#	Ch	From Page	From Line	To Page	To Line	Comment
1	9	0	0	0	0	The population number should be listed referenceing to Table 8-1. and the data of population in Chapter 9 should keep in line with that in Chaper 8. (Liu, Luliu, National Cliamte Center, CMA)
2	9	0	0	0	0	Better assess the case cited not list them simply. (Liu, Luliu, National Cliamte Center, CMA)
3	9	0	0	0	0	General Comments on Chapter 9. Rural Areas: The population in the rural areas is almost half of the population of the world (3.3 billion). The definition of the urban areas is changeable from country to another as indicated in page 5. Figures 9-1 for the Trends in rural, urban and total populations by region and Figure 9-2 for the Demographic and poverity indicators for rural areas of developing countries in page 73 are impressive. Key vulnerabilities and risks in page 22 was explained in a professional way. Tables 9-6 and 9-7 for the exaples of adaptation in the agriculture and water sectors in different regions are impressive (pages 71 & 72). (Labib, Mounir Wahba , Third National Communication (TNC) Project)
4	9	0	0	0	0	The chapter is too focused on agricultural issues. Although agriculture is important for rural areas, other sectors, e.g. tourism, or ecosystem functions seem to be 'underestimated'. In addition, mountain areas, which constitute nearly a quarter of the world's land surface and a much larger proportion of rural areas, should also be further discussed. In page 29, Section 9.3.5.3.2 there is a reference on the importance of mountain areas; nevertheless, the section is also oriented to agriculture. (Dimitris Damigos, Mining and Metallurgical Engineering, NTUA, Greece) (GREECE)
5	9	0	0	0	0	Rural areas lack, as it is stated here, a clear definition. In my view, this causes the main weakness of this chapter (at least of the executive summary). A differentiation of what is meant by "rural areas" in different regions of the world would be particularly helpful in this chapter as their relative importance and contextual meaning links to very different kinds of problems to be faced as a consequence of climate change. In Europe, for example, there are "rural areas" and many of the findings of the chapter are hard to associate with them. For other parts of the world, the same problem can arise due to this lack of definition and focus. (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
6	9	0	0	0	0	I would say that a common differential element of rural areas is their higher dependency on vulnerable resources (freshwater and their sources, agriculture and livestock garzing, soils, etc), the features of the rural built environment (in parts of the World they are weaker and/or more exposed to external events, there are fewer infrastructures providing certain resilience, etc), different societal structures and the variety of governance systems. Maybe these common elements should have been the foundations for this chapter. (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
7	9	0	0	0	0	Please consider including discussion on the impact of climate change on fire (wildfire) risks. Reference: http://www.esajournals.org/doi/abs/10.1890/ES11-00345.1 (Lee, Sai-ming, Hong Kong Observatory)

#	Ch	From Page	From Line	To Page	To Line	Comment
8	9	0	0	0	0	China is a large agricultural country with a large rural population. This chapter, however, gives limited information on studies of rural China from the perspective of climate change impact, vulnerability and risk. It is suggested to add information on impacts by climate change on farmers' livelihoods, poverty, farming and animal husbandry as well as on policies and measures for climate change adaptation including disaster risk management and land use in China.\nReferences:\nSecond National (China) Assessment Report on Climate Change (Science Press, 2011)\nQin Dahe et al, The Evolving Climate and Environment in China:2012 (Meteorological Press, 2012)\nXu Yin long, Ju Hui, Climate Change and Poverty: A Case Study of China[R]. Greenpeace, Oxfam. 2009.\nWang X. Y, Zhang Q, (2012) Climate variability, change of land use and vulnerability in pastoral society: a case from Inner Mongolia, Nomadic Peoples, Vol 16, No1.\nLong, H., Y. Li, Y. Liu, M. Woods, and J. Zou, 2012: Accelerated restructuring in rural China fueled by 'increasing vs. decreasing balance' land-use policy for dealing with hollowed villages. Land Use Policy, 29(1), 11-22. \n"Atkin, M L Clarke, S J Mooney, B Wu, H M West, (2013) Responses to climate change and farming policies by rural communities in northern China: A report on field observation and farmers' perception in dryland north Shaanxi and Ningxia, Land Use Policy, 32,125-133". (CHINA)
9	9	0	0	0	0	The uncertainty and confidence are expressed in this chapter somewhat differently from IPCC's Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties (6-7 July 2010). It is suggested to reformulate such expressions according to the IPCC's Guidance Note. (CHINA)
10	9	0	0	0	0	Please thoroughly check the reference list, as well as the referencing in the text to this list. Many references are still lacking or inaccurately referred to. \n\n (NETHERLANDS)
11	9	0	0	0	0	The majority of the chapter seemed focused on developing country rural areas, the authors might consider breaking the chapter into two sub-chapters. One section focused on developed country rural areas and climate change with the second section focused on developing country rural areas and climate change.\nThere is a marked difference in these two rural areas, and the responses to climate change might be markedly different as well. Developed countries have more "resources" to be able to adapt whereas more developing country residents may suffer without any form of safety nets.\nThe vague term "rural areas" is too broad to cover all countries. The US or Australia rural areas are very different than Pakistan or China, both merit equal investigation in an IPCC "rural areas" chapter. (UNITED STATES OF AMERICA)
12	9	0	0	0	0	Given the close relationship between Chapters 7 & 9, this comment refers to both: Chapter 7 focuses on food production and there seems to be a slight amount of overlap between Chapter 7 and Chapter 9. The authors of both chapters (7 & 9) should collaborate to ensure that duplication is minimized and synergies are maximized. (UNITED STATES OF AMERICA)
13	9	0	0	0	0	Replace "non-market" with "extra-market" since what goes through markets depends on the legal and institutional context. (UNITED STATES OF AMERICA)
14	9	0	0	0	0	The chapter generally does a nice job of summarizing the major areas of literature on VIA in rural areas. However, there is a tendency in the chapter to emphasize rural areas of the developing world, with less attention devoted to rural areas of the developed world. Some sources for the U.S. include:\nPankaj Lal & Janaki Alavalapati & Evan Mercer, 2011.\nSocio-economic impacts of climate change on rural United States. Mitigation and Adaptation Strategies for Global Change\n vol. 16(7), pages 819-844, October.\nand \nResponding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation in New York State\nAnnals of the New York Academy of Sciences VL - 1244, IS - 1, PB - Blackwell Publishing Inc, SN - 1749-6632, UR - http://dx.doi.org/10.1111/j.1749-6632.2011.06331.x, DO - 10.1111/j.1749-6632.2011.06331.x, SP - 2, EP - 649,\nPY - 2011. (UNITED STATES OF AMERICA)

#	Ch	From Page	From Line	To Page	To Line	Comment
15	9	0	0	0	0	The title of this chapter doesn't completely reflect what the chapter covers, especially given the information reviewed in Chapter 7 (Food Systems & Security). It seems that this chapter would be better titled "Rural communities and livelihoods" instead of Rural Areas, because it lacks the extensive agricultural production information covered in Chapter 7. (UNITED STATES OF AMERICA)
16	9	0	0	0	0	Throughout the chapter, there was a strong emphasis towards issues in tropical regions and developing nations. The northern parts of North America and Europe (as well as Southern South America) are all going to experience issues in their rural areas, as well. The chapter barely touched on issues with ice roads, northern villages, and arctic infrastructure. Indeed, there is more work on this than was cited andit should be referenced in this chapter. Further,in the research gaps/needs section, there should be a call for more of this research. (UNITED STATES OF AMERICA)
17	9	0	0	0	0	We suggest that when the chapter is published online, that it be linkable to everything it references, so readers can easily find the info they need. (UNITED STATES OF AMERICA)
18	9	0	0	0	0	A listing of adaptation interventions across regions is missing (Nair, Malini, Indian Institute of Science)
19	9	0	0	0	0	Very good chapter despite the difficulty the authors must have faced in navigating between the situations in rural areas in low and high income countries. (van der Geest, Kees, United Nations University)
20	9	0	0	0	0	At a global scale, rural and agricultural populations are very clearly concentrated in Sub-Saharan Africa and South Asia (and China). See the thematic world maps (based on FAO data) in Van der Geest, K. (2010). Rural Youth Employment in Developing Countries: A Global View. Rome: FAO. (PS no need to reference this publication, just an easy illustration of the global, geographic distribution of rural and agricultural people, see p. 11 and 13). http://www.fao-ilo.org/fileadmin/user_upload/fao_ilo/pdf/Vandergeest_2010_RurYouthEmpl_150_ppi.pdf \nWhen going through chapter 9, I had the impression that there was a tendency to try to represent geographical regions equally while more focus on the regions in which most people live in rural areas and have livelihoods that are more vulnerable to climate threats is justified. (van der Geest, Kees, United Nations University)
21	9	0	0	0	0	This chapter would have benefited from an initial conceptual model, set out in a graphical representation. The authors mention the sustainable livelihoods framework, which would have been useful. It would also have been useful to set out a taxonomy of rural area types - especially between commercial farming dominated systems in rich countries and the mix of commercial / non commercial large and small farm systems in many developing countries. (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
22	9	0	0	0	0	There is surprisingly more literature quoted about rural areas in developing countries and much less about rural areas in rich countries. I am not sure that this reflects the literature. This ends up with giving the impression that impacts will be larger in the rural areas in developing countries than in those of the rich countries, which would not necessarily be true. (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
23	9	0	0	0	0	Author team should ensure that caliberated uncertainty language is used only to make probabilistic statements. (Chatterjee, Monalisa, IPCC WGII TSU)
24	9	0	0	0	0	There are some missing/ incorrect citations in the chapter. These discrepancies have been highlighted in the ref check document for chapter 9 and is available in the supporting material web page. Chapter team may wish to rectify these errors before starting to work on SOD revisions and FGD preparation. (Chatterjee, Monalisa, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
25	9	0	0	0	0	1) Overall -- The chapter team has developed a very robust second-order draft. In the final draft, the chapter team is encouraged to continue its prioritization of clear writing, compacted rigorous assessment, high specificity in examples, and attention to the intricacies of information available. (Mach, Katharine, IPCC WGII TSU)
26	9	0	0	0	0	2) Further shortening and tightening assessment -- The chapter team is encouraged to make each section as compact and accessible as possible, through rigorous polishing and editing. For example, the chapter could be strengthened through careful editing of each section, retaining core content while reducing text in the body of the chapter by 25%. (Mach, Katharine, IPCC WGII TSU)
27	9	0	0	0	0	3) Coordination across Working Group II -- In developing the final draft of the chapter, the author team should continue to ensure coordinated assessment, both in the chapter text and at the level of key findings. As appropriate, cross-references to the sections of other chapters and/or their assessment findings should be used, continuing to ensure that overlaps are reduced and assessment harmonized. (Mach, Katharine, IPCC WGII TSU)
28	9	0	0	0	0	4) Harmonization with the Working Group I contribution to the AR5 -- In developing the final draft, the chapter team should also ensure all cross references to the Working Group I contribution are updated, with discussion of climate, climate change, and climate extremes referencing the assessment findings in that volume. (Mach, Katharine, IPCC WGII TSU)
29	9	0	0	0	0	5) Report release -- The chapter team should be aware that the final drafts of the chapters will be posted publicly at the time of the SPM approval, before final copyediting has occurred. Thus, the chapter team is encouraged to continue its careful attention to refined syntax and perfected referencing. (Mach, Katharine, IPCC WGII TSU)
30	9	0	0	0	0	6) Figures -- If reviewers of the chapter identify figures that would illustrate and clarify assessment within the chapter, the author team is very much encouraged to consider including additional figures. (Mach, Katharine, IPCC WGII TSU)
31	9	0	0	0	0	7) Characterization of future risks -- In characterizing future risks for rural areas, to the degree appropriate the chapter team should indicate the extent to which risks (or key risks) can be reduced through mitigation, adaptation, development, poverty reduction, etc. That is, is it possible to indicate how risks may increase as the level of climate change increases or, potentially, to indicate the relative importance of changes in mean conditions, as compared to changes in extreme events, as compared to potential non-linear changes associated with biome shifts or tipping points? And then, how much can risks be reduced through adaptation or development, in the near-term and in the long-term? How are factors or stressors that multiply risks relevant in this context? As supported by its assessment of the literature, the author team should consider communicating risks for the era of climate responsibility (the next few decades, for which projected temperatures do not vary substantially across socio-economic/climate scenarios) and for the era of climate options (the 2nd half of the 21st century and beyond). As might be helpful to the chapter, the framing of table SPM.4 could be considered in characterization of future risks, along with the key and emergent risk typology of chapter 19. (Mach, Katharine, IPCC WGII TSU)
