

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
1	58155	2	0	0	0	0	General Comments on Chapter 2. Foundations for Decision-Making: Impressive chapter especially the Decision-Making approaches and Figure 2-3 showing the hierarchy of decision-makers. Also, the Institutional context part, social context part and the elements & principles of effective decision support. Figures 2-5, 2-6 and 2-7 are prepared in a very clear format and impressive. The part 2.4. for the Linking Adaptation with Mitigation and Sustainable Development is clear and prepared in a high quality. There are no other comments. (Mounir Wahba Labib, Third National Communication (TNC) Project)	Thankyou, although some of these figures and text have been deleted
2	59255	2	0	0	0	0	Chapter 2 is soundly structured, well written and thoroughly documented. (Danae Diakoulaki, Chemical Engineering, NTUA, Greece) (GREECE)	Thank you
3	60524	2	0	0	0	0	Very good chapter. This is a nice addition to the Assessment Report. (Eric Toman, The Ohio State University)	Thank you
4	60577	2	0	0	0	0	The chapter is entitled "Foundations for Decision-Making". The chapter as it stands is very focussed on climate change, but I strongly encourage the authors to also include resilience to current climate and to climate variability in addition to climate change, unless this is dealt with in another chapter. If it is to just be climate change then I think the chapter should be something like "Foundations for Decision-Making related to climate change". (Chris Hewitt, Met Office)	Has been changed to climate impacts, adaptation and vulnerability throughout the chapter. The decision-making methods discussed here are suitable for all aspect of climate.
5	60779	2	0	0	0	0	This chapter is a major addition to AR5 with very great integrating power and the potential to ensure adaptation (and other chapters) are seen more effectively through the decision-making lens. Overall it does a very useful job of mapping the territory. It includes several explicit cross references to other chapters. However several of these other chapters do not seem to adequately pick up the connections to Chapter 2 (Chap 16 excepted). Most crucial in this respect are Chapters 14 through 17. May already happen but is there a formal joint review or workshop planned across these chapters? (Bob Webb, Australian National University)	There has been cross-communication and hopefully has been adequately addressed
6	60877	2	0	0	0	0	This chapter is possibly one of the most important chapters of the WGII report. The headings of contents are quite promising but the reading is difficult and complex. There are very theoretical parts and digressions, and in the end the sections don't provide a real sense of helpfulness or clarify the current state of the art and foundations for decision making, or provide practical information. Finally, there are few findings that can really be useful for adaptation stakeholders and policymakers. More synthesis or structured contents would improve the capacity to extract useful information from the chapter. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Addressing these issues has been on our priority list
7	60878	2	0	0	0	0	The Executive Summary has many terms that need clarification. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Addressed through a major rewrite
8	60879	2	0	0	0	0	I wonder whether the concept of maladaptation should be introduced more prominently given its significance in later chapters (from those that I have had chance to read). (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	We have only limited space to address this - it is addressed at length in Chapter 14. The whole chapter is aimed towards avoiding the likelihood of maladaptation but has a positive slant.
9	60880	2	0	0	0	0	The reference to the concept of reflexivity/ reflexiveness is to be welcomed, but it could be more explicitly defined. By no means every reader will be familiar with the sociological literature from which it originates. Currently its implications are only really elaborated with regards reflexive scenarios - what about other methods? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Has been added to glossary and is referenced to there
10	60927	2	0	0	0	0	Foundations of decision making: Climate services were mentioned as component for decision making but only a few were mentioned. There are much more on the market. A better survey about these services are needed and in an attachment links to certain services should be provided. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	We did not have room to discuss and list them all. This is really a task for the WMO
11	61979	2	0	0	0	0	Chapter 2 is too long, it is suggested to shorten the whole context of Chapter 2. (Yinlong Xu, Institute of Environment and Sustainable Development in Agriculture (IEDA), Chinese Academy of Agricultural Sciences (CAAS))	We have addressed the page limit
12	62063	2	0	0	0	0	Very good draft of the chapter. (Avelino Suarez, Institute of Ecology and Systematic, Cuban Environmental Agency)	Thank you

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13	62073	2	0	0	0	0	The chapter contains a lot of good information about managing climate risk. However, it is not logically structured and thereby diverts the reader's attention. It would be more logical, for example, to first clearly lay out how climate risk differs from existing risks that decision makers have experience with. What are the characteristics and properties of climate risk that make risk management of climate risk different from risk management of more familiar risks? Subsequently, the authors can lay out what existing risk management models can be used to deal with climate risk and, if climate risk has properties that are not well captured by current risk management models, lay out the research needs and priorities. This approach will likely also make the chapter much more condensed. (Joann de Zegher, Stanford University)	We have improved the narrative of the chapter, but have chosen not to take this path because of length issues. CIAV actually needs to look more at other methodologies, rather than explaining why it is different.
14	64835	2	0	0	0	0	Excellent chapter - provides a comprehensive discussion of the complex issues involved in both framing and making adaptation decisions. Key contributions are - CC impacts and responses occur with a wider systemic context; while our ability to model biophysical impacts is quite strong, our ability model the wider socio-economic implications of those impacts is limited but improving; the harnessing of stakeholder input (ie non-scientific perspectives) to the decision making process provides important information which science alone cannot provide. I may have missed it, but I didn't see a treatment of the need for integration of government adaptation response planning and implementation, both within and between jurisdictions. For those of us who are concrete thinkers, I wonder whether Figures such as 2-5 (which provides an excellent process overview cum road map of 'how to' integrate all this information and move forward in a systematic fashion) and the principles on p24, lines 23-51 (which provide enhanced detail of both concepts and activities involved in generating options within the roadmap of Fig 2-5) - might be given extra prominence - say as an image and a box appended to the Exec Summary for instance. Otherwise, there is a tendency for it to be 'buried' (lost) within the text (Leon Soste, Department of Primary Industries, Victoria, Australia)	Figure 2-5 has been highly modified. We only have the room to mention this have refernced the fuller discussion to Chapter 16
15	68075	2	0	0	0	0	The key conclusions in this chapter lack uncertainty or confidence level. especially in its ES, where no conclusions have been given uncertainty or confidence. It is suggested to be supplemented in accordance with IPCC's Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties (6-7 July 2010). (CHINA)	Chapter findings have been better addressed
16	68781	2	0	0	0	0	The words "decision maker(s)" and "decision making" are used extensively throughout the chapter, though not written in a consistent way. Please decide whether to use a hyphen, space or nothing and use this variant consistently throughout the chapter. (NETHERLANDS)	Have decided to use the Cambridge University Press style as opposed to the original gerund (decisionmaking) we were given, mainly for reasons of clarity
17	68782	2	0	0	0	0	We assume this is a difficult comment, but maybe you can bare it in mind while making changes; many sentences are rather long. If possible, I would propose shortening and/or splitting sentences. Mainly to make the chapter easier to read. (NETHERLANDS)	Done, hopefully well enough
18	69859	2	0	0	0	0	Decision making under uncertainty literature could be brought in more (not angles are covered but perhaps too much in selected areas such as psychology of decision making). More could be made of the kinds of concepts that are in Chapter 16 about making decisions about what kinds of risks are in the realm of "acceptable" and what kinds of climate-related risks are in the realm of "intolerable" risks. Decision makers will have to balance those kinds of considerations moving forward, so represent a better balance of literature there. (Cosmin Corendea, United Nations University Institute for Environment and Human Security)	Brief mentions in later sections (2.3.1, 2.3.2) but length has not allowed longer discussions. Chapter 16 has a great deal more of course.
19	69860	2	0	0	0	0	Poor legal assessment compared with the psychological factors in the social context (no human rights implications, migration). No sociological approach. Too much psychological focus on language and meaning (Cosmin Corendea, United Nations University Institute for Environment and Human Security)	The mentioned sections have been trimmed, the legal aspects mention these elements but can't elaborate, similarly for sociology of organisational learning. A number of sociological critiques are mentioned throughout the chapter and the cultural aspects in the cultural values section have been clarified.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
20	69864	2	0	0	0	0	Cullinan, C (2003), <i>Wild Law: A Manifesto for Earth Justice</i> , Green Books, Totnes, Devon Abram, D (1996), <i>The Spell of the Sensuous</i> , Vintage Books, New York Berry, T (1999), <i>The Great Work: Our Way into the Future</i> , Bell Tower, New York Berry, T, Swimme, B (1992) <i>The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era - A Celebration of the Unfolding of the Cosmos</i> , Harper Collins, New York Reichel-Dolmatoff, G (1994) <i>The Forest Within: The World-View of the Tukano Amazonian Indians</i> , Green Books, Totnes Reichel-Dolmatoff, G (1997) <i>Rainforest Shamans: Essays on the Tukano Indians of the Northwest Amazon</i> , Green Books, Totnes Roldán Ortega, R (2000) <i>Indigenous Peoples of Colombia and the Law: A Critical Approach to the Study of Past and Present Situations</i> , COAMA, Bogotá, Tercer Mundo Editores Warner, K. & K. van der Geest (2013). <i>Loss and damage from climate change: Local-level evidence from nine vulnerable countries</i> . <i>Int. J Global Warming</i> , Vol. X, No. x. Huq, S. & E. Roberts (2013). <i>Coming full circle: The history of loss and damage in the UNFCCC process</i> . <i>Int. J Global Warming</i> , Vol. X, No. x, pp. xx-xx. S. Cutter on resilience chapter and connection between resilience and decision- making (hurricane Katrina) (Cosmin Corendea, United Nations University Institute for Environment and Human Security)	These references have not been utilised, but similar ones have, mainly throughout Section 2.2
21	71057	2	0	0	0	0	There are no FAQs for this chapter. If some are to be included, it is important to ensure that they are adequately reviewed (CANADA)	Three are now included, constructed from reviewed text and internally reviewed for clarity
22	71641	2	0	0	0	0	I recommend defining the term adaptive capacity early in the chapter. The term is defined on page 29, but it is used frequently before that page. (UNITED STATES OF AMERICA)	Definition left where it is but location referenced
23	71642	2	0	0	0	0	It is worth noting that climate resilience can be improved not only by an increase in adaptive capacity but also by enhancing other system capacities (e.g., absorptive capacity, restorative capacity, etc.) (UNITED STATES OF AMERICA)	Briefly mentioned in 2.5.2
24	71643	2	0	0	0	0	The acronym CCIAV is defined up front (Climate Change Impact, Adaptation, and Vulnerability). The acronym is not used consistently. If you are talking about assessments, then "CCIAV assessment" must be stated. As an example, on page 25, lines 14-15: "Progress in CCIAV has been gradual, evolving as the scientific understanding of climate improves." How has climate change impact or climate change vulnerability been gradual, evolving as the scientific understanding of climate improves? I suggest the impacts are independent of our understanding of climate. I suggest that a single editor review all uses of the acronym CCIAV is used consistently -- assure that the words "climate change impact, adaptation and vulnerability" fit into the sentence. (UNITED STATES OF AMERICA)	Has been addressed and changed to CIAV
25	71644	2	0	0	0	0	The text of sections 2.1 and 2.2 is extremely difficult for a non-expert to follow. At times it seems to be a primer on decision making science with little connection to climate. It is dense with poorly defined jargon. The flow of the discussion is not apparent in many places. This changes dramatically in sections 2.3 and 2.4 which do not pose the same challenges for the reader. (UNITED STATES OF AMERICA)	The narrative has been much improved and language simplified, hopefully to the degree needed
26	71645	2	0	0	0	0	This chapter is extremely difficult to read and follow. There are numerous sentences that are incomplete or otherwise flawed and difficult to follow. There is substantial inconsistency among sections in terms of clarity, comprehensibility and use of jargon. It is strongly suggested that the authors reconsider their target audience and seek external guidance to bring a consistent approach and to provide a well coordinated message. (UNITED STATES OF AMERICA)	See above
27	71646	2	0	0	0	0	Throughout the entire chapter, adaptation is considered to be positive quality that results in net benefits. The authors might want to consider adding some discussion regarding that while increased adaptive capacity is generally positive because it provides greater ability to respond and cope with changes, not every adaptation will necessarily have a beneficial impact on countries. For example, "just-in-time" business has been a positive adaptation of businesses in certain regards. However, it has also increased risks associated with supply chain disruptions since businesses keep a lower inventory in stock. (UNITED STATES OF AMERICA)	Maladaptation is mentioned but only briefly - this is the role of the adaptation chapters. Adaptation is here mentioned normatively and descriptively but we don't feel we can go into that for space reasons.
28	77559	2	0	0	0	0	This chapter reads like a risk analysis textbook with much emphasis on theory. There are very few examples provided here (Malini Nair, Indian Institute of Science)	Sorry, page length means that we can only offer limited examples while trying to offer all possible aspects for decision making
29	85246	2	0	0	0	0	In a number of locations throughout the text the adjective 'better' is used to describe the type of decisions that are possible. This needs to be clarified. In what sense are they better? Without this clarification the statement is lacking rigour. (Roger B Street, Oxford University)	This is where we disagree - we have tried to clarify but this is largely up those who frame and answer the question
30	80241	2	0	0	0	0	The authors are to be congratulated for the significant improvements in the chapter since the FOD. The chapter contains a lot of helpful and policy-relevant information. (Kristie Ebi, ClimAdapt, LLC)	Thank you

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31	80242	2	0	0	0	0	The chapter continues to have sections that are more review than assessment with, for example: multiple lists of what different publications consider to be the components of some factor; suggested further reading; and multiple definitions for a term. Please assess these and note what are the most relevant / useful / important. (Kristie Ebi, ClimAdapt, LLC)	This has been a key task in the new edit - these have been cut back and folded into the narrative better
32	80243	2	0	0	0	0	The use of the term methodologies is unclear, and how methodologies (a term used incorrectly by many scientists) differs from methods. Further, the terms appear to be used inconsistently across the chapter. It would be helpful to clarify what is meant and be consistent in use of terms. (Kristie Ebi, ClimAdapt, LLC)	Clarified in the chapter, but had to omit the hierarchical framework due to space - a pity because it is useful but some reviewers did not understand it - would help clear up confusion around methods and tool use.
33	80625	2	0	0	0	0	Chapter 2 is too lengthy, SUGGESTION: shorten Chapter 2 (Jiahua PAN, Chinese Academy of Social Sciences)	We have had to do this to reach the designated page length
34	81032	2	0	0	0	0	There are some missing/ incorrect citations in the chapter. These discrepancies have been highlighted in the ref check document for chapter 2 and is available in the supporting material web page. Chapter team may wish to rectify these errors before starting to work on SOD revisions and FGD preparation. (Monalisa Chatterjee, IPCC WGII TSU)	Fixed
35	81522	2	0	0	0	0	1) Overall -- The chapter team has developed a solid assessment in its 2nd-order draft. In the final draft, the chapter team is encouraged to continue its prioritization of compact and rigorous assessment, effective figures, and clear writing and logic. (Katharine Mach, IPCC WGII TSU)	Thank you and we have worked towards this
36	81523	2	0	0	0	0	2) Coordination across Working Group II -- In developing the final draft of the chapter, the chapter team should continue to ensure coordinated assessment, both in the chapter text and at the level of key findings. As appropriate, cross-references to the sections of other chapters and/or their assessment findings should be used, reducing overlaps and harmonizing assessment. (Katharine Mach, IPCC WGII TSU)	Links to other chapters much better integrated, key findings clearer
37	81524	2	0	0	0	0	3) Harmonization with the Working Group I contribution to the AR5 -- In developing the final draft, the chapter team should also ensure all cross references to the Working Group I contribution are updated, with discussion of climate, climate change, and climate extremes referencing the assessment findings in that volume. (Katharine Mach, IPCC WGII TSU)	Not relevant to this chapter
38	81525	2	0	0	0	0	4) Tightening and shortening the chapter's assessment -- As the author team prepares the next draft, it should continue to condense and tighten the assessment wherever possible. The chapter will be more effective and widely read if it is shorter. Across all sections, repetition should be reduced. (Katharine Mach, IPCC WGII TSU)	This has hopefully been achieved
39	81526	2	0	0	0	0	5) Characterization of future risks -- In assessing foundations for decision-making, the chapter team may wish to consider risks of climate change for what can be considered two eras. Some risks become relevant in the next few decades, during which time projected temperatures do not vary substantially across socioeconomic/climate scenarios. These coming decades can be considered an era of climate responsibility, and adaptation can be considered a primary means of reducing risks during this time. In contrast, mitigation choices made now and in the coming decades will be important in determining the level of climate change realized in the 2nd half of the 21st century and beyond. This longer-term period can be considered an era of climate options. Mitigation and adaptation are both relevant for risk reduction over this time frame. (Katharine Mach, IPCC WGII TSU)	Not the space to do this in this chapter - would have been suitable for Section 2.5.1 but lack of space precludes
40	81527	2	0	0	0	0	6) Informing the summary products -- To support robust and insightful summary products for the report, the chapter team is encouraged to maximize nuance and traceability in its key findings. As part of this, the chapter team should use calibrated uncertainty language to characterize its degree of certainty in its key assessment findings, most especially those included in the executive summary. In addition to nuanced characterization of future risks (see the previous comment), the chapter team is encouraged to consider themes emerging across chapters, indicating for example how risk and risk management approaches are relevant in the context of the assessment across the report, how adaptation experience to date relates to core topics assessed in the chapter, how limits to adaptation may be relevant in the context of this chapter, and how interactions among mitigation, adaptation, and sustainable development may occur. The chapter team is also encouraged to consider further informing box SPM.4 within the summary for policymakers, as well as section B more broadly. (Katharine Mach, IPCC WGII TSU)	We have worked to do this within the chapter and developed tighter findings suitable for the SPM
41	81528	2	0	0	0	0	7) Report release -- The chapter team should be aware that the final drafts of the chapters will be posted publicly at the time of the SPM release, before final copyediting has occurred. Thus, the chapter team is encouraged to continue its careful attention to refined syntax and perfected referencing. (Katharine Mach, IPCC WGII TSU)	Much improved

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42	81529	2	0	0	0	0	8) Assessing theory and concepts -- Where the chapter assesses theory and abstract concepts, it should aim to make the material as concise, clear, logically rigorous, and accessible as possible. (Katharine Mach, IPCC WGII TSU)	Hopefully we have achieved this
43	81530	2	0	0	0	0	9) Geographic balance of examples -- Where the chapter provides specific examples, geographic balance should be considered and addressed as can be supported by available literature. (Katharine Mach, IPCC WGII TSU)	Have endeavoured to do this given that many of the more appied examples are from developed countries
44	84568	2	0	0	0	0	GENERAL COMMENTS: I congratulate the author team for their work on the SOD, recognizing that there is more work to be done. Please see my detailed comments for suggestions related to ES findings and their traceable accounts, refining figures and tables, calibrated uncertainty language, and various specific clarifications. I have two general comments. (1) A careful edit of the entire chapter would be of great benefit, with an eye to ensuring logical flow and clarity of presentation across the chapter sections, in particular where the discussion covers theoretical approaches and related content. My specific comments try to point out opportunities for this in more detail. (2) Calibrated uncertainty language is needed in the executive summary, and already is provided for statements in some sections of the chapter. Not all of these statements have counterparts in the current executive summary. In revising the chapter and at risk (used colloquially) of stating the obvious, please think carefully about how best to capture the key messages emerging from the chapter assessment in both the chapter text and in the ES. And characterize them with calibrated uncertainty language. (Michael Mastrandrea, IPCC WGII TSU)	Continuity, traceability and narrative have been improved
45	84569	2	0	0	0	0	SUMMARY PRODUCTS: In preparing the final draft of your chapter and particularly your executive summary, please consider the ways in which your chapter material has been incorporated into the draft SPM and TS. For chapter 2, this includes presentation of adaptation experience in section A.ii, risk and risk management in section B.i, scenarios in Box SPM.4/TS.3, principles for effective adaptation in section B.ii and climate-resilient pathways and transformation in section D.i and Box SPM.7/TS.10. Are there opportunities for presenting chapter findings and material in a way that further supports broad themes highlighted in the summary products and that facilitates additional cross-chapter synthesis in specific findings or figures/tables? Do the existing summary product drafts suggest additional coordination that should occur between Chapter 2 and other chapters at LAM4? (Michael Mastrandrea, IPCC WGII TSU)	Traceability to SPM/TS and to other chapters has been improved.
46	85310	2	0	1	17	22	Has there been any work in this area of related to development (i.e. not just environment) - reflects the fact that adaptation is also a development issue and also relates to social justice issues. (Roger B Street, Oxford University)	See sections on ethics and 2.5.2
47	85317	2	0	1	20	1	this can be a major barrier (Roger B Street, Oxford University)	Noted and agreed, text retained
48	85297	2	0	3	13	3	Will need to define 'most successful' relative to predetermined and evolving criteria (Roger B Street, Oxford University)	Text removed
49	85347	2	0	3	33	3	holistic narrative on future adaptation choices that also includes their associated risks. (Roger B Street, Oxford University)	Text reworded, but text not added - this issue is dealt with in sections 2.1 and 2.3
50	85255	2	0	4	3	5	Where does transformational adaptation play within the context of resilience? (Roger B Street, Oxford University)	Section 2.5.2
51	85256	2	0	4	3	9	What are these 'similar processes'? (Roger B Street, Oxford University)	Reworded so clarification not needed
52	85290	2	0	4	11	4	What is meant by most suitable? (Roger B Street, Oxford University)	Given the chapter is quite open about scoping and potential choices we don't feel that it has to be elaborated on here (and is not defined in a positivist sense in any case)
53	85262	2	0	5	4	6	Is it not also who is evaluating that decision and also for what purpose? (Roger B Street, Oxford University)	These were listed here
54	85280	2	0	8	8	8	Appears to be something missing in this sentence (contrasted what?) (Roger B Street, Oxford University)	Text removed
55	85284	2	0	10	9	12	Are there examples of these in reality? (Roger B Street, Oxford University)	They abound - they are so common, we did not think they deserved special mention
56	85291	2	0	10	11	10	Is there a subsection on synergies? On Interdependencies? (Roger B Street, Oxford University)	No, but these issues are tightly written into the discussios on complex settings, esp in 2.1
57	85263	2	0	11	4	12	Wicked problem (see page 4 line 51-54). This can play a significant role in affecting the decision and its evaluation (Roger B Street, Oxford University)	Cannot see the link, given the unclear line reference.
58	85298	2	0	14	13	15	Recognise that different approaches can lead to different decisions (see paper in Risk Analysts mentioned earlier) (Roger B Street, Oxford University)	Noted. Implicit throughout the chapter, but the point has not been made explicitly

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59	85332	2	0	15	27	20	Interestingly these also advance the understanding of VIA and not just climate change (Roger B Street, Oxford University)	Has been improved by change to CIAV decision making
60	85344	2	0	16	32	23	Although this does reflect what is in Shafer, more recent literature talks of engagement and knowledge exchange. This includes co-production and co-dissemination, as well as learning (including learning from users) (Roger B Street, Oxford University)	Discussion has generally been improved in this regard
61	85274	2	0	17	7	19	Does not evidence suggest that this may not be sufficient. For example the proliferation of these tools has not had the desired beneficial impacts (Roger B Street, Oxford University)	Not sure here because of the truncated reference, but here we to emphasise process over tools in complex and unfamiliar settings
62	85299	2	0	17	13	24	Is there not some more research research related to M&E on which this paragraph could draw? (Roger B Street, Oxford University)	We have beefed up discussion on adaptive management including Box 2-1
63	85264	2	0	20	4	20	Know and accept - also a problem, especially in the context of what they do not know or what is not acceptable, but may be necessary (e.g., transformational adaptation and dealing with conflicts_ (Roger B Street, Oxford University)	Text removed for space reasons
64	85285	2	0	21	9	31	Suggest that there should be some recognition within this text that these different approaches can lead to different 'answers'. See robust Climate Policies Under Uncertainty: a comparison of RDM and Info-gap methods in Risk Analysts, Vol 32, No. 10 2012 (Roger B Street, Oxford University)	See comment 58
65	85348	2	0	21	33	21	part of climate knowledge exchange (not limit it to only communications) (Roger B Street, Oxford University)	Not changed - the section authors did not pick this up.
66	85325	2	0	23	24	43	It would be useful, if there is associated literature, to discuss how to deal with the proliferation of decision-support tools and methodologies - evaluation of these, understanding of assumptions and limitations and the implications for decisions (can result in different decisions). At least should indicate that this is an emerging issue that will need further effort. (Roger B Street, Oxford University)	We didn't do this - there is some literature and to a degree, the adaptation chapters do mention this. There was some lit became available at the last minute and we cite this (e.g., Webb and Beh, Preston et al., 2013). It is an issue that requires treatment, either at the UNFCCC or IPCC level.
67	85257	2	0	24	3	31	Are there limits to adopting a risk management approach in the context of CIAV, especially in terms of decision-making in the context of ambiguity and ignorance (as suggested by decision theory)? (Roger B Street, Oxford University)	We have clarified in the chapter that the more recent expanded framing of risk can manage this, but that more limited applications may not be suitable for task
68	85249	2	0	25	2	28	In a simple system there can be dependencies and interdependencies with other systems that will require more than consideration of won aims, especially where trade-offs and synergies will require reassessment of aims (Roger B Street, Oxford University)	We elucidate the simple, complicated, complex better in the chapter
69	85322	2	0	25	23	25	Does this address the proliferation of decision-support tools and the implications for those wanting to make use of them? This is a dilemma that is becoming apparent (Roger B Street, Oxford University)	See comment 66
70	85303	2	0	28	15	31	Would help to provide an example of each of these. (Roger B Street, Oxford University)	Space precludes, unfortunately
71	85307	2	0	28	16	29	Is this not also true for adaptation decisions (not just limited to climate change and its impacts)? (Roger B Street, Oxford University)	The remit is CIAV here
72	85323	2	0	28	23	29	adaptation assessments in addition to impacts and vulnerability assessments. (Roger B Street, Oxford University)	The remit is CIAV here
73	85329	2	0	29	26	35	Experience suggests that there is a jump to the first loop and insufficient effort given to identifying the problem and objectives and establishing the decision criteria (see UKCIP guidance associated with the risk assessment) (Roger B Street, Oxford University)	This text was removed but we tried to be more emphatic about the need for adequate scoping at the head of the chapter by addressing the important of context setting
74	85333	2	0	29	27	29	Is this section not really about assessing impacts to inform adaptation? More than just assessing impacts. (Roger B Street, Oxford University)	Slightly expanded in context but the whole section had to be cut substantially
75	85250	2	0	30	2	34	Should provide the reader with more information about what this means for decision making (Roger B Street, Oxford University)	We had to reference this in the scenarios section 2.3.2 to Chapter 1
76	85275	2	0	30	7	31	there may now exist a sufficiently risk set - true, but are these relevant/salient and/or support for those wanting to use them? Availability of these tools and methods may not be sufficient. (Roger B Street, Oxford University)	Point added in the chapter
77	85270	2	0	32	6	33	In what context are they better estimates? Is this also the case when making decisions under ambiguity and ignorance? (Roger B Street, Oxford University)	Science can therefore calculate with less confidence. Text has not been amended.
78	85308	2	0	32	16	33	Does how adaptation decisions are addressed, include how and to what extent they are identified, assessed, implemented and evaluated? (Roger B Street, Oxford University)	Do not understand the point. Anyhow, text has been removed (it was introductory in any case)

