

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
1	36175	13	0	0	0	0	General comments Forest ecosystem are extremely important in coping with climate stresses, specially in livelihoods affected by poor. This linkage should be more information about coping strategies by forest dependent livelihoods would be helpful for clarifying the use of these ecosystems in adaptation (see Robledo C., N. Clot, A. Hammill, and B. Riché The role of forest ecosystems in community-based coping strategies to climate hazards: Three examples from rural areas in Africa. Forest Policy and Economics. (DOI: 10.1016/j.forpol.2011.04.006). Available at: http://www.sciencedirect.com/science/article/pii/S1389934111000475) Further information on the importance of forest ecosystems for coping strategies in poor livelihoods can be found in Risto Seppälä, Alexander Buck and Pia Katila. (eds.). 2009. Adaptation of Forests and People to Climate Change. A Global Assessment Report. IUFRO World Series Volume 22. Helsinki. 224 p. (Carmenza Robledo Abad, HELVETAS Swiss Intercooperation)	In 13.3.2.1, we cross-reference Chapters 15 and 16 that address ecosystem-based adaptation.
2	36862	13	0	0	0	0	Recommended References: Barrientos and D. Hulme (eds) Social Protection for the Poorest, Palgrave, due Feb 2008 Conway, T. and Norton, A. 2002 'Nets, Ropes, Ladders and Trampolines: The Place of Social Protection within Current Debates on Poverty Reduction in Development Policy Review Theme Issue: Poverty, Risk and Rights: New directions in Social Protection 20.5 November. Devereux, S. and Sabates-Wheeler, R 2007 Debating Social Protection IDS Bulletin 38.3 May, esp. pp. 1-33 Sabates-Wheeler, R., Mitchell, T. and Ellis, F., 2008, 'Avoiding Repetition: Time for CBA to Engage with the Livelihoods Literature?', IDS Bulletin, 39.4, pp. 53-59 Sumner, A. 2012a 'Where Do The World's Poor Live? A New Update', IDS Working Paper 393, Brighton: IDS Sumner, A. 2012b From Deprivation to Distribution: Is Global Poverty Becoming A Matter of National Inequality?, IDS Working Paper 394, Brighton: IDS Vernon, T. 2008, 'The Economic Case for Pro-Poor Adaptation: What do we Know?', IDS Bulletin 39.4 (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Thank you for these suggestions. 1) The Barrientos and Hulme 2008 reference has been included in the section in social protection (13.4.1). 2) The Conway and Norton 2002 reference has not been included given that there are more recent references available. 3) The Devereaux and Sabates-Wheeler 2007 was not included, in favor of a more recent (Devereaux, McGregor, and Sabates-Wheeler 2011) IDS bulletin on the subject by the same authors. 4) Sabates-Wheeler et al. 2008 has been included. 5) Sumner 2012a has been included. 6) Sumner 2012b (as listed here), has not been included in favor of other Sumner references (Andy Sumner is a CA and selected the most appropriate references) 7) Pro-poor adaptation is explicitly discussed in Ch 14-16, which is cross-referenced in 13.4.1, and so we elected not to include Vernon 2008.
3	39553	13	0	0	0	0	Overall, I would like to see a bit more attention placed on informal livelihoods in cities. Informal workers and/or people living in informal settlements will face different risks from climate change, which haven't been well articulated in this chapter. (Carrie Mitchell, International Development Research Centre (IDRC))	We refer to Ch 8 for most of the urban issues but have included some in our chapter (with the help of David Satterthwaite, now CA on our chapter). Specific examples include information about people living in urban/informal settlements, from Hardoy and Pandiella 2009, Adelekan 2010, Mitlin and Satterthwaite 2013. This has also been emphasized in considering physical assets as well as the particular issues for urban wage laborers and food security.
4	40873	13	0	0	0	0	I like this chapter a lot, thanks for the tremendous effort. (John Posey, East-West Gateway Council of Governments)	Thank you!
5	42746	13	0	0	0	0	The chapter is very well-written. Although the impacts of climate change on women, elderly and other less-privileged people have been mentioned in different sections in the context of livelihood and poverty, the issue of 'Gender and other Marginalized Groups' deserves a special sub-section on their specific issues. (Muhammad Mohsin Iqbal, Global Change Impact Studies Centre)	We have included a box on gender, embedded in a section on inequalities (also looking at age, race, etc.)
6	44272	13	0	0	0	0	The introduction of the concepts of livelihoods and poverty is rather lengthy. It should be shortened significantly to give more room to the climate-poverty-livelihood interactions. The chapter needs more references, e.g. sectt. 13.1 has several paragraphs with no references at all. (Dominik Reusser, Potsdam Institute for Climate Impact Research)	FOD sections 13.1. and 13.2. have been combined and text has been shortened.
7	44273	13	0	0	0	0	The chapter seems to diverge from the outline approved by the IPCC, however the new structure seems more suitable for the topic and should be kept. (Dominik Reusser, Potsdam Institute for Climate Impact Research)	Yes, agreed.
8	44516	13	0	0	0	0	Section 13.3.1: "Evidence of Observed Climate Change Impacts on Livelihoods and Poverty" starts off with a rather general and as yet unreferenced statement on physical climate changes: "Climate change is already taking place, and further changes are inevitable. These include gradual changes in temperature and sea level but also increased climate variability and extremes, including more intense floods, droughts, and storms." Need to be very careful when lumping together different types of extremes (see SREX Ch3) and careful cross-referencing is needed to chapter 3 of the SREX and relevant WGI AR5 chapters to support more specific statements. (Thomas Stocker, IPCC WGI TSU)	This has been corrected. We are now referring to more generic weather events and climate, upon suggestion from the TSU at LAM3.
9	44906	13	0	0	0	0	The chapter has progressed well. The structure is clear, although there is still some repetition and redundancy between chapters. There are some passages which use country-level or sector-level findings which are not poverty-disaggregated, which I don't see belong here. Also a) some problematic use of grey literature and b) some problems of attribution in observed impacts, as specified below. But on the whole my comments are minor. (John Morton, Natural Resources Institute, University of Greenwich)	As discussed with John, we show country- or sector-level, non-disaggregated data as part of the various methods used to measure poverty. We understand that disaggregated data are better.

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10	45490	13	0	0	0	0	We suggest expanding this chapter to include a brief analysis of how climate extremes can result in displacement and disrupt livelihoods. Suggested text: "Among the most detrimental impacts of climate change are migration pressures and the displacement of populations as livelihoods are affected by disruption of agricultural cycles and extreme weather events. The frequency and intensity of atmospheric hazards that lead to human displacements are expected to increase due to climate change. "The relationship between environmental change and disasters is complex. There is considerable debate on whether the increase in the number of atmospheric hazards in recent years is due to anthropogenic climate change (e.g. Anthes et al., 2006) or whether this is simply a result of improved monitoring and recording systems ('undercounting'; e.g. Landsea, 2007). However, there is emerging consensus among the modelling community regarding the potential increase in intensity of cyclones (Vecchi and Knutson,2008; Knutson et al., 2010), frequency and intensity of heavy rainfall events leading to flooding (Pall et al., 2011), and duration and intensity of droughts (Schubert et al., 2009). Coupled with an increase in exposure due to population growth in vulnerable areas, these could lead to adverse impacts on livelihoods, especially among the poorest communities. The ways in which climate-related hazards might lead to displacement are also complex. It is widely reported that cyclones and floods lead to distress (forced) migration, but droughts often lead to economic (voluntary) migration (Raleigh et al., 2008). However, sudden-onset drought conditions could also result in forced displacement (Hegerl et al., 2007). Hurricane Mitch (1998) is highly illustrative of the complexities associated with extreme events and displacement. It is estimated that Hurricane Mitch temporarily displaced approximately 1 million people in Central America and the Caribbean (Wisner et al., 2004). However, the hurricane was more than a climate event;indeed, its impacts were associated with government policies that (i) marginalized poor populations into hazard-prone areas, (ii) consistently underinvested in disaster preparedness and (iii) promoted systematic degradation of land, which further increased vulnerability. Therefore, classifying Hurricane Mitch solely as a climate event detracts attention from the root causes of and impacts on vulnerability." Suggested reference: Krishnamurthy, P.K. (2012) 'Disaster-induced migration: Assessing the impact of extreme weather events on livelihoods', Environmental Hazards, 11(2): 96-111. (Carlo Scaramella, World Food Programme)	Comments and references forwarded to Ch 12. They specifically deal with displacement and migration.
11	47617	13	0	0	0	0	Overall, this is a well written, well intended study, providing a lot of information (particularly from the new realm of economic studies on rural poverty). At the same time, the voices of poor people seem strangely muted here -- their preferences, perceptions, goals, and experiences are lost in the researchers' analysis. As mentioned before, the treatment of inequality could have been a lot stronger if the report had addressed the characteristics of the non-poor. Inequality by its very nature implies contrast, and here we are given no contrast (or only implied contrast). Perhaps this deficiency can be addressed in future studies. (A. Peter Castro, Maxwell School, Syracuse University)	We don't have the space for dealing with the non-poor, but tried to make emphasis to inequality stronger and highlight both poverty and inequality also in the global north. consider: The focus in the chapter is on livelihoods and poverty, and we elected to include inequality as an important addition in order to stress the dynamics by which become are or become poor. In the SOD we did our best to emphasize inequality more strongly and particularly do so in our discussion of the SSPs in 13.4. In some cases we also highlighted the opportunities the affluent have, such as in the section on insurance (13.3.2.2). We also included more information on poverty and inequality in the Global North as well (e.g. Katrina in the U.S.)
12	47687	13	0	0	0	0	"I wonder if authors of different chapters were able to consult with each other so that there might be a greater integration of the themes " (Bob Pokrant, Curtin University)	Cross-referencing happens between the FOD and SOD.
13	48011	13	0	0	0	0	This is the best sea level chapter ever, out of the five IPCC WG1 assessments. I won't let that stop me from complaining about things I do not like in the comments that follow, but it is the quality of this document that makes me view commenting as worthwhile (James G Titus, US Environmental Protection Agency)	Titus' comments are meant for CH 13 in WGI, not for us.
14	48012	13	0	0	0	0	The report uses both yr and a with an exponent of -1 to signify "per year". Except for when it is in an equation, using yr-1 is quite annoying to read in the middle of a paragraph, and a-1 is even worse. (James G Titus, US Environmental Protection Agency)	Titus' comments are meant for CH 13 in WGI, not for us.
15	48013	13	0	0	0	0	The chapter seems to define "sea level" as including instantaneous local water levels (e.g. it uses the phrase "extreme sea level" to refer to storm surges). The more widely accepted definition of sea level is the tidal water level averaged over a reasonably long period of time (e.g. years or a tidal epoch). I encourage you to adhere to that standard definition and use the phrase "water level" when referring to storm surges. (James G Titus, US Environmental Protection Agency)	Titus' comments are meant for CH 13 in WGI, not for us.
16	48014	13	0	0	0	0	The chapter appears to use the term "glacier" in a common but nonstandard way. The most common definition of glacier is a persistent (i.e. multi year) body of ice resting on land, so that the term would include ice sheets, ice caps, and the small glaciers. The second most common definition seems to be to use the phrase "glacier" to refer to "small glaciers". This chapter, however, seems to use the term "glacier" as referring to "ice caps, ice fields, and small glaciers", in effect, everything but ice sheets. The term is eventually defined on page 18, but one has seen the word many times by that point. (James G Titus, US Environmental Protection Agency)	Titus' comments are meant for CH 13 in WGI, not for us.
17	50757	13	0	0	0	0	1) Overall -- In preparing the 2nd-order draft, the chapter team should prioritize making each section of the chapter a polished, comprehensive treatment of topics considered. From these sections, the chapter team is then encouraged to maximize the utility of its findings, ensuring that they are robust, compelling, and nuanced. Themes to consider informing in constructing findings include decisionmaking under uncertainty, risks of extreme events and disasters, avoided damages, and limits to adaptation. To these ends, the author team is congratulated for its substantial development of the chapter over the past months. In an effort to provide feedback useful for subsequent chapter development, I provide some general and specific comments below. (Katharine Mach, IPCC WGII TSU)	We have done our best!

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18	50758	13	0	0	0	0	2) Highlighting key findings -- In developing the 2nd-order draft, the chapter team should continue presenting key findings throughout the chapter's sections, using calibrated uncertainty language to characterize its degree of certainty in these conclusions. In particular, summary terms for evidence and agreement and levels of confidence may be applicable; where likelihood terms are used, the chapter team should ensure a probabilistic basis for their assignment is available. By highlighting key findings throughout the chapter, a reader will be able to understand how the literature reviews and syntheses in chapter sections--the traceable accounts--support the conclusions of the chapter, especially those presented in the executive summary. Additionally, such identification of key findings further enables presentation of both generalized and meaningfully specific conclusions regarding key trends and determinants in the context of the executive summary. (Katharine Mach, IPCC WGII TSU)	We have tried to highlight key findings, wherever possible with calibrated uncertainty language.
19	50759	13	0	0	0	0	3) Usage conventions for calibrated uncertainty language -- Where used, calibrated uncertainty language, including summary terms for evidence and agreement, levels of confidence, and likelihood terms, should be italicized. In addition to incorporating these terms directly into sentences, the author team, as already done in some places, may find it effective to present calibrated terms parenthetically at the end of sentences or clauses. Casual usage of the reserved uncertainty terms should be avoided, as has been flagged in some specific comments throughout the chapter. (Katharine Mach, IPCC WGII TSU)	We think we've got the convention right this time.
20	50760	13	0	0	0	0	4) Specificity of described observations, projections, and other examples -- The author team is very much encouraged to continue presenting observed and projected impacts, trends, and examples with specificity and conciseness. Some further options for characterizing relevant details in examples have been noted in some places in the chapter. (Katharine Mach, IPCC WGII TSU)	We try to be as precise as possible with observations and projections, showing trends and impacts wherever possible through examples.
21	50761	13	0	0	0	0	5) Conditional framings, with consideration of climate change versus extreme events versus climate variability -- In discussing information on vulnerabilities and/or impacts associated with climate change, extreme events, and climate variability, the author team should use care in its framing to ensure that these 3 aspects (climate change, extreme events, and climate variability) are not overly conflated. Conditional constructions are one tool for the author team to consider, as they can allow separation between physical events and changes and corresponding conditional outcomes. They also can allow separate characterization of the author team's degree of certainty in physical changes (with reference to WG1 findings, for example) and in conditional impacts and outcomes where appropriate. The author team may wish to consider, along these lines, some of the points raised in a preface of sorts on page 7 of chapter 9 (WG2, section 9.3.2). (Katharine Mach, IPCC WGII TSU)	We have tried our best to not conflate terms.
22	50762	13	0	0	0	0	6) Detection and attribution -- Throughout the chapter, terminology regarding detection and attribution should reflect the good practice guidance paper on detection and attribution. Phrases such as "consistent with climate change," "due to climate change," and "linked to climate change" should be carefully reviewed to ensure that attribution is not implied where it hasn't been formally done. I have noted some such instances with review comments in the chapter. (Katharine Mach, IPCC WGII TSU)	We tried our best to be as precise as possible with D&A. As discussed in Buenos Aires with Katie, we use "weather events and climate" as the best umbrella term for climate change in introductory paragraphs.
23	50763	13	0	0	0	0	7) Coordination across the Working Group 2 contribution -- In developing the next draft of the chapter, the author team should consider treatment of topics not only in this chapter, but also across the report as a whole. For each topic, the chapter team should ensure that treatment here is reduced to the essence of what is relevant to the chapter, with cross-references made to other chapters as appropriate, also minimizing overlap in this way. (Katharine Mach, IPCC WGII TSU)	We have used various opportunities for cross-referencing other chapters, mainly 7, 8, 9, 11, 12, 14, 15, 16, and 20.
24	50764	13	0	0	0	0	8) Harmonization with the Working Group 1 contribution to the AR5 -- At this stage of chapter drafting, the author team should carefully consider the working group 1 contribution. Wherever climate, climate change, climate variability, and extreme events are discussed, the chapter team should ensure that their treatment is harmonized with the assessment findings of working group 1. (Katharine Mach, IPCC WGII TSU)	We have made several references to WG1 (SOD), particularly their Chapters 9 and 14, and also 11 and 12. Perhaps there will be more opportunities once WGI text is finalized.
25	53244	13	0	0	0	0	Many statements apply an attribution of impacts to climate change that are not consistent with the key findings of other chapters. Please check all statements of the impacts of climate change to ensure accurate and clear communication. (Kristie L. Ebi, IPCC WGII TSU)	We have harmonized where insight was available and have pointed out differences in measuring approaches that lead to different impacts (e.g. with Ch19 on poverty estimates).
26	53245	13	0	0	0	0	It would be very helpful for the readers to understand assumptions underlying statements of the type climate change is projected to cause y". Under what scenarios and assumptions? Over what time frame? (Kristie L. Ebi, IPCC WGII TSU)	We have specified used scenarios and assumptions wherever possible. Some scenario descriptions in the cited article are several sentences long. Hence we tried to concentrate on the main details (models, time frame, etc.)
27	53246	13	0	0	0	0	Please ensure consistency of definitions with the AR5 glossary. (Kristie L. Ebi, IPCC WGII TSU)	This is done, we refer to the glossary when relevant. Principal terms and concepts - livelihoods, vulnerability, climate-resilient pathways, and social protection, and some others (e.g., maladaptive actions) are used with a reference to the Glossary.
28	53247	13	0	0	0	0	The chapter makes a strong case for the importance of understanding the possible impacts of climate variability and change on the poor in middle income countries, but provides almost no examples. Adding a few would help underscore the point. (Kristie L. Ebi, IPCC WGII TSU)	We have included literature on impacts on the poor in MICs and HICs, but the literature remains scarce! Examples include newly added literature on the poor and Hurricane Katrina in the US, e.g. Elliott and Pais 2006 and Fussell et al. 2010, and on the indigenous in Russia, Crate 2013, and in Bolivia (a LMIC), McDowell and Hess 2012 and Validiva et al 2010. We have also added more information on China, e.g. Piao et al. 2010 and Taylor and Xiaoyun 2012.
29	53248	13	0	0	0	0	An issue not raised that could be of interest is the limited access of the poor to the law. A UN report a few years ago highlighted the importance of this issue. For example, why should a smallholder farmer improve his or her land if they don't own it and if the owner will take the land back if it is more productive? (Kristie L. Ebi, IPCC WGII TSU)	We make reference to limits to access to land in our case study descriptions (Bolivia and under the biofuel section).

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30	53249	13	0	0	0	0	The reference for the SREX is Field et al. 2012. (Kristie L. Ebi, IPCC WGII TSU)	Corrected.
31	54434	13	0	0	0	0	GENERAL COMMENTS: I would like to thank the authors for their work on the FOD. When considering the expert review comments received on your chapter and the next round of revisions, I suggest several overall priorities. (1) Keep in mind that the preparation of the SOD is the time to ensure that each section of the chapter presents a comprehensive treatment of relevant literature, and that the Executive Summary presents findings that capture the key insights that arise from the chapter assessment. (2) This is also the time to focus on distilling the chapter text, not just fine-tuning wording but editing with a critical eye to improving quality by making discussions succinct and synthetic, while still being comprehensive. (3) Cross-chapter coordination is also important at this stage, as it should now be possible to identify topics that overlap with other chapters and to coordinate with other chapter teams to minimize that overlap. (4) Cross-Working Group coordination is important as well, and relevant chapter sections should cross-reference chapters from the other Working Groups, particularly in the case of statements about changes in mean or extreme climate conditions that are assessed in the contribution of Working Group I. (Michael Mastrandrea, IPCC WGII TSU)	We have tried very hard to meet all requests!
32	54435	13	0	0	0	0	EXECUTIVE SUMMARY: The author team has made a good start on the Executive Summary, including clear attention to providing traceable accounts (see separate comment on this) and calibrated uncertainty language. For the SOD, I suggest considering ways to increase the specificity of the Executive Summary findings, providing further details in various findings to enrich the general points currently being made. This could include quantitative information about observed changes in poor populations and projected impacts of climate change, specific geographical areas where evidence exists to support various findings, and other details that supplement more general points. Some specific suggestions along these lines are provided below, among other comments. (Michael Mastrandrea, IPCC WGII TSU)	We have had several rounds of revision here, trying to be as precise, concise, and giving the right examples in term of trends, specific, geographic areas, and specific populations.
33	54436	13	0	0	0	0	TRACEABLE ACCOUNTS: The author team has made a good start to providing traceable accounts for assessment findings and highlighting the location of those traceable accounts in the Executive Summary. In general, I would recommend the author team continue to strengthen the linkage of the Executive Summary findings with the underlying chapter text. This is done very clearly for the nonbold statements, and it is clear that the bold statements synthesize across the various chapter sections referenced. But in this context, I would also suggest providing some explanation of the calibrated uncertainty language used in the Executive Summary in the corresponding chapter section(s) where the traceable account appears for each finding. For example, in situations where confidence in a finding is not high, it would be useful to understand why the author team has made this judgment--what are the factors that limit confidence. In situations where confidence is high, what is the evidence that forms the basis for these assignments. Succinct descriptions in the chapter text of this type will both highlight the basis for ES findings and help explain the author team's assessment of the literature. For findings that synthesize across sections, 13.6 may provide a location to describe such synthesis and resulting findings and calibrated language assignments, but this can also occur in other sections. It would also be useful to better understand the basis for the author team's assignments of likelihood language where it is used, as currently this is not explicitly addressed. One option could be a box or short section describing the nature of evidence assessed by the chapter (see example in Chapter 12, Box 12-2) and in what areas/for what topics quantitative information is available upon which to base probabilistic likelihood assignments, and where qualitative information is available that forms the basis for confidence assignments. This would aid understanding of when likelihood language is used and when it is not. We in the TSU are also available to discuss these issues if that would be of use. (Michael Mastrandrea, IPCC WGII TSU)	We have tried our best to provide solid traceable accounts throughout.
34	54888	13	0	0	0	0	Literature permitting, the chapter team is encouraged to add more cases to support their findings. Moreover, it would be useful if the enabling or deterring factors, drivers etc., are explicitly stated where ever possible. (Monalisa Chatterjee, IPCC WGII TSU)	We have added several new case studies, including some from urban and mountain environments and some from poverty in the North. We also have 4 more detailed case studies presented in Fig 13.2.
