

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
1	38573	9	0	0	0	0	Rural areas have more than agricultural issues. They are crossed by infrastructure systems (roads, railroads, powerlines, pipelines, etc.) and often are sites for mining, industry and commerce. These, too, need to adapt. (Richard Wright, Retired, U.S. National Institute of Standards and Technology)	A new infrastructure section has been added as 9.3.3.2
2	39027	9	0	0	0	0	Overall, the chapter appeared to be biased towards the effects of climate change on rural areas in developing countries. This was evident through the wording as well as the examples given (more detailed comments provided below). As Chapter 14 (Page 8, Lines 49-54) notes, there is a tendency to argue that adaptation is a more pressing issue for developing countries and mitigation is more pressing for developed countries, rather than recognising that adaptation as well as mitigation should be an imperative in both developed and developing countries. If the intention of the chapter is to focus more on developing than developed countries, this should be made clear at the outset. (Sonia Graham, University of Melbourne)	We have endeavoured to include some more developed country examples, for example on governance in Switzerland and the US Great Plains on p.24, but we took the decision not to radically alter the balance of developing/developed country examples, given that over 90% of the world rural population is in developing countries - a fact now made more explicit on p.4
3	39028	9	0	0	0	0	I was surprised that the rapid aging of rural populations, particularly in places like Australia, was not discussed as a trend that may affect the vulnerability of these areas (more detailed comments and references provided below). (Sonia Graham, University of Melbourne)	We have had to limit our discussion of non-climate trends for space reasons, but the aging trend in developed countries is mentioned in Table 9-2
4	39029	9	0	0	0	0	There was a lack of discussion about the effects of climate change in rural Australia. This seems like an important omission given the size of rural Australia and the amount of research conducted on the effects of climate change in this region. (Sonia Graham, University of Melbourne)	There are now 11 mentions of Australia in the text and 14 references with "Australia" in the title
5	41557	9	0	0	0	0	comments send as separate file name " ipcc wg2 AR5 review FOD alka bharat India.pdf" to wg2-ar5-supportingmaterial@ipcc-wg2.gov (Alka Bharat, M.A.National Institute of technology)	We are grateful for these additional references, but the great majority are specific to urban areas or coastal areas
6	44511	9	0	0	0	0	Section 9.3.2.1: It's pleasing to see that good reference to SREX is made when discussing Impacts of Extreme Events. Note that some statements might be updated/revised based upon the latest assessment provided in the WGI AR5. Authors are encouraged to also check and refer to the relevant WGI AR5 chapters. (Thomas Stocker, IPCC WGI TSU)	Re AR5 WGI - Apologies, this was not done at this stage but will be done for the FGD
7	50524	9	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 chapter team has prepared a very solid 1st-order draft. To inform further chapter development, I provide some general and specific comments below. (Katharine Mach, IPCC WGII TSU)	We have endeavoured to work as suggested
8	50525	9	0	0	0	0	2) Highlighting key findings -- In developing the 2nd-order draft, the chapter team should aim to present key findings throughout the chapter, using calibrated uncertainty language to characterize its degree of certainty in these conclusions. In this way, a reader of the chapter will be able to understand how the literature reviews and syntheses in the chapter sections--the traceable accounts--support the conclusions of the chapter, especially those presented in the executive summary. Additionally, identification of key findings throughout the chapter will enable the author team to increase specificity in characterizing key trends and determinants in the context of the executive summary. (Katharine Mach, IPCC WGII TSU)	Use of the calibrated uncertainty language (outside the executive summary) is still a work in progress, and will be a priority for the FGD, before and after LAM4
9	50526	9	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 may find it effective to present them 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)	see above, but we have reduced casual use of the uncertainty terms:
10	50527	9	0	0	0	0	4) Specificity of described observations and projections -- The author team is very much encouraged to continue presenting observed and projected impacts and trends with the high level of specificity and conciseness already employed. (Katharine Mach, IPCC WGII TSU)	We have attempted to continue in this way
11	50528	9	0	0	0	0	5) Conditional constructions -- The chapter team has very nicely introduced (e.g., on page 7) and presented the complexities of information on physical change and extreme events and on corresponding vulnerabilities and impacts. The author team's approach separates, with sophistication, physical events and changes and corresponding conditional impacts. The author team is encouraged to continue using such an approach, also separately characterizing the degree of certainty in the physical changes and in conditional impacts where appropriate. (Katharine Mach, IPCC WGII TSU)	We have attempted to continue in this way
12	50529	9	0	0	0	0	6) Figures -- Figures represent an important and effective vehicle for clear communication of assessment and corresponding key findings. The chapter team should aim to continue developing figures to complement the robust assessment already present in the chapter text. In particular, the chapter team might wish to consider developing conceptual figures, building on the rich reviews of literature provided in the chapter. (Katharine Mach, IPCC WGII TSU)	We, and one delegated team member in particular, did give this consideration, but were unable to come up with anything, other than the revising of the figures on demographic and poverty trends in the opening sections
13	50530	9	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 had worked hard to ensure synergy rather than overlap with other chapters, especially 7, 8, 10, 13, the adaptation chapters, and the Africa chapter and hope this is reflected in the SOD

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14	50531	9	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)	In general, given the dependence of impacts discussed on causal chains through e.g agriculture, we did not feel we needed explicit links to WG1 as these would be hadled in e.g Chapters 4 and 7. A nexception, as already noted might be in insuring references to SREX are comaptible with WG1
15	52808	9	0	0	0	0	Thank you for incorporating the chapter 18 language on detection and attribution and dedicating 9.3.2. to it. (Maximilian Auffhammer, University of California, Berkeley)	A pleasure!
16	52809	9	0	0	0	0	Please reference chapter 18 in your section on detection and attribution and liaise with chapter team to make sure the confidence statements and language are coordinated. (Maximilian Auffhammer, University of California, Berkeley)	Liaison and cross-referencing both done
17	54416	9	0	0	0	0	GENERAL COMMENTS: I would like to thank the authors for a very interesting and enjoyable 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. (5) Continue to look for opportunities for the creation of figures that synthesize across results from the literature and/or highlight conceptual themes. (Michael Mastrandrea, IPCC WGII TSU)	Thank you. We have endeavoured to work in the spirit of these comments, including cross-chapter working. As regards cross-Working Group collaboration, see response to 14 above
18	54417	9	0	0	0	0	EXECUTIVE SUMMARY: Thank you for developing an initial draft of an Executive Summary for the FOD. For the SOD, the author team should focus on constructing assessment findings of the form employed by other chapters. Each paragraph should present an assessment finding in bold with calibrated uncertainty language, followed by additional nonbold sentences providing further explanation and context, as well as line of sight to supporting chapter sections where the traceable account appears (such as the references to chapter sections you have already provided). Section 9.5.1 currently matches the Executive Summary text without the links to other chapter sections. This section may provide a location where synthesis across chapter sections can be presented and explained more fully, which then forms the basis for at least some of the findings presented in the Executive Summary (that present the key insights from this synthesis). In general, I would recommend the author team consider ways to clearly identify assessment findings in the chapter text to link with the Executive Summary, not just in 9.5.1 but elsewhere as appropriate. In the context of linking chapter text with Executive Summary findings, I would also suggest providing some explanation of the calibrated uncertainty language used in the Executive Summary (once it is developed) 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 (and/or evidence and/or agreement is not robust and/or high), it would be useful to understand why the author team has made this judgment (e.g., why is confidence not high, evidence not robust, and/or agreement not high). 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. We in the TSU are also available to discuss these issues if that would be of use. (Michael Mastrandrea, IPCC WGII TSU)	We have redrafted the executive summary in the format suggested. Section 9.5.1 is no longer a copy of the executive summary, but explores and explains findings across chapter sections more fully. With regard to using the calibrated uncertainty language within the chapter sections, we admit that this will have to be more fully developed in the FGD
19	54699	9	0	0	0	0	The chapter team may consider making the difference between observed changes and attributed changes more explicit in the chapter. (Monalisa Chatterjee, IPCC WGII TSU)	We have attempted to do this, especially in section 9.3.2
20	54700	9	0	0	0	0	The author team is encouraged to consolidate discussions and synthesize findings from sections in the chapter to avoid repetition. Moreover, the author team is requested to use strategies like tables, figures, maps to present synthesized findings where ever possible. (Monalisa Chatterjee, IPCC WGII TSU)	We have attempted to do this. For figures see response to Comment 12. Tables have been added/used to replace text in Sections 9.2 and 9.4, where they synthesise examples of rural adaptation from regional chapters
21	54701	9	0	0	0	0	The author team is encouraged to coordinate with other chapters on issues related to rural areas. (Monalisa Chatterjee, IPCC WGII TSU)	We have done this, see response to Comment 13, in partiaulr we have ensured that examples of rural adaptation from the regional chapters are cited and cross-referenced