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79	85345	2	0	32	32	44	The focus appears to be on model projections, whereas climate services is / must be broader to at least include information on past and current climate (including the links to traditional knowledge) (Roger B Street, Oxford University)	Text has been amended to include this
80	85271	2	0	33	6	34	Need to clarify as to who are the stakeholders that need to accept the risk. I would suggest that it is more than just accepting what is at risk, but also the risks associated with the potential 'solutions'. (Roger B Street, Oxford University)	Added in Section 2.1, 2.3.3 and a para on stakeholders has been added 2.3.3
81	85313	2	0	34	18	36	Are the pros and cons considered? Would be useful to provide some of those highlights. (Roger B Street, Oxford University)	Yes, but mostly we pointed to other chapters for space reasons.
82	85337	2	0	35	29	41	I would suggest that experience is showing that it is not only extremes as defined by climatology, but also anomalies as defined by stakeholders and their systems' vulnerabilities that are of concern. Extremes increase the likelihood that thresholds are exceeded. (Roger B Street, Oxford University)	Climate - development - exposure discussed in a more integrated way. Critical thresholds/limits mentioned in 2.3.1
83	85335	2	0	36	29	36	only atmospheric extreme events? Would not this also be the case for sea-level rise particularly in the context of implications for storm surges? (Roger B Street, Oxford University)	Broadened
84	85341	2	0	37	31	37	This should be users' demands (recognising that there is not a single user nor homogenous requirements) (Roger B Street, Oxford University)	Text removed. Anyhow, this usage denotes both singular and plural
85	85342	2	0	37	31	38	Should this not be modes of knowledge exchange (more than communications). I would note that more recent literature suggest that communications is insufficient and knowledge exchange, including engagement are necessary. (Roger B Street, Oxford University)	Knowledge exchange is much more prominent in this section
86	85349	2	0	37	33	37	including climate change impacts, vulnerability and adaptation (Roger B Street, Oxford University)	Text has been changed so much this no longer applies
87	85294	2	0	38	12	39	Some would suggest that climate and adaptation are sure to surprise us (adaptation as a continuous learning process) (Roger B Street, Oxford University)	Text removed
88	85327	2	0	38	25	39	Need to expand on how a lack of leadership can act as a barrier. Leadership - what can be achieved is dependent on the nature and scope of leadership accessible and provided. For example, one may need to accept a lower level of adaptation when no or insufficient leadership exists. Some adaptation can be achieved even without formal high-level leadership, but it is likely to be limited in scope (is this still better than no adaptation?) (Roger B Street, Oxford University)	We did not have room for a para on leadership (could not identify strong enough material in the CIAV) literature. This does not mean we don't see it as important.
89	85336	2	0	38	29	38	Not just people, but also their assets in harms way. (Roger B Street, Oxford University)	We think this phrasing conveys that notion (settlement patterns)
90	85351	2	0	38	35	38	local visualisation of impacts, vulnerabilities, risks and adaptation measures. (Roger B Street, Oxford University)	Text kept and moved to scenarios section. Visualisation of impacts is fine - and the discussion becomes one about risks
91	85251	2	0	39	2	39	The review should also consider whether or not there have been unintended consequences (positive and negative) (Roger B Street, Oxford University)	Unintended consequences discussed in section 2.2
92	85287	2	0	39	10	39	Should this be sustainability and adaptation / mitigation (not dangerous climate change) as dangerous climate change is not really a goal. (Roger B Street, Oxford University)	Text removed
93	85304	2	0	39	15	39	Need to define 'good'. (Roger B Street, Oxford University)	Done in the intro and FAQ 2.1
94	85258	2	0	40	3	41	In the context of managing risks, is there not also the need to managing risks associated with various adaptation measures? (Roger B Street, Oxford University)	This is detailed in the text
95	85288	2	0	40	10	40	Need to clarify what uncertainty is reflected in the expert literature (Roger B Street, Oxford University)	This is included in the section on uncertainty 2.3.1
96	85252	2	0	41	2	43	Should provide the reader with more information about what this means for decision making (Roger B Street, Oxford University)	Have added to this point
97	85281	2	0	41	8	42	Is this really an advantage? If so, in what context? Could this also be seen as a disadvantage? (Roger B Street, Oxford University)	Text removed due to space reasons
98	85339	2	0	41	30	41	Not sure I would label UKCIP as a climate service (more of an adaptation service provider) (Roger B Street, Oxford University)	Not included but added as a boundary organization
99	85276	2	0	42	7	42	In what sense are the results 'better'? (Roger B Street, Oxford University)	This has been defined in FAQ 2-1
100	85295	2	0	42	12	43	New information could also arise as a result of monitoring and evaluation of adaptation measures (in the context of implementation as well as new information on drivers) (Roger B Street, Oxford University)	The description is now generalized to cover all information
101	85265	2	0	43	4	43	Is this a full understanding or a more comprehensive understanding of CIAV decision making? (Roger B Street, Oxford University)	Wording changed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
102	85267	2	0	44	5	45	Mainstreaming will also need to be considered in the context of its potential to deliver synergies and the broad spectrum of adaptation (e.g., transformational adaptation) (Roger B Street, Oxford University)	This is discussed more in later sections
103	85292	2	0	44	11	45	Provide an example of a single best decision that has been recommended. In adaptation, there is more often a set of decisions (suite of supportive adaptation measures). (Roger B Street, Oxford University)	Text removed
104	85320	2	0	44	21	47	check grammar. Does this not also include social justice? (Roger B Street, Oxford University)	Text edited for clarity
105	85305	2	0	45	15	46	Are knowledge of anticipated regional and local impacts sufficient? Can not knowledge of vulnerabilities (biophysical and social) be 'more' informative in the context of adaptation? (Roger B Street, Oxford University)	Text removed ('twas misleading) and point clarified
106	85301	2	0	46	14	47	I would note that translation into action is a major barrier, as is these institutions working in silos. (Roger B Street, Oxford University)	Point on integration added
107	85268	2	0	48	5	49	They need to be understood by decision-makers and the public. (Roger B Street, Oxford University)	We don't distinguish between them (d-ms and public)
108	85259	2	0	49	3	51	How does risk management fit within the evaluation of adaptation measures (relates to comment immediately above)? (Roger B Street, Oxford University)	Description expanded and referenced to other chapters
109	85330	2	0	49	26	50	How does this relate to adaptation beyond coping? Needing to consider transformational adaptation and not just incremental changes to cope and maintain. (Roger B Street, Oxford University)	This has been expanded in the chapter particularly in 2.5.3
110	85282	2	0	50	8	50	trade-offs and synergies, especially in the case of interdependencies (Roger B Street, Oxford University)	Text removed - edited due to space reasons
111	85318	2	0	50	20	51	Check the grammar (Roger B Street, Oxford University)	Text edited
112	85277	2	0	51	7	52	Should it be managing and communicating uncertainty (not just addressing) and does decision-making include implementation and evaluation for which managing and communicating uncertainty are also important (Roger B Street, Oxford University)	Discussion of uncertainties expanded, though space does not allow full discussion
113	85311	2	0	51	17	52	Policy on climate change or policy that promotes adaptation in the context of climate change? (Roger B Street, Oxford University)	No, wider than just adaptation because we address vulnerability etc
114	85352	2	0	51	35	51	Is there a reference for the similar set of factors? Is there a suggestion that llthte are some drivers that are not similar? Note there appears to be an acceptance of the need to adapt (even when not necessarily called adaptation), but in some parts of the world for a number of reasons there is not an acceptance to mitigate (Roger B Street, Oxford University)	The reference is Klein et al 2007
115	85253	2	0	52	2	53	Hopefully more than this as access, although necessary, is insufficient (based on experience) In addition, to access there is a need for support and engagement, as well as credibility, legitimacy and saliency. (Roger B Street, Oxford University)	ES point expanded
116	85315	2	0	52	19	52	...rational policy advice - is this actually pointing to as providing a basis for rational policy advice as definitions by themselves are unlikely to provide advice (Roger B Street, Oxford University)	Wording not great - point has been made with better language
117	85260	2	0	53	3	53	How would you define better? Better in what sense? Provide the evidence that this is true (Roger B Street, Oxford University)	Clarified in FAQ 2-1 and preceding paragraphs
118	85272	2	0	54	7	2	Is this not a limited view. Evidence suggests co-production and co-dissemination of messages is more appropriate and effective (Roger B Street, Oxford University)	No - this needs to be done regardless. The other point is made elsewhere. Some communication of this type will continue regardless
119	85278	2	0	54	7	54	Is it just unaided or also ill-informed reasoning? (Roger B Street, Oxford University)	Wording removed
120	62074	2	1	41	1	41	Please spell out IAV entirely when it has not yet been defined. (Joann de Zegher, Stanford University)	Now done - in the main part of the chapter
121	81531	2	2	4	0	0	Uncertainty Language in the Executive Summary -- The chapter team should assign calibrated uncertainty language to all key findings within the executive summary. Doing so is an important means of communicating the chapter team's degree of certainty in the core conclusions of the chapter, building from its assessment of evidence and agreement for each topic. Additionally, the key findings presented in bold font would be most effective if, in all cases, non-bold supporting text were also provided. (Katharine Mach, IPCC WGII TSU)	Done, hopefully well enough
122	85247	2	2	6	2	7	In what sense what the decisions be better? Better informed? More rigorous? More credible? More salient? (Roger B Street, Oxford University)	No longer in the exec summary

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
123	63489	2	2	6	3	3	General comment on the Executive Summary: The ES is difficult to read and understand which might have several reasons which partly can be overcome by editing: 1. It still contains many technical terms or terms which are not commonly defined, see as examples related questions in the following comments of the chapter. 2. Many sentences are formulated in a complicated way and stand isolated, it is not always clear how they link to the previous and following sentence (inter alia because you use different words for the same thing or "suddenly" introduce a new term). 3. The paragraphs seem to stand isolated and it is not always clear how they relate to the implicit question raised in the first sentence (Line 6-7). In my view, these questions are: 1. What is the foundational knowledge, 2. What are important perspectives? How can better decisions be made? And to what extent do assessments of climate impacts, adaptation and vulnerability play a role in decision making? (GERMANY)	Radically edited with better links to the chapter and continuity between points
124	71647	2	2	15	2	15	All decisions involving uncertainty and valued outcomes involve risk management. Besides being too categorical, this statement is a vague generality that does not begin to approach offering practical guidance. We suggest replacing this as the topic sentence with one of the following sentences: " Risk management provides a useful framework for most CCIA decision-making. " (UNITED STATES OF AMERICA)	We have clarified text along these lines.
125	71648	2	2	15	2	15	decisions involving uncertainty and valued outcomes: doesn't this describe ALL decisions of any significance? (UNITED STATES OF AMERICA)	Yes, that's the point we are making - to show how risk at this general scale is an appropriate frame for decision making
126	71649	2	2	15	2	15	To say that ALL decisions involving uncertainty and valued outcomes involve risk management opens the credibility of the statement and the chapter up to unnecessary criticism. This should say usually or normally. (UNITED STATES OF AMERICA)	See two points above
127	63490	2	2	15	2	16	What is the international risk management standard? (GERMANY)	Referenced
128	61980	2	2	15	2	19	It is suggested to change the 'All decisions involving uncertainty and valued outcomes involve risk management' as 'All decisions concerning uncertainty and valued outcomes involve risk management', and then to delete 'The international risk management standard defines risk as the effect of uncertainty on objectives', because it is not necessary to discuss the concept of risk here, just to clearly state what is the risk we mean in this WGII assessment report is okay. (Yinlong Xu, Institute of Environment and Sustainable Development in Agriculture (IEDA), Chinese Academy of Agricultural Sciences (CAAS))	See points 124 and 125
129	85248	2	2	15	2	19	What would be the case for decisions involving ambiguities or ignorance? What would be the proposed decision-making approach? Does risk management work in these cases or as the decision-theory suggest, are there other approaches that work? (Roger B Street, Oxford University)	Covered in section on uncertainties and adaptive management
130	80626	2	2	15	2	19	It is suggested to change the "All decisions involving uncertainty and valued outcomes involve risk management" as "All decisions concerning uncertainty and valued outcomes involve risk management", and then to delete "The international risk management standard defines risk as the effect of uncertainty on objectives". It is not necessary to discuss the concept of risk here, just to clearly state what is the risk we mean in this assessment report. (Jiahua PAN, Chinese Academy of Social Sciences)	See points 124 and 125
131	71650	2	2	16	2	18	The chapter opens by providing two similar definitions of risk, neither of which agree with the definition of risk provided in Chapter 1 (Page 14, lines 49-50) Having provided these competing definitions, it is not clear which one(s) the authors select or if it is used consistently in subsequent discussions. (UNITED STATES OF AMERICA)	Check latest version but these interpretations are not inconsistent and we have tried to explain why.
132	58321	2	2	17	2	17	What is CCIA ? (Martin Pecheux, Institut des Foraminifères Symbiotiques)	Typo - fixed
133	62064	2	2	17	2	17	Why CCIA instead of CCIAV? (Avelino Suarez, Institute of Ecology and Systematic, Cuban Environmental Agency)	Typo - fixed
134	62075	2	2	17	2	17	Please spell out CCIA entirely. Right now it is only defined in the Introduction, which follows the Executive Summary. (Joann de Zegher, Stanford University)	Typo - fixed
135	71651	2	2	17	2	17	The term CCIA is never defined in this chapter. Climate change impacts and adaptation? (UNITED STATES OF AMERICA)	Typo - fixed
136	68783	2	2	23	2	23	The terminology of 'calculated risks' and 'perceived risks' in the ES is not the same as in the chapter. (NETHERLANDS)	Not in the ES
137	63817	2	2	24	2	25	What are "simple systems" with regard to decision making processes? (GERMANY)	Not in the ES and explained in the text
138	84570	2	2	24	2	28	This material is not discussed in this context in section 2.3.1. It would be useful to consider ways to more explicitly link the material in 2.1.2 and 2.3.1 in the discussions in the chapter text, as is done here in the executive summary. This is also necessary to provide a traceable account for this finding. (Michael Mastrandrea, IPCC WGII TSU)	Text no longer in the ES

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
139	68784	2	2	26	2	26	2.3.1 - is this the correct reference? (NETHERLANDS)	Text no longer in the ES
140	71652	2	2	33	2	33	It is not clear how it is possible that the "new RCP scenario processs is being constructed". If the authors refer to AR5's RCPs, they say "was constructed"? (UNITED STATES OF AMERICA)	No longer in the ES
141	63491	2	2	36	2	37	The term "reflexive" might lead to misunderstandings here as it can refer to the system, as in this case, but the term is also used for decision making processes that are designed in a 'reflexive way'. Is there a possibility to describe a 'reflexive system' in other terms? What does it mean? What are the characteristics of being reflexive? (GERMANY)	No longer in the ES
142	60881	2	2	36	2	39	Is the concept of "reflexive systems" necessary? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	No longer in the ES
143	84571	2	2	36	2	39	This material is not discussed in this context in section 2.2.1.1. Please link this material more clearly with the chapter text. Section 2.1.2 contains relevant text (top of p. 5). (Michael Mastrandrea, IPCC WGII TSU)	No longer in the ES
144	62076	2	2	37	2	38	This is an example where the chapter might benefit from looking into the Operations Research side of decision sciences and link OR to the topic of climate risk management. In particular, it seems like your definition of the issue of reflexive systems is closely aligned with the issue of "endogenous information" in Operations Research; the problem of endogenous information is concerned with decision-making problems where the decisions that agents make affect the information base on which the agent itself and other agents in the network base their decisions. (Joann de Zegher, Stanford University)	We don't go into OR or agent-based modelling - length precluded discussion as to the types of models around - we have mainly discussed what use they are put to
145	60578	2	2	42	2	42	Inconsistent use of acronyms - line 17 has CCIA and line 42 has CCIIV (Chris Hewitt, Met Office)	Typo - fixed
146	60882	2	2	42	2	43	The meaning of this statement is not clear. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Text unchanged but context improved
147	71653	2	2	42	2	43	Like the other points in the Executive Summary, this bold-text statement should be followed by a couple of elaborative sentences. (UNITED STATES OF AMERICA)	Done
148	84572	2	2	42	2	43	Please flesh out this finding further to clarify the points being made. (Michael Mastrandrea, IPCC WGII TSU)	Done
149	63492	2	2	45	2	50	The paragraph standing for itself is clear. However, its position in the ES and its relation to other messages in the ES is confusing. How do other methods referred to in the ES like 'iterative risk management', 'iterative risk assessment' or scenarios relate to "decision support"? Are they not part of "decision support" processes? (GERMANY)	We have placed this in a better context to support the risk statements
150	71654	2	2	50	2	50	The use of jargon such as "boundary organizations" should be avoided or explained in the Executive Summary. (UNITED STATES OF AMERICA)	No, we can't do this but it is in the glossary and explained in the text. As they have a definite function, this term is not jargon, and the function is an important one in linking different systems of knowledge
151	80627	2	2	52	2	52	It is suggested to change the word "regionally" with "widely" (Jiahua PAN, Chinese Academy of Social Sciences)	Wording changed
152	60579	2	2	52	2	53	Suggest rewording to "Climate services provide decisions makers with scientifically credible climate information and expertise" (Chris Hewitt, Met Office)	We want to emphasise the broader role of climate services
153	60883	2	2	52	2	53	What does "knowledge competition" mean in the context of climate services? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Phrasing removed
154	61981	2	2	52	2	53	To change 'Climate services aim to make knowledge about climate regionally accessible to a wide range of decision makers.' as 'Climate services, a goal to enable better management of the risks of climate variability and change and adaptation to climate change, aim to make knowledge about climate regionally accessible to a wide range of decision makers.'. (Yinlong Xu, Institute of Environment and Sustainable Development in Agriculture (IEDA), Chinese Academy of Agricultural Sciences (CAAS))	ES has been edited to remove 'regionally' but not expanded to take in suggested text
155	80628	2	2	52	2	53	In this Executive Summary, there is only definition about "climate services", it is needed to be enriched.SUGGESTION: add the content at P.30 line 20-23 "a goal to enable better management of the risks of climate variability and change and adaptation to climate change" here in Executive Summary. Therefore, change"Climate services aim to make knowledge about climate regionally accessible to a wide range of decision makers." as "Climate services aim to make knowledge about climate accessible to a wide range of decision makers with a goal to enable better management of the risks of climate variability and change and adaptation to climate change.". Note that the geographic level for climate services is not only "regionally" (can be locally, globally etc), therefore, "regionally" should be deleted. (Jiahua PAN, Chinese Academy of Social Sciences)	See above - the role of climate services is very broad so we think a general point is sufficient.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
156	84573	2	2	52	2	53	Section 2.3.3 talks about a range of scales for making knowledge accessible (e.g., local, regional, national). Is the regional scale highlighted here intentionally, or could this statement be broadened? (Michael Mastrandrea, IPCC WGII TSU)	Word removed
157	63493	2	3	1	3	1	How does "knowledge transfer" relate to "climate services", the topic of the paragraph? (GERMANY)	In making knowledge available it is transferred - ES largely unchanged
158	60884	2	3	1	3	2	What is the meaning of "negotiated process" in the context of knowledge transfer? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	It is a process that is negotiated - elaborated in 2.4.1
159	85254	2	3	1	3	2	Knowledge transfer is not sufficient as knowledge exchange is what is required - a two (multiple) way process that recognises the role of framing of the required knowledge and evidence, and the need for knowledge to flow from and between those supplying the information and those requiring the information/knowledge. (Roger B Street, Oxford University)	Elaborated in 2.4.1
160	80629	2	3	1	3	2	In the sentence "Knowledge transfer is a negotiated process that can take a variety of cultural values, orientations and alternative forms of knowledge into account", the word "negotiated" is easy to confuse with the negotiations between government parties. SUGGESTION: change the word "negotiated" as "a two-way communication" (P36 line 16) (Jiahua PAN, Chinese Academy of Social Sciences)	Explanation in 2.4.1
161	60525	2	3	4	3	4	The provided definition of resilience is unclear. At a minimum, I suggest changing "shocks" for "disturbance" to better match the IPCC WG2 definition of resilience. (Eric Toman, The Ohio State University)	Glossary definition included with minor edit
162	71655	2	3	4	3	5	The resilience definition provided seems to be more representative of "stability" than of resilience. The phrase "in order to maintain the same identity" is somewhat ambiguous but implies that the system must attempt to return to a pre-disruption state. That may be the case in many systems, but as A. Rose (and several others) asserts, that is not the general case, especially for economic systems. Perhaps the phrase "in order to maintain the same identity" can be replaced with "in order to attain a desired state." Please read Rose (2007), especially pages 386 and footnote 4 on these topics. A. Rose, "Economic resilience to natural and man-made disasters: Multidisciplinary origins and contextual dimensions" Environmental Hazards 7 (2007) 383CE_398." (UNITED STATES OF AMERICA)	Glossary definition included with minor edit
163	60885	2	3	4	3	7	On would expect more in-depth findings on the links between sustainable development and adaptation, particularly because this is pursued in most countries. Unclear what is meant by "sustainable adaptation". Which new types of governance and institutional arrangements are studied? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Wording changed. Unfortunately we do not have the space to go into depth and this is better left to chapter 20. The ES is a summary of topics covered in Section 2.5.2
164	78943	2	3	4	3	7	I am not sure that these statements are relevant in this chapter. (Richard Jones, Met Office Hadley Centre)	Requested part of chapter structure
165	71656	2	3	4	53	9	A better decision is one where the process of decision-making is judged to produce more acceptable outcomes.... This is practically tautological. More useful than this paragraph would be a discussion of how one evaluates adaptation decisions (specifically). (UNITED STATES OF AMERICA)	Text changed and elaborated in FAQ 2-1
166	71657	2	3	9	3	9	what are "transitional arrangements?" (UNITED STATES OF AMERICA)	Text changed
167	60886	2	3	9	3	10	This statement is incomprehensible. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Text changed
168	71658	2	3	9	3	10	Please expand on the statement in bold, as was done for the other major points in the Executive Summary. (UNITED STATES OF AMERICA)	Text added
169	80630	2	3	9	3	10	The content of "transformation" in Executive Summary is not easy to understand, it needs enrichment. Transformation is critical and point a new direction for adaptation. But here need more explanation for transformation in order to make it more specific and easy to understand, which can refer to P.38 line 20-25. (Jiahua PAN, Chinese Academy of Social Sciences)	Text changed
170	81532	2	3	9	3	10	It would be beneficial to expand this key finding to ensure clarity for the reader, through addition of non-bold supporting text and also through more precise wording within the finding itself. For example, what is meant here through "transitional arrangements"--transitioning from what to what, arrangements in what sense, etc.? Additionally, "difficult to control" for whom and in what sense? (Katharine Mach, IPCC WGII TSU)	Text added
171	84574	2	3	9	3	10	These points are not really expressed in this way in section 2.4.3. That section could also use a stronger conclusion. Please consider explaining these points more clearly in the text, perhaps as a conclusion to 2.4.3. (Michael Mastrandrea, IPCC WGII TSU)	Improved links with 2.5.3