35	54891	13	0	0	0	0	The author team should update the reference list and remove citation inconsistencies between in text citations and full citations given in the reference list. Please see supplementary document named WG2AR5-Chap13_Reference Checks.pdf at https://ipcc-wg2.gov/AR5/author/FOD/SuppMat (Monalisa Chatterjee, IPCC WGII TSU)	We have addressed all text formatting issues (Write-n-Cite required a certain learning curve!).
36	42227	13	1	0	0	0	The impact of CC, concretely the impacts of hydrometeorological disasters and their impacts on people's livelihoods should be more strongly embedded. Also the issue that the recurrent disasters make communities less resilient and the risk of falling into the vicious cycle of poverty (Clot and Carter 2009). Concretely DRR as a topic is key in this chapter and should be better embedded and also accordingly be named (c.f. SREX 2012). (Nicole Clot , HELVETAS Swiss Intercooperation)	DRR is now given its own section in the box in 13.4.1. Recurrent disasters are addressed, for example as part of the topic sentence in 13.2.1.3 on shifts from transient to chronic poverty.
37	42226	13	1	0	34	0	I miss the explicit mentioning that CC is an additional threat/burden to society, especially to the poor and CC adds an element of urgency. At the moment, CC is quite seen as one key element in the context of livelihoods. But indeed CC is "only" an additional burden to the already existing difficult conditions poor people are facing (Nicole Clot , HELVETAS Swiss Intercooperation)	It is explicitly mentioned in the Executive Summary, and in SOD 13.1.4.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
38	43411	13	1	0	34	0	<p>Providing a clear conceptual framework. The chapter described the concepts of poverty, livelihoods, inequalities their dimensions. However, how climate change impacts livelihoods, what are the pathways, how different factors/ stressors interact and interplay and affect livelihoods is not very clear. The Section 13.2.4.is dedicated on this and a Figure 13-2. Is used to illustrate the point. But, it is not clear how different stressors interact and interplay influence livelihood and poverty. Similarly, Section 13.2.2.1. Framings, does not analyze the linkage of climate and livelihoods. The chapter would benefit by developing clear conceptual framework how climatic and non-climatic factors affect livelihoods assets, their access, entitlements, -how policies and institutions and structural factors interact and influences livelihoods. The links between poverty, environment and climate change could also cover in more detail as livelihoods of poor people largely depend on land, water, forest, agriculture, pasture, livestock and other natural resource dependent sectors. More attention to spatial or geographic dimensions would be appropriate. Authors rightly mention that poverty and spatial and temporal dimensions. However, not enough attention is paid to spatial or geographic dimensions- how spatial dimensions and features are relates with change impacts and affects livelihoods. Poor people are generally live in marginal areas such as in mountains, coasts, or in urban sprawl and hazardous areas. Like other marginal areas, people live in remote mountain areas in difficult biophysical condition, fragile environment, with poor physical and socio-economic infrastructure and facilities, suffered disproportionately by the impacts of climate change and had has limited options or ability to act to mitigate the impacts of climate on livelihoods. As a result, people live in developing countries mountain regions, particularly in the greater Himalayan region is highly vulnerable to climate change and their livelihoods are precarious. It would be very useful if this chapter explain spatial features of climate change impacts, particularly on mountains and their link to livelihood and poverty, why mountain regions need differentiated response measures. The statement conclusion drawn in the paper that -climate mitigation policy responses are often detrimental to poor and marginalized people - needs more clarification/evidence. While there are cases when response measures failed to ameliorate livelihoods, there are also cases social safeguards are taken into account such as Community Forestry Carbon Project in Nepal, implemented by ICIMOD has contributed to improve livelihoods poverty, gender, ethnicity and social dimensions are considered in carbon payments and money received through carbon sequestration are channelled to income generating activities. Providing these types of evidences may give a balanced picture. References: 1) Rana. E. B., Karki S., Karki B.S, Kotru R., and Poudel, J. (2012) REDD+ and forest governance in Nepal, ETFRN News - 53, Tropenbos International, Wageningen, the Netherlands 2) Karky, BS; Rasul, G. (2011) 'The cost to communities of participating in REDD+ in Nepal'. In Skutsch, M (ed.) Community forest monitoring for the carbon market: Opportunities under REDD, pp 107-117. London: Earthscan (David Molden. International Centre for Integrated Mountain Development (ICIMOD))</p>	<p>Figure 13.2. has been improved. And the SOD section 13.1.4. (interactions) improved. However, there is NO one single framework in the literature to understand the complexities; hence we propose Fig 13.2. to get us at least in the right direction. We have added 4 case studies to illustrate key points/processes, including one on mountain environments (with references). We have added 2 statements on quality of evidence (beginning of sections 13.2 and 13.3). We have incorporated several studies from the Himalayas. The Section on REDD+ (13.3.1.2) as been revised substantially and updated with new references. In terms of the suggested references, 1) Rana et al. 2012 has been incorporated in 13.3.1.2. 2) Karky et al. 2011 has not been included because we felt only one reference to REDD+ in Nepal was necessary.</p>
39	43412	13	1	0	34	0	<p>(Molden continued) This chapter examines the climate change policy responses and their impact on livelihoods. It, however, did not suggest how to current mitigation and adaptation responses could be made more pro-poor. It would be useful to identify response measures which are livelihood friendly and what policies, strategies, approaches, criteria are required to make mitigation and adaption response pro-poor. 1. Information presented in section 13.2.2.3 and conclusions drawn based on this need to be phrased carefully. While in 1990, 93% poor were in LIC, but now (need time frame, what this now mean), 70% of poor live in MICs, gives an impression that MIC has performed poorly in poverty reduction in comparison to LIC. Without referring population size in LIC and in MIC, giving the number of poor is a bit confusing. Moreover, capacity of different countries to act on mitigating climate impact need to be considered. 2. Like coastal and deltaic area, impact of climate change on livelihood in mountain areas of developing countries such as the greater Himalayan region (also known as Hindu Kush Himalayan is very high for several reason. First, rural poor in mountains depend heavily on climate sensitive sectors such as rangelands, forests, rainfed agriculture. Second, these regions are highly vulnerable to extreme events, natural hazards, which make livelihoods more precarious and susceptible to climate change. For details please ICIMOD, 2011 HKH Climate Report, ICIMOD's Position on Climate Change and Mountain Systems, Mountain Research and Development Vol 28 No 3/4 Aug–Nov 2008, . Martin Beniston, Climatic Change in Mountain Regions: A Review Of Possible Impacts, Climatic Change 59: 5–31, 2003. Impact of climate change on lives and livelihoods of mountain communities of developing deserve more attention. 3. More detailed analysis is required to show the link between climate change, environmental degradation and human poverty. Some 70 percent of the world's poor continue to live in rural areas and depend on their local environments for their livelihoods. (David Molden, International Centre for Integrated Mountain Development (ICIMOD))</p>	<p>Chapters 14-16 deal with adaptation, and WGIII with mitigation. Not in our plenary-approved outline to identify pro-poor policies. "Now" in FOD section 13.2.2.3. has been changed to "2008". Not enough space to provide population size for the MICs and LICs (and not essential for the chapter). Literature on mountain environments has been included. Ch 9 (Rural areas) deals with rural environments; we cross-reference. 1) This section 13.2.2.3, now 13.1.2.2, has been heavily revised. There was not sufficient space to address the capacity of different countries to act on mitigating climate change. 2) We reviewed the suggested literature and incorporated Beniston 2003 as a peer-reviewed paper; we elected not to include the HKH climate report or the position paper. 3) We did our best to balance reviewing the body of literature and making the linkages you suggest. We included the following literature on the Himalayas: Gerlitz et al. 2012, Xu et al. 2009, Azhar-Hewitt and Hewitt 2012, Sudmeier-Rieux et al. 2012, Onta and resurreccion 2011, Nellemann et al. 2001, Banisten 2004, Gentle and Maraseni 2012, Hewitt and Mehta 2012.</p>

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
40	43413	13	1	0	34	0	(Molden continued) 4. Many natural resource-dependent communities makes livelihoods in secondary economic activities such as collecting, processing, packaging, marketing using raw materials from agriculture, forestry, rangelands, wetlands, rivers. Impacts of climate change on such sectors is expected to affect the livelihoods not only people directly dependent on such sector but also indirectly dependent on such sectors. Providing some information on this aspect would be useful. 5. Better clarification of Figure 13-2 would be useful. 6. Section 13.2.2.1. Framings. The framing the dimension poverty would benefit by linking with the main focus of the chapter –the link between climate change and livelihood & poverty. 7. It is anticipated that climate change may trigger environmental or climate refuges, rural-urban migration and cross-border migration in developing countries. There is a risk that climate change may compound the propensity for social conflict which will leave communities poorer, less resilient and in turn ill-equipped to cope with the consequences of climate change. 8. In Section 13.3.1.5 (page 16, line 23), shift from rice farming to shrimp farming in Bangladesh is probably not driven by climatic factors rather economic factor growing demand for shrimp in developed country market, supported by liberalization and globalization. This is probably not the right example of inequality arising from climate change. However, river bank erosion caused by extreme events which has increased significantly could be example where poor people losing their land and becoming land less increasingly. (David Molden, International Centre for Integrated Mountain Development (ICIMOD))	4) Ch 9 deals specifically with rural resources, we cross-reference. 5) Fig 13-2 has been improved. 6) Section on interactions better linked to framing of poverty. 7) Ch. 12 deals with migration, climate refugees and conflict; we cross-reference. Bangladesh example is in the peer-reviewed literature. 8) We never received any input from another reviewer (Islam) on what other publications to cite. We are not clear about what river bank erosion example is referred to here.
41	43414	13	1	0	56	0	This chapter is based on a comprehensive review of knowledge base on Livelihoods and Poverty however understanding of mountain poverty as well as livelihoods is completely missing and is important to be included because: 1) Poverty in mountains is higher and much more persistent 2) Causes of poverty in mountain areas differ from others and 3) Contribution of different poverty determinants differs in mountains and plains. (Hunzai, K; Gerlitz, JY; Hoermann, B (2011) Understanding mountain poverty in the Hindu Kush-Himalayas: Regional report for Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. Kathmandu: ICIMOD). (David Molden, International Centre for Integrated Mountain Development (ICIMOD))	Mountain literature has been included throughout the text. Specifically with respect to the publication you suggest, we elected to include the peer-reviewed paper Gerlitz et al. 2012 by many of the same authors, in order to highlight the HKH.
42	47007	13	1	35	1	35	Souldn't it be "Assessment of Climate Change Impacts on Livelihoods and Poverty AND INEQUALITY" to be coherent with title in 13.2? (Susana Beatriz Adamo, Columbia University)	We stick to the plenary approved outline, but highlight inequality in the text as a central dimension.
43	35898	13	2	0	0	0	The effects of climate change on land (natural capita) and its risk in exacerbating poverty by impairing the livelihoods avenues for the poor need to be captured independently. For instance, climate change events as droughts reduces land productivity, available land for cultivation and dry up forest land for bushmeat and non timber forest products. This affects mostly the poor who depend solely on land (natural capita) output for their livelihoods. As well, the governments of poor nations have been reported to build their development strategy on natural capital (World Development Report, 2010). However, they have no insurance facilities to compensate in times of odd events as droughts. Both adaptation and mitigation measures stress on modifying land use practices in different ways. By so doing, again, available land for the poor is restrained and thereby deepening poverty. An analysis to substantiate the above using the case of Cameroon WDR 2010 indicates that between 1990 and 2005, Cameroon produced 70 millions metric tonnes annual average emissions of CO2 from deforestation (land based emissions). This made Cameroon to contribute an average share of 1.2% to the total emission and was ranked 12th in producing land based emission from CO2 together with Canada, Peru and Philippines. Unfortunately, Cameroon has produced very little wealth compared to these other countries. The aggregate wealth Cameroon produced, reflecting the value of all goods, resources, and services, including natural, produced, and intangible capital, was 10,753USD per capita. Of this, 1,749 came from produced and urban land capita, 4,271 from intangible capital and 4,271USD per capita came from natural capita (summarized from WDR, 2010). This indicates that Cameroon is highly reliant on natural capital and thus is highly vulnerable to climatic changes. This is substantiated by the land, water and agricultural projections. Between 2000 – 2050, temperatures will change by 1.3°C, heat wave duration will change by 02 days, precipitation will change by 0,9 - 3%. All these will produce a projected impact change on agricultural output of -20,0% and an average percentage change in crop yield of -6,6. Such data suggest that due to climatic changes and the effects of deforestation, input for agricultural production will increase with declining yields if no other mitigation and adaptation strategies are employed. WDR (2010). http://siteresources.worldbank.org/INTWDR2010/Resources/5287678-1226014527953/Statistical-Annex.pdf (Precillia Ijang Tata epouse Ngome, Institute of Agricultural Research for Development)	This is a very important remark - climate change on the natural capital as such; however, we think this must be primarily be addressed in the Chapters on terrestrial systems (3.5.5, 4.3). We make references to these chapters.
44	50766	13	2	19	0	0	Executive summary – In further work on the executive summary, there are several aspects of development the author team may wish to consider: 1st, in terms of formatting, all calibrated uncertainty terms used, per the uncertainties guidance for authors, should be italicized. 2nd, as appropriate, the author team may wish to enhance specificity in the executive summary, indicating with further detail specific trends that have emerged or are projected, for example, across categories of countries or regions or across groups with differing vulnerabilities. There may be further opportunity for trends characterized to indicate more specifically when, where, and why (what specific drivers are relevant), illustrating with nuance where the current state of understanding lies. (Katharine Mach, IPCC WGII TSU)	We now use italics for all calibrated uncertainty language.
45	47601	13	2	21	0	0	The Executive Summary should include early on a statement about the meaning and complexity of poverty, drawing on 13.1 but perhaps using simpler, direct language to say that not all 'poor' people are poor in the same way, for the same reasons, and this complexity is reflected on the likely impacts and implications of climate change on poverty and the poor. The difference between well-being and poverty ought to be identified here and in the introductory section on poverty and livelihoods. (A. Peter Castro, Maxwell School, Syracuse University)	Done (under the second major heading). We explain various dimensions of poverty under 13.1.2. and stress wellbeing also in the context of livelihood trajectories, also referring to the multidimensionality of poverty that goes clearly beyond income poverty. We did not have more space to delve deeper into this discussion.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
46	49818	13	2	21	2	52	The excessive and unnecessary costs of attempting to limit emissions of greenhouse gases is increasing poverty and promoting economic disaster. The sooner you wake up to the fact that it is unnecessary the better. (Vincent Gray, Climate Consultant)	This is not something we could address in the Executive Summary. However, we do refer to "collectively addressing GHG emissions and vulnerabilities" at the end of section 13.4.
47	36178	13	2	22	2	23	You mention projected impacts of climate change and responses to climate change - over what time period? (Lindsay Stringer, University of Leeds)	Now stated in opening paragraph (up until 2100).
48	50765	13	2	27	2	29	For this statement, the author team should consider the degree to which impacts on "poor people's lives and livelihoods" have been rigorously attributed to climate change, as implied by the phrase "already affected by climate change." The 2nd sentence of this key finding seems to imply challenges in formally attributing such impacts to climate change. If attribution has not been done in a more formal sense, a more conditional or qualified framing may be appropriate here. (Katharine Mach, IPCC WGII TSU)	We state in the opening paragraph of the ES that climate change interacts with a multitude of non-climatic factors to affect livelihoods and poverty, and that D&A is challenging. However, we have tried to be more careful when attributing anything to climate change, also by specifying what specific aspect of CC we mean.
49	47602	13	2	28	0	29	The authors might want to see a recent article by Yancey Orr, Russell Schimmer and Roland Geerken, "Ethno-ecology in the shadow of rain and the light of experience: local perceptions of drought and climate change in east Sumba, Indonesia," in A. P. Castro et al, (eds.), Climate Change and Threatened Communities (Practical Action, 2012), which calls for understanding phenomenological experiences in understanding climate change. (A. Peter Castro, Maxwell School, Syracuse University)	Book chapter incorporated at the end of the intro paragraph on 13.2.1., making the point that phenomenological observations can further compound the detection & attribution.
50	36179	13	2	28	2	28	"Many of the experienced climate impacts, particularly in terms of increased rainfall and temperature variability" - are these impacts or the symptoms of climate change? (Lindsay Stringer, University of Leeds)	We have rephrased this sentence, saying now that "Many weather events that affect poor people remain unrecognized, such as short periods of extreme temperature or minor changes in the distribution of rainfall,...."
51	53250	13	2	29	2	29	This statement implies attribution. Please rephrase to provide a more nuanced statement that accurately reflects the climate science. (Kristie L. Ebi, IPCC WGII TSU)	This sentence has been rephrased.
52	36180	13	2	30	2	34	You may wish to note that the scale of observations is also important (Lindsay Stringer, University of Leeds)	We refer to temporal scale (short time series, and aggregated numbers) and spatial scale (geographically sparse).
53	42747	13	2	31	0	0	Please see if the Section 13.2.4 'Interactions between livelihood, poverty, inequality and climate change' is relevant to this bullet point. (Muhammad Mohsin Iqbal, Global Change Impact Studies Centre)	We now only refer to 13.2.1.
54	50767	13	2	33	2	33	The sentence on this line could potentially benefit from further clarification. (Katharine Mach, IPCC WGII TSU)	This sentence has been rephrased, and "distribution and magnitude" taken out.
55	36181	13	2	36	2	36	add the word "can" and delete the "s" on "worsens" to read: "climate change can worsen existing poverty" (Lindsay Stringer, University of Leeds)	We decided to leave it as it is because CC does throughout the consulted literature worsen and exacerbate... (robust evidence), often in combination with non-climatic factors, as stated in the intro paragraph.
56	54441	13	2	36	2	39	Regarding the traceable account for this statement, a similar assignment of "very likely" appears in section 13.2.4, but this is not one of the sections referenced in this paragraph. Further, as mentioned in my general comment, the quantitative evidence on which this assignment is based is not clear. It would be useful to explain further the basis for this probabilistic assignment, or perhaps to present only a confidence assignment if the evidence is qualitative in nature. (Michael Mastrandrea, IPCC WGII TSU)	The likelihood statement was removed.
57	53251	13	2	40	2	49	Please check all statements that include "impacts of climate change" to ensure they are consistent with detection and attribution statements of the relevant impacts. (Kristie L. Ebi, IPCC WGII TSU)	All statements have been checked and many have been changed.
58	50768	13	2	43	2	44	The phrase "experiencing disproportionate harm from the impacts of climate change" implies rigorous attribution of impacts to climate change. If formal attribution has not occurred, the author team may wish to adopt a more conditional or qualified phrasing. (Katharine Mach, IPCC WGII TSU)	We rephrased to "particularly negatively affected by weather events and climate, due to".
59	54440	13	2	45	2	45	It would be useful to explain further what types of positive impacts are meant here and what factors might be relevant in determining where they occur. The term positive impacts implies direct beneficial impacts of climate change, but the discussion in 13.3.1.4 seems to indicate that the available evidence mainly relates to examples where successful transformative adaptation has occurred in response to impacts that could be been negative. If so, rephrasing would improve the clarity of this point. (Michael Mastrandrea, IPCC WGII TSU)	Examples of positive impacts were provided.
60	38247	13	2	47	2	48	Executive Summary. "Climate change is likely to create new poor and make many transient poor become chronic poor. This applies to both low-income countries and middle- to high-income countries (high confidence)." Question: This applies the most to which areas (urban or rural) and/or in which region(s) of the world? (Abdalah Mokssit, Direction de la Météorologie Nationale (DMN))	Some area specifications were provided.
61	54442	13	2	49	2	50	It is unclear what is meant by "comprehensive evidence" here. Further elaboration of this point would be helpful to understand what aspects of evidence are not "robust" (which is the calibrated term that may be relevant here instead of "comprehensive"). (Michael Mastrandrea, IPCC WGII TSU)	This phrasing has been removed.
62	50769	13	2	51	2	51	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. If there is not a probabilistic basis, a level of confidence may be appropriate. The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	The likelihood statement has been removed.
63	47603	13	3	1	0	17	What is meant by the 'relational' aspect of poverty needs to be elaborated on, as it is currently very abstract. In addition, this section should make clear that people are poor worldwide in different ways and for different reasons. (A. Peter Castro, Maxwell School, Syracuse University)	We have rephrased this sentence entirely.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
64	36827	13	3	1	3	2	Consider splitting the power issue into another bullet: one thing is being asset poor and another is the power issue. Even within poor groups there are power relations that frame certain adaptation responses and this interacts with policy responses as well. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	We do not address relational poverty in the ES, but we stress that not all the poor are poor for the same reasons.
65	53252	13	3	5	3	12	Are these statements assuming no adaptation? (Kristie L. Ebi, IPCC WGII TSU)	Almost none of the scenarios in future projections state adaptation, now stated in the opening paragraph of 13.2.2.
66	36182	13	3	7	3	7	"poor countries" - economically poor? Please clarify (Lindsay Stringer, University of Leeds)	The sentence has been rephrased. We now use multidimensional poverty under this major ES heading.
67	42217	13	3	8	3	8	what about migrants and internally displaced persons; is it only urban poor? (Nicole Clot , HELVETAS Swiss Intercooperation)	Our chapter does not address migration and internally displaced people. We refer to Ch12 who does a great job on that front.
68	45834	13	3	14	3	21	Is it worth mentioning ecosystem-based adaptation here as a potential and emerging response option (in addition to CDM and REDD+)? (Bradley Hiller, World Bank)	We don't address ecosystem-based adaptation, with the exception of 13.3.2.1 where we refer to Ch 15 that has a whole section on it.
69	53253	13	3	14	3	21	The first and third bullets sound contradictory. (Kristie L. Ebi, IPCC WGII TSU)	The third bullet has been changed to address climate-resilient development pathways.
70	54443	13	3	14	3	21	The implication of the other paragraphs of the Executive Summary is that the confidence assignments presented with each bold finding also apply to the nonbold bullets that follow. Given that two levels of confidence are presented here, it would be useful to specify if any of the nonbold bullets should be interpreted as being assigned either high or medium confidence only (which if so could differentiate the author team's confidence in the different statements). (Michael Mastrandrea, IPCC WGII TSU)	All our heading confidence statements refer to the various sub-bullets.