22	54747	9	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-Chap9_Reference Checks.pdf at <a href="https://ipcc-wg2.gov/AR5/author/FOD/SuppMat">https://ipcc-wg2.gov/AR5/author/FOD/SuppMat</a> (Monalisa Chatterjee, IPCC WGII TSU)	Apologies, we overlooked this document. However, we have worked a lot on improving referencing in the SOD relative to the FOD. Unfortunatly PDG could not access the document on 28.03.2013
23	54748	9	0	0	0	0	Literature permitting, the chapter team is encouraged to add more cases to support their findings. (Monalisa Chatterjee, IPCC WGII TSU)	We have done this, in particular, we have ensured more regional representation of adaptation examples in 9.4

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24	50532	9	2	16	0	0	Executive Summary -- In further work on the executive summary, there are several aspects of development for the author team to consider further: 1st, it would be preferable to present the paragraphs of the executive summary with a key finding in bold text followed by explanatory non-bold text. 2nd, for each key finding and wherever else relevant, the author team should use calibrated uncertainty language to characterize its degree of certainty in these conclusions, especially considering summary terms for evidence and agreement and levels of confidence. 3rd, throughout the executive summary, the author team may wish to enhance specificity, indicating where appropriate any specific trends that have emerged or are projected, for example, across categories of countries or regions. For instance, there may be further opportunity for trends identified to indicate more specifically where, when, why (what specific drivers are relevant), illustrating with nuance where the current state of understanding stands. (Katharine Mach, IPCC WGII TSU)	We have revised the format as recommended. We did not feel that we could add much regional specificity to the executive summary without excessively adding length
25	54702	9	2	16	0	0	Executive Summary - The author team should use calibrated uncertainty language. (Monalisa Chatterjee, IPCC WGII TSU)	We have used CUL as requested
26	49080	9	2	16	3	21	The executive summary of chapter 9 should be more in line with what is current practise in previous IPCC reports and the other chapters. Please boldface the most important findings and collect all references to chapter sections to the end of each executive summary section. (Oyvind Christophersen, Climate and Pollution Agency)	We have used bold face as recommended, but we feel we are providing more of a traceable account by (in some cases) interpolating references to chapter sections within, rather than at the end of, execsum sections
27	40739	9	2	27	0	0	rural populations peaked....what does this mean (Coleen Vogel, Independent Consultant)	reached a maximum and then declined - we consider this normal usage
28	54703	9	2	28	2	32	The author team should refer to relevant sections that provide more information about these findings in the chapter. (Monalisa Chatterjee, IPCC WGII TSU)	This has been done with redrafting of the execsum
29	40740	9	2	33	0	0	drivers again expand what does this mean (Coleen Vogel, Independent Consultant)	now rephrased and the word "drivers" omitted
30	54704	9	2	37	2	38	The author team may consider adding brief explanation on 'subsidy based' and 'investment-based' policy approach. (Monalisa Chatterjee, IPCC WGII TSU)	We felt this was resobaly clear given space constraints: a shift from policies towards rural areas based predominatly on subsidies, e.g. EU CAP, to one based more on investments
31	38243	9	2	40	2	42	Executive Summary. "Cases in the literature of observed impacts on rural areas often suffer from methodological problems of attribution, but evidence for observed impacts, both of extreme events and other categories, is increasing." Question: Is it possible to mention why the literature is essentially suffering from methodological problems of attribution? Do we have the same problem for urban areas (Cf. Chapter 8)? (Abdalah Mokssit, Direction de la Météorologie Nationale (DMN))	Section 9.3.2 makes this clearer
32	40741	9	2	49	0	0	impact to what not clear (cc or CV) (Coleen Vogel, Independent Consultant)	In this context, any projectd impact on the rural economic base, livelihoods etc.
33	50533	9	3	11	3	15	Levels of agreement are described at the start of both sentences in this paragraph. The chapter team is encouraged to evaluate and present calibrated uncertainty language in italics reflecting both the levels of evidence and degree of agreement for these findings. (Katharine Mach, IPCC WGII TSU)	These two specific mentions of levels of agreement were unfortunately not italicised during the SOD process, we will ensure this happens during FGD production
34	54419	9	3	11	3	15	The levels of agreement mentioned here could be adapted into calibrated uncertainty language. The current usage of agreement seems as if it might be equivalent to assignment of a level of confidence in the calibrated lexicon, perhaps based on assignment of low, medium, or high agreement paired with an assignment of a level of evidence (limited, medium, or robust evidence). As mentioned above, we in the TSU would be happy to discuss these technical details of the finding development process. In constructing finding(s) here, it would be useful to communicate what low agreement (or confidence) implies--that there is not a clear linkage between these factors and vulnerability or resilience, or something else? (Michael Mastrandrea, IPCC WGII TSU)	See response to Comment 34 above
35	40742	9	4	8	0	12	May be good to provide some examples of what may be covered (Coleen Vogel, Independent Consultant)	We slightly expanded this paragraph but did not feel that examples per se were appropriate
36	54705	9	4	15	0	0	Section 9.1.2. The author team may wish to add a table or box here to summarize different definitions. (Monalisa Chatterjee, IPCC WGII TSU)	This has been done as bullet points
37	40743	9	4	38	0	40	Why only an Indian example singled out here? (Coleen Vogel, Independent Consultant)	Examples are now given for Australia, India, Jamaica and the US
38	36281	9	5	0	0	0	In general terms the chapter this structured good nevertheless, very Little approaches the stratégies of answers of the social actors in the rural territories and the important of the local Knowledge (see for example a Lugo-Morin et al. 2008 y Lugo-Morin; 2011, 2012). (Diosey Ramon Lugo Morin, Universidad Europea de Energia y Medio Ambiente)	We did not entirely understand this comment, however, more mention has been made of local knowledge
39	36280	9	5	1	0	0	The causes of the climate change sufficiently have been identified in the reports of the IPCC, the previous thing, allows to give account on the impact of the climate change on the peri-urban areas, is important that the social actors mainly make an extensive revision on the subject, the experience of Latin America, that give account of an important wealth. The bibliography that mentions is insufficient and it does not allow to include rural/urban dynamics the possible impact of the climate change. (Diosey Ramon Lugo Morin, Universidad Europea de Energia y Medio Ambiente)	We did not entirely understand this comment
40	36282	9	5	1	0	0	Lugo-Morin, Diosey Ramón (2012), "¿Cómo un problema ambiental se transforma en una posibilidad económica para las comunidades rurales?" Ciencia y Sociedad, 37 (1): 122-139. Lugo-Morin, Diosey Ramón, Javier Ramírez-Juárez, Hermilio Navarro-Garza y Néstor Gabriel Estrella-Chulim (2008), "Etnocompetitividad del sistema artesanal textil Mitla, el papel del territorio y la innovación", Economía, Sociedad y Territorio, 8 (28):. 981-1006. Lugo-Morin, Diosey Ramón (2011), "La multi-racionalidad económica del pequeño productor en los territorios rurales". Spanish Journal of Rural Development, Vol. II (3): 21-38. (Diosey Ramon Lugo Morin, Universidad Europea de Energia y Medio Ambiente)	The judgement of the authjor who redrafted this section - which is essentially about providing context -was not to include additional material which added length

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41	54706	9	5	11	5	14	Sometimes important findings are buried in the text. The author team may wish to reorganize some of these material to highlight such findings. (Monalisa Chatterjee, IPCC WGII TSU)	By shifting these findings to the end of the sub-section and linking them more explicitly to the desakota literature we have given them greater prominence
42	54707	9	5	16	5	25	It will be helpful for readers if 'desakota' is defined. (Monalisa Chatterjee, IPCC WGII TSU)	It is in fact very difficult to find formal definitions of desakota - the authors who use the term tend to talk about what it connotes, rather than how it can be defined
43	54708	9	5	19	5	21	It would be preferable if this sentence is rephrased to further clarify the point. (Monalisa Chatterjee, IPCC WGII TSU)	We felt the sentence (in a slightly restructured form) is clear enough
44	54709	9	5	28	0	0	A synthetic table that consolidates all key conclusions from previous IPCC assessments would be very useful. (Monalisa Chatterjee, IPCC WGII TSU)	The section has been rewritten, almost entirely as a table
45	40744	9	6	1	6	9	Good to see postive examples given - should try and find more (Coleen Vogel, Independent Consultant)	There is increased reference throughout the chapter to positive factors that increase resilience and adaptive capacity
46	43923	9	6	7	0	0	"gives" may be changed with "give" (Muhammad Amjad, Global Change Impact Studies Centre)	text now rewritten as table
47	39030	9	6	27	0	0	A possible reference that could be used to support the statement regarding water being mostly used for agricultural purposes is the World Bank's data on annual freshwater withdrawals for agriculture ( <a href="http://data.worldbank.org/indicator/ER.H2O.FWAG.ZS/countries">http://data.worldbank.org/indicator/ER.H2O.FWAG.ZS/countries</a> ). (Sonia Graham, University of Melbourne)	We wished to reserve this section for AR4 and SREX
48	40745	9	6	27	0	27	water line seems an add on would keep all water sections together (Coleen Vogel, Independent Consultant)	text now rewritten as table
49	50534	9	6	42	6	42	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	text now rewritten as table
50	40746	9	6	46	6	48	links to adaptation nd mitigation can one say more about co-benefits with good examples (Coleen Vogel, Independent Consultant)	it was not possible to expand on this given the new table format, but we will look for scope for cross-referencing in the FGD
51	54749	9	7	17	7	16	Figure 9.1 and 9.2 - Chapter team may consider integrating the two sets of information in one figure. (Monalisa Chatterjee, IPCC WGII TSU)	Has been addressed by editing/ changing the figure
52	39012	9	7	27	0	0	These introductory statements would benefit from careful co-editing with chapter 18 which has made an effort to clarify these concepts. (Wolfgang Cramer, Potsdam Institute for Climate Impact Research)	We have attempted to do this
53	54418	9	7	27	0	0	Section 9.3.2: This introduction provides an excellent discussion of the difficulties in assessing literature on observed impacts of climate change within the scope of this chapter. (Michael Mastrandrea, IPCC WGII TSU)	Thank you.