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
172	77083	2	3	13	0	0	Section 2.1 The introduction is very long and provides a very general overview on decision-making that seems nearly irrelevant to the reader. ie: "decision-makers range from individuals", or "the study of human reasoning has a long history" page 4, " I suggest to cut much of this out, or make specific links to how that information would be relevant later in the chapter. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	Shortened and tighter
173	60580	2	3	17	3	17	see my comment for Chapter 2 as a whole - what about resilience to current climatic conditions and variability? It's not just about climate change. (Chris Hewitt, Met Office)	Changed to CIAV but not discussed expressly
174	60526	2	3	21	3	21	It seems that "scenario-driven" should be removed from this sentence. It appears to refer to historical planning approaches (linear approaches) and not more recent scenario-type approaches (Eric Toman, The Ohio State University)	Text removed and clarified later
175	64836	2	3	24	3	26	where something of human value is at stake - I found the inter-changeability of this definition and its subsequent abbreviation to 'value' and 'values' a little disconcerting. While the definition of values (p16, lines 28-29) was helpful, I struggle with 'values' being the same as 'something of value'. May simply reflect my physical sciences / engineering background (Leon Soste, Department of Primary Industries, Victoria, Australia)	This definition has informed the glossary but we have also improved the values discussion
176	71659	2	3	24	3	31	Despite efforts to understand the description, the "three-tier hierarchy" was unclear both in the text and in the corresponding figure 2-1. Moreover, the discussion of this three-tiered concept appears to terminate in this section. Suggest that the authors reconsider this concept and its presentation and, if used, use it consistently through the subsequent discussions. (UNITED STATES OF AMERICA)	Has been removed due to space considerations. It is useful for institutional and systems analysis and should be informing the chapter but there is just too little room
177	62729	2	3	26	3	36	Should read the "chapter's overall approach is risk management" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Wording changed - now 2.1.1
178	60887	2	3	28	3	34	Figure 2.1 (p. 61) does not portray a "three-tier hierarchy for decision-making", but rather sets the context for risk management and the definitions relevant to the chapter. There is a mismatch between the text and the Figure, further compounded by the introduction of definitions in the fourth Figure column. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Figure 2-1 has been completely modified as has the text accompanying it
179	78944	2	3	28	3	34	I do not understand this hierarchy nor the figure. Please clarify. (Richard Jones, Met Office Hadley Centre)	Figure 2-1 has been completely modified as has the text accompanying it
180	81533	2	3	31	3	31	Although "tools" are referred to here, it is not clear where the reader should be finding depiction of such tools within figure 2.1. (Katharine Mach, IPCC WGII TSU)	Figure 2-1 has been completely modified as has the text accompanying it
181	78945	2	3	33	3	34	Figure 2-1: The "classifications" of approach, methodology and method and subsequent details are confusing and their relevance is not clear. (Richard Jones, Met Office Hadley Centre)	Text removed for space reasons (unfortunately)
182	80244	2	3	33	3	34	Figure 2-1 is not a stand-alone figure; a reader can not look at this figure and understand what it is trying to communicate. (Kristie Ebi, ClimAdapt, LLC)	Figure edited and better incorporated into text
183	60780	2	3	36	3	42	I personally agree with the view that it is possible to encompass other methodologies within a larger risk management process, but note that this is not consistent with views expressed elsewhere eg Chapter 15 page 3 lines 47-48. We should note that even within the adaptation 'profession' there are very different mental models of what 'risk management' is and many (I think incorrectly) see it as a quite constrained tool, not appreciating that it can be as broad as you like depending on how broadly you express the 'objectives at risk' - which is a framing issue. (Bob Webb, Australian National University)	Agreed and we have tried to express this within space constraints
184	60581	2	3	37	3	37	what about opportunities in addition to risk? (Chris Hewitt, Met Office)	It's in the ISO definition and has been clarified, also pointing to 2.2.1.3
185	71660	2	3	39	3	39	The sentence that runs through this line is not clear as written (UNITED STATES OF AMERICA)	Text has been clarified
186	62730	2	3	40	3	42	Evaluating or managing risk within the larger risk management process, should read "main fact be analyzing evaluating or managing risk within a larger risk management process (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Comprehensively rewritten
187	60527	2	3	47	3	47	Insert "can" before "also" now reads. A risk management framework CAN also facilitate.. There is no guarantee that applying a risk management framework will automatically lead to mainstreaming climate information into decision making. (Eric Toman, The Ohio State University)	This text has been omitted
188	78946	2	3	47	3	47	Please remove the jargon "mainstreaming of climate-centric decision-making". I assume you mean "makes it easier to integrate into general decision-making" which would be clearer. (Richard Jones, Met Office Hadley Centre)	wording changed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
189	77334	2	3	49	3	51	Pattern analysis constitutes a new approach to assess vulnerability quantitatively (Sietz et al. 2011 and Sietz et al. 2012). Vulnerability patterns reveal similarities in the vulnerability of socio-ecological systems as shown for the example of drylands and smallholder systems. They provide useful insights into a transfer of adaptation strategies following the hypothesis that regions or systems with similar properties require comparable strategies (Sietz et al. 2011). The validation of results is a major task to strengthen the credibility and suitability of findings for decision-making pertaining to the reduction of vulnerability. Validation has received particular attention in investigating smallholder vulnerability at the household level in the Peruvian Altiplano (Sietz et al. 2012) REFERENCES: Sietz, D., Lüdeke, MKB. and Walther, C. (2011) Categorisation of typical vulnerability patterns in global drylands. Global Environmental Change 21(2): 431-440. ; Sietz, D., Mamani Choque, SE. and Lüdeke, MKB. (2012) Typical patterns of smallholder vulnerability to weather extremes with regard to food security in the Peruvian Altiplano. Regional Environmental Change 12(3): 489 - 505. (diana sietz, Wageningen University)	Not sure this is for this chapter
190	60888	2	3	52	4	4	I find the definition of a good decision ('where the outcomes sought' ... Etc) doesn't sit comfortably with the later acknowledgment (several times in the chapter) that multiple criteria may be applied to this question, including those relating to legitimate processes. Also, what is the 'life of a decision'? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	wording clarified - also in the FAQ - this is relevant to the next comments to 198
191	62731	2	3	53	3	53	should read "One other risk management aims is to make better decisions" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Rewritten and FAQ 2-1 added
192	71661	2	3	53	3	53	A major aim of risk management is to make better decisions. This sounds silly. (UNITED STATES OF AMERICA)	We consider that having people think about the reasons for why they make a decision is worth prompting, even if it seems obvious. Many poor decisions are made because people often ignore their basic assumptions. Surprisingly, the literature has little to say about this. Hence our discussion about making better decisions - it has been edited to reflect this more clearly
193	71662	2	3	53	3	53	It would seem that the major aim of risk management is to manage risk. Assuming that making better decisions is inherent in managing risk seems circular. (UNITED STATES OF AMERICA)	Wittgenstein famously said all logic is circular. The process of undertaking a risk assessment, if done properly, should examine the obvious in addition to the unknown (see point above)
194	80245	2	3	53	4	9	The issue of time scale is an important nuance; when is it decided that a decision relevant to a climate change policy, decision, or measure was "better"? And how does this figure into an iterative risk management approach? (Kristie Ebi, ClimAdapt, LLC)	Temporal considerations have been added
195	85261	2	4	1	4	2	More acceptable by whom? In what context? (Roger B Street, Oxford University)	This has been elaborated upon
196	71663	2	4	2	4	2	Here a "better" decision is defined to be one that produced better outcomes than "previous" decisions made under similar circumstances. But would not a better standard of comparison be other decisions that could have been made in the case at hand? (UNITED STATES OF AMERICA)	We have added both good and better and been rather coy about whether they are assessed within a comment set or compared to previous decisions.
197	60528	2	4	2	4	3	Delete this sentence "It may be highly precautionary, designed to avoid the worst possible outcomes (Hansson, 2006; Malik et al., 2010)." A better decision may be a lot of things, including a precautionary approach. However, if only one example is given, the report seems to elevate a precautionary approach over others as a better approach. (Eric Toman, The Ohio State University)	Text removed
198	68785	2	4	4	4	5	The sentence is difficult to read (had to read it several times). Maybe change into: Elwyn and Miron-Shatz argue that process be given more weight than outcomes, especially under uncertain futures where many outcomes are possible. (NETHERLANDS)	Text removed
199	60781	2	4	11	4	12	agree, and could add that another factor that distinguishes CCA decision making is the pervasiveness of impacts and responses into so many natural and societal systems even at the local level, which puts extra and new demands on managing interdependencies and trade offs (Bob Webb, Australian National University)	Added, also FAQ 2-3
200	62732	2	4	14	4	14	Should read "in norms and values across and within generations" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text added
201	81534	2	4	17	4	21	Citations should be provided to support these statements. (Katharine Mach, IPCC WGII TSU)	Text heavily modified and more references added
202	60890	2	4	19	0	0	Descriptive theories may also be referred to as 'positive'. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Text removed but positive was mentioned?

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
203	60889	2	4	19	4	25	It isn't clear where the distinction between problem-oriented and solution-oriented decisions originates in relevant literature. Some references are needed. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	This has been cited for scenarios
204	60529	2	4	21	4	21	Insert "perceived" before scenarios - Now will read "...framed by aspirations and goals and informed by perceived scenarios..." (Eric Toman, The Ohio State University)	Text removed - was problematic
205	60530	2	4	23	2	23	Are these sentences meant to compare the "study of human reasoning" with "research describing actual processes of human decision-making"? It seems as such given the current text. (Eric Toman, The Ohio State University)	Text removed
206	64895	2	4	23	4	30	Recommend including mention of Berkes (2009) Evolution of Co-Management Role of Knowledge Generation, bridging organizations and social learning. In Journal of Environmental Management. 9(5): 1692-1702 - primarily re: knowledge translation and learning networks (Amejali Ramos Castillo, United Nations University - Institute of Advanced Studies)	Text removed
207	79368	2	4	23	4	41	About non rational decision making: this is a very important notion. I wonder if this shouldn't be expanded somewhat into the literature on experiential learning and about advances in our understanding of how the brain works (conscious versus subconscious decision making, immediate versus slower responses, ...) (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)	Good suggestion that we didn't feel we had room for given the broad number of topics. This section of text was removed for space reasons - these topics are dealt with in the section on interactive risk management (2.1.2) and psychology (2.2.1.2). Kahnemann is cited but not discussed in detail.
208	71664	2	4	24	4	25	There is something wrong with this sentence, its meaning is unclear as written. (UNITED STATES OF AMERICA)	Text removed
209	81535	2	4	25	4	28	On line 25, to what degree are normative aspects contingent on the values and goals embodied by the decision-maker? Should the role of values and goals be reflected on this line, in addition to the mention on lines 28-30? Additionally, should the example on lines 26-28 be qualified further--"may" come to believe that they should, instead of "would"? (Katharine Mach, IPCC WGII TSU)	Text removed, discussed with more structure later
210	60531	2	4	28	4	29	I think this is an accurate statement, but the wording is unclear. What is meant by "a particular formal analysis"? How are "values and goals not well represented in that analysis"? (Eric Toman, The Ohio State University)	text removed
211	71665	2	4	28	4	29	It is not clear what the authors mean by "People may also act inconsistently with a particular formal analysis." (UNITED STATES OF AMERICA)	Text removed
212	62733	2	4	38	4	38	To date the social cultural and cognitive or behavioral aspects of CCAV" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text removed
213	60532	2	4	40	4	40	Clarify what is meant by "these factors." These sentences are making a good point, but the clarity could be improved. (Eric Toman, The Ohio State University)	Text removed
214	84575	2	4	40	4	41	Is this last statement a conclusion of the author team, based on their assessment of the literature? Please clarify if so, and consider expressing as a finding. (Michael Mastrandrea, IPCC WGII TSU)	Text removed
215	58925	2	4	49	0	0	Section 2.1.2. It would be good to include references to chapters within the report that use these concepts, particularly the 5 types of risk identified on p6. (David Wright, University of Ottawa)	We have not got to this level of detail but refernce the remainder of the report comprehensively
216	64307	2	4	49	5	25	Seems useful to differentiate sectors with different decision horizons in this section on iterative risk management to make clear that for some sectors the iterative risk management cycle of assessment-action-reassessment-response is relatively short (e.g. agriculture), for other sectors relatively long (e.g. forestry, built infrastructure). (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	Text added to address this
217	60533	2	4	51	4	51	This first sentence is unclear; what is meant by "complexity is an important attribute for framing and implementing decision-making processes"? (Eric Toman, The Ohio State University)	We have illustrated this through Figure 2-2
218	62734	2	4	51	4	51	Complexity is an important attribute for framing and implementing decision-making processes (this sentence does not make much sense). Perhaps he can be re-written as: "Framing and implementing decision-making processes is highly complex and considered an important attribute for iterative risk management" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	That's not what we meant - see above
219	78947	2	4	51	4	51	Unclear how an "attribute" can "frame" a process, consider rephrasing. (Richard Jones, Met Office Hadley Centre)	It's an attribute the informs framing. This is a key task during scoping.
220	71666	2	4	53	4	53	The term "wicked problems" appears here and is used subsequently through the document. A formal definition of this expression would be helpful. (UNITED STATES OF AMERICA)	We feel the existing text serves as a definition
221	77560	2	4	53	4	53	Is this the right platform to introduce a term such as 'wicked' problems? This terminology is confusing. (Malini Nair, Indian Institute of Science)	It's an important term in the decision-making literature, particularly that describing hard-to-solve problems

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
222	78948	2	4	53	4	53	"Wicked" does not seem an appropriate word to be used. New jargon is not required when there are perfectly good plain English words that could be used. Please replace with "Highly complex" or something similar. (Richard Jones, Met Office Hadley Centre)	See above
223	64838	2	5	0	0	0	Figure 2-2 This appears somewhat inconsistent with the preceding discussion of Rittel and Webber in that the initial stages of 'Identify problem and objectives' and 'Establish decision making criteria' are put forward as (apparently) simple steps rather than as complex iterative processes - something which is captured in the other elements of the Figure (Leon Soste, Department of Primary Industries, Victoria, Australia)	Figure changed and now 2-1, hopefully that does the trick
224	64837	2	5	2	5	2	deep uncertainty - hopefully not being overly pendantic - we use 'deep uncertainty' here to describe Rittel and Webber's highlighting the complexity of different issue framing, plurality of objectives etc - and then use it again on p8, line 15 to refer to our ability to quantify probability distributions. To me, one pertains to a social construct, the other pertains to a mathematical construct - can we have deep uncertainty in both - judgement call (Leon Soste, Department of Primary Industries, Victoria, Australia)	Both are aspects of deep uncertainty, they both plumb the depths
225	62735	2	5	3	5	4	should read "Another important attribute of complex systems is reflexivity..." (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Thanks - changed
226	81536	2	5	5	5	5	For the statement on this line, it would be helpful to clarify further the reasons risks will change--due to climate change, socioeconomic development, etc. versus reflexivity? (Katharine Mach, IPCC WGII TSU)	They all contribute
227	84576	2	5	5	5	5	In the last sentence here, it is not clear what the referenced changes in risk that the author team has in mind will be due to. Do you mean simply the evolution of climate change in the absence of risk management? Is what is meant distinct from the reflexivity mentioned in the previous sentence? Further clarity would be useful here. (Michael Mastrandrea, IPCC WGII TSU)	Clarified
228	60782	2	5	15	5	15	three not two levels? (Bob Webb, Australian National University)	Clarified - internal and external
229	62736	2	5	15	5	15	Should read" iterative risk management processes are generally at two levels" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Clarified - internal and external
230	71667	2	5	15	5	16	The first sentence of this paragraph should start "Three levels of..." instead of "Two levels of..." since there are then three levels discussed. (UNITED STATES OF AMERICA)	Clarified - internal and external
231	68786	2	5	15	5	20	The notation of 'two levels' is confusing. Do the authors mean 'two loops', as shown in Fig2.2? Or do they mean two types (internal/external)? Or do they mean something else? In any case, we think clarification is desirable. (NETHERLANDS)	Clarified - internal and external
232	71668	2	5	15	5	25	The discussion of this figure, the figure itself and its caption are very difficult to follow and internally inconsistent. For example, "Two levels of iteration" appears to refer to "two internal and one external". Further, the figure does not distinguish between internal and external processes. Is the "assessment state on line 16 the same as the "assessment process" on line 23? The same question is raised for "management stage" and "risk management stage". The "scoping phase" mentioned in line 20, does not appear in the figure. (UNITED STATES OF AMERICA)	Clarified - internal and external
233	84577	2	5	15	5	25	The description here is very confusing, as there are three loops depicted in Figure 2-2, at two levels (internal and external). Please clarify both the description here and the figure caption. (Michael Mastrandrea, IPCC WGII TSU)	Clarified - internal and external
234	81537	2	5	16	5	20	This description should be refined so that the reader is able to understand, much more easily, the relationship between the description and figure 2-2. (Katharine Mach, IPCC WGII TSU)	Clarified - internal and external
235	77084	2	5	28	7	2	This section provides a good deal of non-contextualized information on risk at the beginning, and then mentions climate-related risk at the end. I suggest to integrate climate from the beginning, to contextualize the information that is being provided. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	It is better contextualised and most of the references are climate-related in any case
236	62737	2	5	30	5	30	Should read "and complex systems".... (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text changed
237	68787	2	5	30	5	35	If possible, we would prefer that some time indication is added to this section. When did the change from technocratic expert advice to more participatory processes start? (NETHERLANDS)	This has been a slow evolution that is beyond our page limit to describe. Several publications do cover this.
238	71669	2	5	31	5	31	Do "actors and institutions" referred to here correspond to institutions and individuals as discussed on page 4 (line 17)? (UNITED STATES OF AMERICA)	Text changed
239	85266	2	5	34	5	34	Is there an understanding as to why the process is 'proceeding slowly'? It would help to include some explanation. (Roger B Street, Oxford University)	Not in the literature, no. We could speculate but it's a complex question

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
240	71670	2	5	37	5	37	Here the authors provide a fourth definition of risk (see comments for page 2, line 16). It is difficult to understand which definition is being used when the authors subsequently refer to "risk". (UNITED STATES OF AMERICA)	Text removed
241	77561	2	5	39	5	39	VAR methods have been abandoned by finance after the crisis of 2007. How is it applicable in estimating climate risk? (Malini Nair, Indian Institute of Science)	Text removed
242	62738	2	5	47	5	47	Should read "different traditional and modern epistemologies, or ways of knowing, exist for risk...." (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text changed
243	60534	2	5	50	5	50	Suggest using an alternative word for "nominated". Perhaps say "noted" (Eric Toman, The Ohio State University)	Text changed, using 'identified'
244	64840	2	6	0	0	0	Figure 2-3 I like this - for me it captures the separateness but overlap within and between different perspectives of risk - nicely done (Leon Soste, Department of Primary Industries, Victoria, Australia)	Thanks - has been redrawn
245	60535	2	6	1	6	1	Suggest using an alternative word for "nominated". Perhaps say "recognized" (Eric Toman, The Ohio State University)	Text altered
246	85269	2	6	1	6	12	Also risk associated with various adaptation measures and strategies. Where does this fit in with this typology? (Roger B Street, Oxford University)	They fit into these three types (they are not the only identified constructs but we kept to three because of space)
247	81538	2	6	1	6	12	It would be helpful to clarify how these types of risk should be interpreted with respect to figure 2-1. How is an epistemological construct different from a definition, for example, and how do these constructs relate to the categories within the figure? (Katharine Mach, IPCC WGII TSU)	These fit better with Figure 2-2
248	64839	2	6	5	6	7	calculated risk - general comment on model-based risk calculations - it may be worth clarifying at some point that the quantification of risk usually refers to a specific model output - eg a particular flood stage at a given location with associated damage estimates. We usually do that reasonably well. However, while this provides an essential input to subsequent socio-economic impact analysis, the real challenge is how that biophysical risk information is propagated thru' the wider system - ie we have a differential capability in providing systemic 'risk' assessments. (Leon Soste, Department of Primary Industries, Victoria, Australia)	We can't go too far down that path but have modified Fig 2-2 to show that calculated risk has larger uncertainty (and maybe magnitude) in complex contexts
249	71671	2	6	8	6	10	As defined here, "subjective" risk and "perceived" risk seem awfully similar. If they are truly different concepts then these definitions should be improved. Of they are not, then combine. (UNITED STATES OF AMERICA)	Cut down to the main three types
250	60536	2	6	11	6	12	Wording unclear - should it read something like "This may be used to update conceptualizations of future risks."? (Eric Toman, The Ohio State University)	Text omitted
251	71672	2	6	11	6	12	The text states that observed risk will update "conceptualization of future risks." Is this statement intend to state that observed risk affects risk types 1-4? If so, perhaps the text could be amended to explicitly make that statement. Otherwise, I am not sure what "conceptualization of risk" means precisely. (UNITED STATES OF AMERICA)	Text omitted
252	71673	2	6	11	6	12	There may be an extra word.Perhaps the phrase "update to conceptualization" can be replaced with "update conceptualization". (UNITED STATES OF AMERICA)	Text omitted
253	78949	2	6	11	6	12	The second sentence is not clear, please rephrase. (Richard Jones, Met Office Hadley Centre)	Text omitted
254	84578	2	6	11	6	12	Given the potentiality embedded in most definitions of risk, I find the term "observed risk" somewhat confusing. It appears that what is being referenced here is really observed impacts when risk is realized. (Michael Mastrandrea, IPCC WGII TSU)	Text omitted
255	66045	2	6	14	6	23	We could add the factor of the increasing perception of risk and climate change due to the major number of news and editorial comments in newspapers and media (see for instance Llasat et al, 2009). On the other hand, there is a recent paper that shows an overview about how people interpret risks: Eiser et al, 2012. References: Llasat, M.C., M. Llasat-Botija and L. López, 2009. A press database on natural risks and its application in the study of floods in northeastern Spain. Nat. Hazards Earth Syst. Sci., 9, 2049–2061, www.nat-hazards-earth-syst-sci.net/9/2049/2009/; Eiser, J.R., Bostrom, A., Burton, I., Johnston, D.M., Mc Clure, J., Paton, D., Van der Pligt, J., White, M.P., 2012. Risk interpretation and action: A conceptual framework for responses to natural hazards, International Journal of Disaster Risk Reduction 1 (2012) 5–16 (Maria-Carmen Llasat, University of Barcelona)	Added sentence
256	68788	2	6	19	6	19	Difficult sentence to read. Suggestion: change 'social and cultural influences' into 'social and cultural norms/values/beliefs/context'. (NETHERLANDS)	Altered
257	78950	2	6	25	6	29	Figure 2-3: I do not see how the caption related to the figures. Also, in the figure the circles need explaining and their links to the tables and the difference between complicated and complex. (Richard Jones, Met Office Hadley Centre)	Figure and caption changed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
258	80246	2	6	25	6	29	This figure needs to be clear on what is meant by methodologies, approach, methods, and tools. (Kristie Ebi, ClimAdapt, LLC)	Figure text has been edited
259	84579	2	6	25	6	29	This caption does not seem to match the figure. (Michael Mastrandrea, IPCC WGII TSU)	Figure and caption changed
260	60891	2	6	26	6	29	Figure 2.3 caption: Figure 2.3 shows different cases of risk managed by decision makers and not a hierarchy of decision makers (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Figure and caption changed
261	62739	2	6	34	6	35	Should read" the science always situates itself within a broader social setting, often....." (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Wording retained - it's shorter
262	64841	2	6	40	6	42	medium confidence - while I wholeheartedly agree with the use of socially mediated processes in CCIAV, there is an interesting tension here. We have 'high confidence' that 'good scientific and technical information alone is rarely sufficient ..' (p7, lines 27-8) yet, despite the preceding discussion on complexity embedded in social contexts (Rittel and Webber), the discussion on social aspects of risk construction (subjective and perceived risk) and the excellent discussion on social context in decision making (Section 2.2.3), we have only 'medium confidence' that engaging stakeholders in risk assessment is an appropriate vehicle for providing those elements of the decision making process which science alone cannot provide. So - there appears to be some inconsistency here. There also appears to be 2 systems operating in parallel - high or medium confidence (without a recommendation per se), while other strategies (eg for dealing with uncertainty) are recommended (p8, lines 19-20), yet without confidence attached. Does one system carry more weight than the other, or ..? (Leon Soste, Department of Primary Industries, Victoria, Australia)	Good point. We reviewed this and there's high agreement and medium but broad ranging evidence
263	62740	2	6	41	6	42	But require socially mediated processes should read "socially and culturally mediated processes" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Wording changed
264	71674	2	6	44	6	44	The authors list five important constructs for risk at the top of this page and here add a sixth construct: "socially constructed risk" suggesting that this is not an important construct? (UNITED STATES OF AMERICA)	socially-constructed risk is a combination of the three. Text changed
265	60783	2	6	48	6	48	should perhaps be about 'engaging' with stakeholders not just communicating (Bob Webb, Australian National University)	No, communication stands, but the process of engagement will ensure it isn't one way
266	60537	2	6	49	6	49	Suggest including the following citation here: National Research Council. 2009. Informing Decisions in a Changing Climate. Panel on Strategies and Methods for Climate-Related Decision Support, Committee on the Human Dimensions of Global Change. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. (Eric Toman, The Ohio State University)	Added
267	64301	2	6	51	6	52	Please change ii) to: "establishes self-agency, explaining what the recipient can do with the information and ways to make decisions under uncertainty (e.g. precautionary principle, iterative risk-management etc.)" (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	Added
268	71675	2	6	51	6	52	What is meant by "self agency"? (UNITED STATES OF AMERICA)	Leaving text as is
269	60892	2	7	7	0	0	Section 2.2: There is no balance among the sub-sections (i.e. 2.2.1 ~7 pages, 2.2.2 ~2 pages, 2.2.3 ~7.5pages). Sections 2.2.31 & 2.2.3.2 could be merged, as values are determined and influenced by cultural aspects. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Chapter has been seriously reformatted
270	62741	2	7	9	7	9	Organizational and cultural psychological contexts, should read " organizational and cultural/behavioral and psychological contexts of decision-making" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	text removed
271	60582	2	7	13	7	13	This title is good if the chapter includes climate variability as well as climate change. If not then I suggest "...Climate change-related decisions" if this chapter is only about climate change (see my comment for Chapter 2 as a whole) (Chris Hewitt, Met Office)	See responses to earlier comments along the same lines