71	36183	13	3	16	3	17	Mitigation efforts like CDM, REDD+ and land acquisition for food/biofuels are very different things and I would argue that they are not usefully amalgamated in this sentence. They are driven by different things and governed in different ways. I also think this statement is too strong given the early stages of many of the interventions. I don't believe the sample and empirical data we have to date is large or complete enough to say that there are mostly negative impacts. (Lindsay Stringer, University of Leeds)	We rephrased this sentence slightly to signal that CDM/REDD are not the same as biofuel, and we include the term "preliminary" negative impacts.
72	42218	13	3	18	3	19	although insurance systems often do not address resp. Include the poorest in a community; so it would be important to mention it (Nicole Clot , HELVETAS Swiss Intercooperation)	We mention insurance systems in the ES, with a conditional statement. The pros and cons are explored in section 13.3.2.2.
73	48015	13	3	20	3	28	The text explains how much warmer the Pliocene was, so it should also state how much warmer the Eemian was, since it is far more recent and presumably easier to measure. The text seems to imply that the Pliocene had a stable climate without a glacial-interglacial cycle. If that is not the case, then the text needs some clarification (James G Titus, US Environmental Protection Agency)	Titus' comments are meant for CH 13 in WGI, not for us.
74	36184	13	3	31	3	31	"expected future" - again, over what time horizon are you referring to "future"? (Lindsay Stringer, University of Leeds)	2016-2100. Throughout the chapter we have specified which scenarios refer to which time frames, and in our introductory material also specify this at the beginning of 13.1.
75	48016	13	3	31	3	31	"shorter" than what? (James G Titus, US Environmental Protection Agency)	Titus' comments are meant for CH 13 in WGI, not for us.
76	50770	13	3	32	3	33	In treatment in the chapter regarding "gradual change and extreme events," the author team should ensure sufficient conditionality and qualification in evaluating vulnerabilities to and impacts of extreme events. That is, changes in the occurrence of some extreme events have been attributed to climate change or are projected for future scenarios of climate change—but not all extreme events are due to climate change. Throughout the discussion that follows in the chapter, there are some places where further attention to this distinction could be helpful. (Katharine Mach, IPCC WGII TSU)	We have tried to be as specific as the literature allows.
77	48017	13	3	34	3	35	1840-1920 is not the "late 19th century". If there is a difference of opinion on which of those time periods is accurate, the text should say so. Otherwise, it would be best to pick one or the other. (James G Titus, US Environmental Protection Agency)	Titus' comments are meant for CH 13 in WGI, not for us.
78	36185	13	3	36	3	36	"reduce or further increase harm among poor and marginalised populations" -it is highly probable that a mixture of positive and negative impacts from CDM, REDD and insurance will occur. The key point is surely to understand the conditions under which positive and negative impacts occur and to identify routes towards delivery of the positives. The way the sentence is worded at present suggests impacts will just be one or the other (+ve OR -ve) when in reality there will be both. I think this needs amending. (Lindsay Stringer, University of Leeds)	Corrected: "under what conditions" and "and/or" included.
79	36186	13	3	36	3	36	Repunctuate: "(e.g. CDM and REDD initiatives, and insurance instruments) reduce...." (Lindsay Stringer, University of Leeds)	Corrected: only 2 examples given, no comma needed.
80	48018	13	3	38	3	40	This bullet will lead many people to conclude that therefore, we know that the rate of sea level rise has doubled (or increased by 1.5 mm/yr). Some portion of that acceleration may be decadal variation, and the Church and White analysis only supports a 1 mm/yr acceleration over the last century. This bullet should either specifically endorse the view that there has been an acceleration of 1.5 mm/yr, or perhaps consider saying that the most thorough time-series analysis find that there has been a sustained acceleration of 1 mm/yr, and we do not know whether the rest of the acceleration is decadal variation or something more permanent. (James G Titus, US Environmental Protection Agency)	Titus' comments are meant for CH 13 in WGI, not for us.
81	42219	13	3	38	3	46	reference to the sustainable livelihood approach; reference to DFID: Source: DFID 2001: livelihoods@difd.gov.uk (Nicole Clot , HELVETAS Swiss Intercooperation)	The reference to the SLA comes later (under Dynamic livelihoods, 13.1.1.1.). We searched for the DFID reference, but couldn't find it on the DFID site.
82	52108	13	3	38	3	46	In introducing the concept of livelihoods, the author team might also consider cross-referencing the report glossary, which contains an entry for the term. (Katharine Mach, IPCC WGII TSU)	We refer to the glossary in the text.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
83	48019	13	3	41	3	41	Previous bullet mentions tide gauge data while here we say in situ. Is there a reason to use the broader term? (James G Titus, US Environmental Protection Agency)	Titus comment not relevant.
84	35899	13	3	52	3	0	Also include the sick and HIV affected households (Precillia Ijang Tata epouse Ngome, Institute of Agricultural Research for Development)	We have taken out the specific reference to children and female-headed HHs, hence the sick and HIV households don't fit any more.
85	36828	13	3	52	3	53	Explain what does "marginal groups" in the livelihoods literature stands for. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Term "marginalized" explained later, under 13.1.3. (Inequality and marginalization). The term "marginal" is not used.
86	47604	13	4	6	0	0	What exactly are "risky or unsustainable livelihoods" and what is their relationship to poverty? There is an analytical jump here that is not fully explained or explored. Is risky supposed to be defined in legal, health, economic, or other terms? And what is an unsustainable livelihood -- what defines not being sustainable. After all, the world economy is powered largely by fossil fuels whose use may not be sustainable. If discussions of poverty and livelihood are to be based on precision rather than platitudes, then it's important to clarify such claims; examples would help. (A. Peter Castro, Maxwell School, Syracuse University)	Corrected to "why poor people endure adverse living conditions" and moved to the end of SOD section 13.1.3.
87	36829	13	4	6	4	6	Explain unsustainable livelihoods. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	See above. Corrected.
88	40868	13	4	7	4	7	Could you insert the word "often" after the word "is?" There have been times and places that poor communities have found the ability to voice their concerns. Although the reverse is more common, we don't want to perpetuate stereotypes about powerlessness. (John Posey, East-West Gateway Council of Governments)	Sentence has been removed.
89	45835	13	4	11	4	17	Is it worth referencing Amartya Sen's definition of poverty, which includes restrictions of freedoms? (Reference: Sen, A., 1999, Development as Freedom, Alfred A. Knopf, New York, USA.) Synthesised extract from Hiller, B.T. (July 2012) PhD dissertation (unpublished): Poverty is defined as a 'pronounced deprivation in well-being' (UNEP, 2007), where human well-being is 'the extent to which individuals have the ability and the opportunity to live the kinds of lives they have reason to value' (Sen 1999). Those enduring poverty are also particularly vulnerable to adverse events outside their control; are often poorly treated by institutions; and excluded from voice and power (WB, 2001) – a cycle which is self-reinforcing, not self-correcting (Sachs, 2008). Specific references: Sachs, J.D., 2008, Common Wealth Economics for a Crowded Planet, Penguin Books. Sen, A., 1999, Development as Freedom, Alfred A. Knopf, New York, USA. UNEP, 2007, Global Environment Outlook GEO4 Environment for Development, Nairobi, Kenya. WB, 2001, World Development Report 2000 / 01 – Attacking Poverty, Oxford University Press. (Bradley Hiller, World Bank)	Sen 1999 reference has been included.
90	35900	13	4	18	0	0	Add cultural stressors??? (Precillia Ijang Tata epouse Ngome, Institute of Agricultural Research for Development)	Where? There was no text in Line 18 on P4. Cultural context addressed under dynamic livelihoods (SOD 13.1.1.1.)
91	43323	13	4	27	0	0	chapter 13.3 may assess recent field studies done in Brazil regarding poverty, sustainability, resilience, and climate change. Chapter's authors may wish to contact: UNDP/ Brazil; Instituto Polis, www.polis.org.br Dr Silvio Bava; Vitae Civiliis institute, Dr. Rubens Born. A key point is of how family values and local migration empower poor people to face stressful changes, including of CC. (Milton Nogueira da Silva, Climate Change Forum of Minas Gerais, Brazil)	We have included references for Brazil, after LA Perch contacted UNDP Brazil.
92	53254	13	4	27	0	0	The issue of access to law could be included in this section. Oliver Ruppel, CLA Africa, is a lawyer and may be able to help (Kristie L. Ebi, IPCC WGII TSU)	We have included a reference to the process on Legal Empowerment of the Poor (Banik 2009) in section 13.1.3 and MacLennan and Perch in 13.4.
93	45836	13	4	40	4	47	Related to discussion of livelihoods, is it worth briefly mentioning well-being and also livelihood analysis? Synthesised extract from Hiller, B.T. (July 2012) PhD dissertation (unpublished): Poverty is defined as a 'pronounced deprivation in well-being' (UNEP, 2007), where human well-being is 'the extent to which individuals have the ability and the opportunity to live the kinds of lives they have reason to value' (Sen 1999). Well-being comprises the meeting of physical and financial necessities, health, security, good social relations, and freedom of choice and action (WRI, 2005). Livelihoods are 'the capabilities, assets (including both material and social resources) and activities required for a means of living' (Chambers & Conway, 1991). Specific references: Chambers, R. & Conway, G., December 1991, Sustainable rural livelihoods: practical concepts for the 21st century, Institute of Development Studies, Discussion Paper 296. WRI (World Resources Institute), 2005, Millennium Ecosystem Assessment, Ecosystems and Human Well-being: Synthesis; Desertification Synthesis; Wetlands & Water Synthesis; Health Synthesis; Biodiversity Synthesis; World Resources Institute, Washington, DC. UNEP, 2007, Global Environment Outlook GEO4 Environment for Development. Sen, A., 1999, Development as Freedom, Alfred A. Knopf, New York, USA (Bradley Hiller, World Bank)	We have to be short in this section and cross-reference with other chapters (9, 12). We do cite Chambers and Conway and Sen, and other authors prominent in the LH debate. We feel we have covered enough background here.
94	48020	13	4	43	4	43	It is reasonable to provide the 0.84m for 2100, but I suggest providing the whole range as with the rest of the paragraph. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
95	45837	13	4	50	5	12	Livelihood diversification is discussed. However, I believe that both livelihood 'diversification' and livelihood 'improvement' could be mentioned here. Livelihood benefits may comprise both (i) improvements (and intensifications) – for example from enhanced infrastructure, newly introduced techniques, and land-use re-structuring – and (ii) diversifications – which may be introduced separately or facilitated by the aforementioned livelihood improvements. (Bradley Hiller, World Bank)	Done, both are addressed now.
96	40869	13	5	1	5	1	Could you find a word other than "messy?" I don't think you're trying to say that poor people lead messy lives, but I'm afraid that's the way it would be read. (John Posey, East-West Gateway Council of Governments)	Changed to "complex".
97	42220	13	5	1	5	1	I think it is not particularly only to do analysis of people's messy lives but analyses in general; further it is quite a judging statement (Nicole Clot , HELVETAS Swiss Intercooperation)	See above.
98	42221	13	5	5	5	7	Reference: Clot and Carter 2009 (Nicole Clot , HELVETAS Swiss Intercooperation)	Reference now included

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
99	42222	13	5	8	5	10	Reference: Clot and Carter 2009 (Nicole Clot , HELVETAS Swiss Intercooperation)	We did not include the same reference twice as it already appears in the sentence above.
100	44907	13	5	19	5	21	I would modestly suggest adding Morton 2007 in PNAS to this list, and/or a specific reference to Easterling et al. Ch.5, Vol 2 of AR4 (John Morton, Natural Resources Institute, University of Greenwich)	References now included.
101	45259	13	5	21	5	21	"changing land tenure systems" - I would rather (or additionally) mention unclear land ownership (as in large parts of Africa, which are under customary rights) (Marcus Kaplan, German Development Institute)	This sentence has been removed for streamlining and incorporated into the following sentence with only macro-level examples.
102	39546	13	5	25	5	25	It would be worth explaining "spatial and temporal scales" as this means different things to different disciplines. (Carrie Mitchell, International Development Research Centre (IDRC))	Now explained as "the level of spatial (e.g., village versus nation) or temporal (e.g., annual versus multi-annual) analysis affects recognition of direct or indirect impacts".
103	39547	13	5	25	5	28	Also see work by Mitchell on this topic with respect to informal waste workers (Mitchell, C.L. 2009. Trading trash in the transition: economic restructuring, urban spatial transformation, and the boom and bust of Hanoi's informal waste trade. Environment and Planning A, 41 (11): 2633-2650; Mitchell, C.L. 2008. Altered landscapes, altered livelihoods: The shifting experience of informal waste collecting during Hanoi's urban transition. Geoforum, 39: 2019-2029.) (Carrie Mitchell, International Development Research Centre (IDRC))	This Mitchell paper addresses urbanization and globalization in contemporary Vietnam through the lens of informal waste collecting as a form of livelihood, but does not at all address climate. Hence, we do not refer to it. We are interested in the joint impacts of climatic and other factors.
104	36187	13	5	32	5	32	"Weak institutional ties and power positions" - reword or repunctuate this as the sentence is hard to follow. (Lindsay Stringer, University of Leeds)	The phrasing of this sentence has changed and "weak institutional ties" has been taken out.
105	36830	13	5	32	5	33	Consider moving the sentence into another section on vulnerable groups such as page 8 line 14 or page 9 line 14. (ANA SOLORZANO SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	We have done some significant streamlining and revising and the specifics of inequality are now detailed in 13.2.1.5 as well as in the intro material 13.1.3.
106	45260	13	5	34	5	34	give examples for coping strategies with adverse consequences (Marcus Kaplan, German Development Institute)	We did not have space for examples here but cross-referenced Chapters 14 and 16, which more explicitly deal with maladaptive coping strategies, some of which are also detailed in the references provided at the end of the sentence.
107	44908	13	5	34	5	37	The concept of maladaptation is introduced later, it could usefully be brought in here. (John Morton, Natural Resources Institute, University of Greenwich)	Good idea. Done, and cross-referenced to Ch 14 and 16.
108	35901	13	5	42	0	0	Add economic drivers (Precillia Ijang Tata epouse Ngome, Institute of Agricultural Research for Development)	Added.
109	36831	13	5	42	5	42	Source? Include economic drivers. Consider removing religious drivers since they are included in cultural drivers. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Economic drivers added (see above) and religious removed.
110	36832	13	5	43	5	44	It is not just the access to these services (education, health, etc.) but also their quality. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	This sentence now does not exist in this introductory paragraph. It has not been moved; rather the multiple deprivations have been outlined elsewhere.
111	36188	13	5	46	5	48	These sentences would benefit from being supported by references. (Lindsay Stringer, University of Leeds)	Sentence removed and general idea reworded under framings as "However, given these shifting conceptualizations over time, reliable measurements remain challenging and, consequently, attribution of climate change impacts and responses on the world's poor".
112	39548	13	5	48	5	48	It would be helpful to explain (through an example) how restricted poverty assessments makes measuring climate change challenging. (Carrie Mitchell, International Development Research Centre (IDRC))	See above.
113	45261	13	5	53	6	25	This section is much too black-and-white - in the first paragraph the "bad" neo-liberalists that only think about economic growth that will eventually trickle down to the poorest, and on the other hand the "good" people, which - at least it is not mentioned here - do not care about growth at all. A chapter of the AR5 should be able to differentiate a bit more between these two extremes. Apart from this the question how to fight poverty is not directly related to climate change, thus it might be better to stick a bit more to the core topic (climate change). (Marcus Kaplan, German Development Institute)	We believe that a short section on framing is justified in this chapter as it determines what kind of poverty we consider when assessing impacts of climate change. We return to this point at the end when discussing climate-resilient development pathways. We adopt a broader definition that "economic" poverty in our assessment of observed and future impacts. But the stark black and white has been removed.
114	47605	13	6	0	0	0	In addition, it should be mentioned that poverty is viewed in many cultures in moral terms, with notions such as the undeserving or ignorant poor used to justify the marginalization of people. (A. Peter Castro, Maxwell School, Syracuse University)	We have included references to the moral dimensions of poverty framings in this section.
115	47607	13	6	0	0	0	When one moves beyond the macro-level, it becomes apparent that there is often a certain 'make believe' element tied to poverty analysis, as researchers try -- usually through brief questionnaire surveys to somehow identify and measure income. Many times it is better at the ground level to use proxy indicators of economic status, whether it is housing type or converting owned/controlled livestock into Tropical Livestock Units. (A. Peter Castro, Maxwell School, Syracuse University)	Good point, but beyond what we can discuss in this brief section.
116	46761	13	6	1	6	25	I find this section too constructed in terms of opposing an economic with an inclusive approach to poverty reduction. It would be more conducive to detail how over time approaches to poverty reduction and development have become more inclusive. (Reinhard Mechler, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	Section has been re-written. More nuanced now.
117	36189	13	6	3	6	5	I'm not sure about the formatting requirements but shouldn't the World Bank 2010 reference include page numbers if quoting directly? (Lindsay Stringer, University of Leeds)	Page number has been included.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
118	36190	13	6	11	6	11	"favor" - is US or UK English being used? There seems to be a mixture. It would benefit from harmonisation throughout. (Lindsay Stringer, University of Leeds)	US English throughout the report.
119	47606	13	6	15	0	25	This is very abstract and hard to follow. In putting poor people's agency and attributes at the center of one's analysis inevitably tied to the critique of neoliberalism, or is it broader than that? What exactly is the "culture of solidarity" -- is that a necessary attribute of the lives of the poor; it sounds as if it is something invented by activists, sort of the other side of the mirror from the academics' old tired 'culture of poverty' concept. What is called 'alternate' discourse is often how anthropologists and other non-economic social scientists used to view the poor, though their in the past two decades has also become infused with the 'alt' jargon. (A. Peter Castro, Maxwell School, Syracuse University)	Section has been re-written, culture of solitary removed, word "alternative" avoided. However, showing various framings/approaches/discourses IS important.
120	45838	13	6	15	6	25	Is it worth mentioning the UNDP Human Development Index in this section? (Bradley Hiller, World Bank)	The MPI is better suited here than the HDI because it relates specifically to poverty. Ch 20 deals with sustainable development. We have to limit ourselves to the absolute necessary.
121	40871	13	6	19	6	19	Consider deleting the phrase "under neoliberal policies." I'm not sure it's necessary. Also, the term "neoliberal" is ideologically charged, and might suggest biases that the IPCC might rather avoid. (John Posey, East-West Gateway Council of Governments)	Deleted.
122	45262	13	6	24	6	24	This is the first time the term "vulnerability" is mentioned; you should elaborate a bit on this (and if it is only a reference to another section) and say a few words about the linkage between vulnerability and poverty. (Marcus Kaplan, German Development Institute)	We now introduce the definition of vulnerability earlier in the text (p6, under 13.1.3)
123	45263	13	6	28	0	0	Section 13.2.2.2: see my comment for 13.2.2.1; this question is only very indirectly related to climate change, thus it should be dropt. There are other fora where this important question should be discussed (and a short reference to these fora would be enough here) (Marcus Kaplan, German Development Institute)	This section has been shortened and merged with the paragraphs on framing.
124	36191	13	6	37	6	37	Check spacing after CPRC reference closing bracket and "illustrates" (Lindsay Stringer, University of Leeds)	Sentence moved to SOD 13.1.3., with correct punctuation.
125	36192	13	6	40	6	40	Check reference punctuation in this line. (Lindsay Stringer, University of Leeds)	Fixed, and moved up to 1st paragraph in SOD 13.1.2.1.
126	36833	13	6	52	7	12	Link missing between the two parragraphs. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Better transition in new paragraph in SOD.
127	53255	13	6	53	6	54	More explicit information on progress would be of interest. You also could note that progress is tracked at the national level for many targets, which summarize over considerable sub-national heterogeneity. (Kristie L. Ebi, IPCC WGII TSU)	Progress is addressed in Table 13-1, for both global and country level. The MPI shows sub-national heterogeneity (also Fig 13.1)
128	36193	13	7	4	7	4	Add "Africa" after "sub-Saharan" (Lindsay Stringer, University of Leeds)	Sentence has been removed.
129	53256	13	7	8	7	8	Under-five mortality is higher in boys in most if not all countries. (Kristie L. Ebi, IPCC WGII TSU)	Sentence has been removed.
130	50771	13	7	11	7	12	For this statement, it would be helpful to further clarify if the change described reflects improvement or a worsening of outcomes. That is, have people moved from an even more extreme level of poverty into this bracket, or have people moved from a less extreme level of property into this bracket? I assume the 2nd option is what is intended, but it would be helpful to clarify the statement. (Katharine Mach, IPCC WGII TSU)	Sentence has been removed.
131	53257	13	7	11	7	12	How much of this is due to progress in China? (Kristie L. Ebi, IPCC WGII TSU)	Sentence has been removed.
132	36834	13	7	35	7	38	Use more recent references (see Sumner 2012a). (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	We have used most recent references, including Sumner 2012.
133	36194	13	7	45	7	45	delete "has" to read "...poverty remains around..." (Lindsay Stringer, University of Leeds)	Sentence has been reworded.
134	50772	13	7	45	7	45	For the described \$2 poverty, it would be clearest to indicate whether it refers to \$1.25-2 or to \$0-2. (Katharine Mach, IPCC WGII TSU)	\$0-2. This is now explicitly stated in the text.
135	39549	13	7	45	7	46	I'm not sure what the 'so what' of this sentence is? Are you saying global poverty will decline, or are you saying that it will shift to urban areas? Please explain. (Carrie Mitchell, International Development Research Centre (IDRC))	Sentence has been reworded for clarity.
136	48021	13	7	48	7	56	The initial failure (and later only a partial consideration) of AR4 to recognize the potential for the Antarctic ice sheet to contribute to sea level rise over the next century even as the empirial evidence already showed it might already be contributing, was widely criticized in the literature. That part of the story needs to be told, especially given that the evolution of IPCC assessments is being told. The difficulties of the task are explained, and that is reasonable--but acknowledging that IPCC heard the message is just as important as folding its content into the revision--most especially when it was as big a story as it was in this case. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
137	53258	13	7	53	7	54	What are the trends underlying this projected change? (Kristie L. Ebi, IPCC WGII TSU)	Sentence has been removed.