54	40747	9	7	29	7	40	well written excellent section other parts of chapter could follow this pattern of reporting (Coleen Vogel, Independent Consultant)	Thank you. We hope other sections are also clearer
55	50535	9	7	29	7	52	This introduction to the complexities of the relevant linkages and of practices in the literature is very helpful for the reader, in the context of understanding the assessment of the author team. (Katharine Mach, IPCC WGII TSU)	Thank you
56	54710	9	7	38	7	40	An example here will be very useful. (Monalisa Chatterjee, IPCC WGII TSU)	We have not included an example of this specific point, but we hope the slightly expanded section provides adequate information
57	39013	9	8	1	0	0	Nearly nothing in this section is about observed impacts of climate change in rural areas. (Wolfgang Cramer, Potsdam Institute for Climate Impact Research)	We have tried to sharpen the focus throughout this section
58	54711	9	8	1	0	0	Section 9.3.2.1. The author team may wish to reorganize this section to reduce repetition. For example, 'poverty' is a recurring theme in all paragraphs. If the author team wants to use 'poverty' as the main lens, it will be helpful if it is explicitly stated in the beginning of the section. (Monalisa Chatterjee, IPCC WGII TSU)	Section now reorganised. Poverty is an important lens, but not the only one
59	40748	9	8	6	0	0	what is meant by water events - expand (Coleen Vogel, Independent Consultant)	this should have been hyphenated: "high-water events". Now corrected
60	42631	9	8	8	8	9	What timeframe are is being used to define "trend"? Note that the statement about East Africa might conflict with Chapter 22 page 9 lines 38-40, which mentions the "tendency towards lower rainfall during the main growing season (March-May)". Also see Lyon, B., and D.G. DeWitt, 2012: A recent and abrupt decline in the East African long rains. Geophysical Research Letters. (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	Timeframes now given, different intrpretations acknowledged, and Lyon and DeWitt referenece used
61	54712	9	8	51	0	0	Section 9.3.2.2. The author team may consider cross refering other chapters like 12, 22 on issues of migration, tropical glaciers, etc.,. (Monalisa Chatterjee, IPCC WGII TSU)	Chapter 12 referenced on migration in relation to disasters
62	40749	9	9	1	9	15	this section is not clear what is meant in sentence line 5? (Coleen Vogel, Independent Consultant)	This sentence was unclear and has been omitted. Section now rewritten
63	48238	9	9	6	9	6	Migration is another relevant impact that can be observed and attributable directly AND INDIRECTLY to climate. (Jason Garcia-Portilla, University of Sussex)	Section now rewritten
64	54713	9	9	8	9	9	The author team should add relevant references for this sentence. (Monalisa Chatterjee, IPCC WGII TSU)	More references added
65	48239	9	9	11	9	14	According to Dun & Gemenne (2008), there is currently no consensus on definitions on environmental refugees. The resulting variety of concepts such as ecomigrants is not just confusing but unhelpful. Black (2001), has argued that "an initial difficulty in dealing with 'environmental refugees', or 'environmental migrants', is that there are perhaps as many typologies as there are papers on the subject. Black also argues that The Dust Bowl is NOT an example where drought was the cause of migration, since it was mainly due to the fact that the people lost the control of the farms. (Jason Garcia-Portilla, University of Sussex)	This section is now rewritten, and we have revised the section on migration (9.3.3.2.1) substantially to highlight the complexities of the linkage between climate (change) and migration.

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66	54714	9	9	44	9	47	It would be preferable if the author team adds some findings from this study. (Monalisa Chatterjee, IPCC WGII TSU)	We felt the value of this study was more in the conceptual framework than specific findings in the sense of projected impacts
67	54715	9	9	49	10	6	The author team may wish to make the difference between water supply issues and availability issues explicit in this discussion. (Monalisa Chatterjee, IPCC WGII TSU)	By expanding this passage we have made it clearer that we are not using the terms in any specific theoretical sense
68	50536	9	9	50	9	51	For this described projection, it could be helpful to indicate if most models project this reduction across all scenarios of climate change, or if the projection varies with scenario considered. (Katharine Mach, IPCC WGII TSU)	More detail on models and scenarios given
69	40750	9	10	1	10	6	section on groundwater very good should be expanded if literature available (Coleen Vogel, Independent Consultant)	space considerations did not allow further expansion
70	50537	9	10	3	10	3	"unlikely" -- If this term is being used as calibrated uncertainty language, it should be italicized. Otherwise, the author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	casual use deleted
71	54716	9	10	8	10	17	The author team may consider adding a figure highlighting different factors affecting agriculture. (Monalisa Chatterjee, IPCC WGII TSU)	We were not able to come up with an appropriate figure
72	54717	9	10	19	10	29	It would be preferable if the time range and/or scenario information is provided with these findings. (Monalisa Chatterjee, IPCC WGII TSU)	timescales and temperature increases now included
73	50538	9	10	25	10	25	"likely" -- If this term is being used as calibrated uncertainty language, it should be italicized. Otherwise, the author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	casual use deleted
74	40751	9	10	27	10	30	some repetition try and keep refs to water together (Coleen Vogel, Independent Consultant)	We did not manage to eliminate all the repetition in the FOD, but will consider this again in the FGD
75	54718	9	10	37	10	49	The chapter team should cross reference relevant regional chapters. (Monalisa Chatterjee, IPCC WGII TSU)	There was limited opportunity to cross reference regional chapters on these specific issues of yield reduction - we will revisit this for the FGD
76	40752	9	10	40	10	40	Unpack results a bit more not clear what these results are (Coleen Vogel, Independent Consultant)	The phrase refers to yield reduction and related projections in general
77	54719	9	10	40	10	40	It would be preferable if the time range and/or scenario information is provided with these findings. (Monalisa Chatterjee, IPCC WGII TSU)	Difficult to address this for all the references cited
78	40753	9	10	47	10	49	explain what is being meant in these sentences (Coleen Vogel, Independent Consultant)	small-scale bean growers being especially vulnerable, impacts will be felt more severely
79	54720	9	11	5	11	7	The author team should add relevant references for this sentence. (Monalisa Chatterjee, IPCC WGII TSU)	The following section provides the justification and references to support this statement
80	40754	9	11	10	0	0	clarify which countries not clear (Coleen Vogel, Independent Consultant)	Clarification made in the text
81	37006	9	11	14	11	19	Please check the numbers. Do you really mean "decrease per year" or should that read "decrease in annual precipitation"? The overall decrease in precipitation would be 30*40mm = 1200 mm in annual rainfall and the temperature increase 30*0.02 °C = 0.6 degrees. The former seems very high. (Joachim Rock, Johann Heinrich von Thuenen-Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries)	The 40mm fall in precipitation is for the period 69-98. It is not a per year decrease. We thank the reviewer for spotting this error and it has been corrected.