32	9	0	0	0	0	8) Informing the summary products -- To support robust and insightful summary products for the report, the chapter team is encouraged to maximize nuance and traceability in its key findings, continuing to use calibrated uncertainty language effectively. In addition to nuanced characterizations of future risks (see the previous comment), the chapter team is encouraged to consider themes emerging across chapters, indicating for example how extreme events have demonstrated adaptation deficits and vulnerabilities to date and may relate to future risks, how limits to adaptation may be relevant in the context of this chapter, how multidimensional inequality is relevant in the context of climate change, how adaptation experience has been seen to date, and how interactions among mitigation, adaptation, and sustainable development may occur. (Mach, Katharine, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
33	9	0	0	0	0	GENERAL COMMENTS: I congratulate the author team for all their work on an interesting and informative SOD. Please see my detailed comments for suggestions related to specificity of ES findings and traceable accounts, refining figures and tables, calibrated uncertainty language, and various specific clarifications. I have one general comment. The chapter text would benefit from an edit aimed at tightening and focusing the discussions even further. When considering the suite of review comments, please look for opportunities to hone the text in revision. (Mastrandrea, Michael, IPCC WGII TSU)
34	9	0	0	0	0	SUMMARY PRODUCTS: In preparing the final draft of your chapter and particularly your executive summary, please consider the ways in which your chapter material has been incorporated into the draft SPM and TS. For Chapter 9, this includes presentation of observed impacts and vulnerabilities in section A.i and Box SPM.3/TS.4, adaptation experience in section A.ii, sectoral risks in section C.i, and adaptation/mitigation/impacts interactions in section D.ii. Are there opportunities for presenting chapter findings and material in a way that further supports broad themes highlighted in the summary products and that facilitates additional cross-chapter synthesis in specific findings or figures/tables? Do the existing summary product drafts suggest additional coordination that should occur between Chapter 9 and other chapters at LAM4? (Mastrandrea, Michael, IPCC WGII TSU)
35	9	1	1	64	54	Since malaria is mentioned in chapter 8, it should also be included in chapter 9, or removed from both chapters (Lunde, Torleif Markussen, University of Bergen)
36	9	2	0	2	0	Author team may wish to add a climate related ES. (Chatterjee, Monalisa, IPCC WGII TSU)
37	9	2	21	3	50	There is some reiteration and insistence on certain concepts , ideas and findings along the summary. However, their importnace is not well explained. (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
38	9	2	23	2	24	It seems like this finding is based on two sources, perhaps more references should be added in section 9.1.1. (Chatterjee, Monalisa, IPCC WGII TSU)
39	9	2	23	2	24	This statement should be coordinated with the assessment findings of chapters 9 and 13. (Mach, Katharine, IPCC WGII TSU)
40	9	2	23	2	25	A clear definition of "rural" should be provided; can acknowledge that varied definitions exist, but one consistent approach needs to exist for this report. (UNITED STATES OF AMERICA)
41	9	2	24	2	25	This sentence seems a little odd after the first sentence that gives the percentage of rural population. (Chatterjee, Monalisa, IPCC WGII TSU)
42	9	2	28	2	28	a lack of focus on rural areas in policy making ...' I would also add 'with a widespread intensification of productive land uses and policies generally promoting agri-business interests (including through undermining small holder tenure security) at the expense of other ecosystem services (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
43	9	2	28	2	29	This last statement of the paragraph does not appear in section 9.2. Please provide line of sight. (Mastrandrea, Michael, IPCC WGII TSU)
44	9	2	32	2	33	While the rural proportion of the population may be leveling off, the total rural population may still be increasing. Clarify whether the total rural population will still be increasing and where this is expected to happen. (UNITED STATES OF AMERICA)
45	9	2	34	2	34	Poverty rates in rural areas are [suggest to insert ' much higher but'] falling more sharply ...' (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
46	9	2	34	2	36	This sentence is a little confusing. It seems to say that less number of people in rural areas are poor. Please clarify. (Chatterjee, Monalisa, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
47	9	2	38	2	40	Are the mentioned signs of improvement in underinvestment in agriculture evident in certain regions, or everywhere? This is unclear from the chapter text and should be clarified here and/or in the chapter text if retained. (Mastrandrea, Michael, IPCC WGII TSU)
48	9	2	40	2	40	Is it necessary in the author team's opinion to assign both high and very high confidence to this statement? Does this mean confidence is between the two categories? Please consider whether additional gradations of the confidence scale are necessary. (Mastrandrea, Michael, IPCC WGII TSU)
49	9	2	41	2	41	Add the reference [Table 9-2]to the line, like '…in South Asia and Sub-Saharan Africa[Table 9-2]. '\n\n (NETHERLANDS)
50	9	2	45	2	45	The real reference for the text '…investment-based policy' is based on [Table 9-2]\n\n (NETHERLANDS)
51	9	2	45	2	45	This should be Table 9-2 rather than 9-1. (Mastrandrea, Michael, IPCC WGII TSU)
52	9	2	47	2	48	In the summary for policymakers, the chapter team added "remoteness from decision-makers" to this list. Should it be included here? (Mach, Katharine, IPCC WGII TSU)
53	9	2	47	2	48	The reference to section 9.4.4 for the bold sentence is unclear, as these topics are not addressed in that section. Please provide line of sight. In addition, "remoteness from decisionmakers" was included in a similar statement in the SPM. Please consider adding it here. (Mastrandrea, Michael, IPCC WGII TSU)
54	9	2	47	2	50	Yes agreed - some comment here on the need for ecosystem-based adaptation and therefore improved NR governance and integrated site and landscape level management strategies (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
55	9	2	47	3	2	Gender is mentioned twice as related to vulnerability; other parts of the paragraph seem duplicative. This paragraph deals mostly with factors creating differential (additional?) vulnerability but it does not follow a general paragraph on primary vulnerability factors. (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
56	9	2	47	3	2	The drafting of this paragraph is confusing. Resilience, vulnerability, adverse impacts etc. Are they linked to climate change? (vulnerability to climate change, impacts of climate change, resilience facing climate change….) or to multiple factors?? (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
57	9	2	48	2	48	The reference for the text '….vulnerabilities to climate change' is based on [9.5.1]\n\n (NETHERLANDS)
58	9	2	49	2	49	Given the uncertainties guidance for authors, it may be clearest to use a summary term for agreement here more explicitly, with "low agreement" in italics. Additionally, the chapter team should consider providing a summary term for evidence as well. (Mach, Katharine, IPCC WGII TSU)
59	9	2	49	2	51	Please state which factors are associated with increasing resilience and which with increasing vulnerability. (UNITED STATES OF AMERICA)
60	9	2	51	2	51	Given the uncertainties guidance for authors, it would be clearest to present a summary term for agreement here, and potentially for evidence as well, in place of "greater agreement." (Mach, Katharine, IPCC WGII TSU)
61	9	2	51	3	2	Please carefully check the line of sight provided here, as most are incorrect (I assume as a result of reorganization of chapter text). Integration into world markets should be 9.3.5.2.2, access to land and natural resources should be 9.3.5.2.3, flexible local institutions should be 9.3.5.2.3, knowledge and information should be 9.3.5.2.6, and gender inequality should be 9.3.5.2.5. Finally, 9.3.5.3 should be added to support the last sentence of the paragraph. (Mastrandrea, Michael, IPCC WGII TSU)
62	9	2	54	2	54	'mountain farming system' was not specifically addressed in the mentioned reference, please add [9.3.5.3.2]\n\n (NETHERLANDS)

#	Ch	From Page	From Line	To Page	To Line	Comment
63	9	3	4	3	7	A chapter about rural areas should mostly focus on impacts on rural societies, rather than repeating statements on impacts on systems/resources (glaciers, droughts etc.). (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
64	9	3	4	3	7	This statement needs further clarification, as currently it is mixing information about changes in mean conditions, climate variability/extreme events, and the influence of climate change on patterns of extremes. Section 9.3.2 makes it clear that this is what is meant by "extreme events and other categories," but this should be stated in the executive summary as well. Further, "attribution" is discussed in the context of climate change, so its juxtaposition here with evidence for observed impacts of both climate change and climate variability is confusing. It would be clearer to focus on what can be said about attribution observed impacts of climate change, also presenting the recognition that literature often does not distinguish between climate change and climate variability clearly, complicating attribution. (Mastrandrea, Michael, IPCC WGII TSU)
65	9	3	6	3	6	The list of impacts attributed to climate change could benefit from further distinction. Some of the impacts relevant in rural areas have been attributed to climate change, as mentioned, but physical impacts included in the list in terms of extreme events, in the working group 1 contribution, have in some cases been attributed to anthropogenic climate change. The list of impacts here could potentially distinguish further between climate changes and physical changes relevant to rural areas, which have in some cases been attributed to anthropogenic climate change, from "downstream" impacts on human and natural systems for which attribution, when available, is to climate change instead. (Mach, Katharine, IPCC WGII TSU)
66	9	3	6	3	7	Please add the reference [9.5.1]\n\n (NETHERLANDS)
67	9	3	6	3	7	As one smaller follow-on comment, in the nonbold sentence it is not clear what is meant by "extreme events such as droughts and storms" being impacts attributable to climate change. Do you mean changes in patterns of these extremes? Please also ensure consistency with WGI when talking specifically about changes in the physical climate. (Mastrandrea, Michael, IPCC WGII TSU)
68	9	3	7	3	7	should refer to growing and in many dryland areas acute water stress (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
69	9	3	14	3	15	For the summary for policymakers, the chapter team suggested revised wording for this finding, which can be found on page 11, lines 45-46, of the summary for policymakers. The improved wording should be considered here as well. (Mach, Katharine, IPCC WGII TSU)
70	9	3	15	3	15	use of 'certain countries' is vague. Perhaps some names could be provided. (Chatterjee, Monalisa, IPCC WGII TSU)
71	9	3	21	3	21	deepening agric. markets ...' yes price signals critical to increase production, but also social protection for food insecure essential - (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
72	9	3	21	3	23	Is there any information that can be communicated about the evolution of these impacts over time? Are these impacts expected over the next few decades as opposed to later in the century? (Mastrandrea, Michael, IPCC WGII TSU)
73	9	3	23	3	23	Following the uncertainties guidance for authors, it would be preferable to describe this level of agreement as "medium agreement" in italics. (Mach, Katharine, IPCC WGII TSU)
74	9	3	23	3	23	Per my previous comment on an earlier bullet, are both medium and high confidence needed here? Please consider whether further gradations of the confidence scale are necessary. (Mastrandrea, Michael, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
75	9	3	23	3	29	Could add to this introduction a general statement that rural areas' economic transformation is accelerating, including through globalisation, and there are multiple stresses already livelihoods (tenure security & loss of commons / water stress / food security / biodiversity loss etc.). The character of the agrarian transformation is very different SE Asia / S Asia / Africa / L America - in E and SE Asia drastic agrarian tranformation and intensifying land use / land grabbing (see Rigg 2006 World Development) (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
76	9	3	29	3	29	It would be much clearer in this finding to specify more specifically the "multiple factors" that are relevant. (Mach, Katharine, IPCC WGII TSU)
77	9	3	29	3	32	it should also mention the govenmental facilitated migration in the " migratory descion making in individuals and households", such as Chinese case in Ningxia and other places. (Zhu Z, Zhang X. Theoretical Critical Value Curve and Driving Force Formation of Ecological Migration in the Arid Land[J]. Chinese Science Bulletin, 2006,51:196-203.) (zheng , yan, Chinese Academy of Social Sciences (CASS))
78	9	3	34	3	35	The conclusion seems to be unbalanced. Climate mitigation policies can also have positive impacts\n (NETHERLANDS)
79	9	3	34	3	37	Yes the impacts of these measures critically depend on institutional design and implementation - experience so far either tokenistic or discouraging (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