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
272	64302	2	7	13	14	16	Please add new section 2.2.1.4 on "Stakeholder involvement", because this is a central method/tool/process for climate-related decisions and there have been many publications since the AR4 stressing particularly the importance of stakeholder involvement in adaptation decision-making (e.g. Lebel et al. 2010), several publications proposing/discussing specific methods for stakeholder involvement (e.g. Debels et al. 2009, Salter et al. 2010) and some papers reflecting concrete experiences with stakeholder involvement in CCAV assessments and adaptation processes (e.g. de la Vega-Leinert et al. 2008, various publications by project "CLIMAS-Climate Assessment of the South-West", publications on "community-based-adaptation"). Adding such a new section would give this important method/tool/process a higher visibility in chapter 2. Lebel et al. (2010) differentiate six advantages of social learning and stakeholder involvement for adaptation to climate change. These advantages relate strongly to chapters 2.2.1.1 to 2.2.1.3. 1. Stakeholder involvement can reduce informational uncertainty. Informational uncertainty refers to deficits in knowledge about future developments. By involving stakeholders and local experts that have knowledge about a studied system uncertainties regarding potential climate change impacts, vulnerabilities and feasible adaptation options can be reduced. (links well to 2.2.1.1 and "learning" in 2.2.1.3) 2. Stakeholder involvement reduces normative uncertainty. Normative uncertainty refers to uncertainty about goals and actions and also relates to perceptions of acceptable risk. For example, strong stakeholder participation in a water-sensitive region can clarify priorities (for instance on tourism) and acceptable risks (for instance agricultural losses). (links well to 2.2.1.1, "valuation" in 2.2.1.2 and "learning" in 2.2.1.3) 3. Stakeholder involvement helps to build consensus on criteria for monitoring and evaluation, which are essential elements of adaptive management and adaptive governance schemes often used to adapt to climate change. (links well to 2.2.1.3) 4. Stakeholder involvement can empower stakeholders to influence adaptation and take appropriate actions themselves by sharing knowledge and responsibility in participatory processes. 5. Stakeholder involvement can reduce conflicts and identify synergies between adaptation activities of various stakeholders, thus improving overall chances of success. Coordination is crucial to overcome fragmentation across sectors, regions and decision levels. 6. Stakeholder involvement can improve the likely fairness, social justice and legitimacy of adaptation decisions and actions by addressing the concerns of all relevant stakeholders. Deliberative processes bring together alternative perspectives and forms of knowledge reducing the likelihood that collective responses are based solely on relative influence and power of the actors involved. (links well to 2.2.1.2 and 2.2.3.4) References: Debels, P., Szlafsztein, C., Aldunce, P., Neri, C., Carvajal, Y., Quintero-Angel, M., Celis, A., Bezanilla, A., & Martínez, D. (2009). IUPA: a tool for the evaluation of the general usefulness of practices for adaptation to climate change and variability. <i>Natural Hazards</i> , 50, 211-233. de la Vega-Leinert, Anne Cristina, Dagmar Schröter, Rik Leemans, Uta Fritsch, and Jacomijn Pluimers. 2008. A stakeholder dialogue on European vulnerability. <i>Regional Environmental Change</i> 8 (3): 109-124. Lebel, L., Grothmann, T., B. Siebenhüner. 2010. The role of social learning in adaptiveness: Insights from water management. <i>International Environmental Agreements: Politics, Law and Economics</i> 10/4: 333-353. Salter, Jonathan, John Robinson, and Arnim Wiek. 2010. Participatory methods of integrated assessment - a review <i>Climate Change</i> 1 (5): 697-717. (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	Have added a paragraph - thanks very much for the contribution
273	85273	2	7	15	7	16	Hopefully researchs will also consider drawing on this experience! (Roger B Street, Oxford University)	Noted
274	68789	2	7	27	7	28	We would suggest to use this statement in the summary. We think it legitimizes and summarizes very concisely the core message of chapter 2. (NETHERLANDS)	Yes
275	71676	2	7	27	7	28	I recommend adding a reference for the statement "Extensive evidence from the decision sciences shows that good scientific and technical information alone is rarely sufficient to result in better decisions." Without a reference, readers may question the validity of this important statement. (UNITED STATES OF AMERICA)	Done
276	78951	2	7	27	7	28	Insert reference(s) to support the statement. (Richard Jones, Met Office Hadley Centre)	Done
277	58979	2	7	27	7	32	Decisions also need value-judgments, by definition (ought to be). (Drieu Godefridi, Cogito)	Referenced extensively in the chapter
278	60893	2	7	27	7	32	This paragraph seems important enough that it should be included in the Executive Summary. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Done
279	60784	2	7	30	7	32	whilst many methods, tools etc are available this does not mean that they are well used or useful. Many factors mean that in practice there is a significant gap between the availability and use by decision-makers and their advisers - see for example Webb, R. and J Beh, 2013. Leading adaptation practices and support strategies for Australia: An international and Australian review of products and tools, National Climate Change Adaptation Research Facility, Gold Coast, pp.120. Accessible at http://www.nccarf.edu.au/publications/leading-adaptation-practices-and-support-strategies . (Bob Webb, Australian National University)	Added with suggested qualifications
280	78952	2	7	30	7	32	Insert reference(s) to support the statement. (Richard Jones, Met Office Hadley Centre)	Added

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
281	84580	2	7	30	7	32	The linkage of "may" and "medium confidence" here is confusing. Would changing "may" to "is" express the view of the author team? (Michael Mastrandrea, IPCC WGII TSU)	Wording changed
282	71677	2	7	42	7	42	I think the phrase "or a choice" is intended to be "of a choice". If that is not the intended phrasing, that sentence is somewhat confusing. (UNITED STATES OF AMERICA)	Text removed
283	81539	2	7	50	0	0	Section 2.2.1.1. The chapter team should strive to make the logic of this more theoretical section as accessible and clear to the reader as possible. As part of this, the section should be shortened. (Katharine Mach, IPCC WGII TSU)	Shortened and tighter
284	59256	2	7	50	9	31	in Section 2.2.1.1, among other approaches and tools, I expect some references on Monte Carlo simulation which is extensively used to model impacts and responses to future climate changes. (Danae Diakoulaki, Chemical Engineering, NTUA, Greece) (GREECE)	We haven't focused so much on tools
285	85279	2	8	1	8	3	trade-offs and synergies, especially in the case of interdependencies (Roger B Street, Oxford University)	Text removed
286	64303	2	8	3	0	0	Please include studies by Budescu here: Budescu, David V., Steven B. Broomell & Han-Hui Por (2009): Improving communication of uncertainty in the reports of the Intergovernmental Panel on Climate Change. In: Psychological Science 20, p. 299-308. Budescu, David V., Han-Hui Por & Steven B. Broomell (2012): Effective communication of uncertainty in the IPCC reports. In: Climatic Change 113(2), p. 181-200. (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	Reference incorporated in 2.2.1.3
287	84581	2	8	13	8	18	While it would be interesting to work through this characterization further, the levels of confidence have not been described in this way. I would recommend presenting this as a possible interpretation if retained. (Michael Mastrandrea, IPCC WGII TSU)	Text changed
288	81540	2	8	17	8	18	This statement must be clarified. The levels of confidence do not provide one-to-one correspondence with the categories described here. (Katharine Mach, IPCC WGII TSU)	Text removed
289	64842	2	8	18	0	0	Mastrandrea et al 2010 is not in the biblio (Leon Soste, Department of Primary Industries, Victoria, Australia)	Added
290	71678	2	8	18	8	20	(Mastrandrea et al., 2010) is referenced twice. This reference is not provided in the reference section. (UNITED STATES OF AMERICA)	Added
291	81541	2	8	18	8	20	Chapter 1 provides extensive and careful introduction to the uncertainties guidance, and here it would be preferable to simply cross reference the relevant sections of chapter 1. (Katharine Mach, IPCC WGII TSU)	Done
292	84582	2	8	18	8	20	Not always, as the quantitative likelihood scale is recommended when the available evidence warrants its use. All of this is covered in Chapter 1, so please cross-reference that discussion and consider overlap. (Michael Mastrandrea, IPCC WGII TSU)	Text removed
293	71679	2	8	20	8	20	To whom is this use of qualitative confidence recommended? (UNITED STATES OF AMERICA)	Text removed - see chapter 1
294	71680	2	8	20	8	23	Do the authors consider aleatory and epistemic uncertainty to be a part of the conceptual model uncertainty? If not, I recommend adding these concepts to this paragraph. I understand that uncertainty is thought of in many different ways, and I have seen model uncertainty treated separately from aleatory and epistemic uncertainty. Hence, this comment seeks to ensure the authors' intentions are captured. (UNITED STATES OF AMERICA)	Yes; this has been made more explicit and clearer
295	71681	2	8	20	8	23	This statement should be supported with a citation. (UNITED STATES OF AMERICA)	Text removed
296	81542	2	8	25	8	29	The chapter team should not add new material in the final draft that goes substantially beyond material reviewed within the second-order draft. Thus, the appropriateness of adding this box should be very carefully considered. (Katharine Mach, IPCC WGII TSU)	Used text close to what existed in the chapter
297	84583	2	8	25	8	29	If this material does not exist already in the SOD, the time is past for addition of new topics (Michael Mastrandrea, IPCC WGII TSU)	Used text close to what existed in the chapter
298	71682	2	8	31	9	5	In these two paragraphs, the authors appear to be contrasting the 2 cycles shown in Figure 2-2. However, the use of the same cycle description "assess risks, identify options, evaluate trade-offs loop" in both paragraphs is confusing. (UNITED STATES OF AMERICA)	Text condensed and clarified

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
299	78069	2	8	31	9	31	There is much in this section that is both interesting and useful. But there are some strange gaps too. I would argue that the problem of uncertainty varies fundamentally by the type of problem, the temporal and spatial scale of intervention, the category of decision maker, and (in some cases) the object of interest. I would argue that the longevity of water infrastructure combined with both the need of engineers for accurate, precise information, in combination with the lack of confidence in being able to project future states of the water cycle over the operational lifetime mean that there are severe problems in some key aspects water resources management and, by extension, economic development (Kundzewicz and Stakhiv 2010, Matthews/Wickel/Freeman 2011). Large hydropower and major urban utilities should be really worried. But water generally is associated with extremely high levels of uncertainty in future projections. Stationarity may be simply be a reasonable assumption for temporal scales under 10 years, for instance. I think the implication should be that for many communities of practice there needs to be a self-defined conversation that can describe the tolerance of risk and uncertainty and who (climate modelers, for instance) who be involved in defining that risk. (John Matthews, Conservation International)	This is a level of detail we could not get to and severely edited these paras in any case
300	77085	2	8	50	8	53	The Kirshen et al. example is unclear how this differs from the previous method of including uncertainty (assess risks, identify options, evaluate trade-offs). It seems that the example uses existing science from organizationally independent organizations (sea level rise model) to look at impacts and then the policy makers can interpret possible decisions. From the description of the "context-first" approach, the example should frame the question from the point of view of certain decisions that could be made, and then find the appropriate information needed to decide between those options. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	Clearer explanation of 'policy first' approach
301	85283	2	9	1	9	2	Go beyond to co-production and co-dissemination (Roger B Street, Oxford University)	Text omitted
302	71683	2	9	1	9	5	Are "information providers" and "producers" the same group? This is very difficult to follow. (UNITED STATES OF AMERICA)	Yes; we have made the text consistent by only using "providers"
303	77086	2	9	21	0	0	Also see Howard Kunreuther, Geoffrey Heal, Myles Allen, Ottmar Edenhofer, Christopher B. Field and Gary Yohe, "Risk Management and climate change" in Nature Climate Change. 24 March 2013. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	Thanks - noted
304	71684	2	9	31	9	31	What is meant by "set-based characterizations of uncertainty"? (UNITED STATES OF AMERICA)	Example removed
305	84584	2	9	34	11	7	Scenarios subsection: The description of types of scenarios and the logical flow of this section require refinement, particularly in the description of reflexive scenarios on p. 10. (Michael Mastrandrea, IPCC WGII TSU)	Section significantly shortened
306	60538	2	9	36	9	37	Suggest using the definition of scenario from AR4 WG2: "Scenario: A plausible and often simplified description of how the future may develop, based on a coherent and internally consistent set of assumptions about driving forces and key relationships. Scenarios may be derived from projections, but are often based on additional information from other sources, sometimes combined with a 'narrative storyline'." (Eric Toman, The Ohio State University)	Added glossary definition
307	71685	2	9	36	9	37	It seems strange to assign confidence to what is essentially a definition - and the authors should delete the confidence. (UNITED STATES OF AMERICA)	Done
308	60894	2	9	37	9	37	The "very high confidence" qualifier does not seem relevant for this sentence. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	See above
309	81543	2	9	40	9	41	What is meant here should be clarified. Is the author team indicating that scenarios have more extensively reflected socioeconomics, not just climate, in assessing topics related to climate change, or is the author team indicating that use of scenarios in non-climate-change applications has increased? (Katharine Mach, IPCC WGII TSU)	Clarified
310	60539	2	9	48	3	4	This paragraph is unclear. The current organization seems contradictory regarding the number/definition of scenario typologies. (Eric Toman, The Ohio State University)	Text removed
311	71686	2	9	48	10	4	The purpose of this description of scenario typologies is not evident. (UNITED STATES OF AMERICA)	See above
312	71687	2	9	54	9	54	The authors describe the "major groupings" of typologies, then immediately discuss a fourth (Exploratory). (UNITED STATES OF AMERICA)	See above
313	60540	2	10	6	10	10	These sentences are unclear and do not seem to be tied together by any type of common thread. How does a reflexive scenario "work with wicked problems"? How are these similar/different from problem, solution, or actor-based scenarios? (Eric Toman, The Ohio State University)	Text amended
314	78953	2	10	6	10	10	The text here is not clear, perhaps a figure would help. (Richard Jones, Met Office Hadley Centre)	See above
315	71688	2	10	6	10	14	This entire paragraph is unclear in terms of meaning. (UNITED STATES OF AMERICA)	Para edited (see above) and some cut

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
316	81544	2	10	6	10	14	Given the opening sentence of the paragraph, it would be helpful to clarify further how these are reflexive scenarios. (Katharine Mach, IPCC WGII TSU)	Done
317	68790	2	10	10	10	11	Suggestion: Several generations of scenarios produced by IPCC assessments, and national climate scenarios in the UK and Australia, indicate this... (NETHERLANDS)	Text deleted
318	71689	2	10	13	10	14	Is "the new scenario matrix" the RCPs? (UNITED STATES OF AMERICA)	Text deleted
319	60541	2	10	16	10	18	These sentences are unclear. (Eric Toman, The Ohio State University)	Text drastically reduced
320	78954	2	10	16	10	22	The text here is not clear, perhaps a figure would help. (Richard Jones, Met Office Hadley Centre)	Text edited with refs added
321	81545	2	10	16	10	22	Citations should be provided for these statements, and it would be helpful to clarify their logic with respect to the previous 2 paragraphs. (Katharine Mach, IPCC WGII TSU)	Text edited with refs added
322	62742	2	10	18	10	19	Should read "in methodological terms "," (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text deleted
323	62743	2	10	24	10	24	Should read" within a standard research methods applied to access CCIAM, scenarios occupy a relatively uncomfortable position" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text deleted
324	81546	2	10	24	10	24	It would be helpful to specify further what is meant by "uncomfortable place" in this sentence. (Katharine Mach, IPCC WGII TSU)	Text deleted
325	84585	2	10	24	10	24	Why uncomfortable? Please clarify. (Michael Mastrandrea, IPCC WGII TSU)	Text deleted
326	85286	2	10	29	10	31	Is this tension necessary / constructive? Is it a tension created by the separate communities? (Roger B Street, Oxford University)	Text deleted
327	68791	2	10	29	10	36	This paragraph describes the tension between science and policy. We think it would be helpful if this is made explicit, mainly because these type of issues are addressed in the literature as science-policy issues. (NETHERLANDS)	Text deleted
328	71690	2	10	29	10	36	The idea of a "tension" is surprising and requires fuller explanation than is given here. (UNITED STATES OF AMERICA)	Text deleted
329	84586	2	10	30	10	53	There is often a distinction made between prediction and projection in the context of scenarios and scenario development that is not included in this section, where prediction is used. Please consider word choice or explaining the distinction. (Michael Mastrandrea, IPCC WGII TSU)	Text deleted
330	81547	2	10	32	10	32	It would be helpful to clarify further what is meant by "theoretical application." (Katharine Mach, IPCC WGII TSU)	Text deleted
331	81548	2	10	33	10	33	For the statement "scenarios can fill that gap," can they do so fully? Would further qualification be more accurate? (Katharine Mach, IPCC WGII TSU)	Text deleted
332	78955	2	10	35	10	35	Replace "may also be" with "will generally". (Richard Jones, Met Office Hadley Centre)	Text deleted
333	81549	2	10	41	10	41	For the statement on this line, are dangerous climate change and sustainability ever directly predicted, for example following from the challenges characterized in the previous sentence? (Katharine Mach, IPCC WGII TSU)	Text deleted
334	78956	2	10	41	10	43	Insert reference(s) to support the statement. (Richard Jones, Met Office Hadley Centre)	Text deleted
335	68792	2	10	42	10	42	Participatory process' of whom? Of citizens? Stakeholders? (NETHERLANDS)	Text deleted
336	77562	2	10	46	10	49	Please quote some examples from at least distantly related literature (Malini Nair, Indian Institute of Science)	Text deleted
337	84587	2	10	47	10	48	It would be useful to clarify what is meant by "robust to uncertainty" here for clarity. (Michael Mastrandrea, IPCC WGII TSU)	Text deleted
338	60542	2	10	49	10	49	What is meant by "priors"? (Eric Toman, The Ohio State University)	Text deleted
339	71691	2	11	1	11	1	The terms "tame" and "wicked" as used here may be unfamiliar to readers and should be defined. (UNITED STATES OF AMERICA)	Wicked has been defined earlier, tame no longer used
340	78957	2	11	1	11	1	Please replace "tame and wicked" with plain English terms. (Richard Jones, Met Office Hadley Centre)	Not using tame but wicked is defined in the literature and widely used. Defined earlier
341	68793	2	11	1	11	2	The separation into tame and wicked seems simplified. Several typologies/taxonomies address multiple types of problems. See for example, Pielke 2007, Weiss 2003, and Hisschemoller and Hoppe 2001. (NETHERLANDS)	See Figure 2-2
342	60543	2	11	1	11	7	The idea of tame risks was not discussed previously. If include here, should introduce in more depth earlier (when wicked problems first introduced). (Eric Toman, The Ohio State University)	See Figure 2-2
343	81550	2	11	2	11	2	In place of "moderate" the term "medium" should be used given the uncertainties guidance for authors. (Katharine Mach, IPCC WGII TSU)	Done

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
344	81551	2	11	2	11	7	For these statements, either further calibrated uncertainty language should be provided, or citations should be provided. (Katharine Mach, IPCC WGII TSU)	Both actions and text edited
345	60639	2	11	3	0	0	Add?: However, even for wicked problems, it is possible to delineate unacceptable risks (low probability, but inordinate consequence) to prioritize decision-making. (George Backus, Sandia National Laboratories)	wording added
346	85289	2	11	3	11	3	Is it just illustrating alternative solutions or also assessing these solutions? (Roger B Street, Oxford University)	Wording added
347	78958	2	11	3	11	3	Please replace "wicked" with plain English term. (Richard Jones, Met Office Hadley Centre)	See earlier comments
348	71692	2	11	4	11	4	What is unique about "wicked problems" that requires thorough scoping? Do tame problems not require thorough scoping? (UNITED STATES OF AMERICA)	The scope of simple problems is relatively straightforward, for wicked problems it is not
349	71693	2	11	7	11	20	Do the "process and goal-oriented methods" mentioned on line 7 correpond to the "outcomes-based" and "process-based" methods described on lines 19-20? The similar terminology is confusing if these are different concepts. (UNITED STATES OF AMERICA)	Text deleted
350	81552	2	11	10	0	0	Section 2.2.1.2. This section should be substantially further coordinated with chapter 17 especially. Overlap should be reduced, and assessment harmonized appropriately. (Katharine Mach, IPCC WGII TSU)	Section highly edited, now more diverse, linked to 17
351	84588	2	11	10	0	0	Section 2.2.1.2: Please coordinate this discussion with other chapters covering similar topics, including Chapter 17. (Michael Mastrandrea, IPCC WGII TSU)	See above
352	59257	2	11	12	12	33	In Section 2.2.1.2, the focus is only on how to identify relevant criteria and not on methods and tools used to generate judgements taking into account competing criteria and conflicting points of view. The title of this section might change to better reflect its content (e.g. decision criteria). (Danae Diakoulaki, Chemical Engineering, NTUA, Greece) (GREECE)	Section has been edited to achieve this
353	60785	2	11	15	11	16	It would be good to make these and linkages back to Chapter 2 explicit in other Chapters as mentioned in previous comment, as they are (mostly) not there at the moment (Bob Webb, Australian National University)	Chapter is now much better linked
354	71694	2	11	24	11	38	The purpose of this paragraph is not clear. (UNITED STATES OF AMERICA)	Paragraph has been edited for length and clarity and is now at the end of this section
355	68794	2	11	24	11	46	Suggestion: exchange paragraphs (line 24-38) and (line40-46) to structure the section according to the way the criteria's are introduced in the paragraph on lines 18-22. (NETHERLANDS)	Space reasons means this section underwent a severe edit - this structure no longer here
356	78959	2	11	34	11	35	Please insert example(s) of "utilitarian-based ethical frameworks". (Richard Jones, Met Office Hadley Centre)	Text removed
357	81553	2	11	40	12	2	Citations should be provided for these statements. (Katharine Mach, IPCC WGII TSU)	Most text removed
358	62744	2	11	50	11	50	Cost-effectiveness criteria (give simple example) (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text removed - Chapter 17 matter
359	71695	2	11	50	11	51	This sentence seems nonsensical. How can cost-effectiveness criteria be useful when one cannot quantify benefits? (UNITED STATES OF AMERICA)	The text has been removed, but really, decisions are made on sorts of grounds (e.g., political expediency, ethical grounds), then cost effectiveness is used to assess the best way to go about implementing that decision.
360	77563	2	12	6	12	6	How is modern portfolio theory applicable in such a vast literature as climate science? Please provide an example in at least a sentence (Malini Nair, Indian Institute of Science)	Text removed
361	77564	2	12	11	12	20	Examples? (Malini Nair, Indian Institute of Science)	Text removed
362	85293	2	12	14	12	14	It would be usef to provide an example of when uncertainties are well-characterised. (Roger B Street, Oxford University)	Text removed
363	81554	2	12	17	12	17	Should "low regrets" approaches be mentioned here in place of or in addition to "no regrets"? (Katharine Mach, IPCC WGII TSU)	Text removed
364	64843	2	12	22	12	33	robustness and resilience - many good definitions in the chapter - a glossary would make a useful contribution (Leon Soste, Department of Primary Industries, Victoria, Australia)	Have been added to glossary
365	78960	2	12	23	12	23	What does a "satisfying criteria" mean here? Please explain. (Richard Jones, Met Office Hadley Centre)	v brief explanation added
366	71696	2	12	23	12	26	The second sentence of this paragraph is potentially confusing. Is "satisficing" the correct word or is there a typo? If it is a typo, perhaps correcting that word will clarify the sentence. (UNITED STATES OF AMERICA)	explanation added
367	81555	2	12	38	12	30	The phrase "is sure to surprise us" could be clarified. (Katharine Mach, IPCC WGII TSU)	Then where's the surprise?