82	54721	9	11	14	11	19	The author team should add relevant references for this paragraph. (Monalisa Chatterjee, IPCC WGII TSU)	The reference for the results from Mexico is Gay et al 2006, which is given. As regards other studies subsequently undertaken these are presented in the following paragraphs.
83	40755	9	11	15	10	16	extrapolating changes may need to say very briefly how this is done (Coleen Vogel, Independent Consultant)	Further details are given as to the methods and results from the paper.
84	50539	9	11	16	11	16	For this described extrapolation, were no climate models or scenarios used? If not, the author team should evaluate the robustness of the projection. (Katharine Mach, IPCC WGII TSU)	No climate models nor scenarios were used, only a simple extrapolation of past tendencies. Given the short period of extrapolation to 2020, we consider this is as robust as the climate models
85	54722	9	11	21	11	24	It would be preferable if the time range and/or scenario information is provided with these findings. (Monalisa Chatterjee, IPCC WGII TSU)	It has been clarified that these predictions are for a specific scenario of 3oC increase in temperature and 15% increase in rainfall.
86	50540	9	11	21	11	26	For these statements as possible, the chapter team should specify the relevant time frames, the climate/socio-economic scenarios evaluated, and the key drivers of the projected changes. (Katharine Mach, IPCC WGII TSU)	As indicated above the authors of the report used general predictions from IPCC 2001 (they do not specify which scenarios) for S Brazil of 3oC increase in temperature and 15% increase in rainfall to generate the estimates of impacts on coffee production.
87	43924	9	11	26	0	0	There may be "in" between the words: "decline" and "ceffee" (Muhammad Amjad, Global Change Impact Studies Centre)	The section has been edited
88	50541	9	11	29	11	29	For the climate scenarios mentioned, the author team should characterize them more specifically--were they SRES scenarios, levels of temperature increase, etc.? (Katharine Mach, IPCC WGII TSU)	More information is provided on the methods and models used to generate the local climate change scenarios.
89	40756	9	11	33	11	37	No positive cases to report on? (Coleen Vogel, Independent Consultant)	A clarification is made that there are some localities that have improved conditions, but the overall national level scenarios are negative

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
90	54723	9	11	44	11	53	The chapter team should cross refer to relevant regional chapters. (Monalisa Chatterjee, IPCC WGII TSU)	New paragraph added explicitly summarising/cross-referencing regional chapters
91	43141	9	11	45	0	0	African needs to be replaced by "Africa" (SHAHBAZ MEHMOOD, Global Change Impact Studies Centre)	text edited
92	54724	9	11	48	11	51	The author team should add relevant references for this sentence. (Monalisa Chatterjee, IPCC WGII TSU)	The Ruel reference covers the sentence in question
93	54725	9	12	1	13	18	The author team may consider adding a table summarizing different methods used in these studies. (Monalisa Chatterjee, IPCC WGII TSU)	We would not want to unduly emphasise methodology here, especially as the paragraphs on livestock have been expanded and rewritten
94	47938	9	12	4	0	0	Pastoralism is also intimately linked to mobility and the option to access resources across extensive areas - this constitutes a key component for community resilience (see Nakashima, D et al. (2012) "Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation" Paris, UNESCO and Darwin, UNU, pg 47). (Ameyali Ramos Castillo, United Nations University - Institute of Advanced Studies)	New paragraph on pastoralism includes mention of mobility, as does later section 9.3.5.3.1
95	40757	9	12	4	12	12	please rewrite this not sure what is being argued for here (Coleen Vogel, Independent Consultant)	We did not feel this passage was unduly unclear
96	42632	9	12	4	12	21	Many socio-political factors impact livestock holdings in addition to climate variables, particularly factors that impact the ability of pastoralists to migrate (land rights, cultural barriers). (Erin Coughlan, Red Cross / Red Crescent Climate Centre)	These factors are mentioned here as rewritten, and are also mentioned in 9.3.5.3.1
97	50544	9	12	6	12	9	For these described data, the relevant time frame should be specified. (Katharine Mach, IPCC WGII TSU)	The analysis is across different current climate zones, rather than by timescale
98	50542	9	12	7	12	7	"likely" -- If this term is being used as calibrated uncertainty language, it should be italicized. Otherwise, the author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	This is not used here as CUL but seemed difficult to avoid in summarising the Seo and Mendelsohn results
99	50543	9	12	14	12	14	"likely" -- If this term is being used as calibrated uncertainty language, it should be italicized. Otherwise, the author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	As for comment 98
100	54726	9	12	23	12	41	The author team may wish to reorganize some of this material to avoid repetition in other sections like 9.3.4. (Monalisa Chatterjee, IPCC WGII TSU)	This section has been reorganised and shortened
101	40758	9	12	27	12	28	Avoid long shoppin lists of impacts with no substantive backup data/lit (Coleen Vogel, Independent Consultant)	text edited
102	54727	9	12	49	13	8	The author may wish to highlight specific stressors in the examples to identify some of the key drivers. (Monalisa Chatterjee, IPCC WGII TSU)	This section was moved forward to p.9 but we did not feel we could expand it due to space constraints
103	40759	9	13	5	0	0	climate variability driving change here or CC not clear? (Coleen Vogel, Independent Consultant)	sentence now omitted
104	40760	9	13	10	13	18	Nice section here 'centrality of the social' could be spelt out more (Coleen Vogel, Independent Consultant)	This section was moved forward to p.9 but we did not feel we could expand it due to space constraints
105	47939	9	13	14	0	0	See also cases in Sub-sahara Africa and South Asia Kristjanson et al.(2010) Livestock and Women's Livelihoods: A review of the Recent Evidence, Discussion Paper No. 20 Nairobi, Kenya ILRI and Kenya McPeak, J and Doss, C. (2006) Are household production decisions cooperative? Evidence on migration and milk sales from Northern Kenya. American Journal of Agricultural Economics, 88(3) 525-541. (Ameyali Ramos Castillo, United Nations University - Institute of Advanced Studies)	We did not feel we needed additional references on gender at this point
106	39031	9	13	15	0	0	It seems that the statements regarding women's vulnerability to climate change may apply more in developing than developed countries. It is unclear whether this is the intended meaning of the statements. (Sonia Graham, University of Melbourne)	Gender and rural issues have now been encapsulated in a box, where it has been clarified that the majority of the literature refers to gendered vulnerability and impacts in developing countries
107	54729	9	13	21	0	0	Section 9.3.3.2. It will be useful if the key findings are summarized in a table. (Monalisa Chatterjee, IPCC WGII TSU)	We felt this would be very difficult to do
108	54728	9	13	21	13	21	It may be preferable to use 'spatial' instead of 'landscape' (Monalisa Chatterjee, IPCC WGII TSU)	Done
109	40761	9	13	23	13	32	This section is not clear rewrite (Coleen Vogel, Independent Consultant)	This paragraph has been deleted
110	37304	9	13	25	13	25	Where does this figure come from and how is it measured? "Desertification" is a pretty contested term, and I worry the authors are being overly bold here. (Samuel White, Oberlin College)	This paragraph has been deleted
111	50545	9	13	39	13	39	"likely" -- If this term is being used as calibrated uncertainty language, it should be italicized. Otherwise, the author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	term now italicised
112	39032	9	13	42	0	0	Desakota systems is not a commonly used term. It would be helpful to cross-reference the term 'Desakota systems' back to Section 9.1.3, page 5, where the term first appears and is described. Perhaps it could also be added to a glossary? (Sonia Graham, University of Melbourne)	The text has been incorporated with the previous text on desakota in section 9.1.3
113	40762	9	13	42	13	53	Interesting section but not sure it fits in so well here (Coleen Vogel, Independent Consultant)	The text has been incorporated with the previous text on desakota in section 9.1.3
114	54730	9	13	42	13	53	The author team may consider cross referencing the discussion on desakota in page 5 (Monalisa Chatterjee, IPCC WGII TSU)	The text has been incorporated with the previous text on desakota in section 9.1.3
115	40763	9	14	7	0	0	rural rural trends not sure what is being intended suggest you expand this a bit (Coleen Vogel, Independent Consultant)	This section has been revised substantially to highlight the complexities of the linkage between climate (change) and migration - this particular sentence has been removed
116	48240	9	14	9	14	9	"Environmental migration" is a misleading term (Black 2001). It would be better to speak of the nexus between environment or climate change and migration. (Jason Garcia-Portilla, University of Sussex)	This section has been revised substantially to highlight the complexities of the linkage between climate (change) and migration

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
117	37305	9	14	9	14	21	Is there no literature on public health consequences of this migration? It seems like a topic that needs discussion here or in chapter 11 (where it isn't really discussed either). (Samuel White, Oberlin College)	Secondary impacts of climate-induced migration might be beyond the scope of the chapter on rural areas.