80	9	3	34	3	37	The sentence "Climate policies, such as ... payments under REDD, will result in mixed and potentially detrimental impacts on land-use and on the livelihoods of poor and marginalized people." presents a very much different evaluation on REDD+ from TS of WG3 (page45); "The implementation of REDD mechanisms and its variations that can represent a very cost-effective option for mitigation with high social and other environmental co-benefits". The relevant text of the underlying report (paragraph 9.3.3.4) raises issues related to community participation etc. in the ongoing REDD+ pilot projects, however, the REDD+ framework itself should not be judged as "potentially detrimental" only by the results of those pilot projects that are being implemented and are still in the early stages and in general lack sufficient infrastructures, framework, governance and capacity. The reviews of projects in Chapter 9, 13 are not always the result of result-based projects with payments under REDD, and references don't always reflect the result of Decision1 of UNFCCC COP16 where safeguards for REDD+ were defined, which should be promoted and supported when undertaking REDD+ activities. (Further, contents in Chapter 13 show some positive results projects even in early stages.)There is not a sufficient basis for conclusion of medium confidence.Due to the above reasons, this sentence "Climate policies, such as ... payments under REDD, will result in mixed and potentially detrimental impacts" should be deleted.But if some reference to (it any content) regarding climate policy is inevitable here, the sentence should be revised as follows; : "As climate polices, such as encouraging cultivation of biofuels, may result in mixed impacts on land-use and on the livelihoods of poor and marginalized people, the appropriate measures should be considered. " for aforementioned reason, also the contents in chapter 13 do not mean the climate polices, such as encouraging cultivation of biofuels and payments under REDD, always result in mixed impacts on land-use and on the livelihoods of poor and marginalized people. The policies might have detrimental impacts unless the appropriate policies are introduced. (JAPAN)
81	9	3	34	3	37	The need for land for solar power generation (solar cell arrays and mirrors for concentrated solar) and wind farms is largely happening in rural areas, sometimes creating conflict with existing land management (e.g. wildlife conservation) policies or creating a secondary conflict over other natural resources like water (needed for washing solar cells or power generation at solar facilities). This is happening in many locations across the western U.S. and would also be useful to acknowledge here. (UNITED STATES OF AMERICA)
82	9	3	37	3	37	governance is addressed but at no place described, what is meant by this in the context of rural development. (GERMANY)

#	Ch	From Page	From Line	To Page	To Line	Comment
83	9	3	39	3	39	significant > substantial (Tol, Richard S.J., Vrije Universiteit Amsterdam)
84	9	3	39	3	39	It would be helpful here to specify what kind of "climate change impacts" are meant. That is, "monetized climate change impacts"? (Mach, Katharine, IPCC WGII TSU)
85	9	3	39	3	41	Is there any information that can be communicated about the evolution of these impacts over time? Are these impacts expected over the next few decades as opposed to later in the century? (Mastrandrea, Michael, IPCC WGII TSU)
86	9	3	42	3	42	Section 9.3.4.6 covers health. 9.3.4.5 may be intended here? (Mastrandrea, Michael, IPCC WGII TSU)
87	9	3	46	3	47	This statement is also conformed to the content provided on page 30, line 27-30, please add reference [9.4.1] to [9.4.3]\n\n (NETHERLANDS)
88	9	3	47	3	47	The issues of 'social capital' was not specifically discussed throughout the chapter except in 9.3.5.2; please quote the paper on the issues of social capital by Misselhorn (2009)\n\n (NETHERLANDS)
89	9	3	47	3	48	This statement would be clearer if the author team illustrated or indicated more specifically the ways in which these factors are key issues, instead of simply saying they are key issues. (Mach, Katharine, IPCC WGII TSU)
90	9	3	47	3	48	Gender and the role of social capital in building resilience are not really discussed in section 9.4. Please provide line of sight for their inclusion here. The supply of information for decisionmaking is discussed in 9.4.2 and 9.4.4 rather than 9.4.1. In addition, please clarify what is meant by "key" here--it may be more informative to explain what makes each important in this context. (Mastrandrea, Michael, IPCC WGII TSU)
91	9	3	47	3	50	This statement is not clear. It provides a very general overview of items on factors and constraints that makes the full paragraph hardly comprehensible. (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
92	9	3	48	3	48	Delete [9.4.1], add reference [9.3.5.2.5] [Box 9-2] to gender and [9.3.5.2.6] to supply of information\n\n (NETHERLANDS)
93	9	4	1	5	2	The introductory definition and discussion of rural in this section contains much repetition of the same statistics calculated in different ways and misses the opportunity to include discussion of how rural/urban populations break down by major world region. (Although this info is presented in figures and tables later in the chapter), the chapter should include a few sentences that summarize major conclusions/points that can be drawn from the tables such as share of rural population by major world region. (UNITED STATES OF AMERICA)
94	9	4	5	4	15	These paragraphs should be coordinated with assessment in chapters 8 and 13. (Mach, Katharine, IPCC WGII TSU)
95	9	4	12	4	20	Authors may wish to coordinate with chapter 8 to ensure consistency regarding distribution of poor people. (Chatterjee, Monalisa, IPCC WGII TSU)
96	9	4	14	4	15	the reference (UNDP,2005) should be updated. (zheng , yan, Chinese Academy of Social Sciences (CASS))
97	9	4	14	4	15	Numbers on rural proportion of poor and hungry are from old references; the authors should provide updated citations. (UNITED STATES OF AMERICA)
98	9	4	22	4	32	It might be clearest to move this material to section 9.2. (Mach, Katharine, IPCC WGII TSU)
99	9	4	36	4	47	These points are called "considerations," and it would be helpful to clarify further what is meant. Are they starting points for assessment in the chapter, rather than key findings? If they are not starting points but are instead key findings, traceability of the assessment should be ensured, with line-of-sight references provided and calibrated uncertainty language used. (Mach, Katharine, IPCC WGII TSU)
100	9	4	52	4	53	These lines are repetitive. (Mach, Katharine, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
101	9	5	5	5	33	Better add the defination on "rural" by Chinese officials as below due to China is a agriculture country. "In China, "major urban areas" are defined as having a population of 10,000 and over; "medium urban areas" are defined as having a population of 3,000 to 9,999; "small urban areas" are defined as having a population of less than 3,000. "major villages" are defined as having a population of 1,000 to 3,000; "medium villages" are defined as having a population of 300 to 1,000; "small villages" are defined as having a population of less than 300. (Standard for Planning of Town and Village-GB50199-93)" (Liu, Luliu, National Cliamte Center, CMA)
102	9	5	5	5	33	In Nepal, rural and urban definitions have become synonyms as Village Development Committee (lowest level political unit) and municipality/metropolitan respectively. At present, there are 58 municipailites/metropolitans/sub-metropolitans. However, there is also a situation that many VDCs have been combining themselfves to become a municipality to meet criteria to become a municipality which practically is creating rural municipalities in the hills of Nepal. In terms of climate risk these municipalites are not, therefore, less vulnerable compared to rural areas. This kind of definitional problems linked to climatic problems could be the case in many other countries. Ubranisation in Nepal could be learned from - http://cbs.gov.np/wp-content/uploads/2012/Population/Monograph/Chapter%2010%20%20Urbanization%20and%20Development.pdf (Gurung, Tek, Freelance consultant)
103	9	5	5	5	33	It is not clear how this section is connected to climate change. (Chatterjee, Monalisa, IPCC WGII TSU)
104	9	5	19	0	0	Global South is an imprecise and politicized term that should be avoided. (UNITED STATES OF AMERICA)
105	9	5	29	0	0	While in Africa's most populous nation Nigeria, rural areas otherwise known as villages have population below 20,000 with greater proportion of old people and are characterized with lack of potable water, high dependence on agriculture, poor road network and communication facilities, no standardized markets, and belief in superstitions and taboos Alfred and Ewuola, 2010)\n\n[Dr. S. D. Y Alfred, Prof. S. O. Ewuola. Introduction to Rural Life.\nNational Open University of Nigeria First Printed 2010, ISBN: 978-058-008-5]\n (Ezenekwe, Elochukwu, Nnamdi Azikiwe University)
106	9	5	50	6	5	The discussion of disaster risk and adaptive capacity in this section seems somewhat out of the place is this section is supposed to be defining the peri-urban interface. (UNITED STATES OF AMERICA)
107	9	7	8	0	0	Section 9.3.2 Authors may wish to add some discussion on health impacts (Chatterjee, Monalisa, IPCC WGII TSU)
108	9	7	23	7	26	Important take away point, perhaps make it more visible? (Chatterjee, Monalisa, IPCC WGII TSU)
109	9	7	38	7	48	This statement should also reference the assessment findings of the working group 1 contribution to the 5th assessment report. (Mach, Katharine, IPCC WGII TSU)
110	9	7	50	7	54	These sentences could additionally or alternatively cross-reference assessment in this report within chapters 3, 4, 7, 8, 10, etc. (Mach, Katharine, IPCC WGII TSU)
111	9	8	9	8	14	The sentences should cross-reference key findings and relevant sections from chapter 7. (Mach, Katharine, IPCC WGII TSU)
112	9	8	9	8	19	Observed impacts: this paragraph could usefully refer to the paper by Rao et al on the mis-attribution of decreasing crop yields in Kenya's Machakos district to climate change (K. P. C. RAO, W. G. NDEGWA, K. KIZITO and A. OYOO: CLIMATE VARIABILITY AND CHANGE: FARMER PERCEPTIONS AND UNDERSTANDING OF INTRA-SEASONAL VARIABILITY IN RAINFALL AND ASSOCIATED RISK IN SEMI-ARID KENYA. Expl Agric. (2011), volume 47 (2), pp. 267–291 C Cambridge University Press 2011 doi:10.1017/S0014479710000918 (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
113	9	8	11	8	11	What are the four major commodities?\n\n (NETHERLANDS)
114	9	8	21	8	27	These sentences should cross-reference key findings and relevant sections from chapters 3 and 28. (Mach, Katharine, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
115	9	8	25	0	27	Is this literature specific to Inuit or does it refer to all Northern populations (as other populations are also affected by sea ice)? (CANADA)
116	9	8	29	9	37	For more information about regional migration cases on?Asia Development Bank, Addressing Climate Change and Migration in Asia and the Pacific Mandaluyong City,Philippines: Asian Development Bank, 2012. (zheng , yan, Chinese Academy of Social Sciences (CASS))
117	9	8	40	18	2	The section on future impacts is often about observed impacts (van der Geest, Kees, United Nations University)
118	9	8	48	0	0	What is included in beverage crops -- just coffee, tea, and chocolate and not juices and wine principal raw materials? Why is chocolate included when it is predominantly not for beverage use? What about kola nuts? Please be thorough and address all beverage crops that are relevant. (UNITED STATES OF AMERICA)
119	9	9	6	0	0	Section 9.3.3.1 Authors may wish to differentiate between agricultural and non agricultural livelihoods. (Chatterjee, Monalisa, IPCC WGII TSU)
120	9	9	9	0	0	Rurral populations depend directly on agricultural production for subsistence or for sale, but as indicated in the section on peri-urban areas, rural populations are increasingly more dependent on non-agricultural income and the purchase of food products (Reardon et al 2007). Rising prices of food products as a result of climate extremes (see Ch 7 on Food security) would be a major factor leading to vulnerability in rural populations. Often agriculture serves as a way to buffer the risk of non-farm income sources, and therefore climate extremes can directly affect that buffer (See Lerner & Eakin 2011; Eakin, Lerner, Murtinho 2010). (UNITED STATES OF AMERICA)
121	9	9	13	0	0	It may be unlikely that private sector will provide micro-insurance for urban residents at any significant scale in the absence of donor or government subsidies. Are there any examples of climate-related micro-insurance outside of weather-indexed crop insurance in rural areas? If so, please provide examples. (UNITED STATES OF AMERICA)
122	9	9	16	9	17	Section 5.3.3.3: The above statement " winds influence longshore current regimes and hence upwelling systems (……) is not relevant here. Upwelling can be remotely forced, not driven by longshore currents alone. (INDIA)
123	9	9	21	9	39	Future impacts: this section could usefully consider work by John Antle and colleagues on the differential impacts of cc on heterogeneous rural communities: Claessens, L., J.M. Antle, J.J. Stoorvogel, R.O. Valdivia, P.K. Thornton, and M. Herrero. 2010. A minimum-data approach for agricultural system level assessment of climate change adaptation strategies in resource-poor countries. Agricultural Systems, submitted; Antle, J.M. and S.M. Capalbo 2010. "Adaptation of Agricultural and Food Systems to Climate Change: An Economic and Policy Perspective." Applied Economic Perspectives and Policy 32:386-416 (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
124	9	9	35	9	46	2007-8-9 references are a bit old when looking at local effects in climate models. Also, the text does not reflect contradictory projections at local level from different climate change models. (UNITED STATES OF AMERICA)
125	9	9	35	10	8	These statements could cross-reference key findings and relevant material from Chapter 3. (Mach, Katharine, IPCC WGII TSU)