138	36195	13	7	54	7	54	You may wish to refer to the publication: Middleton N, Stringer LC, Goudie A, Thomas DSG 2011 The Forgotten Billion: MDG Achievement in the Drylands. UNCCD-UNDP, New York and Nairobi -- particularly if environmental vulne+G3rabilities are considered. G85 (Lindsay Stringer, University of Leeds)	We decided to include 2 peer-reviewed publications on drylands, with specific applicability to climate change (p13).
139	53259	13	8	3	0	0	What is the role of remittances in patterns of poverty? (Kristie L. Ebi, IPCC WGII TSU)	A relevant point, but like other drivers (such as corruption), we would need more space to discuss, space that we don't have.
140	53260	13	8	11	8	13	An example would be helpful. (Kristie L. Ebi, IPCC WGII TSU)	We have taken out the entire sentence and no longer use the term teleconnected or nested.
141	36196	13	8	15	8	15	"systematic analysis" - at what scale? Local scale analyses are possible. (Lindsay Stringer, University of Leeds)	This sentence has been revised and moved to the middle of paragraph 1 in 13.1.2.3.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
142	47608	13	8	20	0	0	The phrase "lack of human capital" has a dehumanizing aspect to it. Presumably the person lacks schooling or is not literate, and perhaps even in poor health. It should be noted that the person may have a detailed, sophisticated knowledge of their local environment and how to earn a sustained living from it -- human capital that writers of the report or reviewers such as me lack! (A. Peter Castro, Maxwell School, Syracuse University)	Sentence has been removed.
143	36197	13	8	26	8	26	Link this also to the need to monitor social mobility over time (i.e. is it always the same people who are "poor" at different periods of time, even though the number of poor may stay the same?) (Lindsay Stringer, University of Leeds)	Sentence has been removed.
144	46762	13	8	28	8	40	It should be mentioned that poverty traps necessitate outside interventions and transfer to escape the traps. (Reinhard Mechler, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	"without external assistance" included in 13.1.2.3 paragraph 2, but also cross-reference to Ch10 that also discusses poverty traps.
145	36198	13	8	29	8	29	Replace "trapped" with "stuck" as you use the word "trap" on the next line (Lindsay Stringer, University of Leeds)	Reworded as "find themselves in poverty traps". ZOD reviewer didn't like the term "stuck" and suggested "trapped".
146	36199	13	8	31	8	33	Consider also noting that the ability to translate one form of asset to another is important (Lindsay Stringer, University of Leeds)	We discuss this under the definition of livelihoods, do not want to repeat it here.
147	36200	13	8	37	8	37	Add the word "can" so it reads "...political violence can increase..." - Botswana provides a good example that the resource curse does not always hold given its vast diamond resources and lack of conflict. At present, you make too much of a generalisation. (Lindsay Stringer, University of Leeds)	Sentence has been removed.
148	50773	13	8	45	8	46	This statement implies that impacts affecting poor and minority people have been formally linked to climate change to date. The author team should ensure that this is the case or otherwise consider revising the statement to provide further qualification and/or conditionality. (Katharine Mach, IPCC WGII TSU)	Reworded as suggested by TSU in Buenos Aires "The preponderance of evidence suggests ...". We have included stronger references.
149	53261	13	8	45	8	46	This is another attribution statement that should be checked. (Kristie L. Ebi, IPCC WGII TSU)	Checked.
150	47610	13	9	0	10	0	The strength of analysis is diminished by the lack of treatment throughout the paper to those who are not poor. Only by exploring what it means not to be poor, what the options are for dealing with climate change at a national to local level, then can we see the narrow range of choices for those who are impoverished. It is undoubtedly too late to address this deficiency adequately in this paper, but it might be considered for the next round. (A. Peter Castro, Maxwell School, Syracuse University)	We find that this is beyond the scope of the plenary-approved outline. However, we cross-reference Ch 20 on climate-resilient development pathways. We refer to the poor and the non-poor in section 13.4 and highlight the small solution space for the marginalized and vulnerable in our graphic on intersecting inequalities.
151	53262	13	9	2	9	12	There is literature in developed countries that increased inequality leads to decreased population health. (Kristie L. Ebi, IPCC WGII TSU)	We refer to some health-related literature but cross-reference Chapter 11 for specifics.
152	36201	13	9	4	9	4	This comment applies here and throughout and is one linked to reference style and formatting. References are often repeated within a sentence which makes it more difficult to follow e.g. listing the authors and the reference. Is this really necessary? (Lindsay Stringer, University of Leeds)	This is now fixed.
153	36202	13	9	5	9	5	write out PPP in full (Lindsay Stringer, University of Leeds)	Sentence has been removed.
154	50774	13	9	5	9	5	This statement would potentially benefit from further clarification--global income for what time frame? (Katharine Mach, IPCC WGII TSU)	Sentence has been removed.
155	36203	13	9	5	9	7	You state that health and educational achievement gaps have narrowed - can you give an example here? Similarly, you state that income inequality has increased in most countries. Again, an example would be helpful to provide some indication of the size and scope of the changes you are talking about. (Lindsay Stringer, University of Leeds)	Sentence has been removed.
156	50775	13	9	9	9	9	"Likely" -- The author team should ensure that this likelihood term is used only if its assignment reflects a probabilistic basis in the underlying literature. The modifier "far more" implies that the use is casual, not per the uncertainties guidance for authors; casual usage of reserved likelihood term should be avoided. (Katharine Mach, IPCC WGII TSU)	"Likely" removed and sentence reworded.
157	45839	13	9	9	9	10	Poor communities are often more dependent on natural capital than other forms of capital compared to higher income groups. Hence, environmental degradation can affect such poor communities more severely. Synthesised extract from Hiller, B.T. (July 2012) PhD dissertation (unpublished): The field of livelihood dynamics recognises five capital assets (human, natural, financial, physical and social capital (Carney, 1998)) as a basis for development; of which natural capital accounts for between 47%-89% of the 'Gross Domestic Product (GDP) of the poor' (TEEB, 2010). Such dependence on natural capital in less affluent circumstances has also been reflected at state level by authors such as Hamilton et al. (2005). Specific references: TEEB, 2010, Mainstreaming the Economics of Nature: A synthesis of the approach, conclusions and recommendations of TEEB, UNEP. Hamilton, K., Ruta, G., Bolt, K., Markandya, A., Pedroso Galinato, S., Silva, P., Saeed Ordoubadi, M., Lange, G. & Tajibaeva, L., 2005. Where is the Wealth of Nations? Measuring Capital for the 21st Century, Washington, D.C., The World Bank. Carney, D., ed., 1998, Sustainable Rural Livelihoods, Department for International Development, London, UK. (Bradley Hiller, World Bank)	Ch 9 deals more specifically with natural capital. Ch 10 covers various economic sectors. We do note natural capital under the livelihood assets and have a section on climate change impacts on natural assets. Due to space constrains, we have to limit ourselves to a very brief overview of inequality.
158	40872	13	9	10	9	12	Not to wordsmith, but I'd suggest rewriting the last sentence of this paragraph to be something like this: A focus on inequality also highlights growing poverty in middle and high income countries, considering the role of social protection as part of climate change responses. (John Posey, East-West Gateway Council of Governments)	We have reworded this sentence. In the final sentence in 13.1.3 we say, "An inequality lens also highlights growing poverty in MICs and HICs." In other sections we address the differential role of varied social protection approaches of governments-- see the first paragraph in 13.2.1.5.
159	36835	13	9	18	9	20	Consider using an example from developing countries instead. Otherwise, explain the relation of inequality in developed countries and climate change vulnerability. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	This example has been removed from this section.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
160	44909	13	9	18	9	20	The phrasing is a bit unclear- 50% could not mobilize \$2000 under any circumstances, and a further 20% could only do so by pawning etc.? (John Morton, Natural Resources Institute, University of Greenwich)	Sentence has been removed.
161	45264	13	9	18	9	20	Such an example would be even more interesting for a developing country, as I would expect disparities to be even stronger and numbers for financial fragility to be more impressive. (Marcus Kaplan, German Development Institute)	See response to comment #159.
162	50776	13	9	20	9	20	It would be helpful to clarify further if the described "1/5" is included in the 50%. If not, phrasing such as "an additional 20%" might be clearest. (Katharine Mach, IPCC WGII TSU)	The sentence has been removed.
163	47949	13	9	24	0	0	consider expanding to incorporate literature on indigenous peoples' rights and climate change adaptation (Ameyali Ramos Castillo, United Nations University - Institute of Advanced Studies)	We now cross-reference Ch 12 in multiple places.
164	36204	13	9	29	9	30	The sentence starting "The World Bank..." needs to be placed in context. To what extent is the higher mortality rate for women linked to maternal health issues? (Lindsay Stringer, University of Leeds)	This sentence has been removed.
165	39550	13	9	34	9	35	How, exactly, do these factors result in gender-differentiated impacts of climate change? It's worth explaining to the reader, as this is a very common statement that is rarely qualified. I don't think it's a given that women will always be disadvantaged; are there cases where climate change may be beneficial for women? If not, how has women's universal vulnerability been proven in the literature? (Carrie Mitchell, International Development Research Centre (IDRC))	We deal with gender-differentiated impacts in much more depth in SOD 13.2.1.5. This short reference to gender is only to make a point about inequality.
166	47388	13	9	37	9	37	"Please add the following: Although women's vulnerabilities are portrayed to be higher than those of men in a given climate induced situation, due to inhomogeneity among women in a society, not all women are more vulnerable than men (Arora-Jonsson, 2011). Women are not necessarily the victims of climate change, they are capable of contributing to successful coping to climate related shocks and extremes (Nelson and Strathers, 2011; Neelormi, 2010)." Citations: Arora-Jonsson, S., 2011. Virtue and Vulnerability: Discourses on women, gender and climate change, Global Environmental Change, 21(2): 744-751. Nelson, V., Strathers, T., 2011. Resilience, power, culture, and climate: A Case Study from semi-arid Tanzania, and new research directions. Gender and development, 17(1): 81-94. Neelormi, S., 2010. Addressing Gender Issues in Adaptation, in A.U. Ahmed (ed.), Reducing Vulnerability to Climate Change: The Pioneering Example of Community Based Adaptation in Bangladesh, centre for Global Change (CGC) and CARE Bangladesh, Dhaka, pp. 111-127. (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	See above. Most of the gender and climate change references proposed are captured in our SOD 13.2.1.5. We included Neelormi et al. 2008 in that section as well. We did not include gender-specific literature on adaptation (Chapters 14-16 deal with adaptation).
167	36205	13	9	40	9	40	"More than any other factors" - provide some evidence/refs to support this assertion (Lindsay Stringer, University of Leeds)	Sentence rephrased, and Ribot 2010 reference added at the beginning of the 2nd paragraph.
168	48022	13	9	40	9	42	Saying that salinity has no effect is an overstatement, since salinity can contribute to ice melting which in turn can affect sea level. You probably mean no "direct effect." (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
169	36206	13	9	41	9	47	Translation of one form of asset to another is vital and needs to be noted here - it's not just about the assets themselves but the ways in which they can be accessed and liquidated into other forms that is important. (Lindsay Stringer, University of Leeds)	Rephrased by using the word "liquidate".
170	45840	13	9	47	9	49	Synthesised extract from Hiller, B.T. (July 2012) PhD dissertation (unpublished): Established evidence links environmental degradation with climate change, both as cause-and-effect (Gisladottir & Stocking, 2005; Timmer et al., 2008; Nellemann & Corcoran, 2010; Watson et al., 2000; Munasinghe & Swart, 2005) and changing climates are anticipated to impact ecosystems, physical systems, and linked human actions (Hughes et al. 2003, Tompkins & Adger, 2004). Specific references: Munasinghe, M. & Swart, R., 2005, Primer on climate change and sustainable development, Cambridge University Press, Cambridge, United Kingdom. Nellemann, C. & Corcoran E., (Eds.), 2010, Dead Planet, Living Planet, Biodiversity and Ecosystem Restoration for Sustainable Development, A Rapid Response Assessment, NEP, GRID Arendal. Timmer, D., Creech, H. & Buckler, C., 2008, Supporting the Next Generation of Sustainability Leadership, International Institute for Sustainable Development (IISD), http://www.iisd.org/pdf/2008/support_next_gen_leaders.pdf , Accessed June 30th 2010. Watson, R.T., Noble, I.R., Bolin, B., Ravindranath, N.H., Verardo, D.J. & Dokken, D.J. (Eds.), 2000, Land use, land use change, and forestry, Cambridge University Press, Cambridge, United Kingdom. Gisladottir, G. & Stocking, M., 2005, Land Degradation Control and its Global Environmental Benefits, Land Degradation & Development, 16: 99-112, 2005. Hughes, T.P., Baird, A.H., Bellwood, D.R., Card, M., Connolly, S.R., Folke, C., Grosberg, R., Hoegh Guldberg, O., Jackson, J.B.C., Kleypas, J., Lough, J.M., Marshall, P., Nystrom, M., Palumbi, S.R., Pandolfi, J.M., Rosen, B. & Roughgarden, J., 2003, Climate Change, Human Impacts, and the Resilience of Coral Reefs, Science, 301, 929. Tompkins, E.L. & Adger, W.N., 2004, Does Adaptive Management of Natural Resources Enhance Resilience to Climate Change, Ecology and Society, 9. (Bradley Hiller, World Bank)	Links between climate change and environmental degradation go beyond the plenary-approved outline for this chapter. WGII chapters 3-7 deal with natural and managed resources and systems, Ch 9 with rural areas, and Ch 20 with sustainable development. Hence, we did not include the proposed references, as valuable as they are.
171	53263	13	9	47	9	49	What is the evidence and agreement underlying the confidence statements? (Kristie L. Ebi, IPCC WGII TSU)	Changed to confidence statements.
172	54437	13	9	47	9	49	This is an example where likelihood language is being used intentionally, but the quantitative evidence on which these assignments are based is not clear. It would be useful to explain further the basis for these probabilistic assignments, or perhaps to replace with confidence assignments if the evidence is qualitative in nature. (Michael Mastrandrea, IPCC WGII TSU)	Changed to confidence statements.
173	50777	13	9	48	9	48	"likely" and "very likely" -- The author team should ensure that these likelihood terms reflect a probabilistic basis in their assignment. If there is not a probabilistic basis, a level of confidence may be appropriate. (Katharine Mach, IPCC WGII TSU)	Changed to confidence statements.
174	36207	13	9	51	9	51	Check reference punctuation in this line. (Lindsay Stringer, University of Leeds)	Fixed.
175	42223	13	10	1	10	2	should not DRR also be mentioned as an element in the complex interaction? Disasters have a major influence on livelihoods (Nicole Clot, HELVETAS Swiss Intercooperation)	DRR is different from climate change. We have to be careful with terminology (not mix) and traceable accounts. Extreme events are addressed in the next sentence.
176	53264	13	10	4	10	5	A reference is needed. (Kristie L. Ebi, IPCC WGII TSU)	We added an SREX reference.
177	36208	13	10	12	10	12	add "and" before "trap them" (Lindsay Stringer, University of Leeds)	Added.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
178	36209	13	10	14	10	15	Add references here (Lindsay Stringer, University of Leeds)	First part of this sentence removed.
179	54887	13	10	20	0	0	Figure 13.2 The author team may consider further explaining different aspects of the figure, perhaps with examples. (Monalisa Chatterjee, IPCC WGII TSU)	We now show more specifics through 4 distinct case studies.
180	44910	13	10	23	10	23	The importance of the chapter is probably best left to the reader to judge! (John Morton, Natural Resources Institute, University of Greenwich)	Sentence removed.
181	45265	13	10	23	10	23	It should not be the task of the authors to judge that the chapter is an important contribution to a discussion, this should be left to reviewers and readers. What about "The chapter attempts to contribute..." or something similar. (Marcus Kaplan, German Development Institute)	Sentence removed.
182	45491	13	10	36	0	0	We suggest mentioning some of the analyses carried by WFP and partners to understand climate impacts on food security and livelihoods. These analyses propose methods to assess which populations are most vulnerable to climate change, and in what ways for example, by examining climate-sensitivities of food and income sources. Using this information, it is then possible to prioritise interventions to support the most food insecure and vulnerable populations. IRI and WFP (forthcoming) Climate risk and food security in Mali. IRI/WFP: New York/Rome. WFP, NPC and CCAFS (forthcoming) Climate risk and food security in Nepal: Analysis of climate impacts on food security and livelihoods. NPC/WFP: Kathmandu. WFP, ANACIM, and CCAFS (in preparation) Climate risk and food security in Senegal: Analysis of climate impacts on food security and livelihoods. ANACIM/WFP: Dakar. WFP, DRMFS, AAU, and CCAFS (in preparation) Climate risk and food security in Ethiopia: Analysis of climate impacts on food security and livelihoods. DRMFS/WFP: Addis Ababa. (Carlo Scaramella, World Food Programme)	We tried to review and assess the suggested literature. However, it seems it is still not available.
183	36210	13	10	38	10	41	Edit to read: "This section is a systematic review of empirically-grounded relationships between climate change, livelihoods and poverty. It first describes current and observed impacts [state time frame here] (13.3.1) and then future and project impacts [again, state time frame] (13.3.2). By focusing explicitly on the effects on assets and livelihood dynamics, it demonstrates how climate change interacts with the multiple stressors that people face" (Lindsay Stringer, University of Leeds)	The text has been revised.
184	36211	13	10	43	10	43	Typo - correct "sustainability" (Lindsay Stringer, University of Leeds)	The text has been revised.
185	44274	13	10	48	0	0	Sect. 13.3.1: This section needs references or a cross-ref to the chapter where these impacts are discussed in more detail. (Dominik Reusser, Potsdam Institute for Climate Impact Research)	This particular sentence has been removed. Each of the succeeding sections have references and cross-references to other chapters.
186	54438	13	10	48	10	50	These general statements about climate change would benefit from cross-referencing to relevant findings from chapters of the Working Group 1 contribution, thus further capturing the nuances of observed and projected changes in climate and extreme events. (Michael Mastrandrea, IPCC WGII TSU)	This particular sentence has been removed. We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
187	50778	13	10	48	10	51	The 2nd sentence of this paragraph must consider and cross-reference the findings of SREX chapter 3 and especially the WG1 5th assessment report. In particular, the author team should ensure rigorous characterization of changes in extreme events that have been observed, attributed, and/or projected. Additionally, the chapter team may wish to specify further if the described "major impacts" on line 50 have been formally attributed to climate change. (Katharine Mach, IPCC WGII TSU)	See comment 185 and 186
188	53265	13	10	48	10	51	References are needed. (Kristie L. Ebi, IPCC WGII TSU)	See comment 185 and 186
189	44911	13	10	48	11	4	I very much like the mention of events not captured by standard meteorological observations, and of cumulative extreme events. (John Morton, Natural Resources Institute, University of Greenwich)	Thanks!
190	54439	13	10	50	10	51	Likewise, this statement should cross-reference the chapters in Working Group 2 that assess the literature on economic impacts of climate change. These include Chapters 10 and 18. (Michael Mastrandrea, IPCC WGII TSU)	See comment 185 and 186
191	53266	13	10	53	10	53	Please ensure consistency of definition of climatic events with the AR5 glossary. (Kristie L. Ebi, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
192	44913	13	11	0	0	0	Section 13.3.1.1: There is a general problem here of not specifying whether "observed impacts" are seen in the original sources as impacts of climate change, climate variability, or decadal cycles, and with what justification. I realise that given the plethora of literature that uses somewhat loose definitions of climate change impact to explore other issues such as vulnerability or adaptation it would be difficult to be specific on a source-by source basis, but some acknowledgement of the difficulties would be useful. (John Morton, Natural Resources Institute, University of Greenwich)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
193	47611	13	11	0	0	0	The aforementioned Castro et al. collection has recent case studies of the impacts of climate change on local communities, as well as their responses. Their conclusions are similar, though there is generally stronger attention to historical dimensions and wider shifts in the political economy than featured in this report. (A. Peter Castro, Maxwell School, Syracuse University)	Some of the case studies have been considered. Due to space limitation we have not been able to include them.
194	53267	13	11	2	11	2	What types of events? (Kristie L. Ebi, IPCC WGII TSU)	The text has been revised.
195	53268	13	11	6	11	26	Evidence of vulnerability is not evidence of climate change impacts. (Kristie L. Ebi, IPCC WGII TSU)	The text has been revised.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
196	47378	13	11	9	11	9	"Please include references Ahmed and Neelormi, 2007 and Ahmed, 2008." Citations: Ahmed, A.U. and Neelormi, S., 2007. Livelihoods of Coastal Fishermen in Peril: In Search of Early Evidence of Climate Induced Adverse Effects in Bangladesh, Campaign for Sustainable Rural Livelihoods (CSRL) and Centre for Global Change (CGC), Ahmed, A.U., 2008. Assessment of Vulnerability to Climate Change and Adaptation Options for the Coastal People of Bangladesh, Practical Action, Bangladesh, Dhaka, p. 40. (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	The reference has been used in the text.
197	45266	13	11	13	11	15	This sentence describes a scenario, not an observed impact. Thus, I should be shifted to another section. (Marcus Kaplan, German Development Institute)	The sentence has been revised and moved.
198	50779	13	11	15	11	15	It would be helpful to specify further what is meant here by "at risk"--for what level of sea level rise? (Katharine Mach, IPCC WGII TSU)	The text has been revised and moved.
199	53269	13	11	17	11	18	Please check implied attribution of climate change impacts. (Kristie L. Ebi, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
200	44912	13	11	18	11	20	The finding on Nigerian poverty is not CC related and therefore could be omitted (John Morton, Natural Resources Institute, University of Greenwich)	The reference has been removed.
201	45267	13	11	18	11	21	These two sentences give the numbers of poor people for certain countries, but the link to climate change is missing completely. Either establish this link, or remove/shift these sentences, as the title of the section pretends something else. (Marcus Kaplan, German Development Institute)	The chapter deals with the interactions between livelihoods and poverty and climate change. Therefore we also need to address poverty in itself.