118	50546	9	14	10	14	10	"likely" -- If this term is being used as calibrated uncertainty language, it should be italicized. Otherwise, the author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	term italicised
119	37007	9	14	26	14	28	Is the second value given inflation-adjusted? (Joachim Rock, Johann Heinrich von Thuenen-Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries)	We checked the database, it does not say whether or not the figures are inflation-adjusted. Follow up needed
120	40764	9	15	1	15	36	all very interesting but all comes from one source perhaps should either shorten or find supprting additional soruces (Coleen Vogel, Independent Consultant)	The results actually come from three different sources, however all with the same lead author, Nelson. Additional sources have been provided(e.g. Ahmed et al, and Reimer and Li).
121	54731	9	15	10	15	10	It would be preferable if the time range and/or scenario information is provided with these findings. (Monalisa Chatterjee, IPCC WGII TSU)	Time range is provided, the source describes the scenarios in terms of income and population growth (e.g. human wellbeing) which has been added into the text.
122	50547	9	15	11	15	14	For these projected increases, the author team should specify the relevant time frame. Additionally, can the scenario of climate change be indicated more specifically (beyond "pessimistic" socio-economics)? (Katharine Mach, IPCC WGII TSU)	Time range is provided, the source describes the scenarios in terms of income and population growth (e.g. human wellbeing) which has been added into the text.
123	47940	9	16	33	0	0	This reference to one-way knowledge transfer (ie non rural to rural) but does not discuss rural to urban knowledge transfer. Important to include mention of loss of knowledge transfer (ie. intergenerational TK knowledge transfer) and other types of knowledge transfer as a result of climate change. (Ameyali Ramos Castillo, United Nations University - Institute of Advanced Studies)	New text and references have been added on knowledge transfer from rural to urban, and on traditional knowledge.
124	54732	9	16	42	16	42	It will be preferable if acronyms are spelled out when used for the first time in the chapter. (Monalisa Chatterjee, IPCC WGII TSU)	paragraph on GMOs now removed
125	40765	9	16	49	16	54	all negatvie any postive cases to note (Coleen Vogel, Independent Consultant)	Section extensively rewritten. Employment opportunities from climate responses, and opportunities for win-win, now included
126	47941	9	16	54	0	0	Also concern for social, cultural, economic, and rights costs of biofule production (ie. impact of biofuel production on indigenous livelihoods and culture). See German, L., Schoneveld, G., and Pacheco, P., (2011) The Social and environmental impacts of biofuel feedstock cultivation evidcenc from multi-site research in teh forest frontier. In Ecology and Society 16(3): 24. (Ameyali Ramos Castillo, United Nations University - Institute of Advanced Studies)	Apologies, we were not able to incorporate this reference, we will consider in the FGD
127	54733	9	17	9	0	0	Section 9.3.4. The chapter team may consider adding a table with regional categories or a map with text information to summarize some of these findings. (Monalisa Chatterjee, IPCC WGII TSU)	Not feasible; Fair amount of valuable insights maybe lost in trying to summarise regionally; many different pathways and drivers with considerable variation in (projected) outcomes
128	39033	9	17	28	0	41	Australiasia seems to be missing from this discussion of the regional impacts of climate change. (Sonia Graham, University of Melbourne)	relevant material has been added
129	40766	9	17	28	17	41	This section is not clear make clear the links between cc or cv and land degradation (Coleen Vogel, Independent Consultant)	literature has been assessed accordingly; substantial cross-referencing provided for making the point.
130	43075	9	18	8	18	54	The impact of agriculture on rural areas cannot be captured with 15 lines. I would expect a reference to another section in the report or another report, where this impact has been analyzed in detail. The same applies for Fisheries and Water Resources. Instead of having so many subchapters with few lines, I would prefer more compact chapters. (Andreas Meyer-Aurich, Leibniz-Institute for Agricultural Engineering Potsdam-Bornim)	flexibility with chapter structures was not in the hands of individual chapters at this stage; this section is only about relevant valuations; impacts in a more general sense are discussed in 9.3.3.1; the table is provided as illustrative
131	40767	9	18	10	18	44	this section seems a bit thin with very odd pairings for the sub-headings e.g. fisheries and mining (Coleen Vogel, Independent Consultant)	cross- references inserted and table; suffice to overcome some practical constraints of getting into details
132	39034	9	18	12	0	0	Remove the phrase "particularly in the developing world". This statement regarding economic impacts is significant for both developing and developed countries. (Sonia Graham, University of Melbourne)	edited
133	39035	9	18	17	0	0	It would be useful to have a reference for the Ricardian method. (Sonia Graham, University of Melbourne)	is an approach by itself; valuation studies which have used such an approach are cited in the section.
134	39036	9	18	21	0	0	Australia is another continent that experiences serious economic implications for the agricultural sector from ENSO. A useful reference may be Kocik, P., Nelson,, Meinke, H., Potgieter, A. And Carter, J. (2007) From rainfall to farm incomes - transforming advice for Australian drought policy. I. Development and testing of a bioeconomic modelling system. Australian Journal of Agricultural Research, 58(10):993-1003. (Sonia Graham, University of Melbourne)	relevant material added
135	37686	9	18	29	0	0	I think there is a need to not stove pipe agriculture. Food and its production is a large part of many economies. It is important to show how the impact on agriculture affects the rest of the economy with amplified effectt. Add(?): Direct impacts on the agricultural sector have indirect impact on the supporting businesses that supply, for example, fertilizer and farm equipment. Reduced farm output can mean increased farm-produce costs, that in turn lead to impacts on the food processing industry, food-transporters, and ultimately consumers. Sandia National Laboratories produced a study quantifying the multiplier effects that climate change-induced crop-loss have on the rest of the economy (Backus et al., 2012). [Backus, G., T. Lowry and D. Warren, 2012: The near-term risk of climate uncertainty among the U.S. states. Climatic Change, Online First 23 June 2012. Doi: 10.1007/s10584-012-0511-8] (George Backus, Sandia National Laboratories)	references have been added thorough out the text as appropriate and illustrative; which does not mean that all literature has to be necessarily addressed in this section except if it is relevant. Other sections and other chapters deal with important food issues.