126	9	9	36	9	37	What are the references for the statement 'most of the climate change models predict a reduction in freshwater availability by 2050', the text was found to be totally copied from the original work by Juana et al. (2008)\n\n (NETHERLANDS)
127	9	10	2	11	12	It is not clear that the ABD study focuses on rural areas of the four countries mentioned. Authors should confirm that all studies cited look at rural areas.\nThe agricultural discussion needs emphasize how the impacts discussed on different crops specifically affect rural households/livelihoods/economies. Rather than summarizing general agricultural yield findings (which are already provided in the agricultural chapter), the section should focus on studies that show how declining/changing yields affect rural livelihoods. (UNITED STATES OF AMERICA)

#	Ch	From Page	From Line	To Page	To Line	Comment
128	9	10	16	10	19	Another good citation for this section would be...\nMacDonald, Glen M. "Water, Climate Change, and Sustainability in the Southwest." Proceedings of the National Academy of Sciences 107, no. 50 (December 14, 2010): 21256-21262. doi:10.1073/pnas.0909651107.\nHe makes the point of the current and increasing challenges of meeting water demands across the SW United States. One particular trajectory to meet the increasing demands of urban population centers is retiring agricultural waters rights and transferring them to urban use. This would directly impact rural agricultural centers across the region. (UNITED STATES OF AMERICA)
129	9	10	21	10	39	For balance, this needs to discuss positive effects of climate change on crop yields in some locations. (UNITED STATES OF AMERICA)
130	9	10	51	10	51	If "likely" here is a calibrated likelihood term, it should be italicized. Casual usage should be avoided. In a quick pass through the Easterling chapter I was not finding the exact statement; otherwise, I would be more specific in suggesting italicizing or deleting the word. (Mach, Katharine, IPCC WGII TSU)
131	9	10	54	11	1	The timeframe for this projection should be specified, in terms of the baseline for the projection and the projection itself. (Mach, Katharine, IPCC WGII TSU)
132	9	11	4	11	6	Reduced water supply may have implications beyond agriculture, e.g, water collection timing, impact on women. Author team may wish to add these. (Chatterjee, Monalisa, IPCC WGII TSU)
133	9	11	6	11	7	a more recent reference for fruits and nuts is Lobell, D., & Field, C. (2012). California perennial crops in a changing climate. Climatic Change, 109, 317-333\n (Lobell, David, Stanford University)
134	9	11	19	0	0	Box 1: careful with the story on coffee: mix of quality in the references used here. One of them is actually a report to the UK embassy in Rio de Janeiro - not sure about peer review status of this. (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
135	9	11	50	12	9	Authors may wish to show some of these findings on a map or a figure. (Chatterjee, Monalisa, IPCC WGII TSU)
136	9	12	15	12	16	The Chinses cases can be supportive, see: "Atkin, M L Clarke, S J Mooney, B Wu, H M West, (2013) Responses to climate change and farming policies by rural communities in northern China: A report on field observation and farmers' perception in dryland north Shaanxi and Ningxia, Land Use Policy, 32,125-133". (2)Xu Yinlong, Ju Hui, Climate Change and Poverty: A Case Study of China[R]. Greenpeace, Oxfam. 2009. (zheng , yan, Chinese Academy of Social Sciences (CASS))
137	9	12	15	12	26	The relationship between food security and cliamte change, plese revise. (Liu, Luliu, National Cliamte Center, CMA)
138	9	12	15	12	26	Authors may wish to coordinate with chapter 7 on the components of food security figure in chapter 7. (Chatterjee, Monalisa, IPCC WGII TSU)
139	9	12	26	12	26	Not sure where it should go - but here might be as good as anywhere - I found a discussion of the existing water stress crisis lacking - it would be valuable to highlight lack of effective regulatory / property policies for abstraction leading to declining water tables eg most urgently in Ganges (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
140	9	12	33	12	33	It may be helpful if these themes are explicitly stated. (Chatterjee, Monalisa, IPCC WGII TSU)
141	9	12	41	0	0	This could be a separate sub section. (Chatterjee, Monalisa, IPCC WGII TSU)
142	9	12	49	12	50	If the chapter has several potential cost related findings, it may be useful to put them together in a table. (Chatterjee, Monalisa, IPCC WGII TSU)
143	9	12	50	0	0	Check that this is an impact of increased rather than decreased precipitation and explain why the effect of a small change in precipitation is so large. Paragraph is mainly discussing decreased precipitation. (UNITED STATES OF AMERICA)
144	9	13	7	13	8	Another cost statement that could be in the potential cost table. (Chatterjee, Monalisa, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
145	9	13	18	0	0	Also due to reduced net income from the alternative of crop production. Delete jargony "Ricardian method". (UNITED STATES OF AMERICA)
146	9	13	23	13	36	In addition to considering Chapter 7, the key findings of chapter 6 and 30 should be cross-referenced here. (Mach, Katharine, IPCC WGII TSU)
147	9	13	37	0	0	Diversification mediates the risks of farming, but also farming mediates the risks of insecure non-farm income, particularly in peri-urban areas (Lerner & Eakin 2011; Lerner, Eakin, Sweeney 2013). Either way, food production is an important risk aversion strategy that is increasingly less stable with climate extremes. (UNITED STATES OF AMERICA)
148	9	13	44	14	2	Any intensification of the hydrologic cycle in arid/semi-arid areas could lead to a multitude of primary and secondary impacts to rural areas including damage to roads and bridges during flooding events and increased soil erosion and loss between drought/flood cycles (see...\nNearing, M. A., F. F. Pruski, and M. R. O'Neal. "Expected Climate Change Impacts on Soil Erosion Rates: A Review."Journal of Soil and Water Conservation 59, no. 1 (January 1, 2004): 43-50.)\nIncreasing wildfire activity can lead to a secondary impact of changing watershed hydrology and flood flows that can also damage infrastructure as has been happening with recent fires across the western U.S.\nRural communities often have lower tax bases and capacity to deal with infrastructure damage and losses during to extreme weather events. (UNITED STATES OF AMERICA)
149	9	13	46	14	2	The chapter lacks discussion of climate impacts on transportation in rural areas. The only mention of transportation in the document is on page 13, line 48, "For example, river flooding and sea level rise will produce temporary loss of land and land activities, and transportation infrastructure particularly on coastal areas."Recommend including in section 9.3.3.2 Infrastructure the following key points:\n(1) \tIn rural areas where road and other transportation networks often lack redundancy, road closures due to climate impacts such as landslides or flooding can isolate communities, blocking access to hospitals, emergency services, and markets.\n(2) \tClimate impacts on transportation infrastructure may also impact shipping of agricultural products. For instance, barge shipments of agricultural products on the Mississippi River have been significantly impacted by floods and droughts. (Transportation Research Board Special Report 290: Potential Impacts of Climate Change on U.S. Transportation. National Research Council, 2008, p91. http://onlinepubs.trb.org/onlinepubs/sr/sr290.pdf) (UNITED STATES OF AMERICA)
150	9	13	46	14	2	There is some literature on infrastructure impacts of rural areas of the developed world. For example;\nThe study of New York State (Responding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation in New York State. Annals of the New York Academy of Sciences 1244 (2011)\nUR - http://dx.doi.org/10.1111/j.1749-6632.2011.06331.x\nDO - 10.1111/j.1749-6632.2011.06331.x)\ncontains extensive discussions of the impacts of climate change on infrastructure in rural areas -- \nsee in particular, chapters on water resources, telecommunications:\nJacob, K., N. Maxemchuk, G. Deodatis, A. Morla, E. Schossberg, E., I. Paung, J. \tLopeman, R. Horton, D. Bader, R. Leichenko, P. Vancura, and Y. Klein. 2011. \tTelecommunications. Annals of the New York Academy of Sciences. Special Issue: Responding to Climate Change in New York State 1244, 2-649\nDOI: http://dx.doi.org/10.1111/j.1749-6632.2011.06331.x\nShaw, S., R. Schneider, A. McDonald, S. Riha, L. Tryhorn, R. Leichenko, P. Vancura, A. Frei, and B. Montz, 2011. Water Resources. Annals of the New York Academy of Sciences. Special Issue: Responding to Climate Change in New York State 1244, 2-649 doi: 10.1111/j.1749-6632.2011.06331. (UNITED STATES OF AMERICA)
151	9	13	52	0	0	Increases in rainfall or extreme rain events coupled with a decrease in total rainfall would increase sedimentation of reservoirs. (UNITED STATES OF AMERICA)
152	9	14	13	14	16	The point about global integration trends is not clear. Needs to be elaborated. (UNITED STATES OF AMERICA)
153	9	14	15	14	15	Here presentation of a level of confidence may be preferable to a likelihood term. (Mach, Katharine, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
154	9	14	15	14	15	Please consider use of a level of confidence here rather than "likely," as this statement does not seem to be based directly on quantitative evidence. (Mastrandrea, Michael, IPCC WGII TSU)
155	9	14	19	0	0	This section should perhaps address rural to urban migration only. (Chatterjee, Monalisa, IPCC WGII TSU)
156	9	14	19	0	0	Section 9.3.3.3.1. The chapter team should consider further cross-referencing key findings of chapter 12 within this subsection. (Mach, Katharine, IPCC WGII TSU)
157	9	14	19	14	51	It should indicate "climate change induced migration" here, see: [1]Reuveny R. Climate Change-induced Migration and Violent Conflict[J]. Political Geography, 2007,26(6):656-673. [2] Brown O. Migration and Climate Change. IOM Migration Research Series No. 31[R]. Geneva: International Organization for Migration, 2008. (zheng , yan, Chinese Academy of Social Sciences (CASS))
158	9	14	19	14	51	Studies on 'climate refugees' and environmental migration have been largely done in the developing world, but it's unclear how applicable they are or will be in rural areas in developed countries. Rural poverty and increasing rural land prices through 'exurbanization' may limit the ability of rural populations, say in the U.S., to move in response to climatic shocks. Also, Native American reservations are largely rural as well with no real ability to migrate in response to climatic shocks. (UNITED STATES OF AMERICA)
159	9	14	19	14	51	The migration section is repetitive of the section on migration in chapter 12. This section should limit the discussion to migration that is relevant for rural areas and should explain the relevance. Many of the citations included are not rural-specific. (UNITED STATES OF AMERICA)
160	9	14	21	0	0	See also Maldonado et al (2013) 'The impact of climate change on tribal communities in the US: displacement, relocation, and human rights, in Climatic Change, DOI 10.1007/s10584-013-0746-z (Galloway McLean, Kirsty, United Nations University - Institute of Advanced Studies)
161	9	14	22	14	22	Presentation of a level of confidence may be preferable to a likelihood term here, following the uncertainties guidance for authors. (Mach, Katharine, IPCC WGII TSU)
162	9	14	22	14	22	Please consider use of a level of confidence here rather than "likely," as this statement does not seem to be based directly on quantitative evidence. (Mastrandrea, Michael, IPCC WGII TSU)
163	9	14	27	14	29	Chapter 12 should be cross refered here. (Chatterjee, Monalisa, IPCC WGII TSU)
164	9	14	50	14	50	Detection is mentioned here, even though future impacts are the focus of the section. Do the challenges of detection also limit ability to make projections? (Mach, Katharine, IPCC WGII TSU)
165	9	14	50	14	50	Projection may be clearer than "detection" here, given the specific meaning of the latter in terms of observed changes, and the forward-looking context here. (Mastrandrea, Michael, IPCC WGII TSU)
166	9	15	1	16	34	It is not clear why such a long and detailed discussion of trade is relevant for this chapter. This discussion seems repetitive of information that should be included in Chapter 7. The discussion should focus on studies that examine the effects of changing agricultural trade and trade policies on rural areas. (UNITED STATES OF AMERICA)
167	9	15	3	15	3	The timeframe of this statement should be clarified. (Mach, Katharine, IPCC WGII TSU)
168	9	15	4	15	7	No updated version of WTO 2009? No later year data from FAO annual agricultural trade yearbooks? (UNITED STATES OF AMERICA)
169	9	15	7	15	14	The assessment findings of chapter 7 on agricultural price spikes could be cross-referenced here. (Mach, Katharine, IPCC WGII TSU)
170	9	15	16	15	36	Several cost related statements that could be in the potential cost table. (Chatterjee, Monalisa, IPCC WGII TSU)
171	9	15	16	15	42	price projections are covered in chapter 7, best to refer there or at least ensure consistency. Trade is not discussed there so it is good to keep that part, but it would be good if it did not rely solely on nelson et al. and if some synthesis statements could be made. (Lobell, David, Stanford University)

#	Ch	From Page	From Line	To Page	To Line	Comment
172	9	15	23	15	42	Are these real price increases above the general inflation rate? Please clarify in the text. (UNITED STATES OF AMERICA)
173	9	15	44	0	0	Author team may wish to use a figure with this dscussion. (Chatterjee, Monalisa, IPCC WGII TSU)
174	9	16	2	0	0	The large price increases discussed earlier in this chapter should be factored into estimates of changes in trade, instead of just mentioning there are price effects in addition to the volume effects. (UNITED STATES OF AMERICA)
175	9	16	20	0	0	Food donors that switch to more efficient system of buying food in the recipient country or within the region instead of developed countries could offset higher supply costs. (UNITED STATES OF AMERICA)