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
368	62745	2	12	38	12	38	Learning (as a cognitive tool for development, is a crucial aspect of CCI/AV... (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Wording of the sentence changed beyond where this edit would assist
369	71697	2	12	38	12	38	Should say "climate change is "likely" to surprise us (high confidence). (UNITED STATES OF AMERICA)	Wording no longer included
370	60583	2	12	38	12	47	Section 2.2.1.3, paragraph 1: it would be useful to add in text about using forecasts here, including weather forecasting, medium-range forecasts and seasonal forecasts (Chris Hewitt, Met Office)	We have preferred to be generic about new information, leaving the usefulness/critiques of forecasts out due to space reasons.
371	59258	2	12	38	14	16	The section focuses on learning approaches and adaptive management. Important aspects on the elicitation of preferences, cognitive approaches, willingness to adapt etc are not clearly described. (Danae Diakoulaki, Chemical Engineering, NTUA, Greece) (GREECE)	We have only had room to give a brief introduction without being able to elaborate along these lines
372	60544	2	12	44	12	44	Suggest changing "shocks" to "disturbances." (Eric Toman, The Ohio State University)	Text removed
373	62746	2	12	49	12	49	Should read "the concepts of adaptive management (learning by doing)... (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text heavily edited
374	64844	2	12	49	13	4	adaptive management - I wonder whether AM (particularly passive AM as defined here) might also include the consideration and creation of flexibility in both systems and individual options - an area of research which has not yet received a great deal of consideration across different disciplines (Leon Soste, Department of Primary Industries, Victoria, Australia)	Have provided a more active description but little extra detail (space restrictions)
375	81556	2	12	50	12	53	The glossary could be cross-referenced for this statement. (Katharine Mach, IPCC WGII TSU)	Done
376	64845	2	13	0	0	0	Figure 2-4 participants to decisions define 'objectives' not 'objections'. (Leon Soste, Department of Primary Industries, Victoria, Australia)	Figure deleted
377	78003	2	13	0	0	0	Please add the very important issues of heat - health action plans, which have now been implemented in 18 European Member States. (Bittner et al, under publication, WHO Bulletin). It represents a very important story of multisectoral decision making and planning, including long term and short term - including early warning. Further PUBS: 2. WHO (2011) Public health advice on preventing health effects of heat. New and updated information for different audiences. WHO Regional Office for Europe, Copenhagen. (available at: http://www.euro.who.int/__data/assets/pdf_file/0007/147265/Heat_information_sheet.pdf ; accessed 18 October 2012) 4. WHO (2009a) EuroHEAT: Improving public health responses to extreme weather events /heat-waves; Summary for policy makers.WHO Regional Office for Europe, Copenhagen. (available at: http://www.euro.who.int/__data/assets/pdf_file/0009/95913/E92473.pdf ; accessed 19 October 2012) 5. WHO (2009b). EuroHEAT: Improving public health responses to extreme weather events /heat-waves; Technical summary.WHO Regional Office for 8. Lowe D, Ebi KL, Forsberg B. Heatwave early warning systems and adaptation advice to reduce human health consequences of heatwaves. Int J Environ Res Public Health. 2011;8(12):4623-4648 13. Morabito M, Profili F, Crisci A, Francesconi P, Gensini GF, Orlandini S. Heat-related mortality in the Florentine area (Italy) before and after the exceptional 2003 heat wave in Europe: an improved public health response? Int J Biometeorol. 2012;56(5):801-810 (Bettina Menne,	We have not been able to retain these examples - they are included elsewhere in the report
378	85296	2	13	0	13	0	Will there be a discussion of the limits of adaptive management (e.g., when confronted with need for transformational adaptation, especially when urgency will tax small adjustments)? (Roger B Street, Oxford University)	Not in any detail, but transformative actions are briefly described in 2.5.3
379	62747	2	13	1	13	54	Section should provide more concrete examples from the Pacific island countries and territories (PICTs) (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Space precludes
380	71698	2	13	12	13	12	(Hertzler, 2007) reference is not listed in the reference section. (UNITED STATES OF AMERICA)	Text removed
381	78961	2	13	36	12	39	In text and Figure 2-4 replace "participants to a decision" with "participants in a decision" (Richard Jones, Met Office Hadley Centre)	Figure removed and replaced by new one (2-3)
382	59818	2	13	46	13	53	Important to note that another barrier is the need to balance learning outcomes with the mindset that governments need to be able to show on the ground outcomes and value for the expenditure of public funds. (AUSTRALIA)	Text removed
383	56779	2	14	19	0	0	Section 2.2.2 on Institutional Context defines institutions quite clearly, but does not clearly define governance. It also does not indicate how these two concepts, which are often used interchangeably, are interlinked or differentiated within the conceptual framework being utilized. As such it is unclear to reader how exactly good governance provides "key institutional settings for addressing problems" line 40 p. 15. For good overview of these issues, see Dover, S. and Hezri, A. 2010. Institutions and policy processes: the means to the ends of adaptation. WIRES Climate Change 1(1): 212-231. (Ainka Granderson, University of Melbourne)	These interlinkages are described, but only briefly due to space reasons

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
384	58926	2	14	19	0	0	Section 2.2.2. The first sentence is a great motivator. But the section does not tell us in what way institutions can be effective in CCIIV. The last sentence says that institutions need to be updated but it is not clear in what way. I suggest this section should provide more concrete advice or be deleted. If it is retained, the various subsections should have references to other chapters which use the concepts discussed here. (David Wright, University of Ottawa)	We have added more links to other chapters
385	60895	2	14	25	15	33	This section is confusing. Capacity building is hardly mentioned, and it deals mostly with institutions without a clear conclusion. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	The issue of institutions role in capacity building addressed
386	81557	2	14	27	14	30	In defining "institutions," the glossary should be cross-referenced. (Katharine Mach, IPCC WGII TSU)	OK. Agreed and done
387	78962	2	14	31	14	32	The sentence "The strength ..." is not clear, please rephrase or elaborate. (Richard Jones, Met Office Hadley Centre)	Agreed and rephrased
388	85300	2	14	40	14	40	Need to be clear as to the context in which adaptation is a local issue. It can also play out at the national and regional levels with all levels having implications for the others. Inconsistencies across these levels can lead to maladaptation (Roger B Street, Oxford University)	Addressed the issue of "maladaptation"
389	62748	2	14	43	14	43	Ambiguous statement "identified institution is one of the key determinants of adaptive capacity" (what institutional proponents are determinants of adaptive capacity)? (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Disagree
390	59819	2	14	53	14	53	Presence alone is not sufficient. Institutions themselves need to be effectively functioning and accept they have a role in reducing vulnerability. They also need the capacity to take action to reduce vulnerability. (AUSTRALIA)	Agreed and rephrased
391	78963	2	14	53	14	53	What does a "uniform presence" mean here? Please explain. (Richard Jones, Met Office Hadley Centre)	"Uniform presence" refers to presence of institutions to plan, implement and monitor adaptation projects in all the areas vulnerable to climate change
392	66241	2	15	0	31	0	The chapter clearly shows the link between water availability and the observed and projected climate change worldwide. (Leopold Some, Centre National de la Recherche Scientifique Technologique)	This comment does not belong to Chapter 2
393	60584	2	15	1	15	1	suggest "... Long-term responses to climate change and climate variability" (Chris Hewitt, Met Office)	Agreed and rewritten
394	78964	2	15	6	15	6	I do not agree that "Climate change is a development issue", it is an issue for development. Please rephrase. (Richard Jones, Met Office Hadley Centre)	Agreed but rephrased as "Climate change adaptation is a development issue"
395	68795	2	15	6	15	7	Strong claim. Climate change does not specifically/only impact sustainable development in developing countries, right? Maybe rephrase the sentence into "Climate change is a development issue and the risks from climate change could, amongst others, significantly impact sustainable development in developing countries". (NETHERLANDS)	Agreed and incorporated the suggested change
396	60585	2	15	6	15	10	This text supports the usefulness of taking into account current climatic conditions and climate variability (Chris Hewitt, Met Office)	OK
397	85302	2	15	6	15	12	Some evidence suggest that organisations with responsibilities for DRR, those for planning and other for CCA do not necessarily work in concert with negative implications (Roger B Street, Oxford University)	Noted
398	81558	2	15	8	15	8	The wording here could be adjusted to ensure the statement is not interpreted as prescriptive. (Katharine Mach, IPCC WGII TSU)	Rephrased
399	80127	2	15	11	0	0	Please add "Multilateral... and bilateral...institutions are responding to these challenges. You could use SEI, 2009 as a source: http://www.sei-international.org/mediamanager/documents/Publications/Climate-mitigation-adaptation/bilateral-finance-institutions-climate-change.pdf (Jochen Harnisch, KfW)	Agreed and added
400	78965	2	15	17	15	17	Please explain "organised field building", this is not clear. (Richard Jones, Met Office Hadley Centre)	The sentence is re-written
401	71699	2	15	23	15	31	This paragraph introduces two concepts "Discursive frame analysis" and "Analytic Deliberation" with very little explanation and no apparent purpose. (UNITED STATES OF AMERICA)	The paragraph is removed.
402	71700	2	15	25	15	28	Sentence beginning "frame structure,..." conveys no meaning. (UNITED STATES OF AMERICA)	The paragraph is removed.
403	68796	2	15	27	15	28	Unclear sentence. Suggestion: Discursive frame analysis helps to understand how various issues are described, what actors are involved, and their methods of organization.' (NETHERLANDS)	The paragraph is removed.
404	71701	2	15	27	15	28	Discursive frame analysis that understands how various issues are described, the actors involved and their methods of organisation. This is an incomplete sentence. Interesting section, please fix or expand. (UNITED STATES OF AMERICA)	The paragraph is removed.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
405	78966	2	15	27	15	28	The sentence "Discursive ..." is either incomplete or needs rewording. (Richard Jones, Met Office Hadley Centre)	The paragraph is removed.
406	60896	2	15	34	0	0	This section is very theoretical. Some of the literature cited is rather old. There are statements that are quite obvious. The importance of governance for adaptation is not duly highlighted. Some examples of governance schemes and systems in different adaptation strategies would have been very helpful. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	New references have been added and the importance of governance in adaptation is highlighted
407	64304	2	15	36	0	0	The governance concept has been introduced in political science as a differentiation from government concept. Government is top-down, governance is bottom-up. (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	Noted
408	71702	2	15	39	15	39	The purpose of the distinction between governance and good governance is not clear. (UNITED STATES OF AMERICA)	The sentence is deleted
409	62749	2	15	39	15	40	What is the difference between governance and good governance. This sentence previous only describes governance. Perhaps suggestion would be to add what good governance is (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	The sentence is deleted
410	81559	2	15	40	15	40	Use of "requires" could be reconsidered to ensure a policy neutral formulation. (Katharine Mach, IPCC WGII TSU)	Agreed. Rephrased.
411	60897	2	15	40	15	41	An obvious statement about adaptation and mitigation requiring governance, don't build on the potential differences and specificities of adaptation governance versus mitigation governance. This could have been one of the key axes of this chapter. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Noted
412	81560	2	15	41	15	44	The key findings of chapters 19 and 20 should be cross-referenced here. (Katharine Mach, IPCC WGII TSU)	Text completely re-edited, discussing different points; other chapters are referenced
413	68797	2	15	43	15	43	"increase with increasing" - this is confusing. Maybe change the second one into 'progressing/growing or the like'. (NETHERLANDS)	Agreed and re-worded
414	60545	2	15	54	15	54	Is the use of "very likely" here meant to follow WG2 conventions? If so, clarify by italicizing both words and possibly include a definition in parentheses. (Eric Toman, The Ohio State University)	Rephrased
415	78967	2	15	54	15	54	Is "very likely" being used in an "IPCC sense"? Also, the sentence does not end. (Richard Jones, Met Office Hadley Centre)	Rephrased
416	81561	2	15	54	15	54	Casual usage of "very likely" should be avoided, as it is a reserved likelihood a term. To characterize its degree of certainty in the statement, the author team may wish to consider instead a level of confidence. (Katharine Mach, IPCC WGII TSU)	Rephrased
417	69861	2	16	0	0	0	Non economic perspective should be added when addressing 'value' in the social context pg.16 or 'assessing damage' within future scenarios of cc pg. 29. (Cosmin Corendea, United Nations University Institute for Environment and Human Security)	Noted
418	66242	2	16	0	16	0	Figure 2.1 could be simplified to make it more understandable (Leopold Some, Centre National de la Recherche Scientifique Technologique)	It is now simplified
419	85306	2	16	1	16	2	What are the implications from a governance or legal dimension perspective? (Roger B Street, Oxford University)	This example has been edited down to a single sentence referenced to internal law and sovereignty.
420	60586	2	16	1	16	8	It would be good to link this paragraph to climate services (Chris Hewitt, Met Office)	Noted
421	81562	2	16	2	16	2	Where Chapter 6 is cross-referenced, it would be preferable to indicate the specific relevant sections. Additionally, chapter 28 could be cross-referenced here. (Katharine Mach, IPCC WGII TSU)	Agreed and Chapter 28 also referenced here
422	71058	2	16	3	0	0	Suggest adding a reference for "...may result in new territorial claims". (CANADA)	Agreed and added
423	60898	2	16	3	16	0	The phrase "Runoff changes ... precipitation" implies seasonal precipitation will reduce which is incorrect in general and so this needs rephrasing. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Agreed and re-written
424	78968	2	16	3	16	4	The phrase "Runoff changes ... precipitation" implies seasonal precipitation will reduce which is incorrect in general and so this needs rephrasing. (Richard Jones, Met Office Hadley Centre)	Agreed and re-written
425	60899	2	16	5	16	0	As with the runoff statement above, "Addition food insecurity" is quoted as a "given" and without supporting references. Please rephrase and/or add references. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Text removed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
426	78969	2	16	5	16	5	As with the runoff statement above, "Addition food insecurity" is quoted as a "given" and without supporting references. Please rephrase and/or add references. (Richard Jones, Met Office Hadley Centre)	Text removed
427	58927	2	16	11	0	0	Section 2.2.3. This section details differences in ethics, decision making, risk perception etc. among different cultures and societies, but does not tell us how those differences affect climate change adaptation. I suggest in each subsection addressing the question: "Given that there are these differences what should we do about them in order to adapt most effectively to climate change?" (David Wright, University of Ottawa)	These sections have been rewritten with these points in mind
428	81563	2	16	11	0	0	Section 2.2.3. Throughout this section, the chapter team should coordinate its assessment with chapters 14-17 as much as possible. Cross-references to specific relevant sections should be made, with chapter 16 especially relevant, and overlap should be reduced. (Katharine Mach, IPCC WGII TSU)	References to other chapters have been included
429	71703	2	16	11	23	25	Section 2.2.3 seems particularly ineffective. Many statements are made which are no doubt true. However, no logic to the organization of the section is apparent. Also, if there are key messages for the reader, these are not apparent either. (UNITED STATES OF AMERICA)	These sections have been rewritten with these points in mind
430	60900	2	16	32	17	14	This is currently a weak section, considerably shorter than other sections (e.g. the one on psychology), the ultimate point of which needs to be clearer. I rather disagree with the opening sentence. Certainly in academia at least, governance is no longer viewed in this way. However, government is indeed still the major actor in many contexts. Other sources on the subject of climate change governance could be consulted/ referenced, e.g. Ostrom E. Polycentric systems for coping with collective action and global environmental change. Global Environmental Change 2010, 20: 550–557. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	True, Ostrom is really useful but has been little used in this respect (have been working on these issues myself - rj). Still the section has been rewritten but we had no room to expand, which is a pity
431	60901	2	16	38	0	38	The apparent suggestion that mitigation cannot be complementary with adaptation contradicts what has been said in section 1.2.5. This reinforces the need to make a better job of introducing the links in Ch 1. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Text removed
432	62262	2	16	40	16	41	Though there may be a paucity of case studies or theoretical models dealing with the effect of values on contemporary adaptive decision-making, there are numerous historical, archaeological, and anthropological studies that explicitly address the effect of cultural and social values on adaptation and adaptive capacity. Perhaps this is an area where further consideration of historical examples could make up for the current dearth of contemporary information. See: Karl Butzer & Georgina Endfield, special issue of PNAS, 109.10 (2012) including their introductory piece "Critical perspectives on historical collapse." pgs. 3628-3621. (Adam Sundberg, University of Kansas)	The section is now focusing on cultural and social values, whereas Chapter 17 is more economic in scope
433	62750	2	16	43	16	43	Should read " the importance of cultural values and traditions in decision-making related to climate change... " (Dan F. Orcheron, PACE-Pacific Centre for Environment and Sustainable Development)	This part of the text has been moved to the next paragraph.
434	60546	2	16	43	16	45	The second point here is unclear and the text does not seem to return to it below. (Eric Toman, The Ohio State University)	This section has been deleted.
435	85309	2	17	1	17	2	Evidence suggests that there is a diversity of values within a given community (not a homogeneous entity) and that these values can change over time (as the community evolves). Not sure whether there is literature on this diversity or evolution. (Roger B Street, Oxford University)	This part has been deleted.
436	71704	2	17	1	17	8	This paragraph is a good example of a key weakness of this chapter. Statements are made here which are not tied to anything that comes before or after in the chapter. So why does the reader need to know this? There's no logical sequence of thoughts; just a lot of disconnected blocks of material. (UNITED STATES OF AMERICA)	This part has been deleted.
437	60548	2	17	1	17	52	It is unclear how these different ideas relate to each other. As currently written, this section feels like a collection of unrelated concepts. (Eric Toman, The Ohio State University)	The section has been reorganized with clear arguments.
438	84589	2	17	7	17	40	Lines 7-8 and 35-40 overlap, and it would be useful to clearly present the linkage between them. (Michael Mastrandrea, IPCC WGII TSU)	Lines 7-8 have been deleted to avoid overlap does not exist.
439	71705	2	17	22	17	24	This is vague. What is "local" and "comprehensive" information processing? (UNITED STATES OF AMERICA)	Thanks for the remark, the text has been modified: local/global
440	81564	2	17	22	17	24	It would be helpful to indicate more specifically what is meant by "local information processing" versus "more comprehensive information processing." (Katharine Mach, IPCC WGII TSU)	Thanks for the remark, the text has been modified: local/global
441	60902	2	17	29	17	29	Readers could usefully be directed to a definition of maladaptation somewhere in the document. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	In this line there is no reference to maladaptation. Indeed maladaptation is treated frequently in the report. Maladaptive actions are defined in the glossary.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
442	60903	2	17	31	18	9	On monitoring and evaluation, see also: Haris E. Sanahuja (2011). Tracking Progress for Effective Action A Framework for Monitoring and Evaluating Adaptation to Climate Change. Global Environment Facility. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Thanks for this reference but it does not concern the question of values and decision making.
443	64894	2	17	32	17	32	See also Orlove et al. (2010) Indigenous Climate knowledge in southern Uganda: the multiple components of a dynamic regional system. In Climatic Change 100(2): 243-265 and (Ameyali Ramos Castillo, United Nations University - Institute of Advanced Studies)	Thanks for this reference, but this article concerns indigenous knowledge in adaptation and not specifically the role of values in decision making
444	81565	2	17	35	17	37	Should overlap with the value orientations on lines 7-8 be acknowledged? (Katharine Mach, IPCC WGII TSU)	They have been linked but unfortunately the discussion has been much truncated due to space reasons
445	68798	2	17	35	17	40	We think it is a bit confusing that not the standard groups of the cultural theory are used. We guess the authors chose Kahan's terminology on purpose. Maybe a bit more explanation on this terminology is warranted? (NETHERLANDS)	Text removed
446	56343	2	17	41	0	0	Section 2.2.3.1 Value setting has a major gap. It talks about value setting and talks about interesting theories such as cultural theory of risk perception, but entirely misses the subject of indigenous values and perceptions of climate change. I think it needs a paragraph, perhaps at about line 41 on p. 17, on this topic, using such references as: Huntington, H.P., S. Fox, F. Berkes, I. Krupnik et al. 2005. The changing Arctic: Indigenous perspectives. Chapter 3, Arctic Climate Impact Assessment (ACIA). Cambridge Salick, J. and N. Ross. 2009. Traditional peoples and climate change [Introduction to Special Issue]. Global Environmental Change 19: 137-139. Eicken, H. 2010. Indigenous knowledge and sea ice science: What can we learn from indigenous ice users? Pages 357- 376, in: Krupnik, I.; Aporta, C.; Gearheard, S.; Laidler, G.J.; Kielsen Holm, L. Eds. 2010. SIKU: Knowing Our Ice: Documenting Inuit Sea Ice Knowledge and Use. Springer. Marin, A. 2010. Riders under storms: contributions of nomadic herders' observations to analysing climate change in Mongolia. Global Environmental Change 20: 162-176. Nakashima, DJ, Galloway, K, McLean, M, Thurlstrup, HD, Ramos Castillo, A, Rubis, J Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation. UNESCO, Paris, 2012 (Fikret Berkes, University of Manitoba)	Thank for these remarks, some more references will be included and indigenous knowledge in climate change adaptation will be treated, in this chapter in the Climate services section.
447	60547	2	17	42	17	45	Paragraph is unclear. How does it relate to the others here? What does this paragraph add? (Eric Toman, The Ohio State University)	This paragraph has been deleted.
448	71706	2	17	42	17	45	Suggest omitting this paragraph. (UNITED STATES OF AMERICA)	This paragraph has been deleted.
449	81566	2	17	51	17	52	In place of "moderate confidence," the phrase "medium confidence" should be presented in italics. (Katharine Mach, IPCC WGII TSU)	We will make the modification.
450	63257	2	18	0	18	0	Something is wrong with the two headings on this page. The heading "Psychological factors"(line 39) is not numbered; I assume it is supposed to be 2.2.3.3. But if this heading is on the same level as heading 2.2.3.2. (Cultural Determinants and Psychology, line 1) then psychology shouldn't be part of both. I suggest you use 2.2.3.2. Cultural Determinants and 2.2.3.3. Psychological Factors. (Gisela Böhm, University of Bergen)	This section has been reorganized.
451	63258	2	18	4	18	5	The statement "Decision making in climate science cannot be described as rational" is highly debatable. First, I am not sure what "cannot be described as" means - do you mean that some evidence shows that decisions often deviate from rationality? Second, the term rational is contentious. You cannot say that decisions are not rational without specifying what you mean with rational. Usually rationality refers to adherence to the rationality axioms, which is a very specific sense. Research does not warrant such a strong statement as yours in such generality. (Gisela Böhm, University of Bergen)	This sentence concerns the relationship between individual decision making and environmental behavior. Literature provides evidence of important cognitive bias in (complex) decision making process.
452	71707	2	18	4	18	5	The meaning of the sentence beginning "Decision-making" is unclear. (UNITED STATES OF AMERICA)	This sentence concerns the relationship between individual decision making and environmental behavior. Studies provide evidence to the cognitive biases in (complex decision making) processes. A small definition on rationality will be added.
453	60549	2	18	9	18	14	This seems to be a lot of space dedicated to one paper that describes one approach to describe how people may make decisions relating to ecological issues. I suggest reducing substantially and emphasizing the literature on decision-making in general and related to climate change. Where it makes sense, the writing can also bring in well developed concepts from other areas but I would suggest against relying too heavily on individual papers or research into ecological decision-making versus those from other relevant areas (e.g., health, transportation, etc.). (Eric Toman, The Ohio State University)	This part has been deleted.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
454	60550	2	18	16	18	17	As above, the connection to climate change decision making seems tenuous here. (Eric Toman, The Ohio State University)	This part have been related more strongly to decision making.
455	71708	2	18	20	18	20	what is "a gift economy?" (UNITED STATES OF AMERICA)	The gift economy has been deleted as we do not have space to explain it.
456	78970	2	18	23	18	23	Consider the terms "associative", "similarity" and "contiguity" for the glossary. (Richard Jones, Met Office Hadley Centre)	It is difficult to include these terms in the glossary, but we will include some short definitions in the text.
457	85312	2	18	30	18	32	Would help to indicate what that influence is on complex problem-solving or to provide an example. (Roger B Street, Oxford University)	We do not have enough space to provide examples
458	63261	2	18	34	18	36	What do you mean that policy makers' knowledge is less impotent than journalists'? Important for what? What Sundblad et al. showed is that politicians know less about climate change causes, consequences, and the state of the climate system than journalists. (Gisela Böhm, University of Bergen)	Thanks for this remark. We deleted these references due to space limitation.
459	78309	2	18	34	18	36	The term 'cultural knowledge' is inappropriate in this context. All knowledge, even scientific knowledge, is ultimately cultural (the history of science documents the origins of science in Occidental culture, and even though the practice of science has been adopted by a wide variety of other socio-cultural groups, the cultural specificities of scientific thought persist). A more appropriate term in the context of this paragraph would be 'indigenous and local knowledge'. ALSO SUGGEST ADDING TO THE END OF THIS PARAGRAPH: Recent reviews of the scientific literature on the relevance of local, traditional or indigenous knowledge for CCAV include: Roncoli, C., Crane, T. and Orlove, B. 2009. Fielding climate change in cultural anthropology. In: S.A. Crate and M. Nuttall (eds.) Anthropology Climate Change From Encounters to Actions. Left Coast Press, pp. 87–115 [citing 192 sources]; Crate, S.A. 2011. Climate and culture: anthropology in the era of contemporary climate change. Annual Review of Anthropology, 40, 175–94 [citing 136 sources]; Nakashima, D.J., Galloway McLean, K., Thulstrup, H.D., Ramos Castillo, A. and Rubis, J.T. 2012. Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation. Paris, UNESCO, and Darwin, UNU, 120 pp. [citing 305 sources]. (Douglas Nakashima, UNESCO)	Thank for this comment, instead of "cultural knowledge", we use the term cultural local knowledge, what can be more appropriate than indigenous and local knowledge which can be more discriminating for a lot of groups. We agree that all knowledge is cultural, The references you proposed are partly included, in this chapter, in the section of Climate services. Due to the limitation of space we can't include them here.
460	71709	2	18	39	18	39	The subsection title "Psychological factors" is apparently missing a subsection number. Perhaps it is supposed to be 2.2.3.3. (UNITED STATES OF AMERICA)	It has been modified.
461	63262	2	18	39	19	41	Particularly in this section on psychological factors, which is my own expertise, I notice that the wording is often strange. The sentences often just do not seem quite right. It is difficult to tell whether the concepts are used correctly. I assume that much of this ambiguity and confusion is solved when the chapter is proof read by an English native speaker. (Gisela Böhm, University of Bergen)	The text have been reviewed.
462	64305	2	18	39	19	41	The section is strongly underrepresenting the many psychological publications on factors influencing climate change perception and responses. A good overview is given in APA, 2010. Major psychological theories for describing and explaining adaptation decisions and behavior are not mentioned: Protection Motivation Theory (PMT; Rogers, 1983; Rogers and Prentice-Dunn, 1997), Person-relative-to-event (PrE) model (Mulilis and Duval, 1997) , Protective Action Decision Model (PADM) (Lindell and Perry, 1992; Lindell and Perry, 2012). Particularly factors dealt with in social psychological research on climate change (group norms, ideologies, learning by observation etc.) are strongly underrepresented. References: APA – American Psychological Association: Psychology and Global Climate Change – addressing a multifaceted phenomenon and set of challenges. A Report of the American Psychological Association Task Force on the Interface Between Psychology and Global Climate Change. APA, 2010. Lindell, M. K. and Perry, R. W.: Behavioral foundations of community emergency planning. Hemisphere, Washington, DC, 1992. Lindell, M. K. and Perry, R. W.: The Protective Action Decision Model: Theoretical Modifications and Additional Evidence. RISK ANAL 32 (4): 616–632, 2012. Mulilis, J. P. and Duval, T. S.: The PrE model of coping and tornado preparedness: Moderating effects of responsibility. J APPL SOC PSYCHOL, 27 (19): 1750- 1766, 1997. Rogers, R. W.: Cognitive and physiological processes in fear appeals and attitude change: a revised theory of protection motivation, in: Cacioppo, B. L. and Petty, L. L. (eds.), Social Psychophysiology: A Sourcebook. Guilford, London, 153-176, 1983. Rogers, R. W. and Prentice-Dunn, S.: Protection motivation theory, in: Gochman , D. S. (ed.), Handbook of Health Behaviour Research. I: Personal and Social Determinants. Plenum Press, New York, 113-132, 1997 (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	Thanks for these remarks. The topic of this chapter is foundation for decision making. It is impossible to include all the littérature on the psychological aspects of climate change which are not related to decision making. However we will include some of your suggestions related to it.
463	71710	2	18	41	19	41	This section is extremely vague and difficult to read. What are the take-away messages? (UNITED STATES OF AMERICA)	The section will be reorganized in order to make it more understandable