202	47689	13	11	19	0	0	This statement needs rewriting. I read it to say that Nigeria's extreme poor have increased to over 100 billion. "19 top three countries in terms of poverty head counts, Nigeria's extreme poor (<\$1.25/day) have increased by 40% in less than 20 years to now > 100 billion, many of them in the semi-arid north and urban slums (Sumner et al., 2012)." (Bob Pokrant, Curtin University)	The text has been revised . The reference to Nigeria has been removed.
203	36212	13	11	20	11	20	"less than 20 years to now" - be more specific about the dates of the exact time period you are looking at here (Lindsay Stringer, University of Leeds)	The text has been revised and moved.
204	53270	13	11	20	11	20	Million not billion? (Kristie L. Ebi, IPCC WGII TSU)	The text has been revised and moved.
205	36213	13	11	24	11	26	Add the years of these key events (Katrina, European heat waves and the Australian drought) (Lindsay Stringer, University of Leeds)	OK, this has been done.
206	53271	13	11	29	0	0	Please differentiate between climate variability and climate change. (Kristie L. Ebi, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
207	36214	13	11	32	11	33	Edit to read: "...a multitude of other stressors. These interactions often amplify the impacts of climate change" - otherwise this is a long sentence that is hard to follow. Similarly "...There is abundant evidence in the literature that some people's assets (i) natural; ii) physical; iii) financial; iv) human; v) social; and vi) cultural) have already been eroded by climate change. [note, I suggested you number the assets here because in line 36 you refer to "6 assets" so this would improve the clarity] (Lindsay Stringer, University of Leeds)	We have revised the text for clarity and have not numbered assets in order to make the most of space constraints.
208	42224	13	11	33	11	34	is it not political instead of cultural? (Nicole Clot , HELVETAS Swiss Intercooperation)	No, the text is correct.
209	50780	13	11	33	11	34	For this statement, the author team may wish to clarify further if erosion of assets has been formally attributed to climate change or if a more qualified wording may be appropriate. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
210	53272	13	11	33	11	34	A reference is needed. (Kristie L. Ebi, IPCC WGII TSU)	The text has been revised.
211	44275	13	11	33	34	0	"There is abundant evidence": please give this evidence, there are no sources. (Dominik Reusser, Potsdam Institute for Climate Impact Research)	See comment 210
212	45268	13	11	38	11	38	I don't think that the 8page brochure by ActionAid is a reference that should be cited by the AR5; there should be more scientific examples around. (Marcus Kaplan, German Development Institute)	There are many other references, Action Aid reference has been taken out.
213	50781	13	11	38	11	40	For the statement, the author team could consider cross-referencing chapters 3-6 or 30. (Katharine Mach, IPCC WGII TSU)	We have cross referenced to other chapters.
214	50782	13	11	40	11	42	For this statement, it would be helpful to clarify the relevant time frame for observed changes. The author team should also consider if changes in water resources for this region have been formally attributed to climate change as might be suggested by the phrase "due to climate change." If not, more qualified wording may be appropriate. (Katharine Mach, IPCC WGII TSU)	The declining water resources have been attributed to decreasing precip and increasing temperatures. It is properly referenced.
215	53273	13	11	41	11	41	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	See comment 214
216	44276	13	11	42	0	0	"Water-scarce regions such as the Middle East and North Africa (MENA) experience dwindling water resources due to climate change, combined with steep increases in demand due to population and economic growth." This has also been analyzed by V. Tekken, E. Ulazzi, L. Costa, J. Kropp (2011): Increasing pressure, declining water and eroding coast in NE Morocco. Journal of Coastal Conservation (in press). (Dominik Reusser, Potsdam Institute for Climate Impact Research)	Due to space limitations we have not included this reference
217	50783	13	11	45	11	45	It would be helpful to specify what this acronym stands for. (Katharine Mach, IPCC WGII TSU)	It is explained in the text.
218	53274	13	11	45	11	45	Please define MENA. (Kristie L. Ebi, IPCC WGII TSU)	Explained on line 40.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
219	39551	13	11	47	11	47	Also see work by Bakker et al. (2008) Governance Failure: Rethinking the Institutional Dimensions of Urban Water Supply to Poor Households. World Development Vol. 36, No. 10, pp. 1891–1915. (Carrie Mitchell, International Development Research Centre (IDRC))	Due space constraints, we decided not to include this particular reference.
220	53275	13	11	49	11	49	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
221	50784	13	11	49	11	50	For this statement, the author team may wish to consider and/or cross-reference chapters 4, 5, 6, and 30. (Katharine Mach, IPCC WGII TSU)	We have cross referenced to other chapters (4, 5, 6, or 30) in the 2nd paragraph of 13.2.1.1.
222	50785	13	11	51	11	51	The wording on this line ("are responsible") suggests that the described impacts have been formally attributed to the observed physical changes. The author team should ensure this is the case or otherwise consider more qualified wording. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
223	45841	13	11	53	11	53	Climate change also affects marine fisheries' seems a very vague statement when written as a stand-alone sentence. (Bradley Hiller, World Bank)	The text has been revised.
224	53276	13	11	53	11	53	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	The text has been revised
225	36836	13	11	53	12	2	Peru and Colombia are not some "of the poorest countries". They rank as middle income countries (see http://data.worldbank.org/country/) (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	The text has been revised.
226	36215	13	12	2	12	2	check spacing between reference and "and the Caribbean" (Lindsay Stringer, University of Leeds)	The text has been revised.
227	36837	13	12	3	0	0	And middle income countries too. In general consider giving more emphasis to the global poor in MIC. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	We have eliminated this sentence.
228	50786	13	12	5	12	6	For this statement, the author team may wish to consider and cross-reference chapter 5. (Katharine Mach, IPCC WGII TSU)	We have cross referenced to other chapters. Chapter 5 is cross-referenced in paragraph 4 of 13.2.1.1.
229	44914	13	12	5	12	13	I would question of any of this counts as *observed* impacts (John Morton, Natural Resources Institute, University of Greenwich)	We have clarified in the text.
230	36216	13	12	12	12	13	More explanation is needed here with regard to the resettlement. Provide a stronger link to the actual projected climate changes. (Lindsay Stringer, University of Leeds)	We have included more references and clarified the text.
231	44915	13	12	13	12	13	The mention of Inner Mongolia in the context of sea level rise and coastal regions appears odd (John Morton, Natural Resources Institute, University of Greenwich)	The reference to Inner Mongolia has been taken out,
232	50787	13	12	15	12	15	The wording on this line suggests that the described impacts have been formally attributed to climate change. The author team should ensure this is the case or otherwise consider more qualified working. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
233	53277	13	12	15	12	15	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	See comment 232.
234	43801	13	12	15	12	46	Recently, a study reveals the impacts of weather extremes on smallholder food security in southern Peru (Sietz et al. 2011). It demonstrates that poor farmers experienced higher damage due to periods of water shortage and water excess because they had less access to land in different eco-niches, among other factors. Using a variety of eco-niches is important in this high-mountain context in order to distribute the risk of harvest failure appropriately. If production is damaged in one niche, the other niches may still provide sufficient yield. The competition for land resources greatly restricts their access to different eco-niches. Land still available is located far from their living places and sometimes has to be rented at high costs. In addition, labour shortage during sowing disabled some farmers to sow the rather distant intended area. They had no monetary assets to hire labourers for this task. Altogether, the poorest farmers with the maximal harvest failure risk are educationally deprived and lack an alternative income. The results of this study are validated in a two-step procedure taking into account (a) reported outcomes of vulnerability and (b) underlying vulnerability-creating mechanisms. This advanced validation clearly strengthens the credibility of the identified vulnerability patterns and demonstrates their value for decision-making processes. REFERENCE: Sietz, D., Mamani Choque, SE. and Lüdeke, MKB. (2011) Typical patterns of smallholder vulnerability to weather extremes with regard to food security in the Peruvian Altiplano. Reg. Environ. Chang., Published online: 15 November 2011, DOI: 10.1007/s10113-011-0246-5. (diana sietz, Wageningen University)	We have made use of the suggested reference, now published in 2012.
235	50789	13	12	16	12	20	For this statement, the author team may wish to consider and cross-reference chapter 7. (Katharine Mach, IPCC WGII TSU)	We have cross referenced to other chapters.
236	36217	13	12	18	12	18	"pathogens and insect attacks" - increases in parasitic weeds such as <i>Striga asiatica</i> are also important and have important implications for food security and livelihoods. Suggest this is added. See e.g. Stringer LC, Twyman C, and Thomas DSG. 2007 Learning to reduce degradation on Swaziland's arable land: enhancing understandings of <i>Striga asiatica</i> . Land Degradation and Development 18 (2) 163-177. (Lindsay Stringer, University of Leeds)	The text has been revised.
237	44916	13	12	20	12	26	All this seems like projection from known facts of animal physiology, not observed impacts (John Morton, Natural Resources Institute, University of Greenwich)	We have clarified in the text. Some references refer to animal physiology (Hahn), others refer to livestock choices of (agro)pastoralists in terms of choosing the best adapted livestock species given already increased temperature and potential future ranges.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
238	53278	13	12	22	12	22	Degrees C? (Kristie L. Ebi, IPCC WGII TSU)	Degrees C, although no longer in text now.
239	50788	13	12	24	12	24	"likely" – The author team should ensure that this likelihood term reflects a probabilistic basis in its assignment. The preceding word "more" implies that the usage may be casual, which should be avoided. If there is not a probabilistic basis for assignment of the likelihood term, assigning a level of confidence may be appropriate. (Katharine Mach, IPCC WGII TSU)	We are now using the qualified uncertainty language.
240	53279	13	12	25	12	25	Why? (Kristie L. Ebi, IPCC WGII TSU)	We have clarified in the text.
241	48028	13	12	27	12	27	The arbitrary range 5-10% seems to come out of nowhere. Moreover, the percentage is a function of the period of time. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
242	50790	13	12	28	12	28	The wording on this line suggests formal attribution of damage to physical assets to climate change. If rigorous attribution is not intended here, a more qualified phrasing may be appropriate. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
243	53280	13	12	28	12	28	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	see comment 242
244	45842	13	12	28	13	9	Potential for forced migration could be mentioned somewhere within this section on impacts on livelihood assets and human capabilities. Synthesised extract from Hiller, B.T. (July 2012) PhD dissertation (unpublished): Environmental degradation has already triggered population movements and aggravated regional conflicts (GEF, 2005), and, coupled with predicted climatic changes, has the potential to cause migration, displacement, and relocation for between 200 million to 1 billion people by 2050 (WDR, 2010). Specific references: GEF, 2005, Achieving the Millennium Development Goal A GEF progress report, Global Environment Facility, Washington DC. WDR (World Development Report), 2010, Development and Climate Change, World Bank, Washington DC USA. (Bradley Hiller, World Bank)	We have made references on migration available to Ch12 as they have a special section on migration and displacement.
245	36218	13	12	29	12	30	Edit to read "Frequent impacts include homes being destroyed by flood water, mudslides..." (Lindsay Stringer, University of Leeds)	The text has been revised.
246	47379	13	12	30	12	30	"Please include references Ahmed et al., 2012." Citation: Ahmed, A.U., Asaduzzaman, M., and Neelormi, S., 2012. Assessment of Major Eco-system Based Climate Change Related Problems in Bangladesh and Future Trends, Jointly published by CARE Bangladesh and Centre for Global Change (CGC), Dhaka (in press). (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	we have included the reference.
247	36219	13	12	39	12	39	Forthcoming reference - can this be updated? (Lindsay Stringer, University of Leeds)	Yes, it is now published.
248	48029	13	12	43	12	43	A citation to who is doing the assuming in "is generally assumed" is needed. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
249	53281	13	12	43	12	43	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
250	45843	13	12	43	13	2	Speculative comment: I recall reading about migration of pests into previously unchartered areas due to warming temperatures - i.e. specifically mosquitoes into Kathmandu, which was purportedly previously too cold for mosquitoes to thrive. This phenomenon would need to be confirmed as being due to climate change before it could be considered for inclusion. However, such evidence (if found) could provide a good example for this section. (Bradley Hiller, World Bank)	We speak to pathogens and insect attacks very briefly under 13.2.1.1 and have left reference to future shifts in vector-borne diseases to Ch11.
251	42748	13	12	44	0	0	Please see if the phrase 'food security' is actually 'food insecurity'. (Muhammad Mohsin Iqbal, Global Change Impact Studies Centre)	Corrected.
252	44277	13	12	44	0	0	Should be "increased food Insecurity, undernourishment..." (Dominik Reusser, Potsdam Institute for Climate Impact Research)	Corrected.
253	50791	13	12	44	12	44	Is "increased food security" actually what is meant here? (Katharine Mach, IPCC WGII TSU)	Corrected.
254	50792	13	12	53	12	53	If formal attribution of psychological effects to climate change has not occurred, the author team may wish to adopt more qualified wording. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
255	53282	13	12	53	12	53	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	See comment 254
256	53283	13	13	4	13	4	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	See comment 254
257	36220	13	13	8	13	9	Punctuation is strange in the sentence starting "Changes in seasonality...". Please amend. (Lindsay Stringer, University of Leeds)	The text has been revised.
258	47008	13	13	8	13	9	It could be convenient to specify where this particular effect took/is taking place. (Susana Beatriz Adamo, Columbia University)	The text has been revised.
259	48027	13	13	11	13	11	"Physical relationships" probably overstates what semi-empirical models are based on. Perhaps "are based on the assumed existence of a physical relationship between..." (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
260	50793	13	13	14	13	14	By "climatic changes" here, does the author team intend both climatic variability and change? (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
261	53284	13	13	14	13	14	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	See comment 260

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
262	46967	13	13	22	13	22	The statement of "Bangladesh, the more affluent and more powerful tend to benefit from climate change" is not a acceptable statement. There is no such evidence tht climate change has provided benefits to any specific class of the society (neither rich nor poor). The shrimp farming is not a consequence of cliamte change. It has started due to the intervention of the then Govt. to create Polders (coastal embankments) which creates water logging and increase salinity. (A K M Saiful Islam, Bangladesh University of Engineering and Technology)	This probably refers to page 14, see comment 277
263	54889	13	13	28	0	0	Figure 13.3 The author team may wish to increase the font to make it more legible. (Monalisa Chatterjee, IPCC WGII TSU)	The figure has been revised.
264	53285	13	13	32	13	51	Are there examples from middle income countries? (Kristie L. Ebi, IPCC WGII TSU)	We have tried to include more examples from MICs (incl. Russia, China, India, Brazil).
265	45269	13	13	37	13	39	This example is not convincing for several reasons: a) it is taken "only" from a newspaper article; b) I do not see switching to more drought-tolerant crops as a change in livelihood dynamics, but simply as an adaptation strategy; c) I did not understand (and I could not find anything in the original article), why the shift from maize to potatoes creates nutritional gaps. (Marcus Kaplan, German Development Institute)	The text has been revised.
266	42225	13	13	41	13	41	reference: Robledo, Clot, Hammill and Riché (2011) (Nicole Clot , HELVETAS Swiss Intercooperation)	We have not been able to fit this reference into the chapter. It is probably more relevant for the adaptation chapters.
267	53286	13	13	41	13	41	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
268	36221	13	13	41	13	51	This paragraph would benefit from clarifying the difference between livelihood activities, livelihood strategies and use of just the term "livelihoods". More differentiation is needed especially between strategies and activities. (Lindsay Stringer, University of Leeds)	The text has been revised.
269	47009	13	13	41	13	51	I particularly like the format of presenting the topic used in this paragraph: statement, then empiral basis and citations. It would be great if it could be used consistently in the chapter. (Susana Beatriz Adamo, Columbia University)	Thanks, we have tried to learn from this.
270	48030	13	14	0	0	0	This is an important section. It is good that the authors have stated a level of confidence, but the text needs to also explain the basis of that confidence. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
271	50794	13	14	3	14	9	In discussion here, the author team should ensure that climate change and extreme events are not conflated. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
272	36222	13	14	7	14	7	"high odds" - can you be more specific? What are the odds? (Lindsay Stringer, University of Leeds)	The text has been revised.
273	42749	13	14	11	0	0	The word 'from' is suggested to be repalced by 'of'. (Muhammad Mohsin Iqbal, Global Change Impact Studies Centre)	No, from is correct.
274	47380	13	14	15	14	26	"Please add references Ahmed et al., 2009 and Ahmed, 2008". Citations: Ahmed, A.U., Neelormi, S., Adri, N., Alam, M.S., and Nuruzzaman, K., 2009. Climate Change, gender and Vulnerable Groups in Bangladesh, Climate Change Cell, department of Environment, Dhaka, p. 88. Ahmed, A.U., 2008. Desakota Phenomenon Observed in Satkhira-Khulna-Jessore-Dhaka Corridor in the Southwestern Bangladesh, Part II F1 Case Study, in Desakota Study Team, Re-imagining the Rural-Urban Continuum, Istitute for Social and Environmental Transition (ISET), Kathmandu. (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	We have included the Ahmed et al. 2009 reference here, thank you. We also use material from Ahmed and Neelormi in 13.2.1.5.
275	50795	13	14	16	14	16	By "climatic changes" here, does the chapter team mean both climatic variability and change? (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
276	53287	13	14	16	14	16	Presumably you mean weather and climate variability, not climate change. (Kristie L. Ebi, IPCC WGII TSU)	see comment 275
277	46966	13	14	17	14	23	The shift of livelihood is not only occurred in the fishermen community, it also effect the farmers. For example, first ten years of the Polder (coastal embankment) the production of rice was very good. However, it is gradually decrease due to intervention in the rivers and withdrawal of water from the upstream. (A K M Saiful Islam, Bangladesh University of Engineering and Technology)	We have revised this complexity in the second case study in Fig 13-2.
278	53288	13	14	20	14	23	There was an earlier example of how switching to shrimp farming significantly reduced the number of jobs. This point could be brought in here. (Kristie L. Ebi, IPCC WGII TSU)	the earlier example has been removed
279	36223	13	14	21	14	21	Edit to read "...majority suffers a loss of livelihood options..." (Lindsay Stringer, University of Leeds)	the text has been revised
280	48031	13	14	27	14	28	The text should briefly explain why IPCC is confident that the expansion relative to today in the water column was 0.3-0.4m. Without an explanation, one might normally assume that it is very difficult to have any idea about the heat content of the ocean 100,000 years ago. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
281	37013	13	14	31	14	33	How can households generate 115% income? Please check numbers. (Joachim Rock, Johann Heinrich von Thuenen-Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries)	The text has been revised
282	48032	13	14	31	14	33	The text should explain the basis of IPCC's confidence about the Greenland contribution. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
283	53289	13	14	31	14	35	Another issue is cash crops. There are a limited number of studies showing they may be affected by changing weather patterns and projected climate change. (Kristie L. Ebi, IPCC WGII TSU)	The text has been revised. We use a projection on coffee in Central America in 13.2.2.4.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
284	44917	13	14	45	14	48	Country-level findings with limited relevance to poverty (John Morton, Natural Resources Institute, University of Greenwich)	As discussed with John in Buenos Aires, we show that there are some poverty-disaggregated projections (better) and some that don't disaggregate (not as good, but nevertheless prevalent in the literature).
285	48033	13	14	48	14	48	The text should indicate whether there is any fossil evidence of the boundaries of the ice sheet. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
286	53290	13	14	50	14	54	Over what time period? (Kristie L. Ebi, IPCC WGII TSU)	Difficult to specify a particular time period.
287	48034	13	15	2	15	2	The phrase "suggesting substantial sea level variability" could be cut. It seems redundant and it is unclear why a change of 3.5 mm/yr is viewed as "substantial" since it is commonplace today. (James G Titus, US Environmental Protection Agency)	Titus comments not relevant.
288	36224	13	15	4	15	4	"under any official radar" - strangely expressed. Reword. (Lindsay Stringer, University of Leeds)	The text has been revised.
289	45844	13	15	7	15	25	Should remittance incomes be mentioned in this section? (Bradley Hiller, World Bank)	No references have been found that speak to the role of remittances in preventing critical thresholds in the context of climate change.
290	45270	13	15	12	15	14	Any proofs/sources for this statement? (Marcus Kaplan, German Development Institute)	Reference by Little et al. 2006 included.
291	47612	13	15	13	0	14	I am skeptical about the validity of the claim that "the poor are increasingly reliant on social networks." Reliant, yes, but more reliant in the long run -- doubtful? Research by Peter Little et al., "Moving in place": drought and poverty dynamics in South Wollo, Ethiopia," Journal of Development Studies 42(2): 200-225, found that such networks expand and contract as people are confronted with crises such as drought and then recovery periods (normal rains). There is dynamism and fluctuation rather than a clear trend. While many modernization-influenced analyses were wrong about a unilateral trend toward social breakdown, it's an overstatement to see the poor as overall more unified today than in the past. This is the anti-globalization activist's dream, but seldom the reality. (A. Peter Castro, Maxwell School, Syracuse University)	The word "increasingly" has been changed to "often". This changes the meaning of the sentence. We concur with the reviewer's comment.
292	47613	13	15	18	0	0	Sickness etc. 'overlooked' -- overlooked by whom? I suggest that authors reference Robert Chambers highly influential book Rural Development (1983). Many of the ideas presented here are actually recycled from Chambers' original, highly influential, and still relevant study. (A. Peter Castro, Maxwell School, Syracuse University)	"Overlooked" has been removed.
293	36225	13	15	18	15	20	Edit to read: "...thus playing a particularly important yet overlooked role in poverty dynamics (Douglas et al., 2008). Third, the poor tend to sell their assets...then forego meals, medicine..." (Lindsay Stringer, University of Leeds)	Sentence has been adjusted, rephrased as "forego".
294	36226	13	15	21	15	25	Long sentence - please edit to make more readable. Line 23 delete "among" (Lindsay Stringer, University of Leeds)	Sentence has been broken up in more digestible bits.
295	50796	13	15	23	15	23	"likely" -- The author team should ensure that this likelihood term reflects a probabilistic basis in its assignment. If not, casual usage of the likelihood term should be avoided. A level of confidence may be more appropriate. (Katharine Mach, IPCC WGII TSU)	Likelihood statement has been removed.
296	44919	13	15	27	15	32	These findings on suicide and mental health issues in Australia are used in too many disparate sections, as well as a box - better to concentrate in one or two places (John Morton, Natural Resources Institute, University of Greenwich)	We have concentrated reference to mental health and suicide where it is most relevant.