176	9	16	22	16	22	total volume of embedded water projected to decrease' - this seems very implausable and counter intuitive - and therefore needs explaining - one could only expect it because there will be less production to trade?! (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
177	9	16	25	16	34	Here the implication of the discussion is increasing food insecurity for the land- and cash-poorest - and therefore social protection measures should be emphasised - whether buffer stocks or 'right to food' payments (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
178	9	17	1	0	0	Knowledge: no mention of CGIAR and NARC's here. Why not? (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
179	9	17	1	17	19	Diffusion of knowledge will be an important tool for climate change adaption/mitigation across rural areas, but amazingly enough, rural access to high speed internet and even cell phone coverage is quite low across rural areas in the U.S. limiting access to new tools and resources (see http://www.broadbandmap.gov/).\nAlso, traditional mechanisms aiding in the 'diffusion of knowledge' in rural areas like the U.S. Land Grant University and Cooperative Extension system are seeing dramatic declines in funding and are shrinking in scope and reach. (UNITED STATES OF AMERICA)
180	9	17	12	17	19	This paragraph is more about impact and should be integrated with impact sections. (Chatterjee, Monalisa, IPCC WGII TSU)
181	9	17	17	0	0	What is LTK? Is it same as TEK? (UNITED STATES OF AMERICA)
182	9	17	22	0	0	second order impacts: very useful section but very little knowledge - not sure this reflects the literature well. I would have thought that there was a lot more literature on this issue in relation to biofuels and REDD+ (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
183	9	17	22	17	53	The use of rural lands for solar or wind energy development has implications for local vs. state control of land use policies and also creating potential conflicts over other resources like local water supplies. This is happening with the development of concentrated solar power facilities in desert areas of the western U.S. that also need access to water for cleaning mirrors and power generation. (UNITED STATES OF AMERICA)
184	9	17	30	17	42	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. (Ramos Castillo, Ameyali, United Nations University - Institute of Advanced Studies)
185	9	17	44	17	45	REDD mechanisms haven't been developed under the UNFCCC umbrella. It's better to use the term REDD+ instead\n (NETHERLANDS)
186	9	17	44	17	53	Yes REDD mechanism important to mention - although it would be good to possibly refer to the recent 'is the window for REDD closing' discussions from Meine et al - readiness activities have not transformed into market funded shcemes as there is no current or foreseable carbon market to pay. Additionally market based REDD is conceived as an OFFSET not really an emissions reduction scheme. Further it is apparent that good governance of forested landscapes is more effective than token REDD schemes. (Campbell ref. not in bibliog). (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)

#	Ch	From Page	From Line	To Page	To Line	Comment
187	9	17	44	17	53	The text is unbalanced. REDD+ can also benefit rural people\n (NETHERLANDS)
188	9	17	53	0	0	Please explain nested and polycentric in the text. (UNITED STATES OF AMERICA)
189	9	18	2	0	0	This section should include impacts on traditional food systems, in addition to agriculture. See, for example, Lynn et al (2013) 'The impacts of climate change on tribal traditional foods' Climatic Change DOI 10.1007/s10584-013-0736-1, and Nakashima, D.J., K. Galloway McLean, H.D. Thulstrup, A. Ramos Castillo, and J.T. Rubis (2012). Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation. UNESCO and UNU, Paris and Darwin, 120pp. (Galloway McLean, Kirsty, United Nations University - Institute of Advanced Studies)
190	9	18	2	0	0	Section 9.3.4 should be condensed to highlight findings pertaining to rural areas only. (Chatterjee, Monalisa, IPCC WGII TSU)
191	9	18	4	18	26	One problem with valuation you may want to address more prominently is that of the choice of interest rates in case different effects over different time horizons are to be compared. This is implicitly included in "understanding of value" and "philisophical approaches", but this may not be obvious to every reader. (Rock, Joachim, Johann Heinrich von Thuenen-Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries)
192	9	18	28	18	42	Authors may wish to cross refer regional chapters in this paragraph. (Chatterjee, Monalisa, IPCC WGII TSU)
193	9	18	30	0	0	Does this apply to all of Africa or only certain regions? Please explain in the text. (UNITED STATES OF AMERICA)
194	9	18	32	18	33	Add "C global mean temperature increase" after "degrees", State the time horizon. What global temperature increase and time assumptions were used in the World Bank studies? What countries? (UNITED STATES OF AMERICA)
195	9	18	53	0	0	What are instrumental metrics of risk? (UNITED STATES OF AMERICA)
196	9	19	8	19	11	Authors may wish to add a few words description of these perspectives. (Chatterjee, Monalisa, IPCC WGII TSU)
197	9	19	20	19	22	The three references provided only suppport the final part of the phrase - that part concerning Arctic communities. (Lemmen, Don, Canada National Study)
198	9	19	25	0	0	Section 9.3.4.1 needs to be rewritten. Currently the section is not reviewing any literature on the subject. It mentions two papers about ENSO and provide a table. The section needs to provide a balanced text by drawing conclusions from the paers in the table. (Yao, Xiangjun, Food and Agriculture Organization of the United Nations (FAO))
199	9	19	27	19	42	there are impacts of weather beyond the sectors mentioned. See e.g. Hsiang, S.M. (2010). Temperatures and cyclones strongly associated with economic production in the Caribbean and Central America. Proceedings of the National Academy of Sciences, 107, 15367\nDell, M., Jones, B.F., & Olken, B.A. (2012). Temperature Shocks and Economic Growth: Evidence from the Last Half Century. American Economic Journal: Macroeconomics, 4, 66-95\n (Lobell, David, Stanford University)
200	9	19	39	0	0	ENSO cycles are highly critical for Australian agriculture and also for many other countries. Agricultural planning and decision making is often focused around the current crop or pasture growing seasons, as well as for periods beyond one year. There are certain indications that these timescales are exactly those impacted by the extremes of ENSO - La Niña and El Niño - both of which often last for about 10-12 months, and typically have biggest impact in the Australian winter and spring. Therefore, it is important to analyse ENSO to evaluate climate impacts in agriculture. (AUSTRALIA)
201	9	19	45	0	0	Table 9-5 caption should specify that thi is a sample of studies "for the agriculture sector" (Yao, Xiangjun, Food and Agriculture Organization of the United Nations (FAO))
202	9	19	53	0	0	Explain the water footprint tool. (UNITED STATES OF AMERICA)

#	Ch	From Page	From Line	To Page	To Line	Comment
203	9	20	14	20	19	Acknowledging that the Mediterranean area has been identified as being especially vulnerable to climate change and considering the gap in the literature, the authors could consider citing the work of Damigos (2012) that focuses on the impacts of climate change on mining industry in the Mediterranean Region, and Greece in particular. (Citation: Damigos, D. (2012). Monetizing the impacts of climate change on the Greek mining sector, Mitigation and Adaptation Strategies for Global Change, 17, pp. 865–878). (Dimitris Damigos, Mining and Metallurgical Engineering, NTUA, Greece) (GREECE)
204	9	20	14	20	19	Mining is a good activity to mention in this section. It is understudied, but an important actor with respect to its access to power and capital in many rural areas and its use of resources like water. In the western U.S., many mining companies use a great deal of water and have historic priority rights to water that directly impact rural water supplies. Climate change will most likely impact these supplies and increase conflict over this resource in rural areas. Discuss these affiliated issues. (UNITED STATES OF AMERICA)
205	9	20	18	20	19	The idea of the "extent of loss" is introduced but not defined. What types of loss are being referred to? (CANADA)
206	9	20	24	20	26	Such findings can be added in tables like 9.5. (Chatterjee, Monalisa, IPCC WGII TSU)
207	9	20	24	20	26	For this projection, it would be best to specify the relevant climate/socio-economic scenario. Additionally, the acronym ADB could be clarified. (Mach, Katharine, IPCC WGII TSU)
208	9	20	24	20	51	The authors could consider including in Section 9.3.4.3 the results of the study of the Bank of Greece regarding the impacts of climate change in Greece, in particular those referred in Chapter 3: “The cost of climate change for Greece” (available at: http://www.bankofgreece.gr/BogDocumentEn/CHAPTER_%20III.PDF) (Dimitris Damigos, Mining and Metallurgical Engineering, NTUA, Greece) (GREECE)
209	9	20	24	20	51	Is there not more information that can be discussed on GDP and economy-wide impacts? There must be much more out there than basically these two examples: one from SE Asia, and one from northern North America. Further, this section on arctic issues needs to be explored more fully. This is the only section of the chapter dealing with issues in Arctic/cold locales. There is much more information out there than this and the authors should seek it out and reference it accordingly. (UNITED STATES OF AMERICA)
210	9	20	26	20	51	Based on what global mean temperature increase and time period? (UNITED STATES OF AMERICA)
211	9	20	35	0	0	Nigeria witnesses different climate impacts – more heat and less rain in the arid north, increased torrential rains in the south with implications for gully erosion in rural areas, and sea level rise along the southern coastline – and without a strong response, Aaron (2011) notes that climate change would cost the country between 6 percent and 30 percent of its GDP by 2050, worth between $100 billion and $460 billion.\n\n[Aaron Sayne, Climate change Adaptation and Conflict in Nigeria. Special Report 274 of The United States Institute of Peace, 2011]\n (Ezenekwe, Elochukwu, Nnamdi Azikiwe University)
212	9	20	48	20	51	Proper reference for this sentence is Furgal and Prowse (2008) - referenced elsewhere in this chapter: (Lemmen, Don, Canada National Study)
213	9	20	48	20	51	For this example, the timeframe and climate/socioeconomic scenario for the projection should be specified. (Mach, Katharine, IPCC WGII TSU)
214	9	21	14	21	16	The timeframe for this example could be clarified. (Mach, Katharine, IPCC WGII TSU)
215	9	21	15	0	0	This is the baseline, not climate change impact. Please modify the text accordingly. (UNITED STATES OF AMERICA)
216	9	21	19	21	19	Where "costs" are mentioned here, are economic damages or adaptation costs, or both, meant? (Mach, Katharine, IPCC WGII TSU)
217	9	21	28	21	30	perhaps it should be 'and countries in Africa'. (Chatterjee, Monalisa, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
218	9	21	31	21	32	The increase in poverty following a single climate shock could be clarified--is it due to sensitivity to climate in general and climate extremes and variability, or does it also illustrate sensitivity to climate change? (Mach, Katharine, IPCC WGII TSU)
219	9	21	34	21	35	It would be helpful to specify the duration of the drought meant here by "a long drought". (Mach, Katharine, IPCC WGII TSU)
220	9	21	43	21	50	The authors could consider citing also the work of Elsasser and Messerli (2001) and Wolfsegger et al. (2008) (Citation 1: Elsasser, H. and Messerli, P. (2001). The Vulnerability of the Snow Industry in the Swiss Alps, Mountain Research and Development, 21 (4), pp. 335–339. Citation 2: Wolfsegger, C., Gössling, S. and Scott, D. (2008). Climate Change Risk Appraisal in the Austrian Ski Industry. Tourism Review International, Volume 12, Number 1, pp. 13-23). (Dimitris Damigos, Mining and Metallurgical Engineering, NTUA, Greece) (GREECE)
221	9	21	43	21	50	Another good citation for this section would be...\nhttp://jpe.library.arizona.edu/volume_15/Collins.pdf (Journal of Political Ecology)\nThis is a study of the importance of an 'amenity economy' in the White Mountain forest region of rural central Arizona that relies on tourism/recreation. There is a recognition of the threat of climate change to this region (increasing wildfire risk in particular) and its potential impact on the local economy. (UNITED STATES OF AMERICA)
222	9	21	43	22	4	In North America alone there is far more literature on climate change and tourism than what is covered here. This section is inadequate both in terms of depth and breadth and a more thorough lit review must be done. (UNITED STATES OF AMERICA)
223	9	22	1	22	3	The authors could consider citing the work of Fleischer and Sternberg (2006). (Citation: Fleischer A. and Sternberg M. (2006). The economic impact of global climate change on Mediterranean rangeland ecosystems: A Space-for-Time approach, Ecological Economics, 59, pp. 287-295). (Dimitris Damigos, Mining and Metallurgical Engineering, NTUA, Greece) (GREECE)
224	9	22	7	22	22	Research shows that mortality from meteorological disasters of rural areas is six times higher than that of urban areas (Source: Causes of death and demographic characteristics of victims of meteorological disasters in Korea from 1990 to 2008. Environmental Health 2011, 10:82). \nThere was an analysis that diseases linked to climate change including Leptospirosis, Scrub typhus, HFRC are most frequently occur among people working in agricultural and fishery sector. Since those people are mostly living in rural areas, it can be said that rural areas are relatively vulnerable compared to urban areas. (Source: Correlations between climate change-related infectious diseases and meteorological factors in Korea, J of Preventive Medicine and public health 2010;43(5); 436-444, the thesis presents disease incidence distribution by specific administrative regions in urban and rural areas.) (REPUBLIC OF KOREA)