136	50548	9	18	42	18	44	For this projection, the author team should specify the relevant climate/socio-economic scenario. (Katharine Mach, IPCC WGII TSU)	added

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
137	37687	9	18	45	0	0	If this section is going to have Mining in the title, it should include the impacts on mining. Add(?): Chapter 26 (Section 26.11.1.2) notes the sensitivity of the mining sector to water availability and to the droughts that may be associated with climate change. Because the mining sector in rural areas is typically intertwined with many other business sectors of the local economic, the loss of output in the mining sector can have a multiplicative affect on the local economy. For example, a Sandia National Laboratories' study shows that where climate induced drought might produced a few tenths of a percent GDP loss in an average U.S. state economy, states with large mining sectors, such as West Virginia, may experience losses that are ten times larger or more. (Backus et al., 2012) [Backus, G., T. Lowry, and D. Warren, 2012: The near-term risk of climate uncertainty among the U.S. states. Climatic Change, Online First 23 June 2012. Doi: 10.1007/s10584-012-0511-8] (George Backus, Sandia National Laboratories)	material added; cross-referencing done
138	40768	9	19	0	19	0	this whole section is very important but needs careful justification and good robust data to support claims being made. The links between GDP loss and disasters and just disaster loss must be carefully articulated and made clear. (Coleen Vogel, Independent Consultant)	unclear comment; specific references linking CC to GDP loss have been provided; not possible to get into data details in this space
139	50549	9	19	7	19	10	For this projection, the author team should specify the relevant climate/socio-economic scenario. (Katharine Mach, IPCC WGII TSU)	practical limitations of getting into details of scenarios; esp. where well established peer reviewed literature has been assessed and cited. Have attempted to provide some all the same.
140	50550	9	19	10	19	11	For this statement, it would be preferable to adopt a more conditional framing, changing "the predicted" to "a" or to another more conditional wording as supported by the source. (Katharine Mach, IPCC WGII TSU)	edited
141	46964	9	19	14	19	15	The source of this information is mentioned as "ibid". Please kindly provide the source or delete this statement. (A K M Saiful Islam, Bangladesh University of Engineering and Technology)	edited
142	50551	9	19	31	19	33	For this projection, the author team should specify the relevant time frame and climate/socio-economic as supported by the literature. (Katharine Mach, IPCC WGII TSU)	practical limitations of getting into details of scenarios; esp. where well established peer reviewed literature has been assessed and cited. Have attempted to provide some all the same.
143	50552	9	19	39	19	39	It would be preferable to adopt a more conditional or qualified wording here where the author team uses the phrase "the main climate change related extreme events." For example, "climate-related extreme events that may change in frequency or intensity due to climate change" is one possibility. (Katharine Mach, IPCC WGII TSU)	edited
144	50553	9	19	50	19	52	For this statement, the relevant time frame should be specified. (Katharine Mach, IPCC WGII TSU)	edited
145	50554	9	20	1	20	3	For this statement, the author team should specify the relevant climate/socio-economic scenario. (Katharine Mach, IPCC WGII TSU)	practical limitations of getting into details of scenarios; esp. where well established peer reviewed literature has been assessed and cited. Have attempted to provide some all the same.
146	54734	9	20	12	20	12	It will be preferable if the african countries are named here. (Monalisa Chatterjee, IPCC WGII TSU)	added
147	50555	9	20	12	20	14	For this projection, as appropriate the author team should specify the relevant time frame. (Katharine Mach, IPCC WGII TSU)	practical limitations of getting into details of scenarios; esp. where well established peer reviewed literature has been assessed and cited. Have attempted to provide some all the same.
148	39037	9	20	15	0	0	More vulnerable than whom or what? (Sonia Graham, University of Melbourne)	edited
149	50556	9	20	16	20	18	For this statement as appropriate, the author team should specify the relevant timeframe. (Katharine Mach, IPCC WGII TSU)	practical limitations of getting into details of scenarios; esp. where well established peer reviewed literature has been assessed and cited. Have attempted to provide some all the same.
150	40769	9	20	23	20	44	Need to make clear if one is talking about climate change or climate variability in this section (Coleen Vogel, Independent Consultant)	all references provided for those interested in details; specific terminology used as appropriate to the reference being cited, whether climate change or something else.
151	37008	9	20	32	20	37	These ideas have allready been presented earlier in the text. Please unite paragraphs and delete text here. This paragraph here is not necessary. (Joachim Rock, Johann Heinrich von Thuenen-Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries)	edited text as appropriate in view of the coverage in the chapter
152	54735	9	20	40	0	0	The chapter team should cross reference relevant regional chapters. (Monalisa Chatterjee, IPCC WGII TSU)	added
153	39038	9	20	45	0	0	Why mention just Africa and Asia? What about other continents? There may also be health implications with respect to rising temperatures for aging rural populations, such as Australia. This is particularly important given the average age of the rural population in Australia is much higher than the national average and is also increasing at a faster rate. A useful reference may be: Horton, G., Hanna, L. and Kelly, B. (2010) Drought, drying and climate change: Emerging health issues for ageing Australians in rural areas, Australasian Journal on Ageing, 29(1):2-7. Available at: <a href="https://www.uni-hohenheim.de/fileadmin/einrichtungen/hcecon/Dateien_und_Bilder/Dateien/Gender_und_Gesundheit/SS_10/Horton__Hanna__Kelly_2010_-_Drought_drying_and_climate_change.pdf">https://www.uni-hohenheim.de/fileadmin/einrichtungen/hcecon/Dateien_und_Bilder/Dateien/Gender_und_Gesundheit/SS_10/Horton__Hanna__Kelly_2010_-_Drought_drying_and_climate_change.pdf</a> (Sonia Graham, University of Melbourne)	the reader is referred to the relevant material in the health chapter



#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
154	48288	9	21	0	0	0	Vulnerability definition needs to be refined, if this is the only region to have such a deformation (Malini Nair, Indian Institute of Science)	We are not clear what "region" is referred to. After much discussion, we decided we needed to present the competing definitions
155	50557	9	21	1	0	0	Section 9.3.5. The author team may wish to consider and cross-reference chapter 19 in this section. (Katharine Mach, IPCC WGII TSU)	Apologies, we were unable to do this, but will work on two-way liaison with Chapter 19 in the FGD
156	54736	9	21	1	0	0	Section 9.3.5. The chapter team should cross reference relevant regional chapters (e.g. 19). (Monalisa Chatterjee, IPCC WGII TSU)	As for comment 155
157	52107	9	21	5	21	22	The author team may also wish to reference the glossary for the report in this discussion of the term "vulnerability." (Katharine Mach, IPCC WGII TSU)	We are concerned that the glossary definition is too generic and concise and would not be easily incorporable in the discussion
158	50558	9	21	5	21	31	The author team could consider developing an explanatory graphical representation of these concepts. (Katharine Mach, IPCC WGII TSU)	A graphic would probably have taken up more space than the text
159	54737	9	21	44	0	0	Section 9.3.5.2. The chapter team may consider emphasizing on this section. Moreover, the chapter team may consider adding a table emphasizing high/low agreement, barriers/positive linkages and with relevant references for findings about vulnerability in different sectors. (Monalisa Chatterjee, IPCC WGII TSU)	We have strengthened this section, however we did not find the idea of a table practical
160	40770	9	22	1	22	35	Why such a strong focus on vul, why not also on resilience. Some of the statements are also not clear see lines 23-25 (Coleen Vogel, Independent Consultant)	The section as rewritten includes more on resilience, but still centrally addresses vulnerability, as in the section title
161	39039	9	22	29	0	0	The statement "they are not accompanied by reciprocity" is unclear. Who is "they" and reciprocity with regards to what? (Sonia Graham, University of Melbourne)	changed to "if it is not accompanied by reciprocity", which we hope is clearer
162	50559	9	22	31	22	35	Levels of agreement are described at the start of both sentences in this paragraph. The chapter team is encouraged to evaluate and present calibrated uncertainty language in italics reflecting both the levels of evidence and degree of agreement for these findings. (Katharine Mach, IPCC WGII TSU)	"greater agreement" now used here in comparison with previous para, so we think it is defensible not to italicise
163	54738	9	23	20	23	24	Key findings like these could be emphasized in the summary table for this section. (Monalisa Chatterjee, IPCC WGII TSU)	See response to Comment 159 above
164	40771	9	23	28	23	54	Weak section, difficult to follow what is being meant suggest it be re-written (Coleen Vogel, Independent Consultant)	This section has been rewritten
165	54739	9	23	35	23	40	Key findings like these could be emphasized in the summary table for this section. (Monalisa Chatterjee, IPCC WGII TSU)	See response to Comment 159 above
