if documented properly, will provide a lot of very interesting information to learn from these mistakes. In fact, it is common knowledge that one learns more from past failures than from past successes. Maybe we should revise our pollicy approaches in a way that such experiments can be carried out and will be documented in a way that the keys for failure are transparant. For instance, in some 'failed' transition experiments on the ground, the failure was due to power disequilibriums but such insights are usually not communicated officially. This is also a more generic problem of scientific communication: publishing a failed experiment is almost impossible (which is actually keeping valuable information from other researchers who might repete the experiment with the same mistakes)... I have this information from discussions with Derk Loorback, so I am not sure whether you can find publications on this. Maybe best to contact him directly about this via loorbach@fsw .eur.nl (Gorissen, Leen, VITO - Flemish Institute for Technological Research)	It is an excellent point and we mention it in 8.6.3.2 and in the conclusion.
273	8	35	9	0	0	also tradeoffs with mitigation? (Thalmann, Philippe, EPFL Swiss Federal Institute of Technology Lausanne)	We have moved the discussion of tradeoffs to 8.2.5 but can make more explicit the tradeoffs with mitigation in the final draft.
274	8	35	9	38	18	These three sub-sections should be the core of the chapter. They discuss the synergies and tensions between the three fields of knowledge that you are seeking to integrate. However, in order to become the core of the chapter they need to be expanded somewhat, this is particularly true for the section on synergies which should provide some solutions to the multiple complexities and problems that you bring up in the rest of the chapter. (Iglesias, Ana, Universidad Politecnica de Madrid)	We have revised this section, and some of it appears earlier, but some is incorporated into the section on Facilitating Transformative Change and we have expanded the last section to cover the core arguments.
275	8	35	30	0	37	We question whether a more striking example of the linkage between cultural heritage protection and adaptation can be found than this example involving Paris and higher (average?) temperatures. The great dilemma facing Paris is not obvious from the text - is it new building codes or retrofitting of air-conditioners? What about cities prone to flooding or landslides? (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have removed this example.
276	8	35	53	36	41	When talking of multiple scales and then referring only to local and "large scales" maybe we are loosing some of the needed richness and diversity of discussion--is large scale only national or is it subnational, river basin, ecological region etc. In general there has tended to be a jump from community and local to national scales in discussion of DRM and CCA-see this study and the three chapters--local ,national and international for example. This does preclude the richness of a more diverse classification that makes precise the advantages and management needs of looking diversely at community, local, economic and ecological or physical regions, subnational--departmental or what ever, national and international scales for example as opposed to local--what is that? and large scale-what is that? (Lavell, Allan, Programme for the Social Study of Risk and Disaster (FLACSO))	This is an excellent point and relates to discussions of scales and levels as social constructions. WE have tried to be more general in section 8.2.5.
277	8	36	44	0	0	What does "Agency" mean in this context? (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have removed this as a heading but it refers to the capacity to act on one's behalf.
278	8	37	13	0	15	This finding might be important, but is also rather obvious. We propose that the sentence is either deleted or that this issue is elaborated on in more detail. (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have removed this text.
280	8	37	17	0	26	A critical issue (commuication about uncertainty) that need a lot more research. (Longstaff, Pat, Syracuse University)	We have removed this particular text but it is a good point.
281	8	37	17	37	26	As noted in line 18, this paragraph does indeed need supporting references to be cited. (Stocker, Thomas, IPCC WGI TSU)	We removed this text and have covered this uncertainty in Section 8.2.3 planning for the future.

#	Ch	From Page	From Line	To Page	To Line	Comment	Response
282	8	37	20	0	0	While communication uncertainties is presently questionable as a strategy, development decisions including the use of CCA and DRR tools will be made by the thousands and there will be no certainty but only probability about event location, severity or frequency, and the science community must be more ourspoken about the propable risks. (Bender, Stephen Bender, Organization of American States (retired))	We have removed this text but agree that probabilities should be the focus.
283	8	37	31	0	32	Which examples does the last sentence refer to? (Asphjell, Torgrim, Climate and Pollution Agency (Norway))	We have removed this text.
284	8	37	31	37	32	If examples can be provided on climate change management it should be done in a following paragraph. (Ammann, Walter J., Global Risk Forum GRF Davos)	We have removed this text.
285	8	37	35	0	0	Section 8.7: This section or some other part of this chapter should also review the folowing publication: 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)	We will consider this reference in the final draft.
286	8	37	35	38	18	The society, especially local community should function to manage the uncertainty of physical conditions. Agriculture is to be the art of managing uncertainties, and its knowledge or wisdom to reduce future possible risks which are to be introduced or utilized to adapt to climate change is to be suggested to be included in this closing section or the introductory section, i.e. 8.2.1 on Page 4. For this statement, the following paper is to be referred; Watanabe, T. and Kume, T., 2009. A general adaptation strategy for climate change impacts on paddy cultivation : special reference to the Japanese context. Paddy and Water Environment, 7, 313-320. (Watanabe, Tsugihiro, Research Institute for Humanity and Nature (RIHN))	This is a good point -- unfortunately we do not have to elaborate on the important role of agriculture (it is likely to be covered in chapter 4)
287	8	37	37	38	6	I am not sure what is the "argument" being made here. One can agree that there should be greater synergies between disaster risk reduction and climate adaptation efforts, but … There should be greater clarity in what kind of "benefits" can be expected from greater synergy between disaster risk reduction and climate adaptation or at at minimum, provide an example of what synergy looks like in the form of a box or refer to a case study if there is one. (Park, Jacob, Green Mountain College)	By synergy, we emphasize the mutually advantageous and compatible elements of both, with the benefit of coordinating short-term and long-term responses and explicitly confronting the tradeoffs.