225	9	22	9	22	22	This section should be covered in more depth. Australia and the UK have published many papers on this, which are not referenced. Undoubtedly other parts of the world have more info on this as well. Further, it is not enough to just reference other chapters--a summary of what is said in those chapters must be included in this chapter. If we can imagine a policy-maker coming to find out about health in rural areas, they are unlikely going to want to go and dig through several chapters of this lengthy document. All of the relevant info must be at least summarized in the appropriate chapter. (UNITED STATES OF AMERICA)
226	9	22	13	0	0	Africa is a continent, not a region. Did you mean a particular region on the continent? Please explain in the text. (UNITED STATES OF AMERICA)

#	Ch	From Page	From Line	To Page	To Line	Comment
227	9	22	29	23	44	The role of adaptive capacity should be mentioned here as a concept that is useful for describing the strengths and assets that people and communitites have which reduce their vulnerability? Adaptive capacity is similar to this idea of livelihoods or 'entitlement' approaches, but because it plays such a key role in the standard conceptual framework for vulnerability (exposure + sensitivity = potential impact; potential impact - adaptive capacity = residual vulnerability), it ought to be included here in the discussion. This approach has been developed and applied empirically in several publicly available spatial vulnerability assessments/reports to inform policy audiences (none of which appear to have been consulted). Examples are: \nAllen Consulting 2005, Climate change risk and vulnerability, report to the Australian Greenhouse Office, Department of the Environment and Heritage, Canberra, available at sfrpc.com/Climate%20Change/4.pdf (pdf 1.86mb).\nSchröter, D & ATEAM consortium 2004, Global change vulnerability: assessing the European human–environment system, Potsdam Institute for Climate Impact Research, Germany, available at unfccc.int/files/meetings/workshops/other_meetings/application/pdf/schroeter.pdf (pdf 895kb).\nMetzger, M.J. & Schroter, D. 2006, 'Towards a spatially explicit and quantitative vulnerability assessment of environmental change in Europe', Regional Environmental Change, no. 6, pp. 201-1\nStenekes, N., Reeve, I, Kancans, R, Stayner, R, Randall, L & Lawson, K 2012, Revised indicators of community vulnerability and adaptive capacity across the Murray–Darling Basin: a focus on irrigation in agriculture, ABARES report to client prepared for the Murray–Darling Basin Authority, Canberra, available at http://www.mdba.gov.au/bpkid/bpkid-view.php?key=242pAN2tT5RE9gj*xrUHSxVEzhtWdH00ZYp56GR8AsI= (pdf 4538kb) (AUSTRALIA)
228	9	22	34	22	38	It would be useful to provide definitions of vulnerability (even if there are several competing ones) in a section that is about competing definitions. \nFor e.g. Nelson (2010) says that vulnerability is "the susceptibility of a system to disturbances determined by exposure to perturbations, sensitivity to perturbations, and the capacity to adapt." (This definition is from Nelson, W. Adger and K. Brown, Adaptation to environmental change: contribution of a resilience framework. Annual Review of Environment and Resources, 32 (2007), pp. 395–419.) (AUSTRALIA)
229	9	22	34	22	38	Please explain briefly what "end-point or outcome vulnerability" actually is. (AUSTRALIA)
230	9	22	34	22	38	in AR5 vulnerability is separate from exposure. Perhaps that could be mentioned here and WGII glossary can be cross refered. (Chatterjee, Monalisa, IPCC WGII TSU)
231	9	22	34	22	45	Which definition of vulnerability does this report use, one or both? If both, would be best to distinguish them using the separate terms mentioned. (UNITED STATES OF AMERICA)
232	9	22	41	22	41	There is a sentence in 9.3.5.1 Competing Definitions of Vulnerability in the 2nd dot point (p.22) that is incomplete: "and thus widening the..." ? (AUSTRALIA)
233	9	23	7	23	7	Given the usage of the phrase "starting point vulnerability," which does not seem to be the intended meaning here, it might be clearest to avoid the phrase here. (Mach, Katharine, IPCC WGII TSU)
234	9	23	16	23	16	A stronger dependence on climate conditions was one of the major causes of smallholders´ climate vulnerability in southern Peru (Sietz et al. 2012). Farmers who generate non-agricultural income are better able to deal with recurrent weather extremes such as droughts and frosts. Ref: Sietz, D., Mamani Choque, SE. and Lüdeke, MKB. (2012) Typical patterns of smallholder vulnerability to weather extremes with regard to food security in the Peruvian Altiplano. Regional Environmental Change 12(3): 489 - 505. (sietz, diana, Wageningen University)
235	9	23	17	23	18	Income constraints and poverty in terms of limited crop area and livestock clearly relate to higher climate vulnerability of smallholders in southern Peru (Sietz et al. 2012). The findings of this study are validated against independently reported damage due to weather extremes. REFERENCE: Sietz, D., Mamani Choque, SE. and Lüdeke, MKB. (2012) Typical patterns of smallholder vulnerability to weather extremes with regard to food security in the Peruvian Altiplano. Regional Environmental Change 12(3): 489 - 505. (sietz, diana, Wageningen University)

#	Ch	From Page	From Line	To Page	To Line	Comment
236	9	23	20	23	26	About the socio-economic driving factors of migrants vulerability, see “The analysis shows that Rural–urban migration in mega-deltas is an outcome of many forces Economic factors are often the underlying drivers of migration, but they are mediated by social–political factors. “\nSeto, K. C. Exploring the dynamics of migration to mega-delta cities in Asia and Africa: Contemporary drivers and future scenarios, Global Environmental Change, Volume 21, Supplement 1, December 2011, Pages S94-S107 (zheng , yan, Chinese Academy of Social Sciences (CASS))
237	9	23	28	23	39	These paradoxes should be highlighted further. Moreover, factors that have been observed but not understood should be clarified in the key findings. (Chatterjee, Monalisa, IPCC WGII TSU)
238	9	23	29	23	29	Following the uncertainties guidance for authors, it would be preferable to present "low agreement" in italics here. Additionally, a summary term for evidence could potentially be presented. (Mach, Katharine, IPCC WGII TSU)
239	9	23	41	23	41	Following the uncertainties guidance for authors, is it possible to present a summary term for agreement, and potentially also for evidence, here? (Mach, Katharine, IPCC WGII TSU)
240	9	24	3	0	0	Women may have less ability to cope with reductions in income due to climate change, although existing data are not sufficient to establish this as a general conclusion. However, data are generally only available for poverty at the household level, rather than for individuals within households. Consequently, income data can only be disaggregated for female-headed households vs. male-headed or dual-headed households. \n Quisumbing, A., L. Haddad, and C. Pena. 2001 "Are Women Over-Represented Among the Poor? An Analysis of Poverty in 10 Developing Countries"Washington, DC: International Food Policy Research Institute, FCND Discussion Paper 115.\n Anriquez, Gustavo. 2010. "Demystifying the Agricultural Feminization Myth and the Gender Burden."Rome: Food and Agriculture Organization of the United Nations. Background paper prepared for the State of Food and Agriculture 2010-2011. \nData from 35 studies in 20 countries demonstrated that female-headed households were only more likely to be poor than male-headed households in some countries, while the opposite was true in other countries. Also, data limitations make it difficult to distinguish among households headed by single, widowed, or divorced women and those supported by remittances from family members living outside the home. \nIn much of the developing world, women have less access to agricultural inputs and services than men and have lower crop yields as a result. However, reported data vary due to different definitions of food production and collaborations between women and men in provision of land, labor, and capital in dual-headed households.\n Doss, C. 2010. "If Women Hold Up Half the Sky, How Much Food Do They Produce?"Rome: Food and Agriculture Organization of the United Nations. Background paper prepared for the State of Food and Agriculture 2010-2011. \nFAO (2011) also estimated that 400 million women are small-scale livestock producers --approximately two-thirds of the total. Although women often share livestock responsibilities with men and children, certain types of livestock tend to be more associated with women in some locations, for example, poultry, dairy cattle, and pigs. Women may also comprise 30% of total employment in fishing, aquaculture, and fish marketing and processing. Differences by location are large; in aquaculture women constitute 33% of the workforce in China, 42% in Indonesia, and 80% in Vietnam. \n FAO. 2011. State of Food and Agriculture: Women in Agriculture: Closing the Gender Gap for Development. Rome: Food and Agriculture Organization of the United Nations. (UNITED STATES OF AMERICA)
241	9	24	9	24	15	Authors may wish to make these nuances more visible in the chapter. (Chatterjee, Monalisa, IPCC WGII TSU)
242	9	24	24	24	24	Ericksen and Silva 2009 is cited in the chapter but is not in the references.\nThe article by Silva et al -- should also be cited here as it elaborates on the other piece through a detailed empirical assessment of double exposure (i.e. exposure to both climatic and economic shocks)\nHere are the two references:\n2010. Silva, Julie A., Siri Eriksen, and Zacarias A. Ombe. Double Exposure in Mozambique's Limpopo River Basin. The Geographical Journal 176:6-24.\n2009. Eriksen, Siri and Julie A. Silva. The Vulnerability Context of a Savanna Area in Mozambique: Household Drought Coping Strategies and Responses to Economic Change. Environmental Science & Policy 12:33-52. (UNITED STATES OF AMERICA)

#	Ch	From Page	From Line	To Page	To Line	Comment
243	9	24	33	24	35	A study in southern Peru shows that smallholders living in remote areas are highly vulnerable to weather extremes (Sietz et al. 2012). It employs an elaborate validation of this finding. Considering an even further increase of weather extremes due to climate change suggests more severe climate vulnerability of smallholders in this region. Reference: Sietz, D., Mamani Choque, SE. and Lüdeke, MKB. (2012) Typical patterns of smallholder vulnerability to weather extremes with regard to food security in the Peruvian Altiplano. Regional Environmental Change 12(3): 489 - 505. (sietz, diana, Wageningen University)
244	9	24	33	24	50	aspects such as scale of farms, type of agricultural activities, are important in determining the experience and need to be highlighted. Moreover, the example given in lines 43 to 50 is a classic complex vulnerability example. Authors may wish to make it and such examples more visible in the chapter. (Chatterjee, Monalisa, IPCC WGII TSU)
245	9	24	40	0	0	*Observation: Suggest adding that observations of agricultural performance after extreme climatic events in the last two decades have revealed that resiliency to climate disasters is closely linked to the high level of on-farm biodiversity, typical of traditional farming systems (Altieri and Nicholls, 2013).\n\n*References: Altieri, M and C Nicholls (In Press) "The Adaptation a nd Mitigation Potential of Traditional Agriculture in a changing Climate" In Journal of Climatic Change: Special Issue on Climate Change Mitigation and Adaptation with Local Communities and Indigenous Peoples (2013) (Galloway McLean, Kirsty, United Nations University - Institute of Advanced Studies)
246	9	24	40	24	50	Suggest including Altieri, M et al. (In Press) "The Adaptationa nd Mitigation Potential of Traditional Agriculture in a changing Climate" In Journal of Climatic Change Special Issue on Climate Change Mitigation and Adaptation with Local Communities and Indigenous Peoples (Ramos Castillo, Ameyali, United Nations University - Institute of Advanced Studies)
247	9	24	40	24	50	See also Ford et al. (2006) Vulnerability to climate change in the Arctic: A Case Study from Arctic Bay, Canada" Global Environmental Change 16.2 (2006): 145-160. (Ramos Castillo, Ameyali, United Nations University - Institute of Advanced Studies)
248	9	24	46	24	50	A good citation for this section that reinforces the value of local knowledge... The authors should consider citing:\nBrugger and Crimmins. 2012. Weather, Climate, and Rural Arizona: Insights and Assessment Strategies. A Technical Input to the U.S. National Climate Assessment. March 1st, 2012.\nhttp://www.climas.arizona.edu/files/climas/project-documents/public/1400/nca-report-final.pdf (UNITED STATES OF AMERICA)
249	9	25	19	25	32	Federal control of grazing lands in the western U.S. and associated land use policies will likely be stressed with associated climatic shocks with drought and changing landscapes (e.g. wildfire). Climate change will necessitate increased coordination and cooperation between livestock producers and federal managers with flexible and responsive management policies to navigate an increasingly more variable climate in the future. (UNITED STATES OF AMERICA)
250	9	25	35	0	0	Authors may wish to cross refer chapter 12 here. (Chatterjee, Monalisa, IPCC WGII TSU)
251	9	25	44	0	0	Elsewhere this report discussed studies minimizing the role of climate change in migration. Perhaps all migration should be included in one section, rather than confusingly being spread throughout 2-3 sections. (UNITED STATES OF AMERICA)
252	9	25	47	0	0	Authors may wish to cross refer chapter 13 here. (Chatterjee, Monalisa, IPCC WGII TSU)
253	9	26	6	0	0	Authors may wish to cross refer chapter 13 here. (Chatterjee, Monalisa, IPCC WGII TSU)
254	9	26	6	27	2	The take home message from this discussion seems to be that multiple types of efforts can work as it would ensure that different groups receive assistance from different sources. Perhaps this can be explicitly said in the findings. (Chatterjee, Monalisa, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
255	9	26	39	26	39	Following the uncertainties guidance for authors, is it possible to present a summary term for agreement instead of little "agreement"? (Mach, Katharine, IPCC WGII TSU)