297	44918	13	15	28	15	28	I question the relevance of "white" (John Morton, Natural Resources Institute, University of Greenwich)	Reference to white has been removed.
298	45845	13	15	28	15	29	Is it necessary (appropriate) to distinguish 'white' farmers? (Bradley Hiller, World Bank)	Reference to white has been removed.
299	36227	13	15	28	15	32	Long sentence - please edit (Lindsay Stringer, University of Leeds)	Sentence has been rephrased.
300	48035	13	15	47	15	48	Need to explain the basis for this confidence. If possible, explain what happened since this area is covered with ice today. (James G Titus, US Environmental Protection Agency)	Comment not relevant for our chapter (should be Ch13 in WGI).
301	47381	13	15	47	15	49	"Please add a reference Ahmed et al., 2012." Citation: Ahmed, A.U., Hassan, S.R., Etzold, B., and Neelormi, S., 2012. Where the Rain Falls: Climate Change, Hunger and Human Mobility, Bangladesh Case Study, United Nations University (UNU), Bonn (in press). (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	We included the reference here. Thanks.
302	53291	13	15	51	15	54	Legal issues could be brought into this discussion. (Kristie L. Ebi, IPCC WGII TSU)	We now have 2 references to legal issues. See also # 92
303	42750	13	15	52	0	0	The reference '(Di Falco and Bulte, 2010)' is suggested to be written as 'Di Falco and Bulte (2010)'. (Muhammad Mohsin Iqbal, Global Change Impact Studies Centre)	Fixed.
304	47614	13	16	0	0	0	I'm skeptical that the impacts of climate change on inequality can be so neatly sorted from other influences on the distribution of wealth. Does it form a part of the picture -- yes, but it may not be the most powerful strokes. (A. Peter Castro, Maxwell School, Syracuse University)	We rephrased as "contribute to and exacerbate".
305	44920	13	16	2	16	13	I am not clear if "transformation" is being used here in a more limited sense than "adaptation". If not, the paragraph is unnecessarily pessimistic (John Morton, Natural Resources Institute, University of Greenwich)	Word "transformation" has been replaced with "positive livelihood trajectories".
306	36228	13	16	5	16	5	edit to read "...engaged in livestock production in combination..." (Lindsay Stringer, University of Leeds)	"production" has been included.
307	47382	13	16	9	16	9	"Please add one sentence: In the southwestern Bangladesh, NGO-promoted community based adaptation efforts has led to increased livelihood resilience, often by exploiting ecosystem-based services (Ahmed, 2010; Neelormi, 2010)." Citations: A.U. Ahmed, (ed), 2010. Reducing Vulnerability to Climate Change: The Pioneering Example of Community Based Adaptation in Bangladesh, centre for Global Change (CGC) and CARE Bangladesh, Dhaka, 154 p. (ISBN 978-984-33-2234-0). Neelormi, S. 2010, Addressing Gender Issues in Adaptation, in A.U. Ahmed (ed.), Reducing Vulnerability to Climate Change: The Pioneering Example of Community Based Adaptation in Bangladesh, centre for Global Change (CGC) and CARE Bangladesh, Dhaka, pp. 111-127. (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	This is a good reference, but more suited for the Adaptation chapters in WGII. We did not include it here.
308	47010	13	16	12	16	13	I do not see the relevance of including this example, and it might even be offensive. (Susana Beatriz Adamo, Columbia University)	Example has been removed.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
309	50797	13	16	18	16	18	Where the chapter team mentions "climate change" on this line, does it actually mean climate variability, extreme events, and climate change together? If so, it would be helpful to expand the statement as appropriate. (Katharine Mach, IPCC WGII TSU)	Changed to "climate variability and change as well as climate-related disasters "
310	44921	13	16	22	16	22	"tend to benefit" does not sound right - have limited opportunities to benefit, but more than the poor? (John Morton, Natural Resources Institute, University of Greenwich)	This sentence has been removed. Content will go into a case study box together with Fig. 13_2. This article had been peer-reviewed.
311	50798	13	16	22	16	22	Where the chapter team mentions "climate change" on this line, does it actually mean climate variability, extreme events, and climate change together? If so, it would be helpful to expand the statement as appropriate. (Katharine Mach, IPCC WGII TSU)	We reworded this sentence into our case study B in Fig 13.2 with more details.
312	36229	13	16	24	16	25	In discussing land and water use and decision making, it could be important to include mention of access to land and ability to purchase it as these factors can affect people's ability to participate in land use decision making. (Lindsay Stringer, University of Leeds)	This is included in one of the case study boxes.
313	53292	13	16	28	16	28	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Changed to "unevenly distributed climate impacts"
314	53293	13	16	34	16	34	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Changed to "as a result of weather events and climate-related disasters"
315	53294	13	16	44	16	44	This is a good point that could be elaborated in the introduction. (Kristie L. Ebi, IPCC WGII TSU)	Not clear which introduction - scope and delineations? We don't talk about vulnerability there.
316	50799	13	17	15	17	15	Where the chapter team mentions "climate change" on this line, does it actually mean climate variability, extreme events, and climate change together? If so, it would be helpful to expand the statement as appropriate. (Katharine Mach, IPCC WGII TSU)	Changed to "climate variability and change"
317	53295	13	17	15	17	15	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Changed to "climate variability and change"
318	39552	13	17	17	17	17	Citation is repeated. (Carrie Mitchell, International Development Research Centre (IDRC))	Fixed.
319	44922	13	17	26	17	27	I would question the use of a non-peer-reviewed NGO source to make a point like this, quite apart from the issue of whether it can be attributed to climate *change* (John Morton, Natural Resources Institute, University of Greenwich)	We acknowledge anecdotal evidence.
320	36230	13	17	27	17	27	Edit to read: "...evidence points to increasing cases of death among..." (Lindsay Stringer, University of Leeds)	Changed to "cases of death"
321	53296	13	17	27	17	28	Please check against chapter 11. (Kristie L. Ebi, IPCC WGII TSU)	Nothing in Ch 11 that speaks to heat-related stress distinctly among men and women
322	47383	13	17	34	17	34	"Please add a sentence: In Bangladesh, no attempt has been made to disaggregate gender-based data amongst the large number of deadbodies found after the devastating cyclones of 1991 and 2007." (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	Not so relevant here (unless we have extra space), but Neelormi is added as a reference for comment #324 (Ahmed et al.)
323	44923	13	17	37	17	38	Without knowing the wording used in the original, this seems an unnecessarily negative wording: cultural expectations of physically saving others? (John Morton, Natural Resources Institute, University of Greenwich)	No, no unnecessary negative wording, but changed to "due to culturally-imposed roles as heroic life-savers"
324	47384	13	17	40	17	41	"Please add a reference: Ahmed et al., 2007." Citation: Ahmed, A.U., Neelormi, S., and Adri, N., 2007. Climate Change in Bangladesh: Concerns regarding Women and Special Vulnerable Groups, Centre for Global Change (CGC), in association with UNDP, Climate Change Cell, DFID and Bastob, Dhaka. (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	Ahmed et al. added in paragraph on the feminization of poverty (rather than the elderly) - see comment #328.
325	53297	13	17	42	17	42	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Changed to "weather events, climate, and extreme events"
326	53298	13	17	49	17	49	Presumably you mean weather and climate variability, not climate change. (Kristie L. Ebi, IPCC WGII TSU)	Changed to "climate variability"
327	53299	13	18	1	18	1	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Changed to "as a social consequence of weather events and climate"
328	47385	13	18	9	18	9	"Please add a sentence: Due to prolonged water logging in the southwestern region in Bangladesh, a significant proportion of men have migrated out to leave the family responsibilities on household women, who have faced extreme hardships as virtual single mothers (Ahmed et al., 2007)." Citation: Ahmed, A.U., Neelormi, S. and Adri, N., 2007. Entrapped in water World: Impacts of and Adaptation to Climate Change Induced Water Logging for Women in Bangladesh, Centre for Global Change (CGC), Dhaka. (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	Ahmed et al. added in paragraph on the feminization of poverty (rather than the elderly).
329	36231	13	18	12	18	12	edit to read: "Lower calorific intake due to climate..." (Lindsay Stringer, University of Leeds)	Changed.
330	44924	13	18	18	18	18	Awkward phrasing - replace race with ethnic minorities (John Morton, Natural Resources Institute, University of Greenwich)	Changed to "ethnicity and race".
331	53300	13	18	18	18	18	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Changed to "climate-related impacts"
332	44925	13	18	22	18	24	Unclear what is being said here - explain more fully or delete (John Morton, Natural Resources Institute, University of Greenwich)	Deleted.
333	53301	13	18	22	18	24	This is not clear. (Kristie L. Ebi, IPCC WGII TSU)	See above.
334	50800	13	18	37	18	37	Is the word "palpable" the best option here? (Katharine Mach, IPCC WGII TSU)	The word has been removed.
335	53302	13	18	37	18	37	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Sentence has been removed.
336	53303	13	18	43	18	43	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	We refer to Ch 12 for impacts on indigenous people.
337	47690	13	18	44	0	0	This sentence needs to be made clearer: "Also, high latitude livelihoods experience contaminant concentrations in marine mammals and new regulations related to climatic changes affect (McCarthy et al., 2005)." (Bob Pokrant, Curtin University)	Sentence has been removed.
338	47011	13	18	44	18	44	The sentence is incomplete. (Susana Beatriz Adamo, Columbia University)	See above.
339	36232	13	18	44	18	45	Sentence appears unfinished/does not make sense (Lindsay Stringer, University of Leeds)	See above.
340	53304	13	18	50	18	50	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Sentence removed entirely.
341	36233	13	18	53	18	53	"almost certainly" - what confidence? (Lindsay Stringer, University of Leeds)	Wording changed to "high confidence"

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
342	53305	13	19	8	19	14	Much of this is repeated. (Kristie L. Ebi, IPCC WGII TSU)	Not entirely clear what repetition the comment refers to. If meant in comparison to "observed impacts", then the repetition is on purpose to stress that "future impacts" will have similar effects on livelihoods and the poor. This needs to be stated explicitly, and there is evidence in the literature.
343	35689	13	19	16	19	20	It isn't clear how the ranking of 20 countries most at risk of extreme weather is being established (Craig Johnson, University of Guelph)	The ranking on the Wheeler set has been clarified, and categories re LICs, MICs, and HICs clarified. Countries within the economic groups are ranked in alphabetical order.
344	45271	13	19	16	19	24	Any source for this dataset? Unclear to me: lines 17-19 give a list of the 20 countries most at risk from extreme weather, 11 of which are LICs; lines 23-24 state that of the top 20 most vulnerable countries to climate change, only 4 are LICs; please explain the difference between the two listings (Marcus Kaplan, German Development Institute)	Wheeler data set. Reference provided.
345	36234	13	19	17	19	17	"dataset of outlines" - not sure what you mean here. This is hard to follow and does not make sense. (Lindsay Stringer, University of Leeds)	Grammar corrected to "Wheeler {{2417 Wheeler, D. 2011}} employs an extensive dataset to analyze...."
346	53306	13	19	17	19	17	A reference is needed. (Kristie L. Ebi, IPCC WGII TSU)	Still Wheeler 2011.
347	36838	13	19	19	19	20	According to the World Bank Colombia and Cuba rank as upper middle income countries not LIC (see http://data.worldbank.org/country/) (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Corrected to UMICs.
348	44926	13	19	20	19	22	Not clear how these lists are constructed. Surely Ethiopia has higher absolute numbers of poor than Kenya? (John Morton, Natural Resources Institute, University of Greenwich)	The data set shows number of people at risk from extreme weather events, not poverty numbers.
349	53307	13	19	20	19	22	Much of this is repeated. (Kristie L. Ebi, IPCC WGII TSU)	The part that describes poverty numbers has been removed (discussed under SOD 13.1.2.2.)
350	36839	13	19	24	0	0	Source? (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Wheeler data set. Reference provided.
351	53308	13	19	24	19	24	Which countries? (Kristie L. Ebi, IPCC WGII TSU)	Corrected to LICs, MICs, and 1 LIC (OECD removed).
352	37378	13	19	31	20	29	there are lots of literatures to support your point, but there are too many time nodes in this section, for example, 2020,2030,2049,2050,2055,2080,2100.Suggest to simplify as 2020,2030,2050,2080, and it is enough. (Liyong Xie, Shenyang Agricultural University)	Time nodes are taken from peer-reviewed literature on existing projections. These can't be lumped together or reduced to a smaller number of time nodes.
353	50801	13	19	34	19	35	For this statement, as supported by the underlying source the chapter team should specify the relevant climate/socio-economic scenario, potentially also providing further information on the key drivers for the projected change. (Katharine Mach, IPCC WGII TSU)	The Stern sentence has been replaced with a better one.
354	50802	13	19	40	19	43	For this statement, the author team should specify the relevant time frame. (Katharine Mach, IPCC WGII TSU)	Done. 2016.
355	36235	13	19	45	19	51	This is a very long sentence and is hard to follow. Can you break it down into a greater number of shorter sentences? (Lindsay Stringer, University of Leeds)	Sentence rewritten.
356	44927	13	19	45	20	2	This paragraph does not include poverty-dissaggregated data, so is a candidate for deletion (John Morton, Natural Resources Institute, University of Greenwich)	We now stress that projections that focus on GDP are in the literature and are not poverty disaggregated.
357	50803	13	19	48	19	48	Given the large range presented here, it would be helpful to provide further information on the key drivers (climate versus socioeconomic) influencing the projected outcome, as can be supported by the underlying source. (Katharine Mach, IPCC WGII TSU)	Large range broken up based on 2 distinct methods used by the authors.
358	47012	13	19	49	19	29	The range of the interval is very wide. (Susana Beatriz Adamo, Columbia University)	Range interval better specified, given 2 distinct methods.
359	44278	13	20	0	0	0	Fig. 13-4: Please make sure that references to vulnerability are in line with the general definition in the glossary. The figure seems very general and not very targeted to the topic of the chapter, as the vulnerability assessment in the dataset does not account for poverty and livelihoods. (Dominik Reusser, Potsdam Institute for Climate Impact Research)	Figure 13_4 has been eliminated.
360	36236	13	20	1	20	1	Typo - GPD - change to GDP (Lindsay Stringer, University of Leeds)	Typo corrected.
361	50804	13	20	4	20	6	For this statement, the author team may wish to consider and cross-reference chapter 7. (Katharine Mach, IPCC WGII TSU)	We cross-reference Ch7.
362	49090	13	20	4	20	20	When multipel references are used they should be listed chronologically, not alphabetically. This seems to be the case throughout this chapter. (Oyvind Christophersen, Climate and Pollution Agency)	Done.
363	53309	13	20	4	20	20	Please check against chapter 7. (Kristie L. Ebi, IPCC WGII TSU)	Cross-referenced with Ch 7.
364	49091	13	20	11	20	11	The reference to Müller et al. Looks awkward, replace "(Müller et al., 2011)" with "(2011)" (Oyvind Christophersen, Climate and Pollution Agency)	Sentence with Mueller et al. cut.
365	37379	13	20	12	20	13	"some parts will benefit" is tend to misunderstand. Does this point come from Muller or others? because Muller state that "ALL Afiraca agriculture " (Liyong Xie, Shenyang Agricultural University)	Most of this paragraph has been cut (instead cross-reference to Ch 7).
366	50805	13	20	14	20	20	For these statements as appropriate, it would be helpful to indicate the relevant climate/socio-economic scenarios. (Katharine Mach, IPCC WGII TSU)	See #365.
367	37380	13	20	15	20	16	"In the North American corn Belt,.....from 2020-49". Is this sentence suitable here? (Liyong Xie, Shenyang Agricultural University)	See #365.
368	36237	13	20	22	20	22	Incorrect apostrophe - should read "world's poor" (Lindsay Stringer, University of Leeds)	Sentence has been removed.
369	36238	13	20	22	20	28	This paragraph is complicated and difficult to understand in relation to the scale of the figures provided. Can you be more specific about the figures per country and avoid aggregation so that it's easy to see which figures relate to which observation? (Lindsay Stringer, University of Leeds)	The figure has been removed and the paragraph integrated into a more detailed discussion of impacts of sea level rise.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
370	44928	13	20	22	20	28	This paragraph does not include poverty-dissaggregated data, so is a candidate for deletion (John Morton, Natural Resources Institute, University of Greenwich)	Poverty disaggregated data will come later in this section. Here, we want to show that literature exists that shows future impacts on poor countries.
371	50806	13	20	22	20	28	For these statements as appropriate, it would be helpful to indicate the relevant climate/socio-economic or sea level rise scenarios. (Katharine Mach, IPCC WGII TSU)	We have done this as best as possible. Some scenario details would take several lines, however. In those cases, we refrain from providing all details.
372	54890	13	20	31	0	0	Figure 13.4 The author team may wish to add more details about overall vulnerability. (Monalisa Chatterjee, IPCC WGII TSU)	The figure has been removed.
373	53310	13	20	34	0	0	How much of this is due to population growth? (Kristie L. Ebi, IPCC WGII TSU)	This comment refers to the section heading. Where shifts in population are included in the scenarios and/or assumptions, we state so explicitly.
374	44929	13	20	36	20	51	It is not quite clear that the countries mentioned are the most severely affected within Hertel and Rosch's sample rather than relative to all developing countries (John Morton, Natural Resources Institute, University of Greenwich)	We emphasized that this particular literature discusses a sample of developing countries as part of conducted simulations.
375	50807	13	20	38	20	39	For this statement, the author team should consider further characterizing the relevant time frame, climate/socioeconomic scenarios, and specific geographic region, as can be supported by the underlying sources. (Katharine Mach, IPCC WGII TSU)	Details provided, as available in the cited literature.
376	50808	13	20	41	20	42	For the described 30-year event, it would be preferable to also indicate the relevant timeframe or baseline from which it was determined. (Katharine Mach, IPCC WGII TSU)	2 time frames used in the simulations are provided.
377	50809	13	20	46	20	48	For this statement, the author team should specify the relevant climate/socio-economic scenario as appropriate. (Katharine Mach, IPCC WGII TSU)	Details provided, as available in the cited literature.
378	36239	13	20	52	20	52	You talk about reductions in the percentage poverty headcount. Are percentage poverty and the poverty headcount not different things? Also, if the poverty headcount decreases, this can sometimes be because the poor die. How can this be accounted for? (Lindsay Stringer, University of Leeds)	Sentence has been removed.
379	50810	13	21	3	21	6	For this statement, it would be preferable to indicate as appropriate the relevant time frame and climate/socio-economic scenario. (Katharine Mach, IPCC WGII TSU)	The entire paragraph has been removed.
380	53311	13	21	3	21	6	What are the assumptions underlying the projections? (Kristie L. Ebi, IPCC WGII TSU)	We specified assumptions for all scenarios whenever possible, see comment #26.
381	47013	13	21	6	21	6	It could be adequate to mention that the results from Feng et al. 2010 have been somewhat controversial and contested, please see for example Auffhammer and Vincent 2012 http://www.pnas.org/content/early/2012/07/10/1202049109.full.pdf+html (Susana Beatriz Adamo, Columbia University)	The entire paragraph has been removed.
382	47386	13	21	6	21	6	"Please add the following: However, in-country rural to rural migration is also quite common in low-income countries such as in Bangladesh (Ahmed, 2008). Rainfall variability induced reduction in production and subsequent food insecurity has led to seasonal out-migration of rural farmers within the country's farming zones, while the responsibility of farming at source is generally carried by the respective female partners (Ahmed et al., 2012)." Citations: Ahmed, A.U., 2008. Desakota Phenomenon Observed in Satkhira-Khulna-Jessore-Dhaka Corridor in the Southwestern Bangladesh, Part II F1 Case Study, in Desakota Study Team, Re-imagining the Rural-Urban Continuum, Institute for Social and Environmental Transition (ISET), Kathmandu. Ahmed, A.U. et al., 2012 (already given above). (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	The entire paragraph has been removed.
383	53312	13	21	8	21	24	Please check the findings of other chapters, to ensure consistency. (Kristie L. Ebi, IPCC WGII TSU)	Cross-reference to Ch 11 and 12 included.
384	50811	13	21	15	21	17	For the statement, the author team should specify the relevant climate/socio-economic scenario and potentially the key drivers of the range of outcomes presented. (Katharine Mach, IPCC WGII TSU)	Sentence deleted (cross-reference to Chapter 11).
385	36240	13	21	16	21	16	U.S. - elsewhere you write out United States in full. Suggest you do so here for consistency. (Lindsay Stringer, University of Leeds)	Changed to "United States".
386	36241	13	21	23	21	23	"governmental assistance" - what about other forms of aid (non-governmental). These should also be mentioned. (Lindsay Stringer, University of Leeds)	"governmental" removed.
387	36242	13	21	26	21	26	"one livelihood to another" - this is far too simplistic. Livelihoods are generally diverse and you need to differentiate here between livelihood strategies and change therein and livelihood activities and changes there. This section up to line 35 needs clarification. (Lindsay Stringer, University of Leeds)	Changed to "shifts in livelihoods". We do not distinguish between livelihood strategies and activities, given other priorities in the chapter.
388	36243	13	21	32	21	32	edit to read "livestock- dependent livelihoods" (Lindsay Stringer, University of Leeds)	Fixed.
389	36244	13	21	33	21	33	Biofuels are perhaps being over-emphasised here. What about e.g. increasing areas of land being demarcated for conservation purposes? Protected areas are still expanding. (Lindsay Stringer, University of Leeds)	Biofuels are explicitly mentioned in the cited literature while conservation is not. No change made.
390	53313	13	21	34	21	34	Will be detrimental under what assumptions? (Kristie L. Ebi, IPCC WGII TSU)	Sentence has been deleted - not enough space to explicitly state all assumptions.
391	36245	13	21	40	21	40	high likelihood - what confidence? (Lindsay Stringer, University of Leeds)	Changed to "high confidence"
392	50812	13	21	44	21	47	For this statement, the author team should consider specifying the relevant climate/socio-economic scenario and timeframe for the projection. (Katharine Mach, IPCC WGII TSU)	The part of the sentence that would have required specifications on the scenarios has been removed.