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
464	63259	2	18	44	18	45	That some psychological models "integrate even more psychological factors" than other psychological models sounds strange; what do you mean? (Gisela Böhm, University of Bergen)	This part has been deleted
465	60551	2	18	48	18	50	It seems odd to characterize social dilemmas as "Psychological factors". I do think the discussion of such dilemmas could be expanded elsewhere in this chapter. (Eric Toman, The Ohio State University)	This part has been reorganized.
466	71711	2	18	48	18	50	The first 3 sentences in this paragraph jump from one thought to another in a disconnected way. What does it mean to say "decision making can also be realized without thinking?" Is this simply stating that it is possible to put no thought into a decision? If so, the thought can be deleted: it tells us nothing we do not already know. (UNITED STATES OF AMERICA)	This part has been deleted.
467	60904	2	18	50	18	50	What does "Decision-making can be realized without thinking" mean? Please clarify. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Thank for this remark. This part has been deleted.
468	78971	2	18	50	18	50	What does "Decision-making can be realized without thinking" mean? Please clarify. (Richard Jones, Met Office Hadley Centre)	Thank for this remark. This part has been deleted.
469	63260	2	18	51	18	52	"trade-offs between utility and probability" is wrong; you trade off different qualities of an option (e.g., different consequences or the combinations of utility and probability for different options, for example when trading off a large damage of low probability with a smaller damage of higher probability); but utility and probability are not traded off. (Gisela Böhm, University of Bergen)	This sentence has been deleted.
470	62263	2	19	4	19	14	"Memory" is an important, unexamined dimension of the cultural and value-based assessment of risk and decision making and may be a useful subcategory of the psychological factors in this section. Memory studies can refer to individualistic memory (explicit psychological element here), collective/cultural memory (which is less psychological and has more sociological implications), or both. Most work on "collective memory" can be traced back to Maurice Halbwachs On Collective Memory (Chicago: University of Chicago Press, 1992), whereas cultural memory is usually derived from the work of Jan and Aleida Assman and has more of an emphasis on cultural production. (Astrid Erll and Ansgar Nünning, Cultural Memory Studies: An International and Interdisciplinary Handbook (Berling: Walter De Gruyter, 2009). Both concepts are crucial elements in understanding the connections between individual experience of environmental change and their social manifestations. Recent work in anthropology and history underscores the importance of repeated, communal experience and memory in disaster learning processes. [Christian Pfister, "Learning from Nature-induced Disasters," in Natural Disasters, Cultural Responses: Case Studies Toward a Global Environmental History, Christian Pfister and Christof Mauch eds. (New York: Lexington Books, 2009) pgs. 17-40.] [Pfister, The Monster Swallows You: Disaster Memory and Risk Culture in Western Europe, 1500-2000. Rachel Carson Center Perspectives vol. 1 (2003) pgs. 1-23.] It should be noted that much of this work deals with disasters (of which many are linked to climate), but I have yet to see any that explicitly deal with "memory of climate change." (Adam Sundberg, University of Kansas)	Thanks for this important remark. Memory will be added with some references.
471	85314	2	19	11	19	12	Unclear as to where this statement (Natural variation in the world's climate is a low risk) actually comes from. It is an interesting statement considering recent events (droughts, heat waves, flooding, etc.) and that some countries identify these risks as significant at the national level. (Roger B Street, Oxford University)	This part has been be deleted.
472	64306	2	19	21	19	23	The results of research in general and our publication in particular is not correctly described here. Please change text as follows "Cognitions influence people's adaptive decisions and actions. Grothmann and Patt (2005) develop and test a socio-cognitive model of proactive private adaptation to climate change. They show, for instance, the importance of perceptions of adaptive capacities in addition to perceptions of risk. If a high perceived climate change risk is combined with low perceived adaptive capacities the response is fatalism, denial and wishful thinking." (Torsten Grothmann, Carl von Ossietzky University of Oldenbure)	Thanks for this suggestion. The text has been modified.
473	63210	2	19	34	19	36	Here, a single study is used to give a sweeping statement about policy makers. This gives a false impression and is an incorrect representation of the true situation, and the statement should therefore be deleted. (Asa Sjoström, Swedish Meteorological and Hydrological Institute)	Text removed
474	70297	2	19	34	19	36	This single study is used to give a sweeping statement about policy makers, which gives a false impression and is an incorrect representation of the true situation. It should be rewritten or deleted. (SWEDEN)	Text removed
475	71712	2	19	34	19	36	Not clear what this sentence means. Less important according to whom? By what standard? (UNITED STATES OF AMERICA)	Text removed
476	78972	2	19	34	19	36	The final sentence does not seem relevant, consider removing. (Richard Jones, Met Office Hadley Centre)	Text removed
477	84590	2	19	35	19	36	In what sense is importance meant here? (Michael Mastrandrea, IPCC WGII TSU)	Text removed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
478	85316	2	20	8	20	9	I would suggest that resilience is also a key examples (Roger B Street, Oxford University)	Added
479	62751	2	20	24	20	24	should read "Cultural anthropological and linguistic studies from different countries (name...), Conclude the dictionary definitions are inadequate for communicating the complex framings..." (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text heavily edited, this point added (subtly)
480	81567	2	20	29	20	30	The use of italics here is unclear and could be avoided. (Katharine Mach, IPCC WGII TSU)	Italics removed
481	62752	2	20	44	20	45	In complex situations, problem risk.... This sentence is complicated and awkward (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text edited
482	62753	2	20	44	20	48	This entire paragraph is awkward. Consider removing (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text retained and edited - this is an important point
483	71713	2	20	50	20	50	Bad grammar: "Language is but not the only tool" (UNITED STATES OF AMERICA)	Text edited
484	71714	2	21	6	21	23	Suggest omitting these 3 paragraphs. Hard to know what important information they convey. (UNITED STATES OF AMERICA)	Pretty much all non-specialist communication is through narratives; people learn through story telling. Furthermore specialist communities of practice sustain their practice via internal narratives. Text retained (edited slightly).
485	62754	2	21	11	21	11	"specialist knowledge " is undefined. (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Don't need to - self evident, though text has been edited to make this clearer
486	64897	2	21	16	21	16	See also Brugnach et al. (2008) Toward a Relational Concept of Uncertainty: about Knowing Too Little, Knowing Too Differently and Accepting Not to Know. In Ecology and Society 13(2): 30. (Ameyali Ramos Castillo, United Nations University - Institute of Advanced Studies)	Cited in section on scenarios - sits better there
487	78973	2	21	17	21	17	The phrase "narratives that inform these narratives" is not clear, please rephrase. (Richard Jones, Met Office Hadley Centre)	Text has been substantially edited
488	71059	2	21	20	21	23	Suggest that the sentence stating "narratives of risk and vulnerability demotivate indigenous people where scientific... narratives... promote resilience" could be supplemented by further text that describes the value of traditional knowledge or early polar explorers who survived due to cooperation with Inuit and FN. See "The Earth is Faster Now" (eds Krupnik and Jolly 2002, ARCUS) . (CANADA)	This suggestion has been considered
489	81568	2	21	26	0	0	Section 2.2.3.4. The chapter team should consider further cross-references to relevant working group 3 chapter sections, aside from the broad reference at the end of the section. The effectiveness of the very short subsection approach could also be considered. (Katharine Mach, IPCC WGII TSU)	Thank for this remark, due to the limit of place we could not treat these questions.
490	84591	2	21	26	0	0	Section 2.2.3.4: Ensure that the range of views in the literature is clearly presented in each subsection. Currently it is not clear this is being done. (Michael Mastrandrea, IPCC WGII TSU)	The quotes are integrated and assessed in the text.
491	85319	2	21	36	21	37	Is this not also the case at the national and local levels? This point also refers to the role of social justice and ethics and the national and local scales. (Roger B Street, Oxford University)	Modifications have been realized.
492	81569	2	21	37	21	44	It would seem preferable to integrate and assess the quotes provided on these lines. Additionally, further citations ideally should be provided for lines 37-40. (Katharine Mach, IPCC WGII TSU)	We modified economic, in economic issues
493	71715	2	21	44	21	47	In th sentence starting "The main ethical concerns include:É," one of the ethical concerns is simply "low". The issue is that the concerns need to be separated by semicolons instead of commas, and one of the concerns has a comma in it. (UNITED STATES OF AMERICA)	Reference has been added.
494	71716	2	21	45	21	45	economic is a lone adjective in a list of nouns. (UNITED STATES OF AMERICA)	The term field has been replaced by area.
495	71717	2	21	54	21	54	(United Nations, 1992) is not listed in the references. (UNITED STATES OF AMERICA)	modified
496	71718	2	22	2	22	2	The sentence begins "Scheider and Lane (2006) distinguish three fields:..." The term "fields" was not previously defined or discussed and is a bit confusing. I suggest tying this important concept into the previous discussions. If the term "fields" must be used, then introduce the term somehow. (UNITED STATES OF AMERICA)	modified
497	71719	2	22	3	22	3	Write out "Fourth" and "Fifth" (UNITED STATES OF AMERICA)	modified
498	58939	2	22	5	0	0	'geo-engineering' should be spelt 'geoengineering' to be consistent with the rest of the report. (Chris Vivian, IMAREST)	Due to space's limits we could not integrate more details.
499	58940	2	22	5	0	0	'geo-engineering' should be spelt 'geoengineering' to be consistent with the rest of the report. (Chris Vivian, IMAREST)	References are cited in line 23 and 24.
500	71720	2	22	11	22	17	A more nuanced discussion of inter-country issues is advised. Specifically, a distinction should be made between emissions that occurred before CO2 was known to be harmful (ca 1990) and those that occurred after that time. (UNITED STATES OF AMERICA)	We agree, but it is necessary to respect the limits of the length.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
501	60905	2	22	21	22	21	From what literature are the 3 characteristics drawn? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	We agree, but it is necessary to respect the limits of the length.
502	81570	2	22	24	22	25	A balanced presentation of this information, reflecting the full range of scientific views, should be ensured. (Katharine Mach, IPCC WGII TSU)	This sentence has been deleted.
503	81571	2	22	27	22	27	For this statement, it would seem more balanced to also provide alternative arguments that exist. (Katharine Mach, IPCC WGII TSU)	It was not possible to make cross-references with chapter 4
504	71721	2	22	31	22	34	This a somewhat of a run-on sentence. Needs better punctuation, at a minimum. (UNITED STATES OF AMERICA)	Modified
505	84592	2	22	40	22	42	Rather than citing one pre-AR4 study to support this statement, it would be preferable to cross-reference the discussion of this literature in Chapter 4 and relevant conclusions. (Michael Mastrandrea, IPCC WGII TSU)	Thanks for this reference. Due to the limits of the length it is not possible to include examples.
506	78974	2	22	45	22	45	3 should read "Who should make such decisions ..." (Richard Jones, Met Office Hadley Centre)	Text significantly rewritten
507	64898	2	22	53	23	3	Another useful reference is Ackerly and Vanderbergh (2007) Climate Change Justice: The Challenge for Global Governance. In Geo Invironmental Law Review 553. Also, perhaps useful to include mention of specific examples (Ameiyali Ramos Castillo, United Nations University - Institute of Advanced Studies)	Thanks but this text has been cut down severely to save on space
508	64847	2	23	0	0	0	Box 2-2 is beautiful. It highlights that the engagement of stakeholder perspectives and knowledge in the adaptation planning process is feasible and can be eminently succesful (Leon Soste, Department of Primary Industries, Victoria, Australia)	Thanks
509	60906	2	23	1	0	0	This section seems to be the most important and clearest of the chapter. It could provide more input to the summaries. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	More input has been provided for the summaries but the section did not survive, although the most salient parts were moved to other sections. This was to aid the chapter narrative
510	85321	2	23	1	23	24	Suggest that there are other social justice issues that should be highlighted (ssee some of the more recent Joseph Roundtree Foundation literature) (Roger B Street, Oxford University)	Some have briefly been mentioned
511	60907	2	23	5	0	0	The section title does not correspond to the content (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Title and most text removed
512	71722	2	23	11	23	18	This paragraph is a lot of vague generalities. (UNITED STATES OF AMERICA)	Text removed
513	84593	2	23	33	0	0	Section 2.3.1: Please consider ways to improve the logical structure of this section, as well as considering overlap with previous sections of the chapter. One direction could be to more explicitly organize the section and discussion around Figures 2-5 and 2-6 and their components, which are currently presented at the end of the section but could be introduced earlier. Please also ensure clear referencing of material presented to the underlying literature, as currently, several paragraphs have no references at all. (Michael Mastrandrea, IPCC WGII TSU)	Section has been totally reorganized and heavily edited
514	64846	2	23	35	23	37	The specification of the 3 elements of decision support appears quite positivistic and somewhat out of step with the empathy in the preceeding discussion. For instance - 'products' does not refer to the intangibles of different perspectives, insights, understanding and local knowledge brought into the decisional process by the more inclusive approaches advocated in the preceeding sections (Leon Soste, Department of Primary Industries, Victoria, Australia)	Text heavily edited and been altered to being descriptive
515	60908	2	23	35	23	41	This is a good summary of the decision support elements and could be moved to the Executive Summary and SPM. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Text did not survive the editing process
516	78975	2	23	45	23	45	Please replace "wicked" with plain English term. (Richard Jones, Met Office Hadley Centre)	Have retained this term because of its widespread usage in decision making
517	60909	2	23	47	23	48	In what sense is this a 'hierarchy' of agents? If it is, why are individuals at the top? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Text removed
518	71723	2	24	2	24	19	This paragraph is a good example of the sort of material this chapter needs more of. Why? Because a case study gives readers lessons they can learn and examples they can use as models for their own actions. (UNITED STATES OF AMERICA)	Box retained but most other examples removed due to space reasons, but several sections in 2.4 are rich with them and chapter links have been improved
519	85324	2	24	14	24	19	This should indicate (if it was the case) the role of climate change risks in this decision-making process. (Roger B Street, Oxford University)	Text is clear in this regard

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
520	60786	2	24	23	24	28	also see Webb and Beh 2013 (reference at previous comment page 7, line 30) which includes a framework, process and criteria for assessing decision support products, including identification of a set of 'adaptation principles' and then applies these to a wide range of support products (including international products) and translates this to the Australian adaptation decision support context and strategy. (Bob Webb, Australian National University)	Reference added
521	64848	2	24	23	24	51	This is excellent - it provides both the framework and specific guidance for information generation feeding into the risk management decision making process. Suggest linking this (and adaptive management?) more strongly to the process summary captured in Figure 2-5 would be useful (Leon Soste, Department of Primary Industries, Victoria, Australia)	Retained but moved up in the chapter
522	80293	2	24	27	0	0	CITE = ? although the points illucidated from line 28 to line 43 are excellent. (Tek Gurung, Freelance consultant)	It is cited
523	81572	2	24	31	24	31	Casual usage of "likely" should be avoided. (Katharine Mach, IPCC WGII TSU)	This is a cited list, taken from the reference. Text retained.
524	71724	2	24	31	24	32	While process does have value in its own right, it seems questionable to assign it higher value than outcomes. At a minimum, different actors will have a different perspective on this. It would be more defensible to say that development of sound processes should itself be a priority. (UNITED STATES OF AMERICA)	This is context specific and we give better guidance in Section 2.1 about this.
525	60787	2	24	45	24	46	agree, and to support different needs in different contexts see also for example Webb and Beh 2013 (reference at earlier comment) which identifies such differentiation as critical (e.g. at Figure 3.4) whilst also recognising some common needs. (Bob Webb, Australian National University)	Much stronger emphasis in the revised chapter
526	85326	2	25	3	25	3	What is meant by 'better' decisions? I would also suggest that such decisions need to be capable of being monitored and evaluated. (Roger B Street, Oxford University)	See FAQ 2-1 and preceding text
527	81574	2	25	3	25	3	What is meant in the opening sentence of this paragraph should be further clarified and specified. (Katharine Mach, IPCC WGII TSU)	Text removed
528	81573	2	25	3	25	21	Citations must be provided for all statements in these paragraphs. (Katharine Mach, IPCC WGII TSU)	Text removed
529	60587	2	25	7	25	9	This sentence implies that there is a need to take account of current climate as well as climate change (Chris Hewitt, Met Office)	Text removed
530	81576	2	25	11	25	12	If these statements are conclusions of the chapter, calibrated uncertainty language could be used to characterize the chapter team's degree of certainty in the finding. (Katharine Mach, IPCC WGII TSU)	Text removed
531	81575	2	25	11	25	21	Redundancy of these paragraphs with earlier material in the chapter could be considered and reduced. (Katharine Mach, IPCC WGII TSU)	Text removed
532	60788	2	25	11	26	39	this very useful summary of some of the prerequisites of good decisions could perhaps be augmented by summary insights from Webb, R. J., R. McKellar and R. Kay, 2013. Climate change adaptation in Australia: Experience, challenges and capacity building, (Submitted, in second stage review - will send as separate attachment) which includes a common set of challenges from a wide range of local/regional projects and also identifies some of the interdependencies between the challenges, and by the set of 'good adaptation principles' in Webb and Beh 2013 (see reference earlier - especially Section 3.1) which can be seen as part of framing a response to these challenges (Bob Webb, Australian National University)	Text removed
533	81577	2	25	16	25	16	Casual usage of "likely" should be avoided, as it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Text removed
534	81578	2	25	35	25	35	If this statement is a conclusion of that chapter, calibrated uncertainty language could be used to characterize the chapter team's degree of certainty in the finding. (Katharine Mach, IPCC WGII TSU)	Text removed
535	60552	2	25	35	26	27	How are these concepts different from those described earlier? In particular, much time is previously devoted to institutions. I suggest considering how these concepts relate to the underlying issue of decision support and make this connection clearer in the paragraphs here. Currently, this reads as very disconnected from the rest of the section on decision support. (Eric Toman, The Ohio State University)	Text removed
536	78976	2	25	42	25	42	Consider the terms "normative" and "positivist" for the glossary. (Richard Jones, Met Office Hadley Centre)	Text removed
537	78977	2	25	45	25	46	Please clarify the phrase "via management lens through how innovations" as this does not make sense. (Richard Jones, Met Office Hadley Centre)	Text removed
538	81579	2	25	48	25	50	The 3 styles presented in this sentence could be indicated more clearly. (Katharine Mach, IPCC WGII TSU)	Text removed
539	81580	2	25	52	26	4	Citations should be provided for all statements in this paragraph. (Katharine Mach, IPCC WGII TSU)	Text removed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
540	64849	2	26	0	0	0	Figure 2-5 provides an excellent synthesis of the overall decisional process - well done to the developer. Suggestions for consideration - the decision scoping / decision making box might make reference to incorporating stakeholder values. The decision analysis / governance box combines technical expertise, management plans and policies but not stakeholder knowledge. The decision analysis / CCIAV box refers to analysis of risks and testing of adaptation options but not to final option selection or specification of the rationale underlying why that option was chosen. We simply jump to decision implementation (Leon Soste, Department of Primary Industries, Victoria, Australia)	Figure removed and replaced by new one (2-3)
541	60910	2	26	5	26	25	Figure 2-6 could be better explained and linked to the text. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Figure removed
542	60911	2	26	6	0	0	Boundary institutions: can examples of this kind of institution be added? Is the European Environment Agency a boundary institution? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	examples listed on page 27, lines 22-26 of SOD; will move this text to re-numbered section 2.4.3 of FGD
543	81581	2	26	8	26	11	The glossary should be referenced for this definition. In addition, the chapter team could replace the definition here with a reference to the glossary. (Katharine Mach, IPCC WGII TSU)	will reconcile definitions from text and glossary
544	80631	2	26	19	26	19	In the sentence "Knowledge is a cultural resource that people can draw from and may also be generated for specific decisions...", here knowledge defined as "cultural resource" is a narrow sense, and inconsistent with knowledge transfer. SUGGESTION: change "Knowledge is a cultural resource that people can draw from and may also be generated for specific decisions." as "Knowledge covers scientific, technological, cultural and institutional resources that people can draw from and may also be generated for specific decisions." (Jiahua PAN, Chinese Academy of Social Sciences)	Text removed
545	85328	2	26	19	26	27	An initial challenge is access, but there is also a need for knowledge integration and mobilisation (refer to knowledge exchange literature, including stakeholder engagement). I would also suggest that knowledge exchange that reflects the two-way flow of evidence and knowledge is more appropriate than knowledge transfer. (Roger B Street, Oxford University)	Text removed
546	78978	2	26	23	26	23	One cannot have "information transfer" as a "knowledge challenge". Please rephrase. (Richard Jones, Met Office Hadley Centre)	Text removed
547	78979	2	26	30	26	31	The climate services element of the figure is not mentioned in the text. Also it would be good to include a reference to the WMO's Global Framework for Climate Services (GFCS) here. (Richard Jones, Met Office Hadley Centre)	Text removed
548	81582	2	26	32	26	35	These statements should be clarified, as the 1st sentence indicates that most effort is placed within the scoping and analysis stages, while the 2nd sentence seems to perhaps be adopting a different definition of the "analysis stage"? (Katharine Mach, IPCC WGII TSU)	Text removed
549	78980	2	26	37	26	39	Figure 2-5: I am not sure that the text boxes in the "Climate services" line reflect how these services are relevant. Suggest referring to the GFCS documents for guidance on this (and referring to them in the text). (Richard Jones, Met Office Hadley Centre)	Figure removed and replaced by new one (2-3)
550	60553	2	27	11	30	8	While the information provided in this subsection (2.3.2) is certainly important, it is unclear how it is linked to decision support (the larger section within which it is located). This subsection should be more explicitly linked to decision support. Alternatively, it may be best to move 2.3.2 to after subsection 2.3.3. Climate Information and Services. (Eric Toman, The Ohio State University)	agree to move section to re-numbered section 2.4.2 of FGD, so that it follows re-numbered section on climate services - 2.4.1
551	81583	2	27	13	27	13	It could be helpful to indicate further the relevant context/scale here--whose goal? Also, is it possible to make a more nuanced opening statement? (Katharine Mach, IPCC WGII TSU)	see 550
552	71725	2	27	13	27	14	Omit the first sentence of this paragraph. (UNITED STATES OF AMERICA)	see 550
553	78981	2	27	13	27	14	First sentence is obvious and thus unnecessary, please remove. (Richard Jones, Met Office Hadley Centre)	see 550
554	85331	2	27	13	27	15	I would suggest that progress is also dependent on our understanding of adaptation and decision making in the context of uncertainties and complex systems. (Roger B Street, Oxford University)	sentence on progress deleted; new text added on role of CCIAV assessments