256	9	27	7	0	0	Key debates about knowledge and how it is produced , managed, dessiminated should be highlighted in chapter findings like ES. (Chatterjee, Monalisa, IPCC WGII TSU)
257	9	27	9	27	9	Given differing usages across chapters, it might be helpful to briefly specify the general definition of institutions being employed here. This could be done, for example, by making reference to the report glossary. (Mach, Katharine, IPCC WGII TSU)
258	9	27	46	0	0	It will be useful if it is explained how these sub categories fit into the section key vulnerabilities and risks. (Chatterjee, Monalisa, IPCC WGII TSU)
259	9	27	48	27	51	The description is too general. Please describe the effects of climate change in rural regions in detail. (Liu, Luliu, National Cliamte Center, CMA)
260	9	28	5	28	45	Box 9-3. See comment for Page 21. (Dimitris Damigos, Mining and Metallurgical Engineering, NTUA, Greece) (GREECE)
261	9	28	21	28	21	Casual usage of "likely" should be avoided, as it is a reserved likelihood term. (Mach, Katharine, IPCC WGII TSU)
262	9	28	32	28	32	Following the uncertainties guidance for authors, is it possible to present a summary term for evidence here instead of "little evidence"? (Mach, Katharine, IPCC WGII TSU)
263	9	28	42	28	43	The chapter incorrectly interprets the findings of Scott et al. 2006.\nWheres climate change poses a risk to only 4 of 14 ski areas during the period through 2029, during the later part of the 21st century (2070-2099), only 4 areas will not be at significant risk. The article also points out the significant costs associated with snowmaking and the uncertainties about water availability and concludes that "Climate change represents a notable threat to the winter recreation sector in the Northeast, and the potential economic ramifications for businesses and communities heavily invested in winter tourism and related real estate is sizeable"\nAdditional discussion of impacts of climate change on rural tourism (e.g. trout fishing) in New York state is found in:\n Wolfe, D., J. Comstock, H. Menninger, D. Weinstein, K. Sullivan, C. Kraft, B., Chabot, P. Curtis, R. Leichenko, and P. Vancura. 2011. Ecosystems. Annals of the New York Academy of Sciences. Special Issue: Responding to Climate Change in New York State 1244, 2-649 doi: 10.1111/j.1749-6632.2011.06331. (UNITED STATES OF AMERICA)
264	9	28	43	28	43	What are the six areas? (CANADA)
265	9	28	48	0	0	China is a typical case about herdsmen's vulerability under changing climate, see the refrence: Wang X. Y, Zhang Q, (2012) Climate variability, change of land use and vulnerability in pastoral society: a case from Inner Mongolia, Nomadic Peoples, Vol 16, No1. (zheng , yan, Chinese Academy of Social Sciences (CASS))
266	9	28	48	0	0	*Observation: Suggest adding that pastoralism is also intimately linked to mobility and the option to access resources across extensive areas, which constitutes a key component for community resilience (Nakashima et al. 2012). \n\n*Reference: Nakashima, D.J., K. Galloway McLean, H.D. Thulstrup, A. Ramos Castillo, and J.T. Rubis (2012). Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation. UNESCO and UNU, Paris and Darwin, 120pp. (Galloway McLean, Kirsty, United Nations University - Institute of Advanced Studies)
267	9	28	48	0	0	Authors should consider adding a small table identifying vulnerable communities and factors that influence their vulnerabilities. (Chatterjee, Monalisa, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
268	9	28	48	29	5	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). 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. (Ramos Castillo, Ameyali, United Nations University - Institute of Advanced Studies)
269	9	28	48	29	17	Suggestion to have a look at a paper that is currently under review for a special issue on "loss and damage from climate change". It looks at pastoralists in Northern Burkina Faso who are faced with increasingly adverse climatic conditions and whose coping capacity has been thwarted by constraints on their moblility (transhumance). Source: Traore, S., T. Owiyo & Y. Sokona (under review). Dirty drought causing loss and damage in Northern Burkina Faso. Int. J Global Warming. The manuscript for this forthcoming article has been submitted to TSU according to the review instructions. Document name: IJGW_LD_Burkina.pdf (van der Geest, Kees, United Nations University)
270	9	29	3	0	0	Cultural factors may limit the willingness of pastoralists to switch to settled agriculture. (UNITED STATES OF AMERICA)
271	9	29	22	29	22	It would be preferable to cite the specific relevant chapter for this statement, instead of the more generic reference used. (Mach, Katharine, IPCC WGII TSU)
272	9	29	26	29	26	A summary term for agreement could be used here, even parenthetically at the end of the sentence instead of at the start of the sentence. (Mach, Katharine, IPCC WGII TSU)
273	9	29	52	29	52	Casual usage of "likely" should be avoided, as it is a reserved likelihood term. (Mach, Katharine, IPCC WGII TSU)
274	9	30	14	30	14	For developing countries' case on adaptation policy making, in the second China'a National Assessment Report on Environmental and climate change (2012) . (zheng , yan, Chinese Academy of Social Sciences (CASS))
275	9	30	18	30	27	Calibrated uncertainty language used on line 18, 19, 21, and 27 should be italicized. (Mach, Katharine, IPCC WGII TSU)
276	9	30	23	30	26	An example will be very useful here. (Chatterjee, Monalisa, IPCC WGII TSU)
277	9	30	25	30	26	Please provide additional information on 'existing coping strategies…short-term resource availability'\n\n (NETHERLANDS)
278	9	30	26	30	30	The statement 'in developing countries, …the improvement of rural areas' seems contradictory to the statement on page 3, line39-41(Most studies…, and geographical locations)\n\n (NETHERLANDS)
279	9	30	33	0	0	Chapter 2 should be cross refered here. (Chatterjee, Monalisa, IPCC WGII TSU)
280	9	30	37	30	38	In relation to the sentence "In Australia, the Queensland Government has set policies in anticipation of sea level rise", on 8 October 2012, the Queensland Government's State Planning Policy 3/11: Coastal Protection was suspended and replaced by the Draft Coastal Protection State Planning Regulatory Provision. This new provision does not take the same anticipatory approach to planning for sea level rise as SPP 3/11. Suggest revising or deleting sentence to reflect this recent policy change (and revising references to Queensland Government policies in anticipation of sea level rise in Box 25-2). For more details see: (i) http://www.ehp.qld.gov.au/coastalplan/management-plan/ and (ii) http://www.eianz.org/sitebuilder/aboutus/knowledge/asset/files/326/121029ltrtominister powellredraftsprp.pdf (AUSTRALIA)
281	9	30	39	0	0	Some developing countries use the historical 10-year flood risk or less in their planning. (UNITED STATES OF AMERICA)
282	9	30	40	30	41	Suggest capitalizing "Northern Canada". (CANADA)
283	9	30	46	30	47	very high confidence as calibrated uncertainty language should be italicized. (Mach, Katharine, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
284	9	30	49	0	0	Most index-based crop insurance is small-scale donor-funded pilots. The private sector is unlikely to replicate this on a large scale without subsidies due to the increasing climate risk and high transaction costs. (UNITED STATES OF AMERICA)
285	9	31	4	31	4	It would be helpful to clarify further what is meant by "responsive." (Mach, Katharine, IPCC WGII TSU)
286	9	31	4	31	12	Does this apply specifically in rural context? (Chatterjee, Monalisa, IPCC WGII TSU)
287	9	31	4	31	18	For a Chinese case, please find the reference: Atkin, M L Clarke, S J Mooney, B Wu, H M West, (2013) Responses to climate change and farming policies by rural communities in northern China: A report on field observation and farmers' perception in dryland north Shaanxi and Ningxia, Land Use Policy, 32,125-133 (zheng , yan, Chinese Academy of Social Sciences (CASS))
288	9	31	14	0	0	Suggest including an Australian example here as well - several examples to choose from, e.g. Russell-Smith J, Monagle CM, Jacobsohn M, Beatty RL, Bilbao B, Millan A, Vessuri H and Sanchez-Rose I. (in press) Can savanna burning projects deliver measurable greenhouse emissions reductions, and sustainable livelihood opportunities for indigenous and local communities, in fireprone settings? In Journal of Climatic Change: Special Issue on Climate Change Mitigation and Adaptation with Local Communities and Indigenous Peoples (2013)| Green, D, J Billy, and A Tapim. "Indigenous Australians' knowledge of weather and climate." Climatic Change 100.2 (2010): 337-354. (Galloway McLean, Kirsty, United Nations University - Institute of Advanced Studies)
289	9	31	14	31	14	Following the uncertainties guidance for authors, a summary term for evidence could be used here. (Mach, Katharine, IPCC WGII TSU)
290	9	31	14	31	19	Suggest including relevant examples from Australia specifically Russell-Smith et al. (in press) Can savanna burning projects deliver measurable greenhouse emissions reductions, and sustainable livelihood opportunities for indigenous and local communities, in fire-prone settings? In Journal of Climatic Change Special Issue on Climate Change Mitigation and Adaptation with Local Communities and Indigenous Peoples. Also Green, Donna, Jack Billy, and Alo Tapim. "Indigenous Australians' knowledge of weather and climate." Climatic Change 100.2 (2010): 337-354. (Ramos Castillo, Ameyali, United Nations University - Institute of Advanced Studies)
291	9	31	18	0	0	Additionally, the increasing presence of peri-urban areas provides alternative income sources for farmers facing climate shocks, and helps serve as a buffer to climate extremes. For example, increased flooding in peri-urban central Mexico results in farmers depending more on non-farm incomes (Eakin, Lerner, Murtinho 2010). (UNITED STATES OF AMERICA)
292	9	31	23	31	23	Do these 'wide ranging and manifold examples' represent the average /common state of things or anomalies in rural areas. (Chatterjee, Monalisa, IPCC WGII TSU)
293	9	31	28	31	28	this section should be coordinated with chapter 7 and the other adaptation chapters, to ensure consistency. I don't see any obvious inconsistencies, but partly because the section mainly just list options but doesn't talk about effectiveness or limits or anything quantitative. the table though is a nice list of references (Lobell, David, Stanford University)
294	9	32	7	32	17	water - 'improved management is required' - agreed but what does it look like? Basin level? Pro-poor? Effective regulation against over abstraction. Focus on more efficient water use? Protection of base river flows and multiple functions etc. Role of forests in catchments & ecosystem based adaptation (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
295	9	32	21	0	0	Netherlands control measures had very high capital costs. (UNITED STATES OF AMERICA)
296	9	32	36	0	0	See also Voggasser et al (2013) 'Cultural impacts to tribes from climate change influences on forests' Climatic Change DOI 10.1007/s10584-013-0733-4 (Galloway McLean, Kirsty, United Nations University - Institute of Advanced Studies)

#	Ch	From Page	From Line	To Page	To Line	Comment
297	9	32	36	33	11	Manipulation of vegetation composition and stand structure has been suggested as a strategy for offsetting climatic change impacts on wildfires in Canada. See these two recent papers: Terrier, A., Girardin, M.P., Périé, C., Legendre, P., Bergeron, Y. 2013. Potential changes in forest composition could reduce impacts of climate change on boreal wildfires, Ecological Applications 23: 21-35. Girardin, M.P., Ali, A.A., Carcaillet, C., Blarquez, O., Hély, C., Terrier, A., Genries, G., Bergeron, Y. In press. Vegetation limits the impact of a warm climate on boreal wildfires. New Phytologist (http://www.cef-cfr.ca/uploads/Membres/girardin-new-phytol.pdf) . The following paper in Forest Ecology and Management also provide options for adapting to high fire risks under climate change: Girardin, M.P., Ali, A.A., Carcaillet, C., Gauthier, S., Hély, C., Le Goff, H., Terrier, A., Bergeron, Y. . 2013. Fire in managed forests of eastern Canada: Risks and options, Forest Ecology and Management, Special Issues on Mega Fires Vol 294: 238-249.\n\n\n (CANADA)
298	9	32	44	32	45	Suggest add case in China. China's 'increasing vs. decreasing balance' land-use policy for dealing with hollowed villages makes a major contribution to freeing land for afforestation, which also has income-generation potential for rural communities. Long, H., Y. Li, Y. Liu, M. Woods, and J. Zou, 2012: Accelerated restructuring in rural China fueled by 'increasing vs. decreasing balance' land-use policy for dealing with hollowed villages. Land Use Policy, 29(1), 11-22. (Liu, Luliu, National Cliamte Center, CMA)
299	9	32	48	32	49	Additional examples could be added to show how forests can contribute to people's adaptation. In a review on the role of forests and trees in reducing people's vulnerability to climate variability or change, Pramova et al. (2012) identified five cases of EBA among which four are relevant to this chapter on rural areas (the fifth is about urban trees): (1) ecosystem products used by local communities facing climatic threats (safety nets); (2) the regulation of water, soil, and microclimate by trees in agricultural fields for a resilient production; (3) water regulation and soil protection for reduced climate impacts in watersheds; (4) protection of coastal areas from climate-related threats [Pramova E., Locatelli B., Djoudi H., Somorin O., 2012. Forests and trees for social adaptation to climate variability and change. WIREs Climate Change 3:581–596. doi: 10.1002/wcc.195] (Locatelli, Bruno, CIRAD-CIFOR)
300	9	33	1	0	0	The experiences of Caprivi in Namibia are also relevant here, see e.g Russell-Smith J, Monagle CM, Jacobsohn M, Beatty RL, Bilbao B, Millan A, Vessuri H and Sanchez-Rose I. (in press) Can savanna burning projects deliver measurable greenhouse emissions reductions, and sustainable livelihood opportunities for indigenous and local communities, in fireprone settings? In Journal of Climatic Change: Special Issue on Climate Change Mitigation and Adaptation with Local Communities and Indigenous Peoples (2013) (Galloway McLean, Kirsty, United Nations University - Institute of Advanced Studies)