166	48287	9	24	0	0	0	The relationship between Aids and climate change vulnerability is not studied. This is important in poorer parts of South Asia and Africa (Malini Nair, Indian Institute of Science)	We did not find good references on this, but would be happy for further pointers
167	40772	9	24	17	0	0	how do institutions enhance or reduce vul - give some examples (Coleen Vogel, Independent Consultant)	This paragraph has been substantially expanded
168	40773	9	24	29	0	0	info from further away can you expand on what is being articulated here (Coleen Vogel, Independent Consultant)	We have expanded this section, though expanding on the point about distance was not the main priority
169	39040	9	24	31	0	33	The statement regarding the need to make weather forecasting information more attractive to users does not acknowledge that some lead-times for weather forecasting does not match the timeframes with which landholders make decisions (e.g. Graham et al., 2009) or the role that social learning might play (e.g. Jakku and Thorburn, 2010). Graham, S., McGinness, H.M., and O'Connell, D.A. (2010) How useful is seasonal climate forecasting for tree planting decisions in south-eastern Australia? Perspectives from local knowledge experts. In Kellimore, L.R. (Ed) Handbook on Agroforestry: Management Practices and Environmental Impact. Nova Publishers: New York. Jakku, E. and Thorburn, P.J. A conceptual framework for guiding the participatory development of agricultural decision support system. Agricultural Systems, 103(9):675-682. (Sonia Graham, University of Melbourne)	The discussion on seasonal forecasting has been expanded and moved to Box 9-6 in Section 9.4
170	48241	9	24	36	24	46	Black 2001; 2011 document opposite examples that show that vulnerable people do NOT tend to migrate, for which the evidence is mixed and it is not possible to generalize. (Jason Garcia-Portilla, University of Sussex)	We feel the discussion here and elsewhere is now more nuanced
171	35645	9	24	38	24	40	Actually studies of internal and international migration have tended to find that migrants are positively selected on human, social and financial capital rather than representing the most vulnerable (e.g., Lindstrom & Ramirez 2010; Tong & Piotrowski 2012). References: Lindstrom, D., and A. Ramirez. (2010). Pioneers and followers: Migrant selectivity and the development of U.S. migration streams in Latin America. The Annals of the American Academy of Political and Social Science 630(1): 53-77. Tong, Y., and M. Piotrowski. (2012). Migration and health selectivity in the context of internal migration in China, 1997–2009. Population Research and Policy Review 31(4): 497-543. (Clark Gray, University of North Carolina at Chapel Hill)	See response to 170 above
172	40774	9	24	38	24	54	this section also not easy to follow the debate should be re-written (Coleen Vogel, Independent Consultant)	Section has been rewritten and slightly shortened, but also complemented with better coverage of migration elsewhere
173	54740	9	24	39	24	39	It would be preferable if the difference between 'coping' and 'adapting strategy' is made explicit. (Monalisa Chatterjee, IPCC WGII TSU)	we feel this is a fairly standard dichotomy, and space did not allow an expansion
174	40775	9	25	1	25	10	again not easy to follow what the debate is - re-write (Coleen Vogel, Independent Consultant)	This paragraph has been tightened, but a substantial box on gender added
175	50560	9	25	2	25	2	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	This example of casual usage deleted
176	54741	9	25	15	0	0	Section 9.4.1. The author team should consider adding a synthetic figure/table/map to summarize findings in this section. (Monalisa Chatterjee, IPCC WGII TSU)	A table has been added to compare regional evidence for different rural adaptation options
177	50561	9	25	18	25	19	The use of "need" and "should" on these lines could potentially be interpreted as policy prescriptive. It would be preferable to characterize the benefits of adaptation and linkages more specifically, using formulations that avoid interpretations of policy prescriptiveness. (Katharine Mach, IPCC WGII TSU)	wording changed so it can no longer be interpreted as policy-prescriptive

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
178	39041	9	25	19	0	20	The suggestion that adaptation "should be linked to other development initiatives..." appears to be more relevant to developing countries, although this isn't clearly stated. The references provided here and the examples on lines 40-42 are all for developing countries. Perhaps this statement could be qualified? (Sonia Graham, University of Melbourne)	Agreed - clarification has been made that linking with development is appropriate for developing countries
179	50562	9	25	21	25	23	For this statement, the author team should specify the relevant time frame for the projection, as well as the climate/socio-economic scenarios evaluated. (Katharine Mach, IPCC WGII TSU)	Removed this reference due to its age and potential to be seen as policy-prescriptive
180	40776	9	26	0	0	0	in general one should make clear are we talking about coping or indeed adaptation (Coleen Vogel, Independent Consultant)	This section focuses on adaptation-and so responses to coping have been removed
181	50563	9	26	31	26	32	For this statement, the author team should specify whether the recommended management measure addresses effects of climate change, overfishing, or both (given synergistic interactions). (Katharine Mach, IPCC WGII TSU)	Clarified that selective gear is a way of managing reduced fish stocks due to bleaching
182	40777	9	26	32	26	32	what is meant by gear? (Coleen Vogel, Independent Consultant)	This is accepted fishery terminology-but to clarify "fishing" has been inserted before gear
183	40778	9	26	34	26	34	explain what and how mauritius has higher adaptive capacity (Coleen Vogel, Independent Consultant)	Clarification added - it is based on the multi-faceted social
184	40779	9	26	38	26	48	Are social transfers a coping or adaptation mechanism? To be an adaptation surely it will have to be institutionalised ? (Coleen Vogel, Independent Consultant)	Clarified that social transfers have to be institutionalised to be considered an adaptation measure
185	48289	9	27	12	0	0	Please include examples of smokeless stoves from India: C M Shastri, G Sangeetha and N H Ravindranath Dissemination of efficient ASTRA stove. Case study of a successful entrepreneur in Sirsi India Energy for Sustainable Development Vol VI, No 2, June 2002 (Malini Nair, Indian Institute of Science)	Additional cookstove examples have been added - not this one, as the reference is outside the date range for AR5
186	39042	9	27	14	0	0	The definition of social capital provided here seems arbitrary. Given that it is essentially described as being synonymous with social networks, it may be better to simply refer to social networks here, as has been done earlier in the chapter (e.g. page 22, line 12). If social capital is to be used it may be worth following one of the two major conventions used to define it. Specifically, Bourdieu and Coleman argue that social capital is an individual resource generated through individual networks and interactions (Magnani and Struffi, 2009; Webb and Cary, 2005). Alternatively, Putnam and Fukuyama, argue that social capital is the property of aggregated units, rather than individuals, and is generated through the norms and values of trust, reciprocity and solidarity within the close relationships that exist among families and groups (Bacci & Beasley, 2004, 2005; Keele, 2007; Newton, 2001; Putnam, 2000). (Sonia Graham, University of Melbourne)	This passage has been deleted. References to social capital in the chapter as a whole are now inclusive of both views
187	39043	9	27	14	0	0	References for definitions of social capital include: Bacchi, C., & Beasley, C. (2004). Moving beyond care and/or trust: An ethic of social flesh. Paper presented at the Australasian Politics Studies Association Conference, Adelaide. Bacchi, C., & Beasley, C. (2005). The limits of trust and respect: Rethinking dependency. Social Alternatives, 24(4), 55-59. Keele, L. (2007). Social capital and the dynamics of trust in government. American Journal of Political Science, 51(2), 241-254. Magnani, N., & Struffi, L. (2009). Translation sociology and social capital in rural development initiatives. A case study from the Italian Alps. Journal of Rural Studies, 25(2), 231-238. Newton, K. (2001). Social trust and political disaffection: Social capital and democracy. Paper presented at the EURESCO Conference on Social Capital, Exeter. Putnam, R. D. (2000). Bowling alone: The collapse and revival of American community. New York: Simon and Schuster Paperbacks. Webb, T., & Cary, J. (2005). Social capital and natural resource management: An application to Landcare. Rural Society, 15(2), 119-131. (Sonia Graham, University of Melbourne)	Thank you for the references. We did not feel that a conceptual discussion of social capital was necessary, especially given the need to shorten 9.4.
188	54742	9	27	46	28	5	The author team may consider reorganizing some of the discussion on gender dimensions in vulnerability section. (Monalisa Chatterjee, IPCC WGII TSU)	The gender information from the entire chapter has been taken out and put into a box
189	50564	9	27	52	27	52	The author team should clarify further what is meant by "when risk is considered." (Katharine Mach, IPCC WGII TSU)	The word "climate" has been inserted before risk for clarification
190	54743	9	28	11	28	11	The chapter team should coordinate with adaptation chapters on consistent use of the concept 'planned adaptation' (Monalisa Chatterjee, IPCC WGII TSU)	The responsible LA committed considerable time to liaising with the adaptation chapters at LAM3 and we feel this issue has been resolved.