393	50813	13	21	48	21	48	"highly likely" -- This phrase should be revised. If a likelihood term is intended (reflecting a probabilistic basis for its assignment), the author team should consider which reserved likelihood term would be most appropriate. If a probabilistic basis is not available, a level of confidence could be considered. (Katharine Mach, IPCC WGII TSU)	Changed to "high confidence".
394	50814	13	22	5	22	5	The author team may wish to consider clarifying if such thresholds have been projected by climate or other models, as the current wording might suggest, or if they are anticipated on the basis of process or other understanding. (Katharine Mach, IPCC WGII TSU)	Sentence has been rephrased and the entire paragraph changed to enhance clarity.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
395	53314	13	22	5	22	5	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	Sentence has been rephrased.
396	46763	13	22	5	22	9	The threshold mentioned is not clear at all and needs discussion and critique, whether this is a robust finding. (Reinhard Mechler, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	We have included more details here with references to WG1 Ch 14 and new references
397	50815	13	22	6	22	6	"likely" -- The author team should ensure that this term is being used for the uncertainties guidance for authors, with a probabilistic basis for its assignment. The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Sentence has been rephrased and the likelihood statement removed.
398	36246	13	22	7	22	7	Reference inconsistency - Smith et al (needs to be in italics) or Smith and Vivekananda (or both?!) (Lindsay Stringer, University of Leeds)	Corrected to Smith et al. 2009 (PNAS).
399	36840	13	22	10	0	0	Not clear what is the purpose of this argument if the example of the Himalayas lacks evidence. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Sentence has been rephrased to provide stronger evidence.
400	53315	13	22	17	22	21	References are needed. (Kristie L. Ebi, IPCC WGII TSU)	2 references included.
401	36247	13	22	22	22	25	Strange wording of the sentence starting "Also anticipated...". Rework. (Lindsay Stringer, University of Leeds)	Sentence has been rephrased.
402	36841	13	22	23	22	25	Include in braquets "from Central Mexico to Northern Central America". Not sure if it will be clear for the reader to identify which countries and regions Mesoamerica integrates. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Changed to Central America.
403	53316	13	22	30	22	30	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	This entire section is now included in 13.4. and D&A statements are made where appropriate.
404	36842	13	22	31	0	0	What about the poor people in MIC and HIC? Better "poor populations" instead of "poorer nations". (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Corrected to "poorer populations".
405	52109	13	22	33	22	34	It would be beneficial to also refer to the glossary for this report, which contains the same definition for "vulnerability." (Katharine Mach, IPCC WGII TSU)	We refer to the glossary for the definition of vulnerability.
406	53317	13	22	33	22	35	Please ensure definitions are consistent with the AR5 glossary. (Kristie L. Ebi, IPCC WGII TSU)	Done.
407	45272	13	22	35	22	39	The chapter already emphasized the phenomenon of multiple stressors and the close linkages between poverty and vulnerability to climate change quite often, there is no need to mention it here again (Marcus Kaplan, German Development Institute)	Ok, the paragraph has been shortened to avoid repetition.
408	53318	13	22	41	22	43	References are needed. (Kristie L. Ebi, IPCC WGII TSU)	See comment #403. References for this particular statement are added (end of first paragraph 13.4.1).
409	36843	13	22	42	22	43	Use some hedges. For example, "will not necessarily lead to..." rather than "will not lead to ...". In certain contexts income poverty alleviation might reduce income inequality. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Corrected.
410	35690	13	22	45	23	9	This is a bit of a strange paragraph that appears to be summarizing or repeating points already made in the earlier text (Craig Johnson , University of Guelph)	This entire paragraph has been broken up and key elements addressed under development, sustainability, or justice.
411	50816	13	22	46	22	47	For the phrase "increasing frequency and severity of hazards," the author team may wish to consider a more conditional or qualified phrasing, given that not all hazards are increasing in frequency and/or severity. (Katharine Mach, IPCC WGII TSU)	Conditional phrasing used here now.
412	36844	13	22	48	22	53	Not clear. Do you mean that livelihoods of the poor are more vulnerable because however they have a high risk index they receive poor social support measures due to their low damage costs? (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	The sentence has been rephrased to avoid confusion.
413	36248	13	22	53	22	53	"cannot afford" - and perhaps may not have the opportunity. This should be noted. (Lindsay Stringer, University of Leeds)	"may not have the opportunity" has been included.
414	36845	13	23	1	0	0	What is the link with climate change impacts? (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Sentence has been rephrased.
415	45273	13	23	1	23	2	as in my previous comment, the marginalization of certain groups was mentioned several times already (Marcus Kaplan, German Development Institute)	Sentence has been rephrased to avoid repetition.
416	36846	13	23	5	0	0	Only in rurality? (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	The term rurality has been removed.
417	36854	13	23	5	23	5	Only in rurality? (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	The term rurality has been removed.
418	36249	13	23	6	23	9	Often the poorest of the poor have safety nets through e.g. government aid. It's often the "common poor" who are most vulnerable. This should be noted. (Lindsay Stringer, University of Leeds)	This is now noted at the beginning of the paragraph.
419	40870	13	23	9	23	9	One more that you could add to your list of reasons that livelihood resilience is threatened: For complex reasons, communities with greater concentrations of racial minorities and low income households tend to exhibit lower levels of adaptive capacity than more affluent communities. Source: Posey, J. (2009) The determinants of vulnerability and adaptive capacity at the municipal level: Evidence from floodplain management programs in the United States. Global Environmental Change 19:482-493. (John Posey, East-West Gateway Council of Governments)	Thanks for the reference and text - both are now included.
420	44930	13	23	12	23	12	Not clear how or why this is similar to a Gini coefficient (John Morton, Natural Resources Institute, University of Greenwich)	Reference to the Gini coefficient has been removed.
421	50817	13	23	14	23	16	For this statement, the author team should provide the relevant climate/socio-economic scenario, potentially also with further discussion of the key drivers for ranges presented. (Katharine Mach, IPCC WGII TSU)	A brief statement about what scenarios were used is included in the text.
422	48118	13	23	23	23	23	"highly likely" needs to be replaced by a statement consistent with the guidance on uncertainty - e.g. use "very likely" if appropriate, or if not appropriate, use a wording that does not suggest a likelihood. (Philippe Marbaix, Université catholique de Louvain)	Changed to a confidence statement.
423	50818	13	23	23	23	23	"highly likely" -- This phrase should be revised. If a likelihood term is intended (reflecting a probabilistic basis for its assignment), the author team should consider which reserved likelihood term would be most appropriate. If a probabilistic basis is not available, a level of confidence could be considered. (Katharine Mach, IPCC WGII TSU)	Changed to a confidence statement.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
424	36250	13	23	25	23	25	Check spacing between "development" and reference. (Lindsay Stringer, University of Leeds)	Corrected.
425	36251	13	23	26	23	26	"top MDG" - change to MDG 1 (Lindsay Stringer, University of Leeds)	Corrected.
426	50819	13	23	26	23	26	"unlikely" -- The author team should ensure that a probabilistic basis in the information available supports assignment of this likelihood term. If a probabilistic basis is not available, a level of confidence could be considered. (Katharine Mach, IPCC WGII TSU)	Rephrased by using the term "improbable" to avoid confusion with probabilistic statements.
427	35691	13	23	31	23	39	Is it worth considering the possibility of food riots and social unrest? (Craig Johnson, University of Guelph)	We believe this will be more appropriate for Chapter 12 (Human Security)
428	36176	13	23	42	27	10	The statements on CDM and REDD+ are highly misleading. As REDD+ is still under negotiation it is not possible to state that the mechanisms "has shown mostly negative impacts". The scientific literature reports only on potential negative risks and issues that need to be considered during the design of the mechanism (current negotiations). There is some literature stating "proved" negative impacts of REDD+, but the IPCC authors should be careful repeating such statements. Similarly, the statement regarding the CDM will be in contradiction with the validation documents of many CDM projects. A more differentiated statement that clarifies the impacts of different sizes of CDM project activities would be far more useful! Further, the section induces the idea of focusing on reforestation. However an important part of the references quoted are either not considering A/RCDM or considering it only regarding the extreme reduced share of projects in reforestation in the whole CDM. For that reason conclusions of these studies cannot be extrapolated to the reforestation activities in the CDM!! Even less considering the the A/R CDM is the only mechanism that has to prove that not negative socio-economic impacts are taking place due to the A/R CDM project implementation it would be useful if the authors consult with the authors of ch. 11 WG III for discussions on A/R CDM, REDD+ and biofuels (Carmenza Robledo Abad, HELVETAS Swiss Intercooperation)	The text has been revised and the new sections are 13.3.1.1 and 13.3.1.2. The CDM text (13.3.1.1) has been shortened considerably due to space constraints and the discussion revised to reflect the tension between the validation documents of CDM projects and independent analyses by observers; we note this tension but it is not possible given the current state of knowledge to know which of these are correct.
429	45274	13	23	45	23	47	also known already from previous sections of the chapter (Marcus Kaplan, German Development Institute)	The text of the chapter has been significantly condensed and repetitive statements removed unless needed for specific emphasis.
430	50820	13	23	46	23	46	By "climatic changes" here, does the author team mean climate variability, climate change, and extreme events? (Katharine Mach, IPCC WGII TSU)	This sentence and phrasing has been removed here and also revised elsewhere in the chapter; this section has been streamlined to focus on responses to climate change, not the changes themselves.
431	53319	13	23	46	23	46	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	This sentence and phrasing has been removed here and also revised elsewhere in the chapter; this section has been streamlined to focus on responses to climate change, not the changes themselves.
432	50821	13	23	48	23	48	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. Casual usage of this reserved likelihood term should be avoided. (Katharine Mach, IPCC WGII TSU)	This sentence and phrasing has been removed here and also revised elsewhere in the chapter.
433	47615	13	24	0	0	0	REDD+ has proven more controversial than portrayed here. The website REDD Monitor contains a constant flow of information about different disputes and concerns related to the program and carbon forestry. (A. Peter Castro, Maxwell School, Syracuse University)	Although the source being cited is not peer reviewed, the message of the comment and ongoing developments around REDD+ have led to some modifications in the second paragraph on REDD+. Specifically, the text now indicates how the initial enthusiasm for REDD+ has been tempered, and that REDD+ has also raised equity concerns.
434	47014	13	24	9	24	33	The CDM section is patchy, and needs further development. (Susana Beatriz Adamo, Columbia University)	This section (now 13.1.1.1) has now been revised, condensed, and streamlined. A cross-reference to 21.6.1.4 should address the concern about the development of this section.
435	36252	13	24	11	24	33	This section needs some attention. The CDM isn't aiming explicitly to be pro-poor, rather pro-sustainable development. Pro-poor is a contested term - it's unclear whether it refers to helping the poorest of the poor come out of poverty, or whether it is about raising wellbeing for a larger proportion of the population. I think this section needs carefully rewording in relation to the definition of pro-poor that is being used (which is currently unclear) and in the context of reflection on what the CDM was established to do. (Lindsay Stringer, University of Leeds)	The wording in the section has been revised to discuss the multiple dimensions of sustainable development invoked by CDM, and not just poverty. The term pro-poor is now only used in reference to two extensive reviews that argue that the CDM is not pro-poor.
436	35692	13	24	14	24	15	this sentence requires a source (Craig Johnson, University of Guelph)	A reference has been provided - (UNFCCC 2013).
437	50822	13	24	24	24	24	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. Casual usage of this reserved likelihood term should be avoided. (Katharine Mach, IPCC WGII TSU)	"Is likely to" has been changed to "may."
438	39156	13	24	26	0	0	Based on my research in Borneo, REDD schemes are promising in theory but there are enormous problems with implementation. As it is, REDD is a get-rich-fast scheme for the likes of Macquarie Bank, who derive huge profit margins from the carbon profits they acquire in this manner. The danger of profiteering by investment banks needs to be addressed, particularly if the report calls for (and it does) significant non-state actor involvement. (Thomas Reuter, University of Melbourne)	This perspective was not incorporated due to space constraints and a lack of peer-reviewed literature to substantiate this claim.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
439	35902	13	24	36	25	0	It is clear that REDD's activities will modify land use patterns and particularly bush meat hunting, NTFP gathering and slash and burn agriculture. The REDD mechanism will propose alternatives to NTFPs collection, hunting and slash and burn agriculture. Therefore, the farming systems, cropping systems, food production, and utilization and food search mechanism of the forest dependent population will change. But then, how will REDD mechanism response to the displaced food needs of such people? Are national and local food security agendas being mainstreamed into the emerging REDD national policies? How do emerging activities on forest cover and land degradation affect practices of local food search, production, utilization and storage? How ready are the local and indigenous people as well as the local institutional framework to adapt to and adopt the new 'REDD introduced technologies'? This section needs to provide more clarity on REDD policy framework. (Precillia Ijang Tata epouse Ngome, Institute of Agricultural Research for Development)	The text continues to highlight the equity concerns that have been expressed about REDD+ and which this comment raises. However, given that there is little evidence about REDD policies at this time, it is not possible to provide clarity on REDD+ policy framework.
440	36253	13	24	38	24	45	Mention also the need for suitable partnerships and institutions - see e.g. Stringer LC, Dougill AJ, Mkwambisi DD, Dyer JC, Kalaba F, Mngoli M 2012 Challenges and opportunities for carbon management in Malawi and Zambia Carbon Management 2 (3) 159-173 and Stringer LC, Dougill AJ, Thomas AD, Spracklen DV, Chesterman S, Ifejika Speranza C, Rueff H, Riddell M, Williams M, Beedy T, Abson D, Klintonberg, P, Syampungani S, Powell P, Palmer AR, Seely MK, Mkwambisi DD, Falcao M, Siteo A, Ross S, Kopolo G 2012 Challenges and opportunities in linking carbon sequestration, livelihoods and ecosystem service provision in drylands Environmental Science and Policy (19-20) 121-135 (Lindsay Stringer, University of Leeds)	This section (now 13.3.1.2) has been considerably revised and condensed and so the paragraph to which this comment applies, which gave a larger sense of what REDD is and some overview that needed to be cut, no longer exists. The reference has been included in the chapter.
441	50823	13	24	43	24	43	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. Casual usage of this reserved likelihood term should be avoided. (Katharine Mach, IPCC WGII TSU)	This paragraph and sentence have now been eliminated in the streamlining and restructuring of the text.
442	50826	13	24	52	24	52	It would be helpful for the reader to specify what the acronym MRV stands for. (Katharine Mach, IPCC WGII TSU)	This has now been stated explicitly in the text in the second paragraph of this section.
443	53320	13	24	52	24	52	Please define MRV. (Kristie L. Ebi, IPCC WGII TSU)	This has now been stated explicitly in the text in the second paragraph of this section.
444	47211	13	25	1	25	2	The Cancun Agreements actually expand beyond 'interests of local communities and indigenous peoples' to 'Respect for the knowledge and rights of indigenous peoples and members of local communities' - retaining this wording is crucial to understanding that the potential impact of REDD+ can expand beyond economic impact on livelihoods and exclusion of use to conflict over land rights and land tenure (see Beymer-Farris and Bassett, 2012 among others). With regard to respecting knowledge, this can involve safeguarding of traditional livelihoods, for example the use of fire in indigenous swidden in South East Asia (see Erni, C (2009) (will be uploaded as supplementary material) which says that: "The UK based Forest Peoples Programme (FPP) and FERN have studied nine concepts for government programs on "Reducing Emissions from Deforestation and Forest Degradation" (REDD). Eight of these "identify 'traditional agriculture' or 'shifting cultivation' as a major cause of forest loss" (Griffiths 2008" 20). Again, it is the shifting cultivators who have to take the blame.") (Jennifer Rubis, United Nations Educational, Scientific and Cultural Organization (UNESCO))	The "respect for knowledge and rights" clause has now been incorporated into the first sentence of the third paragraph of the REDD section (now 13.3.1.2, "respect for the interests, knowledge, rights, and sustainable livelihoods of local communities and indigenous people."
445	50824	13	25	5	25	5	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. Casual usage of this reserved likelihood term should be avoided. (Katharine Mach, IPCC WGII TSU)	"Is likely to" has been changed to "may."
446	50825	13	25	7	25	7	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. Casual usage of this reserved likelihood term should be avoided. (Katharine Mach, IPCC WGII TSU)	"Is likely to" has been changed to "will."
447	36254	13	25	10	25	15	It is important to discuss property rights here and their role in determining communities' abilities to participate in REDD+ activities. (Lindsay Stringer, University of Leeds)	This section has now been streamlined, and paragraph 2 now mentions both local participation and ownership.
448	36255	13	25	20	25	20	edit to read "participation of local people in decision making" (Lindsay Stringer, University of Leeds)	This paragraph has now been eliminated in the restructuring and streamlining process.
449	47387	13	25	25	25	25	"Please add the following: There are apprehensions that REDD+. If not designed with adequate gender-sensitivity, may accrue gender-differentiated results with inequitable benefits in favour of men and deprivation of women (UN-REDD Programme, 2011). Leveraging the unique knowledge and skills of women and men who are dependent on forests can ensure more innovative approaches to design REDD+. Gender analysis of REDD+ processes, mechanisms, and policies at national and international levels are required." Citation: UN-REDD Programme, 2011. The Business Case for Mainstreaming Gender in REDD+, Geneva, 41 p. (SHARMIND NEELORMI, GenderCC, Women for Climate Justice)	This perspective has been incorporated in the second half of the second paragraph, and the reference has now also been incorporated. The full reference is UN-REDD Programme, 2011. The Business Case for Mainstreaming Gender in REDD+, Geneva, 41 p.
450	36256	13	25	32	25	32	Note that although the VCM is small, it is growing. Add some statistics to show this trend - see e.g. the State of the World's carbon markets report (2011). (Lindsay Stringer, University of Leeds)	We have updated with the latest available statistics. However, given the space constraints we did not see it Ch 13 responsibility to incorporate market details but rather to focus on impacts on livelihoods and poverty.
451	36257	13	25	36	25	36	"voluntary certification" - it is important to note the diversity of certification schemes here. (Lindsay Stringer, University of Leeds)	We mention the diversity but cannot describe further.
452	36258	13	25	40	25	43	Note that the results are context specific and more research is needed to really be able to assess the poverty impacts of VCM schemes in relation to poverty alleviation. (Lindsay Stringer, University of Leeds)	We try to be careful not to generalize.
453	36259	13	25	46	25	49	What about other ecosystem services and benefits from carbon storage, not just their direct poverty impacts? These should be mentioned. See Stringer LC, Dougill AJ, Thomas AD, Spracklen DV, Chesterman S, Ifejika Speranza C, Rueff H, Riddell M, Williams M, Beedy T, Abson D, Klintonberg, P, Syampungani S, Powell P, Palmer AR, Seely MK, Mkwambisi DD, Falcao M, Siteo A, Ross S, Kopolo G 2012 Challenges and opportunities in linking carbon sequestration, livelihoods and ecosystem service provision in drylands Environmental Science and Policy (19-20) 121-135 (Lindsay Stringer, University of Leeds)	We have included references on the ecosystem benefits. However, a more detailed treatment was not fitting. We do include the recommended reference in para 2 of 13.3.1.3.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
454	47950	13	26	0	0	0	Link this to Chapter 9 section on Biofuel production for a coherent discussion between the two chapters (Amejali Ramos Castillo, United Nations University - Institute of Advanced Studies)	We have cross-referenced to Ch 9 and will consider a cross-reference to WHIII when their next draft is available.
455	38886	13	26	1	0	0	13.4.1.4 Biofuel Production and Large - Scale Land Acquisitions: This section has discussed various aspects of biofuel and how poverty might be affected by such growing activity. But the section failed to show the impact of biofuel on reducing poverty through offering employment opportunities for workers in the large plantations dedicated to biofuel crops. (Mohamed Tawfic Ahmed, Suez Canal University)	We have inserted some findings on the employment opportunities from the literature. See paragraph 4 of 13.3.1.4.
456	43327	13	26	1	0	0	After three decades of sugar cane ethanol production, Brazil has many studies about impact of climate change and of sugar cane plantations and food production. Please contact University of Viçosa, professor Dr. Justino; www.ufv.br. University of Sao Paulo, department of economic studies. Instituto de Estudos do Comércio e Negociações Internacionais; www.iconebrasil.org.br (Milton Nogueira da Silva, Climate Change Forum of Minas Gerais, Brazil)	We are tasked with assessing the published literature, not personal communication. But we have included some more references to the Brazilian experience.
457	36260	13	26	3	26	9	It is unclear why there is focus on biofuels here. How are biofuels different from any other non-food crop (e.g. rubber, tobacco, cotton)? How do land use shifts to these crops compare with those towards biofuels? I don't know if there has been any systematic assessment but often wonder if biofuels are just the "in" thing to look at when actually other non-food crops are having a similar impact. Some reflection and explanation on this would be helpful in contextualising here. (Lindsay Stringer, University of Leeds)	The reason we focus on biofuels is the link to climate change policies. Tobacco, rubber etc are not connected to climate change policy. In the framing material at the beginning of 13.3 we emphasize that we have chosen to highlight 2 CC adaptation and 2 CC mitigation strategies with particular relationships to livelihoods and poverty.
458	50827	13	26	4	26	6	For the negative and positive views characterized here, it would be helpful to specify if they pertain to consequences in terms of poverty or consequences more broadly. (Katharine Mach, IPCC WGII TSU)	Thank you, we have done our best to clarify that the views pertain to the impacts on livelihoods and poverty.
459	36261	13	27	9	27	10	See also Dyer JC, Stringer LC, Dougill AJ 2012 Jatropha curcas: Sowing local seeds of success in Malawi in Journal of Arid Environments 79: 197-110 for further examples of small-scale poverty benefits from biofuel cultivation. Check "Peskett and Institute 2007" ref on line 8 - is this right? (Lindsay Stringer, University of Leeds)	We have incorporated this reference, thanks.
460	36855	13	27	13	0	0	Talk about the different adaptation scales, their interactions and their importance for positive change towards climate change threats. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	We specifically talk about spatial and temporal scales of livelihoods and experienced impacts. In Figures 13.2 and 13.5 we further illustrate the importance of different scales and processes across scales. We do not talk about adaptation scales (Chapters 14-16 cover adaptation).