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
555	78070	2	27	13	27	26	For the past 2.5 years, the World Bank and Conservation International have led a water resources management boundary organization focused on operational approaches to water as a "theme" rather than as a sector, bridging divides in expertise between engineering, ecology, hydrology, governance, economics, finance, and climate science. The Alliance for Global Water Adaptation (AGWA; http://alliance4water.org) is, among other things, actively working to create a "meta tool" for mainstreaming resilience tools and best practices into water management. AGWA has been evolving into a kind of technical voice of water and climate change. The Adaptation Committee recently requested AGWA to comment on the use of climate models for adaptation purposes, particularly for water management, for instance. A number of governments, many development banks, many NGOs, and the private sector are engaged in AGWA. Development bank AGWA members alone represent more than 20 billion USD in annual water investments, and AGWA products and tools are being used as the basis of core investment, operations, and management strategies for organizations ranging from the World Bank to the US Army Corps of Engineers. (John Matthews, Conservation International)	paragraph moved to re-numbered section 2.4.3 of FGD; thanks to the reviewer for providing information on AGWA; will add to text
556	78982	2	27	16	27	20	It is not clear how these programmes relate to the assessment. Either expand on this or remove this text. (Richard Jones, Met Office Hadley Centre)	see 542
557	79369	2	27	29	27	29	Assessing impacts: I am surprised that there was no discussion here of impact models - hydrology, crops, ..., of the growing use for decision support systems and complex systems models (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)	this was introduced on page 28, lines 1-18 of SOD; will keep in FGD
558	64308	2	27	29	28	49	Section should also mention the development of Participatory Integrated Assessments (PIA, cf. Salter et al. 2010) to assess impacts, especially at regional and local scales (links back to my comment on better representation of stakeholder involvement methods in chapter 2, page 7, line 13) References: Salter, Jonathan, John Robinson, and Arnim Wiek. 2010. Participatory methods of integrated assessment - a review <i>Climate Change</i> 1 (5): 697-717. (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	agreed; will refer to PIA
559	78983	2	27	31	27	31	Climate impact assessment does not necessarily "draw on interdisciplinary studies". Please rephrase. (Richard Jones, Met Office Hadley Centre)	agreed; will rephrase
560	81584	2	27	35	27	36	Short-term adjustments can also lead to less ideal long-term outcomes, for example through maladaptation. Should this be acknowledged? (Katharine Mach, IPCC WGII TSU)	agreed; will add reference to maladaptation
561	71726	2	27	39	27	39	The last word in this line should be "they," not "it." (UNITED STATES OF AMERICA)	agreed; will change this word
562	71727	2	27	42	27	42	Colloquialism "muddling through" seems unnecessary. It's not at all clear what is meant by it without reading the cited reference. A short explanation instead would be much better. (UNITED STATES OF AMERICA)	will elaborate on statement from Glantz (1988)
563	78984	2	27	47	27	48	The description "Scenarios of ... atmospheric conditions" is too simplistic and should provide more detail. (Richard Jones, Met Office Hadley Centre)	will add specific indicators, such as temperature and precipitation
564	60912	2	28	12	0	0	Surprising not to see reference to the EU's new 'Clearing House', or platform, launched earlier this year. See http://www.eea.europa.eu/themes/climate/european-climate-adaptation-platform-climate-adapt (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	thanks to the reviewer for providing information on EU climate adaptation platform; will cite here (re-numbered section 2.4.2.1 of FGD)
565	60913	2	28	16	28	16	The wrong section numbers are given. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	these are figure numbers, not section numbers
566	71728	2	28	26	28	40	This section should cite the special issue of JESP which is full of case studies on Integrated Assessments and Management Projects in the Americas due to climate change. http://www.sciencedirect.com/science/journal/14629011/26/supp/C (UNITED STATES OF AMERICA)	thanks to the reviewer for providing information on additional case studies; however, these have not been added due to restrictions on chapter length
567	81585	2	28	31	28	33	For this projected outcome, the relevant scenario of climate change should be specified. (Katharine Mach, IPCC WGII TSU)	deleted text on outcome
568	69862	2	29	0	0	0	Non economic perspective should be added when addressing 'value' in the social context pg.16 or 'assessing damage' within future scenarios of cc pg. 29. (Cosmin Corendea, United Nations University Institute for Environment and Human Security)	non-economic perspective was already indicated on page 29 of SOD, including the importance of an affected activity in supporting society (line 11), importance of governance and support systems (lines 13-20), development deficit and structural deficit (lines 28-33)
569	60914	2	29	1	0	0	Assessing vulnerabilities and risks is central to adaptation action. This section is very poor describing the kinds of processes for vulnerability assessments, and instead it jumps from the early paragraphs to evaluate adaptive capacity, adaptation deficit, etc. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	will cite 19.2.5 and 19.6

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
570	64309	2	29	1	30	8	Section should also mention the new concepts for assessments of adaptive capacities that have been developed since the AR4: For example Gupta, J., Termeer, K., Klostermann, J., Meijerink, S., van den Brink, M., Jong, P., Nooteboom, S., and Bergsmaa, E.: The Adaptive Capacity Wheel: a method to assess the inherent characteristics of institutions to enable the adaptive capacity of society, Environ Sci Pol, 13(6), 459-471, 2010. Grothmann, T., Grecksch, K., Wings, M., and Siebenhüner, B. (2013). Assessing institutional capacities to adapt to climate change – integrating psychological dimensions in the Adaptive Capacity Wheel. Nat. Hazards Earth Syst. Sci. Discuss., 1, 793-828. Huntjens, P., Lebel, L., Pahl-Wostl, C., Camkin, J., Schulze, R., Kranz, N.: Institutional design propositions for the governance of adaptation to climate change in the water sector. Global Environ Chang, 22(1), 67-81, 2012. Kuhlicke, C. Steinführer, A., Begg, C. et al.: Perspectives on social capacity building for natural hazards: outlining an emerging field of research and practice in Europe, ENVIRON SCI POLIC, 14, 804-814, 2011. Ostrom, E.: A General Framework for Analyzing Sustainability of Social-Ecological Systems, Science, 325, 419-422, 2009. Pahl-Wostl, C.: A conceptual framework for analysing adaptive capacity and multi-level learning processes in resource governance regimes, Global Environ Chang, 19, 354-365, 2009. Eventually, it makes sense to include these assessment concepts for adaptive capacities in a new section 2.3.2.3 titled "Assessing Adaptive Capacities and Adaptation" to give these newly developed concepts since the AR4 a higher visibility in the table of contents and also include the various concepts on assessing adaptation options in this section (unfortunately, many of these have not been published in scientific journals). Since CCI/AV also includes an A for adaptation, a new section 2.3.2.3 on assessments of adaptation seems necessary. Certainly, this section can strongly refer to chapters "14.5 Adaptation Assessments" and chapter 17 analysing the costs of adaptation. Adaptation assessment concepts are for example: Debels, P., Szlafsztein, C., Aldunce, P., Neri, C., Carvajal, Y., Quintero-Angel, M., Celis, A., Bezanilla, A., & Martínez, D. (2009). IUPA: a tool for the evaluation of the general usefulness of practices for adaptation to climate change and variability. Natural Hazards, 50, 211-233. Van Ierland, E.C., De Bruin, K., Dellink, R.B., Ruijs, A. (2007): A qualitative assessment of climate change adaptation options and some estimates of adaptation costs. Wageningen, 155 pp. Watkiss, P., Hunt, A., Horrocks, L. (2009): Scoping Study for a National Climate Change Risk Assessment and Adaptation Economic Analysis. Defra Study, pp. 98. (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	thanks to the reviewer for identifying references on assessment of adaptive capacity, and for identifying 14.5 for linkage; there is not enough space to add another section, but will add 'adaptive capacity' to title of re-numbered section 2.4.2.2 of FGD, and add Gupta et al (2010) citation; adaptive capacity was discussed on page 29, lines 13-22 of the SOD, and the proposed reference will be incorporated at the equivalent point in the FGD
571	84594	2	29	6	29	11	Please compare this description with that in Chapter 19, as it currently reads as closer to the AR4 formulation than the AR5 presentation. (Michael Mastrandrea, IPCC WGII TSU)	given that this is chapter 2, the intent is to both link with AR4 and foreshadow AR5-Chapter 19; additional text on Chapter 19 is already included on page 30, lines 1-4 of the SOD
572	81586	2	29	9	29	10	This statement should be further clarified, with more precise indication of the point being made. (Katharine Mach, IPCC WGII TSU)	sentence was deleted as text was redundant
573	60588	2	29	11	0	0	This entire section seems to be written from a social sciences context. Can it be revised in places to additionally include a climate service provider perspective? (Chris Hewitt, Met Office)	climate services section re-numbered as 2.4.1 in FGD, and now precedes this text
574	60589	2	29	18	29	18	suggest "... Information from global to regional to national and local levels;..." (Chris Hewitt, Met Office)	wrong page and/or line number; cannot find text being reviewed
575	85334	2	29	26	29	27	The existence of an adaptation deficit may not only be as a result of hampered effective decision-making and therefore may to some degree explain why and observed hurricane or other events can have this impact (Roger B Street, Oxford University)	see 576
576	84595	2	29	28	29	29	The phrase "insufficient adaptation" implies that adaptation should be expected to avoid all impacts, but there are limits to the extent to which this is possible in various contexts. (Michael Mastrandrea, IPCC WGII TSU)	this phrase is part of discussion on adaptation deficit, including citing of AR4; no action required
577	81587	2	29	30	29	31	It would be preferable to specify which chapter within the special report is meant here, through use of the recommended citations for chapters. (Katharine Mach, IPCC WGII TSU)	will cite Cardona et al. (chapter 2) from special report

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
578	60590	2	29	31	29	34	I don't think many countries have established regional climate services and I don't think there is much literature describing it. Also, the sentence is a bit confusing mixing up national and regional climate services. I suggest "While some countries have already established national climate services or are on the way to do so (for example, Austria http://ccca.boku.ac.at/ , China http://www.cma.gov.cn/en/ , the UK http://www.metoffice.gov.uk/climate-service-uk), there are differences in the evolution, organization and practice in different countries. The development of regional climate services in North America, Europe and Eastern Asia are relatively well documented, with an increasing focus on stakeholder engagement, communication and decision support (Ebinger et al., 2010; Hewitt et al., 2013)". The new reference would be Hewitt, C. D., C. Buontempo, P. C. Newton, 2013: Using climate predictions to better serve society's needs. Eos, 94, 105--107, DOI:10.1002/2013EO110002. I'm not sure what other references there are, but there must be some for North America. (Chris Hewitt, Met Office)	wrong page and/or line number
579	78985	2	29	35	29	25	By "parsing" do you mean "separating", if so then please say so. (Richard Jones, Met Office Hadley Centre)	will change 'parsing' to 'separating'
580	79124	2	29	48	29	50	Another example in vulnerability assessment in a regional scale for Mexico (municipalities) can be found in Monterroso Rivas A.I., Conde Álvarez C., Gay García C., Gómez Díaz J.D., y López J. 2013. Two methods to assess vulnerability to climate change in the Mexican agricultural sector. Mitigation and Adaptation Strategies for Global Change. doi: 10.1007/s11027-012-9442-y [see supporting material "Mexico-Vulnerability.pdf"] (Alejandro Monterroso, Universidad Autonoma Chapingo)	thanks to the reviewer for providing information on vulnerability assessment case in Mexico; will cite here
581	81588	2	30	1	30	4	It would be preferable to provide more specific reference to the treatment in chapter 19 and relevant findings. (Katharine Mach, IPCC WGII TSU)	emergent risks is a major theme throughout Chapter 19; will cite sections 19.3 and 19.4
582	84596	2	30	1	30	8	Again, please compare this description with that in Chapter 19, as this does not seem completely in line with the characterization of emergent risks there. (Michael Mastrandrea, IPCC WGII TSU)	see 581
583	62755	2	30	13	30	14	"CLIMATE SERVICES ARE THE LINK BETWEEN GENERATION AND APPLICATION OF CLIMATE KNOWLEDGE". There should be a specific reference for this quotation. (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	not necessary
584	59820	2	30	13	30	52	This section does not define/explain what a 'climate service' is, and there is a missing link between climate service to mitigation. The description at Pg 32, line 16 could be used to describe a climate service but needs to be in this beginning section. (AUSTRALIA)	It does, in the second paragraph. Mitigation added in line 19
585	60789	2	30	25	30	27	Maybe support with Webb and Beh 2013 (reference at previous comment page 7, line 30) as the problem of over-fragmentation of support was a major finding (Bob Webb, Australian National University)	good idea, but lack of space
586	78986	2	30	27	30	27	After "weak", suggest adding some references, e.g. case studies in WMO's Climate Exchange. (Richard Jones, Met Office Hadley Centre)	not necessary
587	78987	2	30	27	30	29	Insert "much" before "more" and then add more factors into the sentence such as "communications channels", "building understanding at community and stakeholder levels" etc. (Richard Jones, Met Office Hadley Centre)	added, see below
588	85338	2	30	29	30	29	case specific communication, engagement and knowledge exchange skills. (Roger B Street, Oxford University)	added
589	71729	2	30	31	30	31	on the way to do so should be "on the way to doing so." (UNITED STATES OF AMERICA)	ok
590	68799	2	30	34	30	34	can an example of such literature be provided? (NETHERLANDS)	see following paragraph
591	60915	2	30	34	30	38	The European Climate Adaptation Platform, Climate-ADAPT, is an initiative of the European Commission, and is managed jointly by the Commission and the EEA. European Data Centres are usually maintained by the EEA, but they are the result of joint effort by the Commission and the Agency. They are not EEA's own initiatives. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	corrected
592	60591	2	30	39	30	42	I'm not sure those examples are correct. The German example doesn't acknowledge the role of the German Weather Service DWD. For Sweden the reference is for a regional climate modelling programme which doesn't sound like a national climate service. For the UK, the UK Climate Impacts Programme is part of a wider picture involving the likes of the UK's Met Office. If my previous comment (for lines 31-34) is accepted then I suggest deleting these sentences and examples will be listed in lines 31-34. (Chris Hewitt, Met Office)	accepted; examples deleted; Vaughan & Dessai inserted for overview
593	78988	2	30	44	30	45	Some mention of Regional Climate Outlook Forums (RCOFs) would be appropriate here. (Richard Jones, Met Office Hadley Centre)	included

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
594	78989	2	30	48	30	48	Add reference Jones et al., 2004 after "PRECIS". Jones, R. G., M. Noguer, D. Hassell, D. Hudson, S. Wilson, G. Jenkins, and J. Mitchell (2004) Generating high resolution climate change scenarios using PRECIS, report, Met Office Hadley Centre, Exeter, UK. (Richard Jones, Met Office Hadley Centre)	added
595	79370	2	31	1	31	1	Climate information systems: history and concepts. I am surprised not to see any discussion in here of the regional climate centres in Africa and of the growing use of climate models in regional climate outlook forums. (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)	added line 22 - 23
596	60592	2	31	1	31	28	This sub-section (and several of the following ones) seems to be written from a particular perspective (a social sciences perspective perhaps?). This is valid but doesn't include much representing a climate service provider's perspective. I'm not sure what to suggest specifically, but would just like to note this in case the authors can make revisions (Chris Hewitt, Met Office)	correct, but we focus here on the social history
597	71730	2	31	3	31	13	The sort of history referred to in this paragraph is interesting and useful and should be expanded upon; specifically, more of the history should be spelled out in the text as opposed to only being contained in cited references. More space in the chapter should be devoted to material of this nature instead of the vague generalities that are so dominant. (UNITED STATES OF AMERICA)	correct, but lack of space
598	60917	2	31	15	31	22	There should be some mention of Regional Climate Outlook Forums here. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	added line 22-23
599	78990	2	31	15	31	22	There should be some mention of Regional Climate Outlook Forums here. (Richard Jones, Met Office Hadley Centre)	added line 22 - 23
600	85340	2	31	24	31	27	Is communication sufficient? I suggest not as engagement and knowledge exchange are also required. (Roger B Street, Oxford University)	added
601	84597	2	31	24	31	38	This paragraph currently reads as the preference of the authors for a specific perspective in the literature, rather than expert judgment regarding the literature support for various perspectives. Please consider the framing here, and make explicit where the judgment of the author team is being expressed and how it is supported by the literature. (Michael Mastrandrea, IPCC WGII TSU)	rewritten, content change
602	60593	2	31	30	31	30	Given that this sub-section is the history of climate services, it seems strange to omit recent history. I suggest something like the following additional paragraph: "In 2009 the World Climate Conference-3 brought together Heads of States, government ministers, representatives from industry, and technical and scientific experts to discuss the needs for climate services and improved coordination (World Climate Conference-3 Conference Statement (WCC3, 2009); http://go.nature.com/bEqMA6). A High-Level Taskforce was subsequently created (World Meteorological Organization Climate Knowledge for Action: A Global Framework for Climate Services — Empowering the Most Vulnerable Report No. 1065 (WMO, 2011)) to initiate the development of a Global Framework for Climate Services to coordinate and strengthen existing activities and develop new infrastructure where needed. This Global Framework for Climate Services was endorsed by governments in October 2012 and is now being implemented, with a focus on developing countries, and priority being given to agriculture and food security, water resources, health and disaster risk reduction (Hewitt et al, 2012) (Chris Hewitt, Met Office)	added line 23-25
603	60916	2	31	31	0	0	Demand is essential for the concept of climate services. Sectoral specific demands and providing solutions to bridge the resolution gap of information appear as fundamental for successful climate services. This should be duly highlighted. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	added 32, line 18 incl. Uncertainty
604	80247	2	31	31	0	0	The multiple definitions of climate services should be assessed to identify common elements. (Kristie Ebi, ClimAdapt, LLC)	the assessment focus on the process and development of the idea and practice instead on common elements.
605	71731	2	31	31	32	27	This section makes no mention of downscaling, and yet that is one of the key products demanded of Regional Climate Services by users. It would be useful to refer both to the need for downscaling to inform decision making but also refer to earlier sections of this chapter regarding the importance of using (downscaled) scenarios in a risk assessment context. (UNITED STATES OF AMERICA)	inserted 31, 23-24
606	60790	2	31	33	32	1	Maybe support with Webb and Beh 2013 (reference at previous comment page 7, line 30) as the framework and analysis in that study is grounded in more effectively matching user demand with product supply. (Bob Webb, Australian National University)	Citation added
607	81589	2	31	35	31	35	It would be preferable to use calibrated uncertainty language to characterize the "intense discussion" mentioned here. (Katharine Mach, IPCC WGII TSU)	we make no use of uncertainty language in this chapter
608	71732	2	31	38	31	40	Since this section is likely to be of utmost interest to climate change stakeholders, it would be helpful to use less academic language than this sentence which is very difficult to parse. (UNITED STATES OF AMERICA)	Text clarified

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
609	84598	2	32	1	32	14	Again, this text reads as the preference of the authors. Please clearly present what represents the judgment of the author team based on their assessment of the literature, and how those conclusions are supported by the literature. (Michael Mastrandrea, IPCC WGII TSU)	strongly edited text; problem removed
610	71733	2	32	3	32	7	This is not how all regional climate services (RCS) operate. It should be made clear that, by their very nature, RCS vary worldwide and indeed even in nearby regions. While some groups may focus on linking users and producers this is not an accurate way to characterize all RCS'. Indeed some do begin with users' needs and see their mandate as being defined by addressing them. (UNITED STATES OF AMERICA)	ok, line 3
611	80248	2	32	4	32	5	What was meant was institutions should continue to exist, not that they can not be modified as needs and conditions change. (Kristie Ebi, ClimAdapt, LLC)	deleted
612	81590	2	32	4	32	5	Is this statement supported by the literature or a perspective of the author team? Careful distinction between these categories should be ensured here and throughout the chapter. (Katharine Mach, IPCC WGII TSU)	deleted
613	60791	2	32	4	32	7	if NRC is referring to stability of institutions who are support providers (like UK CIP) as opposed to institutions in general then they have a point - Australia for example has suffered from no continuity and cumulative learning and improvement, and ongoing services, in its support approaches (see Webb and Beh 2013 - reference at previous comment page 7, line 30) (Bob Webb, Australian National University)	deleted
614	78991	2	32	9	21	14	The material in this paragraph should be supported by references. (Richard Jones, Met Office Hadley Centre)	done
615	60918	2	32	9	32	14	Should this be dealt with in the specific section on capacity building which now deals only with institutions? (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Text removed, capacity described in later sections
616	85343	2	32	13	32	14	Although in this case communications may be right, this can only be developed through knowledge exchange and engagement (Roger B Street, Oxford University)	ok, line 12 incl.
617	77565	2	32	16	32	18	Good that this section is included in this chapter. Climate communications may be made a separate chapter (Malini Nair, Indian Institute of Science)	ok
618	60919	2	32	16	32	23	Another important factor that is require but which is not mentioned here is that capacity building is required on both (all) sides of the communication (chain). (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	ok, incl. line 17
619	78992	2	32	16	32	23	Another important factor that is require but which is not mentioned here is that capacity building is required on both (all) sides of the communication (chain). (Richard Jones, Met Office Hadley Centre)	ok
620	81591	2	32	25	32	27	Is this statement an assessment finding? If so, calibrated uncertainty language should be used to characterize the author team's degree of certainty in the conclusion. (Katharine Mach, IPCC WGII TSU)	no calibrated language in this section
621	60594	2	32	30	32	30	The geo-political dimension of climate services is a strange topic to focus a sub-section on. What about other topics such as government, industry, the public? (Chris Hewitt, Met Office)	This is intended to cover these areas but cannot add detail because of space limitations. Stakeholders are dealt with separately
622	80249	2	32	32	32	44	Is it really necessary for each country to have its own climate model? It would be helpful to understand how to decide where climate models have sufficient skill (and understanding the criteria for sufficient) that projections can be used in adaptation planning. (Kristie Ebi, ClimAdapt, LLC)	we do not state that every country needs its own model
623	60595	2	32	35	32	35	Universities are only one example. I suggest "Decision support tools are developed in climate research centres, operational service providers and universities, such as the climate model PRECIS from the UK's Met Office..." (Chris Hewitt, Met Office)	ok
624	71734	2	32	35	32	37	The PRECIS climate model should not be described as a "decision support tool" or as an "earth systems model." It is neither; just a climate model. (UNITED STATES OF AMERICA)	ok
625	78993	2	32	35	32	38	Suggest removing phrase "global south" and "global North", change "universities" to "institutes", replacing "Earth system models such as PRECIS" (which it is not) with "This" and removing "direction to". (Richard Jones, Met Office Hadley Centre)	ok
626	60596	2	32	37	32	37	PRECIS isn't an Earth system model. I suggest "Regional climate models such as PRECIS contribute to building the capacities and capabilities for regional and national climate change management through training, sustained support, technology transfer and generation and provision of climate change information." (Chris Hewitt, Met Office)	ok (except second half for lack of space)