191	50565	9	28	45	0	0	Section 9.4.3. It would be preferable to paraphrase information further in this section, reducing the use of direct quotes. (Katharine Mach, IPCC WGII TSU)	Paraphrasing has been done and quotation marks are now only used for direct quotations
192	54744	9	28	45	0	0	The chapter team may consider adding a subheading for each of the examples. (Monalisa Chatterjee, IPCC WGII TSU)	Done - new sectoral subsections, 9.4.3.1 etc.
193	50566	9	28	51	28	52	It would be preferable to specify if the mentioned "negative effects" are observed, projected, or both. Additionally, it would also be preferable to indicate more specifically what is meant by "very serious." (Katharine Mach, IPCC WGII TSU)	This passage now deleted
194	50567	9	29	8	29	8	For this statement, it would be preferable to indicate the relevant time frame for the described increase in flood frequency and magnitude. (Katharine Mach, IPCC WGII TSU)	the paper does not specify - I believe it is more of a general indication of the spatial population in at risk areas
195	50568	9	29	35	29	36	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	passage now deleted
196	50569	9	30	29	30	29	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	passage now deleted
197	50570	9	31	13	31	14	The author team should specify which "extreme weather events" it is referring to on line 13. Additionally, the "changes" mentioned on line 14 should also be specified further, ideally with reference to the findings of the working group 1 contribution to the 5th assessment report. Finally, casual usage of the term "likely" should be avoided on line 14, given that it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Apologies - this was not addressed during SOD drafting - we should look at it for FGD
198	54745	9	32	22	0	0	Section 9.4.4. The author team is encouraged to cross reference chapter 16 and cross reference framing applied in it. (Monalisa Chatterjee, IPCC WGII TSU)	Based on new guidelines provided by chapter 16, we have done this

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
199	48290	9	32	27	0	0	Multinomial Logit is too technical, take out and say discrete regression analysis. Or provide a sample estimation in the Appendix (Malini Nair, Indian Institute of Science)	I prefer to directly cite the methodology from the original text, and so have left this
200	50571	9	32	32	32	33	In this statement, the author team should avoid formulations that could be interpreted as potentially policy prescriptive, as might be suggested with the word "must." (Katharine Mach, IPCC WGII TSU)	Words that can be perceived as policy prescriptive have been changed
201	40780	9	33	1	33	43	well written section on seasonal forecasts and their uptake but what about heat days, changes in rain days how are these being transmitted and taken up e.g. SREX findings of (Coleen Vogel, Independent Consultant)	additional reference has been made to SREX
202	50572	9	33	23	33	23	It would be helpful to clarify a bit further what "the participatory processes" were. (Katharine Mach, IPCC WGII TSU)	Additional detail added
203	50573	9	33	48	0	0	Section 9.5.1. The author team may wish to consider the following potential directions in revising the section. 1st, for key conclusions given, it would be preferable to provide line-of-sight references to the chapter sections supporting those conclusions. 2nd, the author team should consider characterizing its degree of certainty in conclusions presented through the uncertainties guidance for authors, using especially summary terms for evidence and agreement and levels of confidence. 3rd, the author team may wish to maintain the narrative style of text here, while presenting the executive summary more in a bullet form. (Katharine Mach, IPCC WGII TSU)	Apologies - in differentiating this section from the execsum we omitted to introduce the line of sight and CUL. This will be a priority for the FGD
204	43074	9	33	50	33	51	The lack of a clear definition should not be a key conclusion. Nobody needs this definition besides the authors of this report, who make a distinction between rural areas and others. So, the problem is rather a problem of the structure of the report than a problem which needs attention from the scientific or public community. (Andreas Meyer-Aurich, Leibniz-Institute for Agricultural Engineering Potsdam-Bornim)	We disagree: readers of this report may well want to know more about definitions, and the lack of clarity is inescapable
205	48293	9	34	0	34	0	This page needs rewriting. The arguments are too strongly worded (Malini Nair, Indian Institute of Science)	We disagree
206	54746	9	34	4	34	51	Some of the key findings are buried in the text. It will be useful to highlight them in the chapter. (Monalisa Chatterjee, IPCC WGII TSU)	We are not quite clear what is meant here
207	48291	9	34	10	0	0	Explain the statement " Interlinkages between land tenure and food policy are important drivers" (Malini Nair, Indian Institute of Science)	This passage has been rewritten
208	48292	9	34	27	34	33	Please cite references to support the arguments here, as well as the whole of page 797 (Malini Nair, Indian Institute of Science)	References not appropriate for a concluding section, though we accept from Comment 203 above that cross-references to Chapter sections should have been included
209	50574	9	34	41	34	45	Levels of agreement are described at the start of both sentences in this paragraph. The chapter team is encouraged to evaluate and present calibrated uncertainty language in italics reflecting both the levels of evidence and degree of agreement for these findings. (Katharine Mach, IPCC WGII TSU)	See response to Comment 203
210	50575	9	35	23	0	0	Frequently Asked Questions. The author team should ensure full development of each frequently asked question--in terms of both question and response--in the second-order draft. (Katharine Mach, IPCC WGII TSU)	Now done
211	50576	9	57	0	0	0	Table 9-1. The author team should ensure the citation supporting each statement in this table can be determined by the reader. For example, some data and information currently presented lack a citation clearly tied to the statement or box in the table. (Katharine Mach, IPCC WGII TSU)	(now Table 9-2) citations improved
212	43142	9	59	0	0	0	Fig 9-3 , The word "change" against the column "Tea", should be replaced by the word "changes" against both Kenya and Uganda. (SHAHBAZ MEHMOOD, Global Change Impact Studies Centre)	A stylistic issue -will be addressed in the FGD
213	43925	9	59	0	0	0	Fig 9-3 , The word "change" against the column "Tea", should be replaced by the word "changes" against both Kenya and Uganda. (Muhammad Amjad, Global Change Impact Studies Centre)	As above
214	50577	9	59	0	0	0	Table 9-2. To provide a (very substantial) contrast, the author team might also consider presenting statistics for developed countries. It also may be clearest for the reader to provide a more extended introduction of the indicators in the caption of the table. (Katharine Mach, IPCC WGII TSU)	This table re-organised as a figure
215	50578	9	59	0	0	0	Table 9-3. For the changes given for 2050, the author team should clarify the scenarios of climate change considered in the analyses cited. (Katharine Mach, IPCC WGII TSU)	Details are provided of the main climate change variables used in the model results summarized
216	53931	9	59	0	0	0	Table 9-2: The information presented in this table may be more effectively communicated if presented as a figure (bar chart). (Yuka Estrada, IPCC WGII TSU)	Done
217	50579	9	60	0	0	0	Table 9-4. Within this table, wherever possible the author team should indicate both the relevant time frame and the climate/socio-economic scenarios pertinent to the analysis. (Katharine Mach, IPCC WGII TSU)	Done
218	53932	9	61	0	0	0	Figure 9-1: It would serve readers better if this figure was reproduced for the purpose of this chapter. All four map components can be combined as a single map (see SREX figure 4-2: <a href="http://ipcc-wg2.gov/SREX/images/uploads/SREX_Fig4-2.jpg">http://ipcc-wg2.gov/SREX/images/uploads/SREX_Fig4-2.jpg</a> ) and two tables in the middle can be also illustrated as charts. (Yuka Estrada, IPCC WGII TSU)	Figure now re-organised
219	50580	9	62	0	0	0	Figure 9-2. In the caption for the table, it would be helpful to further clarify the indicators plotted. For example, all but the last column in each plot presumably represent the percentage in the region as a proportion of population, but this is not completely clear. (Katharine Mach, IPCC WGII TSU)	Figure now re-organised
220	53933	9	62	0	0	0	Figure 9-2: Again these charts may be combined as a single map/figure. (see SREX Figure 4-7, <a href="http://ipcc-wg2.gov/SREX/images/uploads/SREX_Fig4-7.jpg">http://ipcc-wg2.gov/SREX/images/uploads/SREX_Fig4-7.jpg</a> ) (Yuka Estrada, IPCC WGII TSU)	Figure now re-organised