461	52435	13	27	13	30	28	add the content of the disaster and eliminate poverty (Jian Guo WU, Chinese Academy of Environmental Sciences)	We were not sure what this comment referred to, so could not address it.
462	36847	13	27	20	0	0	Talk about the different adaptation scales, their interactions and their importance for positive change towards climate change threats. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	See comment #460 above.
463	36262	13	27	33	27	33	change "lead" to "led" (Lindsay Stringer, University of Leeds)	The sentence has now been deleted.
464	36263	13	27	41	27	41	delete "also" (Lindsay Stringer, University of Leeds)	The sentence has now been deleted.
465	53321	13	27	49	27	49	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	The sentence has now been deleted.
466	44931	13	28	1	28	19	The disadvantages of conventional insurance are commonly explained in terms of moral hazard, adverse selection and high transaction costs - it would be good to have some of this terminology here. A good reference is Sommarat Chantarat, Andrew G. Mude, Christopher B. Barrett, and Michael R. Carter "Designing Index-Based Livestock Insurance for Managing Asset Risk in Northern Kenya" Journal of Risk Insurance 2012 (John Morton, Natural Resources Institute, University of Greenwich)	A phrase has been added "and transaction costs associated with conventional insurance schemes". The section focuses on the effects of insurance on poverty and livelihoods and is unable to make in-depth description of different insurance forms. The reference has been checked but says little about actual effect on poverty and livelihoods, more about what a system could look like.
467	46764	13	28	1	29	3	The section needs some more careful revision. It should be stated that it deals with insurance for crop and property risks as induced by disasters. The key aspects about microinsurance is that is often provided by NGOs and other local organizations strongly bringing down the transaction costs to clients, a key barrier to insurance provision. Whether insurance is low regrets or not, depends importantly on the premium, which often can be high. if the premium can be subsidized or cross-subsidized (e.g. by way of including non-correlated, less risky clients), it may truly be low regrets. There seems to be a typo, when discussing that claims exceed premiums, which would indeed be very attractive to clients. Finally, I am not sure that compulsory/mandatory insurance is indeed more equitable and acceptable, as many, part. in developing countries, would see this as an additional tax on their livelihoods. (Reinhard Mechler, INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS)	The phrase has been added: "(aimed at property and productive resources such as crops and livestock in the face of disasters)" plus the phrase "and transaction costs associated with conventional insurance schemes". "Premiums exceed claims" corrected. The section now states that insurance can be an added livelihood cost to poor households.
468	50828	13	28	9	28	9	"Likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. Casual usage of this reserved likelihood term should be avoided. (Katharine Mach, IPCC WGII TSU)	The sentence has now been deleted.
469	36264	13	28	21	28	26	Worth also noting that this is particularly the case in dryland areas where rainfall is very discrete in terms of its spatial occurrence. (Lindsay Stringer, University of Leeds)	The sentence has now been deleted.
470	43415	13	28	21	28	26	Paragraph is not substantiated with literature review and discussions could be contrary to ground realities (David Molden, International Centre for Integrated Mountain Development (ICIMOD))	The sentence has now been deleted.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
471	36265	13	28	37	28	49	Mention should be made of cultural barriers to insurance adoption as well (Lindsay Stringer, University of Leeds)	The section is shortened and focus especially on the effects on the poor and livelihoods, cross-referenced to chapter 16 which describes insurance, a wider discussion of insurance schemes and cultural barriers is not possible here.
472	42751	13	28	51	28	52	The phrase '--- underlying forces that make certain poor people vulnerable, such as economic marginalization, are addressed.' is suggested to be re-written as '--- the underlying forces make certain that vulnerable poor people , such as economically marginalized, are addressed'. (Muhammad Mohsin Iqbal, Global Change Impact Studies Centre)	I have kept the original phrasing which appeared clearer.
473	53322	13	29	8	29	23	The SREX reference is Field et al. 2012. (Kristie L. Ebi, IPCC WGII TSU)	We have made references to the SREX report.
474	47688	13	29	13	0	0	13.4.2. Adaptation Responses. I consider this section too short and it does not do justice to the considerable work being done on local adaptation strategies in many developing countries. The categories provided are generic and almost empty of substantive content so the reader does not get much of an idea of the activities of local people, both rich and poor, as they engage with natural and human-induced hazards linked to climate change. I would add that more attention needs to be given in the chapter to discussing the idea of adaptive capacity related to climate change so that pro-poor adaptation strategies can have a better chance of working over the longer term. This would necessarily involve engagement with current models of economic development that direct development planning. I would include here a more detailed discussion of the debate around mainstreaming climate change into development and the creation of climate-resilient development strategies. See, for example, Ayers, J. and Dodman, D. (2010) Climate change adaptation and development I: the state of the debate. Progress in Development Studies 10, 2: 161–68 13.4.2.3. Household and Community Responses". What place is there in autonomous adaptation for innovation, that is, finding new ways of adapting? The categories mentioned could be regarded as established ones but innovation suggests a capacity to create new solutions. I also suggest that the authors consult Mark Pelling (2010):Adaptation to Climate Change:From Resilience to Transformation. Routledge for a discussion of the innovative aspects of adaptation and their link to rights-based notions of adaptation. (Bob Pokrant, Curtin University)	This section has been moved up and substantiated, to show how autonomous and planned adaptation relate. Cross-referenced to chapter 16 where adaptation is discussed more widely. Mainstreaming into adaptation and climate-resilient adaptation strategies should be discussed in section 13.4.
475	35693	13	29	15	29	16	I think the "triple F" model needs to be described (Craig Johnson , University of Guelph)	This sentence has now been deleted.
476	36266	13	29	37	29	37	Change "safe" to "save" (Lindsay Stringer, University of Leeds)	Correction made.
477	47691	13	29	40	0	0	See quotation below. I would say that any measures that have the effects stated in the quotation are maladaptive rather than could be both directly in terms of poverty reduction and indirectly in terms of climate change. Am I missing some other meaning in the quotation below? "Measures that increase poverty and inequity and undermine livelihoods and adaptive capacity could be considered maladaptive, as defined by Barnett and O'Neill (Barnett and O'Neill, 2010)." (Bob Pokrant, Curtin University)	Maladaptation cross-referenced to 19.3.2.5, definitions of maladaptation vary where some do not consider effects on vulnerability (only on emissions).
478	36856	13	29	45	0	0	Consider moving Section 13.4.2.3 to page 27 before Section 13.4.2.1 It gives more fluency and context to the text. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	The section has been moved as suggested.
479	43328	13	29	45	0	0	The book "Water and Climate Change" has several examples of how poor communities may adapt to the vagaries fo climate, flood control, heat waves, food security etc. (by Milton N Silva et al, published by Centro de Documentacao Eloy Ferreira da Silva and Fundacao Banco do Brasil, Belo Horizonte, 2012). Copy was sent via email. (Milton Nogueira da Silva, Climate Change Forum of Minas Gerais, Brazil)	We have tried to focus on references that show actual effects of adaptation on poverty and have not had much space to elaborate on adaptation itself, this is covered in chapters 14-16.
480	47015	13	29	52	30	20	Are these responses exclusive or can they be concurrent? There are numerous examples of migration as part of the others, as a way to access other markets, in this case labor markets. (Susana Beatriz Adamo, Columbia University)	Phrase added for clarification: 'often occurring concurrently and in combination'.
481	36857	13	30	1	30	2	Extensification and intensification activities are also autonomous adaptation responses. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	Phrase added: 'extension and intensification of activities',
482	47692	13	30	18	0	0	The authors state: "In contrast to migration which is often a last resort option and typically a reactive strategy, both diversification and storage are more proactive adaptation strategies (Smithers and Blay-Palmer, 2001)." While I agree with the statement about migration as often reactive, do the authors consider that planned migration needs to be considered as a societal strategy of adaptation? It may become necessary to move large groups of people from threatened coastlines and other places and to reduce the disruption and provide longer term livelihood options, planned migration may become a necessity. (Bob Pokrant, Curtin University)	The description of migration has been reformulated, and we cross-reference CH12 for more details on migration.
483	36858	13	30	18	30	23	However, diversification as a way out of poverty and of climate change adaptation depends on a range of factors such as the available options, preferences, etc. (see Sabates-Wheeler, Mitchell and Ellis 2008). (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	The description of diversification has been reformulated.
484	50829	13	30	26	30	26	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. Casual usage of this reserved likelihood term should be avoided. (Katharine Mach, IPCC WGII TSU)	The sentence has been deleted.
485	35903	13	30	31	0	0	Just wondering - could we not identify a section on insurance schemes, livelihoods and climate change to demonstrate how livelihoods could be stabilise through appropriate insurance schemes. What this may cost and how effective and efficient this could be. (Precillia Ijang Tata epouse Ngome, Institute of Agricultural Research for Development)	There is now a separate section on insurance, Box 13-2.
486	36177	13	30	31	32	9	There are many studies looking at the links between bilateral development cooperation (through ODA) and adaptation to climate change in the past decades. The authors should consider this literature including references from e.g. OECD, Agrawal or Klein et al (Carmenza Robledo Abad, HELVETAS Swiss Intercooperation)	The entire section 13.5 has been revised and shortened substantially.
487	36267	13	30	45	30	46	check reference style here. See also: Middleton N, Stringer LC, Goudie A, Thomas DSG 2011 The Forgotten Billion: MDG Achievement in the Drylands. UNCCD-UNDP, New York and Nairobi (Lindsay Stringer, University of Leeds)	The entire section 13.5 has been revised and shortened substantially.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
488	47616	13	31	0	0	0	Similarly, social protection programs have proven more problematic than relayed here. For example, human rights groups have claimed that Ethiopia's social protection scheme (often held up as a model) is simply part of the ruling party's patronage network, and those who do not favor the EPRDF's rule are refused assistance. The long-term effectiveness of these programs, and whether they truly differ from food aid and similar schemes have yet to be determined. (A. Peter Castro, Maxwell School, Syracuse University)	We have shortened and revised this section substantially. The points raised have been considered.
489	44932	13	31	7	31	9	The Ethiopian PSNP is normally considered as a social protection policy (albeit with more general poverty reduction objectives) so this sentence belongs lower down (John Morton, Natural Resources Institute, University of Greenwich)	We have moved the Ethiopian PSNP to the section on Social Protection, in Box13-2.
490	53323	13	31	8	31	9	The impact of climate change on high school graduation? (Kristie L. Ebi, IPCC WGII TSU)	This example has been removed.
491	36852	13	31	17	31	23	This is a very narrow definition of social protection. It refers only to the World Bank safety net approach on social protection. What about rights-based social protection, informal social protection and social welfare or labour- market based social security in developed countries? (see Barrientos and Hulme 2008; Sabates-Wheeler and Devereux 2007; Conway and Norton 2002). (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	We have had a long discussion about this. The definitions used can be found in the Glossary. We have chosen to use a rather narrow definition of SP.
492	36860	13	31	17	31	23	This is a very narrow definition of social protection. It refers only to the World Bank safety net approach on social protection in middle income countries. What about rights-based social protection, informal social protection and social welfare or labour- market based social security in developed countries? (see Barrientos and Hulme 2008; Sabates-Wheeler and Devereux 2007; Conway and Norton 2002). (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	See above (same comment).
493	36851	13	31	25	0	0	Define pro-poor adaptation, for example: 'poverty-focused measures and providing poor individuals, households and communities with the right incentives, tools and capacity to adapt; and addressing the market failures and barriers that constrain autonomous adaptation' (Vernon 2008:37). (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	The section has been revised substantially, but we have included pro-poor adaptation elsewhere.
494	36859	13	31	25	31	25	Define pro-poor adaptation, for example: 'poverty-focused measures and providing poor individuals, households and communities with the right incentives, tools and capacity to adapt; and addressing the market failures and barriers that constrain autonomous adaptation' (Vernon 2008:37). (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	See above.
495	36268	13	31	30	31	31	check reference style here. (Lindsay Stringer, University of Leeds)	The text has been revised.
496	53324	13	31	38	31	38	Please change DRR to DRM as the later is a broader term. (Kristie L. Ebi, IPCC WGII TSU)	We have discussed this very much but decided that we deal primarily with DRR and not the entire spectrum of DRM.
497	36853	13	31	49	32	9	Talk about structural or contextual vulnerabilities to climate change and the potential role of certain social protection measures such as conditional cash transfers in reducing those vulnerabilities by promoting and transforming livelihoods in contexts of stress and shocks (and not only the protective and preventive measures of social protection that help mainly in post-disaster contexts). Mention how further empirical evidence is still needed to better understand those dynamics. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	The section of SP has been shortened and revised substantially.
498	36861	13	31	49	32	9	Talk about the potential role of long term social protection measures such as conditional cash transfers in reducing the structural or contextual vulnerabilities to climate change by promoting and transforming the livelihoods of the poor (and not only the protective and preventive measures of social protection that help mainly in post-disaster contexts). These social protection measures are especially relevant in a context where global poverty is shifting towards MIC which eventually will have the financial capacity to address poverty alleviation domestically (see Sumner 2012b). Mention how further empirical evidence is still needed to have a better understanding of the dynamics between these social protection measures and climate change adaptation. (ANA SOLORZANO-SANCHEZ, INSTITUTE OF DEVELOPMENT STUDIES)	We mention briefly cash transfer programmes.
499	52434	13	32	12	32	49	add the content of biodiversity coservation and poverty reduction (Jian Guo WU, Chinese Academy of Environmental Sciences)	We have a short cross-reference on ecosystem-based adaptation (Chapters 15 and 16.
500	42752	13	32	21	0	0	The reference '(IEA (International Energy Agency), 2011)' has been referred as such on 5 occasions; in line 21, 22, 38, 42, 44 and 45. It is suggested that it may be referred as '(IEA, International Energy Agency, 2011)' at the first place of its referring, later it should be referred as '(IEA, 2011)'. (Muhammad Mohsin Iqbal, Global Change Impact Studies Centre)	The entire section has been substantially revised and shortened. The comment is therefore no longer relevant.
501	36269	13	32	24	32	32	check reference style here. (Lindsay Stringer, University of Leeds)	Yes, we checked the reference style throughout the document.
502	50830	13	32	30	32	30	"limited evidence" -- If this phrase is being used per the uncertainties guidance for authors, it should be italicized. Additionally, the author team may wish to consider assigning a summary term for agreement as well. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term.
503	36270	13	32	34	32	34	add mention of livelihood diversification here too. (Lindsay Stringer, University of Leeds)	The entire section has been substantially revised and shortened. The comment is therefore no longer relevant.
504	47016	13	32	36	32	48	I think more information/a broader explanation is needed about the pro and cons of renewable energy for new energy users versus effects of changes in other older users of electricity and other conventional forms of energy. (Susana Beatriz Adamo, Columbia University)	The entire section has been substantially revised and shortened. The comment is therefore no longer relevant.
505	50831	13	32	46	32	46	"limited evidence" -- If this phrase is being used per the uncertainties guidance for authors, it should be italicized. Additionally, the author team may wish to consider assigning a summary term for agreement as well. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term, as discussed at LAM3.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
506	50832	13	32	51	0	0	Section 13.6. For this section overall, the chapter team may wish to present more synthesis independent of research gaps. Additionally, the author team should consider assigning calibrated uncertainty language for assessment findings presented in this section, also providing line-of-sight references to the supporting chapter sections. (Katharine Mach, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term, as discussed at LAM3.
507	47017	13	33	2	33	6	Lower levels of analysis or higher resolution? It could be interesting to link this to temporal and spatial scales. (Susana Beatriz Adamo, Columbia University)	The entire section has been substantially revised and shortened. The comment is therefore no longer relevant.
508	47018	13	33	9	33	10	Once again, this seems to refer to changes in scales of observation than go beyond the usual climate change scenario downscaling exercises. (Susana Beatriz Adamo, Columbia University)	The entire section has been substantially revised and shortened. The comment is therefore no longer relevant.
509	36271	13	33	13	33	14	Fire has not been mentioned and could be important particularly linked to changing winds. (Lindsay Stringer, University of Leeds)	The entire section has been substantially revised and shortened. The comment is therefore no longer relevant.
510	53325	13	34	6	34	6	Please add weather and climate variability. (Kristie L. Ebi, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term as discussed at LAM3.
511	53326	13	34	6	34	14	Please check attribution to climate change. (Kristie L. Ebi, IPCC WGII TSU)	We have systematically revised our statements on climate change to make sure we don't conflate climate change, climate variability and extreme events. In many cases we have used the term "weather events and climate" as an umbrella term, as discussed at LAM3.
512	53327	13	34	18	34	18	Vulnerable to impacts or vulnerable to climate change? (Kristie L. Ebi, IPCC WGII TSU)	To impacts of climate change.
513	47019	13	34	22	34	24	Children, female headed households are not always marginalized populations, the statement needs some clarification about when and where this happens, and in relation to what are they marginalized. (Susana Beatriz Adamo, Columbia University)	The FAQs have been revised substantially, therefore the comment is no longer relevant.
514	42753	13	34	33	0	0	The word 'from' before 'eviction' is suggested to be deleted. (Muhammad Mohsin Iqbal, Global Change Impact Studies Centre)	The FAQs have been revised substantially, therefore the comment is no longer relevant.
515	53328	13	34	42	34	42	Reproductive hardship? (Kristie L. Ebi, IPCC WGII TSU)	The FAQs have been revised substantially, therefore the comment is no longer relevant.
516	48023	13	45	3	0	0	Section 13.6.1.2 is a reasonable and comprehensive review of the semi-empirical models. The attempt to explain why these models find a relatively high sensitivity of sea level rise to global temperatures is quite useful, and in fact it is what past assessments should have done to reconcile observations of sea level rise with what the models would have predicted. Perhaps you are a bit too kind to this analysis, in that there is essentially no theory to support these models. Consider the reasons why the temperature-projections section in a different chapter does not include a projection based on a historic regression of temperature on CO2 concentrations, or whether the authors of that chapter would be as kind to those (climate skeptics?) who have put forth such studies in the past. Perhaps you are more kind to semi-empirical than they would be because AOGCM's are better than ice-sheet dynamic models, so there is a greater need for a simplistic model here than there. Better to emphasize the relative need, than to leave open the possibility that such models are any better for projecting sea level than for projecting temperature. (James G Titus, US Environmental Protection Agency)	Not our chapter.
517	48024	13	45	3	0	0	The only omission I see in 13.6.1.2, is a discussion of the inherent limitations of time series regression analysis as a tool to estimate dynamic lags in relationships between an independent (e.g. temperature) and a dependent variable. Has Rahmstorf and others made the (unrealistic) assumption of an instantaneous response of sea level to temperature, the regression coefficients would have found an unrealistically low sensitivity. By playing around with different assumed functional specifications of the lagged response, one can derive all sorts of equilibrium sensitivities. And if one assumes that the change in sea level is a function of temperature, one has embedded a functional form guaranteed to over-estimate sea level rise at some point in the future. Needless to say, my comments are quite informal, but if you could find a way to treat this inherent limitation of time-series analysis, your review of these models will be even more complete. (James G Titus, US Environmental Protection Agency)	Not our chapter.
518	48026	13	45	3	0	0	It might be worth pointing out somewhere in this section, that the semi-empirical models, while flawed, may be an appropriate way for planners to capture the complete range of uncertainty, while at the same time, for purpose of an assessment such as AR5, they do not significantly add to the knowledge base. (James G Titus, US Environmental Protection Agency)	Not our chapter.
519	48025	13	45	16	45	18	You are correct to emphasize the need that motivated the semi-empirical models. But the casual reader might be left with the impression that they do "simulate recent accelerations in ice flow and..." and of course they don't do so either. The second reason, by contrast, does highlight something the semi-empirical models do. (James G Titus, US Environmental Protection Agency)	Not our chapter.
520	47020	13	54	0	0	0	Figure 13-2 displays a great amount of information, but it is difficult to read. Maybe it could be better if a legend is incorporated, as to eliminate as much text as possible. (Susana Beatriz Adamo, Columbia University)	The figure has been changed significantly (now 1 entire page and 4 case studies).
521	53949	13	54	0	0	0	Table 13-1: MDG should be spelled out in the caption. Is the data described in "country-level MDG progress" from specific countries used in the study or an average of all? (Yuka Estrada, IPCC WGII TSU)	We no longer use this table.
522	53950	13	54	0	0	0	Table 13-2: Can "Building adaptive capacity" and "Coping" be described under a different column instead of being part of time frame column? (Yuka Estrada, IPCC WGII TSU)	We no longer use this table.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
523	35904	13	55	0	0	0	Figure 13-2 - Climatic stressors - Add hurricanes and storms. I prefer 'destruction of livelihoods avenues' to 'unfavorable asset portfolios' (Precillia Ijang Tata epouse Ngome, Institute of Agricultural Research for Development)	We have significantly revised this graphic.
524	53951	13	55	0	0	0	Figure 13-2: While this figure has a great potential to communicate complex livelihood dynamics effectively, the presentation may be improved. For example, the direction of intensity of stressor and well-being should be specified. What is the x-axis is depicting (time?)? This figure may be easier to be understood (and may make more sense) if two panels are used; the top panel could illustrate stressors while the bottom could illustrate livelihood trajectory. Also, it would be helpful for readers to have clarification on "incremental changes" under climatic stressors. (Yuka Estrada, IPCC WGII TSU)	We have significantly revised this graphic.
525	50833	13	56	0	0	0	Figure 13-4. For the figure caption and legend, it would be helpful to clarify and specify further how "direct risks" are defined and quantified here. (Katharine Mach, IPCC WGII TSU)	This figure has been removed from the chapter.
526	53952	13	56	0	0	0	Figure 13-3: As it stands, the most conspicuous and eye-catching part of this figure is months described in the outer circle and it is hard to know what this figure is for. It is an interesting way to illustrate the information, but it may not be the most effective method depending on the purpose. Using colors may solve some issues, but some problems will remain, for example, information depicted in the "expenses" circle is extremely cumbersome to read. (Yuka Estrada, IPCC WGII TSU)	The figure has been improved.
527	53953	13	56	0	0	0	Figure 13-4: Reference to this figure should be provided in the text. As it is presented, I do not see much added value to have this map. An explanatory caption is needed to describe why this figure is presented in this chapter, especially in this particular section. (Yuka Estrada, IPCC WGII TSU)	We no longer use this figure. We do talk about sea level rise in the text, 13.2.1.1.