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
627	71735	2	32	46	33	13	Presumably the term "indigenous knowledge" here means knowledge possessed by indigenous peoples. But in fact everything that is said in this section applies to the specialized knowledge that ANY affected stakeholder has about their affected system. For example, an experienced water resource manager has "indigenous knowledge" about his/her own watershed that is invaluable in designing effective adaptation. It would be good in this discussion to make it clear that the points made apply to specialized knowledge held by all stakeholders, not just indigenous peoples. (UNITED STATES OF AMERICA)	ok
628	64899	2	32	46	33	22	See also Russell-Smith et al. (In Press) Can savanna burning projects deliver measurable greenhouse emissions reductions, and sustainable livelihood opportunities for indigenous and local communities, in fire-prone settings? In Journal of Climatic Change Special Issue on Climate Change Mitigation and Adaptation with Local Communities and Indigenous Peoples (Amejali Ramos Castillo, United Nations University - Institute of Advanced Studies)	section deleted
629	70786	2	32	54	0	0	*Observation: New co-produced knowledge is not limited to oral histories, but incorporates a broad range of traditional knowledge expertise *Suggested text: This increased attention to oral histories and other traditional knowledge is leading to new experiments in which these are compared or combined... (Kirsty Galloway McLean, United Nations University - Institute of Advanced Studies)	ok
630	60597	2	33	5	33	21	These two paragraphs provide strange examples. Are there not some additional, or more appropriate, examples that could be included? (Chris Hewitt, Met Office)	deleted
631	81592	2	33	10	33	10	Is the sentence on this line an overgeneralization? Should any circumstances in which adaptation is appropriate at other-than-local scales be acknowledged? (Katharine Mach, IPCC WGII TSU)	deleted
632	85346	2	33	10	33	11	Adaptation (particularly adaptation actions) to be implemented locally and to address local needs should be locally identified, but should also be informed by larger scale (e.g., national) adaptation measures (e.g., policies and directions) (Roger B Street, Oxford University)	ok
633	71736	2	33	19	33	19	takes should be "take" (UNITED STATES OF AMERICA)	ok
634	81593	2	33	24	0	0	Section 2.3.4. The chapter team should coordinate further with chapters 14-15 in revising the section. Specific relevant key findings and sections of those chapters should ideally be cross-referenced. (Katharine Mach, IPCC WGII TSU)	re-numbered section 2.4.4; already cited chapter 15 (and 16) on page 35, line 30 of SOD, and will keep that here
635	81594	2	33	26	33	39	It would be preferable to provide relevant introductory citations for these paragraphs. (Katharine Mach, IPCC WGII TSU)	chapters 3-12 already cited
636	80250	2	33	28	33	30	Water quality also in an important requirement. (Kristie Ebi, ClimAdapt, LLC)	will add water quality
637	60598	2	33	34	33	34	Why restrict this paragraph to climate change. I suggest "Climate change and climate variability could influence..." (Chris Hewitt, Met Office)	will add climate variability
638	78071	2	33	41	33	48	I will discuss this in more detail in my comments on chapter 3 (I am a freshwater adaptation specialist), but IWRM is not by itself necessarily a means of doing climate adaptation. IWRM can just as easily make adaptation harder or less effective as make it easier, and most cases globally suggest that it is making adaptation harder. The most general statement possible about adaptation and IWRM is that IWRM might relieve some external pressures on water management in a very passive way; but this does not constitute an active climate adaptation program. Sustainability as defined by IWRM is largely a stationary definition, and stakeholder engagement is widely variable in definition and implementation. It is more accurate to say that IWRM looks more at negotiating tradeoffs between powerful interests, such as manufacturing, energy, etc. At least one of the authors you cite here has an active program promoting IWRM in this way, but this is a narrow, minority perspective, and not substantiated by the evidence. Environmental flows as a movement may be somewhat more applicable. But as someone who has been working in this area since 2007 I think the IWRM references here are parochial, inaccurate, dated, and potentially embarrassing to the IPCC. (John Matthews, Conservation International)	will cite Sections 3.6.1 and 3.6.6 on discussion of IWRM and adaptive water management; will add Bateman and Rancier (2012) - Case Studies in Integrated Water Resources Management (published by American Water Resources Association)
639	71737	2	34	7	34	16	More vague generalities! Make this concrete or get rid of it. (UNITED STATES OF AMERICA)	this paragraph is meant to briefly introduce the management concepts related to the objective of sustainable fishing (as part of the overall theme of 2.3.4 of SOD, to become re-numbered 2.4.4 of FGD), and foreshadow other chapters that specifically address fishing, where more detailed assessment of literature is available; also, see 642

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
640	79931	2	34	10	34	10	Please consider exchanging "some" for "many" to generate "... depletion of many populations..." (NORWAY)	replace Pauly et al (2002) with Froese et al (2012) and use the word 'many'
641	81595	2	34	10	34	12	The relevant key findings of chapter 6 should be cross-referenced here. (Katharine Mach, IPCC WGII TSU)	already cited on page 34 line 16 of SOD; see 642
642	81596	2	34	16	34	16	In place of the chapters referenced here, chapters 5, 6, 7, and 30 would be a more logical set of chapters to reference. (Katharine Mach, IPCC WGII TSU)	will add citation of chapter 30; chapters 5-7 already cited in line 16 of SOD
643	80251	2	34	18	34	47	It would be more efficient to direct the reader to chapter 14, where these issues are discussed in detail. (Kristie Ebi, ClimAdapt, LLC)	Referenced
644	81597	2	34	19	34	19	Where "must" is asserted here, it would be preferable to specify by which criteria or perspectives this requirement is seen. (Katharine Mach, IPCC WGII TSU)	Rephrased the sentence
645	60765	2	34	35	34	39	Opportunities and threats to implementation of NAPs extend beyond problems with funding and the GEF process to include the reservations that countries like Haiti have with requirements to update/upgrade their olders NAPAs. This could present an opportunity for boundary organizations to bring project expertise to align NAPs with MDGs, Hyogo Framework for Action and other global initiatives for 2015 and post 2015. (Lynn Wilson, SeaTrust Institute)	A sentence is added to address this comment
646	60920	2	34	41	34	47	This paragraph may also want to cite EEA Report 3/2013 "Adaptation in Europe" (http://www.eea.europa.eu/publications/adaptation-in-europe) (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	The recommended reference is cited
647	60921	2	35	3	0	0	Again (like the equivalent section in chapter 1), the discussion of linkages between mitigation and adaptation lacks much depth, feels as though it has been tacked on at the end of the chapter. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	wrong line number; see 652
648	71738	2	35	12	35	13	The assertion that "An evaluation suggests these plans are underdeveloped" needs a citation. (UNITED STATES OF AMERICA)	citation of Preston et al. (2011) is indicated in line 15; will also add Bierbaum et al (2012)
649	60599	2	35	25	35	26	This paragraph is something that the EUPORIAS project will explore and develop. I suggest revising the sentence to be "These factors allow new strategies to be explored and implemented (Shepherd et al., 2006; Hewitt et al., 2013) (Chris Hewitt, Met Office)	thanks to reviewer for identifying new reference; will add Hewitt et al (2013) here
650	85350	2	35	25	35	26	These factors allow new strategies to be explored, implemented and evaluated, I would suggest that evaluation should be added. (Roger B Street, Oxford University)	will add 'evaluated'
651	78994	2	35	36	35	36	Reference Black et al is missing. (Richard Jones, Met Office Hadley Centre)	will add missing reference; Black, C., J. Brislawn, G. Deheza, T. Finessey, C. McNutt. 2012. Summary Report: Colorado Drought Tournament. Report from September 2012 Drought Tournament. Denver, CO. Access at: http://www.drought.gov/media/pgfiles/Drought_Tournament.pdf
652	80252	2	35	48	0	0	These issues are discussed in detail in chapter 20; please condense and refer the reader to that chapter. (Kristie Ebi, ClimAdapt, LLC)	2.4.1 of SOD (re-numbered 2.5.1 of FGD) is an introduction to the topic of adaptation-mitigation tradeoffs, and meant to foreshadow other chapters that focus on this issue; the text is already short, and refers to chapter 20, as well as 16, and discussion in 2.4.2 of SOD (re-numbered 2.5.2 of FGD) on resilience
653	60922	2	35	48	36	20	AR5 is supposed to provide new findings, and not simply a summary of AR4. Some analysis would have been expected on how countries are combining adaptation and mitigation within their climate action policies, the potential for shared decision frameworks, the current knowledge status of adaptation-mitigation policies' tradeoffs for particular sectors, or how decision-making processes for adaptation and mitigation relate to each other. Finally this section does not offer anything. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	see 652
654	62756	2	35	52	35	53	Should read "AR4 for substantiated this by concluding that a lack of information made it difficult to assess these synergies" (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	text already says this so no change needed
655	59821	2	35	52	36	6	This section requires more details/ clarity on the synergies and trades-offs between adaptation and mitigation. (AUSTRALIA)	will expand on discussion and caption of Figure 2-8
656	81598	2	36	1	36	20	Beyond the cross-references provided, is it possible to provide assessment here of new literature now available and findings of chapter 2? (Katharine Mach, IPCC WGII TSU)	no room to add text; also, see 652, 653, 655

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
657	85353	2	36	3	36	4	The reduced rates of economic growth are a what scale (regional, local national and / or global)? (Roger B Street, Oxford University)	scale now indicated
658	60923	2	36	23	0	0	The essential linkage between sustainable development and adaptation seems to be insufficiently developed here despite the long text provided. The confusion with the term resilience does not help provide an understanding of the linkage. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	will cite 20.2.3.2
659	81599	2	36	25	36	25	Is "should" the most preferable word to use here--could the benefits of such integration be articulated more precisely? (Katharine Mach, IPCC WGII TSU)	benefits discussed in rest of section and chapter 20 is cited
660	78995	2	36	39	36	40	Sentence does not make sense, please rephrase. (Richard Jones, Met Office Hadley Centre)	text deleted
661	69863	2	36	49	37	10	Resilience concept poorly exemplified in very local case studies (e.g.: King County, Seattle, WA) when linkage btwn sustainable development and resilience could be argued with more relevant examples (e.g.: SE Asia) (Cosmin Coredea, United Nations University Institute for Environment and Human Security)	this case is part of a narrative in this section (re-numbered 2.5.2 of FGD) which includes other cases; will add reference to Chapter 24 text box on tropical cyclones, CC-TC
662	71739	2	36	49	37	17	The discussion on resilience and adaptation is somewhat confusing. Line 49 on page 36 appears to imply that resilience is a subcomponent of adaptation. But line 11 on page 37 implies the opposite. The text would benefit from a statement that explicitly states where the two concepts fit, relative to each other. (UNITED STATES OF AMERICA)	will reconcile text so that it is consistent
663	60924	2	36	51	36	54	It would be good to relate these examples to the frameworks that were introduced earlier in the chapter. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	will add linkage to earlier sections of Chapter 2 on risk management and decision support frameworks; shared learning is already indicated on page 37, lines 1-2 of SOD and is kept in FGD
664	78996	2	36	51	36	54	It would be good to relate these examples to the frameworks that were introduced earlier in the chapter. (Richard Jones, Met Office Hadley Centre)	see 663
665	71740	2	37	11	37	11	eliminate comma (UNITED STATES OF AMERICA)	will delete comma
666	85354	2	37	11	37	11	I would suggest that good communication is not sufficient. Knowledge exchange is what is required (Roger B Street, Oxford University)	will change phrase to 'knowledge exchange'
667	71741	2	37	11	37	17	This discussion seems in places to be about sustainable adaptation, and in other places to be about sustainable development. These of course are very different things. Please figure out which you want to discuss and stick to that. Any discussion of sustainable adaptation might be merged with the earlier discussion of synergies between mitigation and adaptation. (UNITED STATES OF AMERICA)	sustainable adaptation is one of many ideas presented within the broader framing of 2.4.2 of SOD (now re-numbered 2.5.2 in FGD); besides sustainable adaptation, the section introduces the concepts of ecosystem stewardship, urban resilience, disaster risk reduction, and resilience as an outcome of social contracts; this introduction is meant to foreshadow the more detailed treatment of climate-resilient pathways in chapter 20
668	77422	2	37	23	37	26	Shale gas may be a cleaner alternative to other fossil fuels, but this is the additional extraction to what fossil fuel reserves were already known. Media reports from the United States suggest that public concerns about contamination of ground and surface waters are ignored. (Himangana Gupta, Panjab University, Chandigarh, India)	the point here is not to promote shale gas extraction, but to cite examples of literature in which new adaptation planning and decision making approaches are being followed as part of assessments of shale gas extraction activities
669	81600	2	37	51	37	51	In place of this generic reference, it may be more helpful to the reader to provide specific cross-references to relevant sections of Chapter 15 in the preceding paragraphs. (Katharine Mach, IPCC WGII TSU)	agreed; will identify 15.2.3.2, 15.3.4 and 15.5
670	60925	2	38	9	0	0	The concept of transformational adaptation is absolutely unclear, both here and in the rest of the report. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	Framed with respect to other types
671	81601	2	38	9	0	0	Section 2.4.3. This section focuses on transformative adaptation, and the chapter team should consider assessment in chapter 16 and 20 that suggests that transformative adaptation and transformation are not synonymous. It would seem preferable to also consider transformation more broadly within this section, beyond the somewhat weak final paragraph. Specific cross-references to relevant sections of chapters 16 and 20 should be provided. (Katharine Mach, IPCC WGII TSU)	Links to other chapters made

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
672	84599	2	38	9	0	0	Section 2.4.3: Please consider and cross-reference the discussions in Chapters 16 and 20 on these topics. Transformative adaptation and transformation are not used interchangeably, for example. In addition, as mentioned in the context of the executive summary, the section ends fairly abruptly, and the ES finding associated with this section is not really presented here. An explanation of that finding could make a useful conclusion to this section. (Michael Mastrandrea, IPCC WGII TSU)	Links to other chapters made
673	80632	2	38	12	38	12	In the sentence "..., particularly in the context of a world where the global temperature target of 2°C is exceeded.", the tense "is" inappropriate, SUGGESTION: "is" should be altered as "would be". (Jiahua PAN, Chinese Academy of Social Sciences)	Text removed
674	81602	2	38	13	38	13	Casual usage of "likely" should be avoided, as it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Text removed
675	64310	2	38	15	38	16	Please make clear, if and how incremental adaptation is different from iterative risk management promoted in 2.1.2 (Torsten Grothmann, Carl von Ossietzky University of Oldenburg)	Clarified in the text
676	62757	2	38	20	38	20	Should read" adaptation that is transformative (comma), marks a shift towards... (Dan F. Orcherton, PACE-Pacific Centre for Environment and Sustainable Development)	Text edited more substantially
677	78997	2	38	30	38	33	Would a figure to represent the differences described be useful here? (Richard Jones, Met Office Hadley Centre)	No space
678	71742	2	38	35	38	35	There is something wrong with the last phrase of this sentence, as written it is unclear. (UNITED STATES OF AMERICA)	Text edited
679	79932	2	38	38	38	41	Very important point/insight! (NORWAY)	This positivist reading has been removed, but is made in Chapter 20 where it is examined in more depth
680	60554	2	38	43	38	43	If appropriate, I suggest including a summary here to tie the wide variety of concepts examined in this paper together. (Eric Toman, The Ohio State University)	We wanted to but could not find the room to do so
681	71743	2	46	8	46	8	Is this supposed to be Hertzler reference? In any case he reference is incomplete. (UNITED STATES OF AMERICA)	text removed
682	71744	2	49	42	0	0	Lempert, R., 2012. reference needs a volume number to be complete. (UNITED STATES OF AMERICA)	fixed
683	70787	2	51	36	0	0	*Observation: Incorrect reference details *Reference should read: Nakashima, D.J., K. Galloway McLean, H.D. Thulstrup, A. Ramos Castillo, and J.T. Rubis (2012). Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation. UNESCO and UNU, Paris and Darwin, 120pp. (Kirsty Galloway McLean, United Nations University - Institute of Advanced Studies)	thanks to the reviewer; see 684
684	64896	2	51	36	51	36	Incorrect reference: correct reference should be: Nakashima, D.J., K. Galloway-McLean, H.D. Thulstrup, A. Ramos Castillo, and J.T. Rubis (2012). Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation. UNESCO and UNU, Paris and Darwin, 120pp. (Amejali Ramos Castillo, United Nations University - Institute of Advanced Studies)	thanks to the reviewer; will make the correction
685	64900	2	51	36	51	39	Incorrect reference: correct reference should be: Nakashima, D.J., K. Galloway-McLean, H.D. Thulstrup, A. Ramos Castillo, and J.T. Rubis (2012). Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation. UNESCO and UNU, Paris and Darwin, 120pp. (Amejali Ramos Castillo, United Nations University - Institute of Advanced Studies)	thanks to the reviewer; see 684
686	71745	2	56	43	0	0	"Year: American Economics Review..." incomplete reference. (UNITED STATES OF AMERICA)	fixed
687	71746	2	58	47	58	48	The citation for Vugrin and Turnquist can be updated. The report was previously published as a technical report, but it recently was published in a journal. The reference can be replaced with the following: Turnquist, M., and E. Vugrin, "Design for resilience in infrastructure distribution networks," Environment, Systems, and Decisions, 33(1), pp. 104-120. (UNITED STATES OF AMERICA)	thanks to the reviewer; will update with the new title
688	71747	2	61	0	0	0	Figure 2-1:This figure is uninformative and unhelpful. If the purpose is to define important terms, then a table would be a better way to do that. (UNITED STATES OF AMERICA)	Figure removed
689	71748	2	61	0	0	0	Figure 2-2: The point of this figure is obscure, but perhaps it could be clarified. There seems to be a concrete point to be made; it's just not clear what that is. (UNITED STATES OF AMERICA)	Figure completely redrawn
690	79371	2	61	0	0	0	Figure 2.1: not sure what this figure is telling me (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)	Figure removed
691	81352	2	61	0	0	0	Figure 2-1: It is hard to tell how the concepts are organized in rows and/or in columns which makes it difficult to understand the main message of this figure. The caption says that risk is portrayed as an approach... but I did not see that this figure was about risk at all. It needs a significant revision in order to be a valuable visual aid to your chapter; else I would suggest deleting it. (Yuka Estrada, IPCC WGII TSU)	Figure removed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
692	81353	2	61	0	0	0	Figure 2-2: This figure could benefit from clear labeling and further explanation in the caption so that it can stand alone with a clear message(s). For instance, which parts are internal and which one is external? Can the two red circles be labeled so that audience would know immediately which one is assessment stage and which one is management stage? (Yuka Estrada, IPCC WGII TSU)	Figure completely redrawn
693	81603	2	61	0	0	0	Figure 2-1. This figure needs a longer caption to further clarify interpretation for the reader. Additionally, the logic of the graphic should be ensured, for example with respect to the different definitions of risk discussed within the chapter. As is, the graphic is somewhat cryptic for the reader to interpret--the meaning of each cell in the interactions across the various cells should be much clearer for the reader. Additionally, the chapter team should ensure that the final definitions provided within the rightmost cells match the final wording within the glossary of the report (and within chapter 19). (Katharine Mach, IPCC WGII TSU)	Figure removed
694	81604	2	61	0	0	0	Figure 2-2. The discussion of "loops" within the figure caption and the chapter text should be carefully clarified. One option would be to number the loops within the graphic, most especially because the caption describes 2 loops and the chapter text describes 3 iterations, which is somewhat unclear for the reader. (Katharine Mach, IPCC WGII TSU)	Figure completely redrawn
695	71749	2	62	0	0	0	Figure 2-3: There is something wrong with this figure/caption. The figure labeled as 2-3 does not appear to be a "schema for the chapter" (UNITED STATES OF AMERICA)	Figure redrawn and clarified
696	71750	2	62	0	0	0	Figure 2-3: This figure conveys no information. Suggest deleting it. (UNITED STATES OF AMERICA)	Figure redrawn and clarified
697	71751	2	62	0	0	0	Figure 2-4: Both boxes: the bullets are not needed. (UNITED STATES OF AMERICA)	Figure removed
698	71752	2	62	0	0	0	Figure 2-4: In the left box; "objections" should be "objectives," presumably. (UNITED STATES OF AMERICA)	Figure removed
699	81354	2	62	0	0	0	Figure 2-3: This figure poses more questions than providing a visual aid to your paragraph. First, the caption does not help to interpret the figure. It is not clear how "a hierarchy" of decision makers is shown or how the decision-making environment is depicted here. How are adaption, mitigation and sustainable development, the methods and tools illustrated? In terms of figure presentation, overlapping circles are hard to read, and it is not clear what the positions of each circle represent. Also, further description is needed to explain how the circles and tables are related to each other. (Yuka Estrada, IPCC WGII TSU)	Figure redrawn and clarified
700	81355	2	62	0	0	0	Figure 2-4: It is not clear if this figure provides enough value as a visual aid. As I understand, the deliberation with analysis is an iterative process but with a clear beginning. However, this figure may suggest an infinite loop, and thus no clear starting point. (Yuka Estrada, IPCC WGII TSU)	Figure removed
701	81605	2	62	0	0	0	Figure 2-3. This figure requires a very careful caption to ensure its interpretation is clear. As is, the wrong figure caption seems to be provided. For complicated and complex risks, it should be clarified why multiple bubbles have the same labels--because different actors have different perceived risks, for example? (Katharine Mach, IPCC WGII TSU)	Figure redrawn and clarified
702	58928	2	63	0	0	0	Figure 2.6. This seems to be too high level to be useful. Planners would need something more practical than this. (David Wright, University of Ottawa)	Figure removed
703	71753	2	63	0	0	0	Figure 2-5: The value that this figure brings to the discussion is obscure (Fig. 2-5). Suggest deletion. (UNITED STATES OF AMERICA)	Figure substantially redrafted (2-3)
704	71754	2	63	0	0	0	Figure 2-6: The meaning of the graphic images in the bottom half of this figure is not apparent. (UNITED STATES OF AMERICA)	Figure removed
705	71755	2	63	0	0	0	Figure 2-6: This is not a particularly helpful figure (Fig. 2-6); the authors should consider deleting it. (UNITED STATES OF AMERICA)	Figure removed
706	81356	2	63	0	0	0	Figure 2-5: This figure has the potential to provide a good summary of the decision making process, but it may be better presented to convey the main message. The boxes make each element compartmentalized and give the audience an impression that they are all independent from each other and stand alone. If authors wish to retain the format, a table may be a better option. Also, I am not clear on some of the row headers in the left column. For instance, what are exactly "climate services" in the context of the decision making process? Also, "decision making process" on the third row seems to be the same thing as the top row (column headings). (Yuka Estrada, IPCC WGII TSU)	Figure substantially redrafted (2-3)

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
707	81357	2	63	0	0	0	Figure 2-6: This figure, especially the bottom half is confusing and its caption is not particularly helpful for interpreting it. There are too many fragmented and unlabeled elements and it is not clear for the audience how to interpret each component. For instance, what exactly is the line representing in this chart? From the text (P 26 Line 41), one is given the impression that x-axis is showing a "time" element, but in the mid panel, horizontal arrows are labeled differently. It needs a significant revision in order to be a valuable visual aid to the paragraph. (Yuka Estrada, IPCC WGII TSU)	Figure removed
708	81606	2	63	0	0	0	Figure 2-6. The thresholds mentioned within the caption are presumably the horizontal dotted lines within the figure, but it would be very helpful to clarify this. (Katharine Mach, IPCC WGII TSU)	Figure removed
709	68076	2	64	0	0	0	Figure 2-7 is difficult to understand. It is suggested to make it easier and clearer. (CHINA)	see 711
710	71756	2	64	0	0	0	Figure 2-7: Once again, any takeaway message from this figure is obscure. (UNITED STATES OF AMERICA)	see 711
711	81358	2	64	0	0	0	Figure 2-7: The author team should further develop the caption for this figure to provide a guide for the reader in interpreting the concepts and processes depicted here; for instance, what exactly are the processes depicted in each triangle? How does geographical scale fit to the bottom-up triangle? (Yuka Estrada, IPCC WGII TSU)	figure 2-7 redrawn; text added to figure caption
712	60926	2	65	1	0	0	The content of the quadrants of Figure 2.8 is not self-explanatory and there is mismatch between the different aspects treated in each quadrant. For example, expansion in the use of renewable energy sources (other than hydropower) is missing from the bottom-right quadrant, as well as improved energy use efficiency. A link between "coastal zone defence" and "increase of emissions" is also not evident. It is recommended to revise the figure substantially, addressing few key sectors in terms of mitigation and adaptation in a consistent way. (European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)	will add explanation in the text and figure caption that these are representative examples of each type of trade-off or synergy, and not meant to be complete lists; will add text explaining 'adaptive emissions'