301	9	33	1	33	11	Not clear if this applies in a rural context. (Chatterjee, Monalisa, IPCC WGII TSU)
302	9	33	1	33	12	See Russell-Smith et al. (in press) Can savanna burning projects deliver measurable greenhouse emissions reductions, and sustainable livelihood opportunities for indigenous and local communities, in fire-prone settings? In Journal of Climatic Change Special Issue on Climate Change Mitigation and Adaptation with Local Communities and Indigenous Peoples (Ramos Castillo, Ameyali, United Nations University - Institute of Advanced Studies)

#	Ch	From Page	From Line	To Page	To Line	Comment
303	9	33	7	33	8	The text says that there is virtually no peer-reviewed literature on PES specifically for emissions reductions, while there are a lot of papers on this topic (carbon payments, CDM, REDD+, etc.). The authors may have wanted to say that there is virtually no peer-reviewed literature on PES specifically for adaptation (?). I think the chapter could mention some literature on PES and adaptation and discuss how PES can contribute to adaptation or be used as a policy instrument for adaptation. First PES can produce adaptation co-benefits if the services that are paid for contribute to reducing the vulnerability of the society to climate change (e.g. hydrological services) or when the protection of these services contribute to sustaining other services that are relevant to adaptation. Second PES can also have adaptation-relevant institutional spillovers, for example with institutional strengthening or increased coordination between economic sectors (Wertz-Kanounnikoff et al., 2012). Third PES can also influence (positively or negatively) the adaptive capacity of people receiving the payments (Locatelli et al., 2008). [Wertz-Kanounnikoff S., Locatelli B., Wunder S., Brockhaus M., 2011. Ecosystem-based adaptation to climate change: What scope for payments for environmental services? Climate and Development 3(2): 143-158. doi:10.1080/17565529.2011.582277] [Locatelli B., Rojas V., Salinas Z., 2008. Impacts of payments for environmental services on local development in northern Costa Rica: A fuzzy multi-criteria analysis. Forest Policy and Economics 10(5): 275-285. doi:10.1016/j.forpol.2007.11.007] (Locatelli, Bruno, CIRAD-CIFOR)
304	9	33	14	0	0	If these categories are similar to those in outcome section then a table could be put together to highlight factors that drive vulnerability and exposure and adaptation experience. (Chatterjee, Monalisa, IPCC WGII TSU)
305	9	33	16	33	31	For these statements, the key findings of chapter 6 and 30 could be cross-referenced. For example, the example provided on lines 16 and 17 is potentially overly narrow. (Mach, Katharine, IPCC WGII TSU)
306	9	33	35	0	0	It will be helpful to know if this is a classic or special example from rural areas. (Chatterjee, Monalisa, IPCC WGII TSU)
307	9	33	51	0	0	It will be helpful to know if this is a classic or special example from rural areas. (Chatterjee, Monalisa, IPCC WGII TSU)
308	9	34	18	0	0	Replace "beverage" with "coffee." (UNITED STATES OF AMERICA)
309	9	35	7	0	0	Section 9.4.4 Limits and Constraints to Rural Adaptation mentions that both hard (physical) and soft (financial, social, cultural) barriers must be considered but only talks about access to land, water, market and credit, technologies and particularly information. There is no mention of socio-cognitive or cultural barriers although there is a growing body of research that highlights their importance, including in rural and peri-urban areas. Indeed, sections 2.2.3.1 and 2.2.3.2 in Chapter 2 on Foundations of Decision-making presents a good overview of this literature on subjective and social dimensions of decision-making that should be better integrated into this section. (Granderson, Ainka, University of Melbourne)
310	9	35	9	35	9	very high confidence as calibrated uncertainty language should be italicized. (Mach, Katharine, IPCC WGII TSU)
311	9	35	9	35	11	These statements should also cross-reference the findings and relevant sections of chapter 16. (Mach, Katharine, IPCC WGII TSU)
312	9	35	10	35	11	The definition of hard limits and soft limits used here differs substantially from AR5 glossary and I think also from the way it is conceptualized in WG2, chapter 16. (van der Geest, Kees, United Nations University)
313	9	35	47	0	0	Chapter 22 should be cross refered here. (Chatterjee, Monalisa, IPCC WGII TSU)
314	9	35	49	35	49	For this statement, further clarity would be helpful in terms of the relevant geographic area and context of the statement. (Mach, Katharine, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
315	9	36	26	36	36	Relevant literature that has not been cited: Speranza, Chinwe Ifejika, et al. "Indigenous knowledge related to climate variability and change: insights from droughts in semi-arid areas of former Makueni District, Kenya." Climatic Change 100.2 (2010): 295-315. and Kijazi, A. L., et al. The use of indigenous knowledge in weather and climate prediction in Mahenge and Ismani wards, Tanzania. CCIAM, 2012.; Enock, C. Makwara. "Indigenous Knowledge Systems and Modern Weather Forecasting: Exploring the Linkages." Journal of Agriculture and Sustainability 2.2 (2013). (Ramos Castillo, Ameyali, United Nations University - Institute of Advanced Studies)
316	9	36	26	36	36	Another good citation for this section...\nJochec, Kristi G., James W. Mjelde, Andrew C. Lee, and J. Richard Conner. "Use of Seasonal Climate Forecasts in Rangeland-Based Livestock Operations in West Texas."Journal of Applied Meteorology 40, no. 9 (September 1, 2001): 1629‰ÛÒ1639. doi:10.1175/1520-0450(2001)040<1629:UOSCFI>2.0.CO;2. (UNITED STATES OF AMERICA)
317	9	36	43	0	0	Section 9.5.1. Calibrated uncertainty language should be used to characterize the chapter team's degree of certainty in findings presented here. Line-of-sight references should also be provided to clarify the origin of these findings within the chapter's assessment and to thereby provide traceability. More importantly, though, this section should be meaningfully differentiated from the executive summary, or otherwise it should be deleted. In its current form, it is not clear how much additional insight it provides. (Mach, Katharine, IPCC WGII TSU)
318	9	36	43	0	0	Section 9.5.1: The purpose of this section is unclear, and it confusingly overlaps with the executive summary of the chapter. My recommendation would be to delete the section, ensuring that these conclusions are captured in the executive summary. If retained, these statements must be assigned calibrated uncertainty language. (Mastrandrea, Michael, IPCC WGII TSU)
319	9	36	47	36	48	This statement should be coordinated with chapters 8 and 13. (Mach, Katharine, IPCC WGII TSU)
320	9	37	2	37	4	The sentence needs rephrasing. (Chatterjee, Monalisa, IPCC WGII TSU)
321	9	37	27	0	0	Also damage to infrastructure and occupational heat stress of farm, fishery, mining and forest workers. (UNITED STATES OF AMERICA)
322	9	37	45	37	46	The conclusion is unbalanced. Climate mitigation policies can also have positive impacts\n (NETHERLANDS)
323	9	37	45	37	47	It is not certain that biofuels or payments under REDD will negatively impact rural livelihoods. The conclusion on governance is fine, as negative outcomes are surely possible. However, positive outcomes are also possible in many important cases.\nArndt, Channing, Karl Pauw, and James Thurlow. "Biofuels and Economic Development: A Computable General Equilibrium Analysis for Tanzania." Energy Economics. 34:(2012): 1922–1930.\nArndt, C., R. Benfica, and James Thurlow. "Gender Implications of Bio-fuels Expansion in Mozambique: A CGE Model Analysis." World Development. 39(9) (2011): 1649-1662.\nArndt, C., S. Msangi, and James Thurlow. "Are biofuels good for African development? An analytical framework with evidence from Mozambique and Tanzania." Biofuels. 2(2) (2011): 221-234.\nArndt, C., R. Benfica, F. Tarp, J. Thurlow and R. Uaiene. "Biofuels, Poverty, and Growth: A Computable General Equilibrium Analysis of Mozambique." Environment and Development Economics. 15(2010): 81-105.\nReilly, J., J. Melillo, Y. Cai, D. Kicklighter, A. Gurgel, S. Paltsev, T. Cronin, A. Sokolov, C. A. Schlosser, 2012: Using land to mitigate climate change: Hitting the target, recognizing the tradeoffs, Environ. Sci. Technol., 46 (11), pp 5672–5679, doi: 10.1021/es2034729. \nAlso see work on REDD by Arild Angelsen and others. (Arndt, Channing, University of Copenhagen)

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324	9	37	45	37	47	The sentence "Climate policies, such as ... payments under REDD, will result in mixed and potentially detrimental impacts on land-use and on the livelihoods of poor and marginalized people." presents a very much different evaluation on REDD+ from TS of WG3 (page45); "The implementation of REDD mechanisms and its variations that can represent a very cost-effective option for mitigation with high social and other environmental co-benefits". The relevant text of the underlying report (paragraph 9.3.3.4) raises issues related to community participation etc. in the ongoing REDD+ pilot projects, however, the REDD+ framework itself should not be judged as "potentially detrimental" only by the results of those pilot projects that are being implemented and are still in the early stages and in general lack sufficient infrastructures, framework, governance and capacity. The reviews of projects in Chapter 9, 13 are not always the result of result-based projects with payments under REDD, and references don't always reflect the result of Decision1 of UNFCCC COP16 where safeguards for REDD+ were defined, which should be promoted and supported when undertaking REDD+ activities. (Further, contents in Chapter 13 show some positive results projects even in early stages.)There is not a sufficient basis for conclusion of medium confidence.Due to the above reasons, this sentence "Climate policies, such as ... payments under REDD, will result in mixed and potentially detrimental impacts" should be deleted.But if some reference to (it any content) regarding climate policy is inevitable here, the sentence should be revised as follows; : "As climate polices, such as encouraging cultivation of biofuels, may result in mixed impacts on land-use and on the livelihoods of poor and marginalized people, the appropriate measures should be considered. " for aforementioned reason, also the contents in chapter 13 do not mean the climate polices, such as encouraging cultivation of biofuels and payments under REDD, always result in mixed impacts on land-use and on the livelihoods of poor and marginalized people. The policies might have detrimental impacts unless the appropriate policies are introduced. \n (JAPAN)
325	9	38	19	38	41	One problem not addressed here is the interdisciplinary assessment of land-use as a whole in rural areas. Rural communities use the surrounding area for agriculture, livestock and forestry in various ways, with the diversity of management systems and practices and their respective interactions and interdependencies often not so well understood. To address rural areas, it is therefore necessary to apply an approach considering all of the land-uses combined. (Rock, Joachim, Johann Heinrich von Thuenen-Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries)
326	9	38	21	38	41	All these points are important - I would also add how to achieve governance for ecosystem-based adaptation, and landscape level integrated NR management. Also sustainable intensification of agriculture is much discussed but little practiced - partly due to political economic obstruction. How to achieve policy transformation on this issue? (Kentarchos, Anastasios, European Union DG Research, Directorate Environment Climate Change & Environmental Risks Unit)
327	9	38	21	38	41	Many research gaps are missed. For example, more research into health, which is needed. The chapter does not ask for more research on tourism, which is also needed. Another need is more info on GDP, as well as more info on rural Arctic (and Antarctic) issues. (UNITED STATES OF AMERICA)
328	9	38	46	0	0	FAQ 9-1 The question is broad and doesn't highlight any thing specific pertaining to rural areas and climate change. Another way of phrasing this question would be highlighting how vulnerability differs within rural areas and provide a complex vulnerability example. (Chatterjee, Monalisa, IPCC WGII TSU)
329	9	38	47	38	50	Replace no "clear and unique definitions" with "multiple and conflicting definitions". Specify the definitions of rural used in the numbers presented. (UNITED STATES OF AMERICA)
330	9	39	8	39	22	Addressing both impacts and adaptation in one question may not be most effective. (Chatterjee, Monalisa, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
331	9	51	36	51	37	The surnames are mistaken for given names. The reference should be: Wang, R.-Y., Z. Qiang, H.-Y. Li, Q.-G. Yang, H. Zhao, and Z.-G. Wang, 2007: Impact of climate warming on cotton growth in the Hexi Corridor area. Advances in Climate Change Research, 3, 57-59. (WANG, Xiao-Ling, National Climate Center, China Meteorological Administration)
332	9	66	0	0	0	Add " °C " after 2-3 in 2nd Row under the heading "Impacts on agriculture and agricultural trade" in Table 9-1 (Manzoor, Naeem, Global Change Impact Studies Centre (GCISC))
333	9	66	0	0	0	Table 9-1 It will be useful if another column is added to provide chapter and section numbers for these major findings from AR4. (Chatterjee, Monalisa, IPCC WGII TSU)
334	9	67	0	0	0	Table 9-2. Citations should be provided within the 1st box in the last row on page 67. (Mach, Katharine, IPCC WGII TSU)
335	9	67	0	68	0	Table 9-2 Perhaps the sources for these findings can be placed in a separate column. Some of the sources are missing. (Chatterjee, Monalisa, IPCC WGII TSU)
336	9	69	0	0	0	Please compare Table9-1 with chapter 7 just in case of conflicts and repetition. (WANG, Xiao-Ling, National Climate Center, China Meteorological Administration)
337	9	69	0	0	0	Table 9.4: I would add an indication of the strength of the evidence for each row in this table (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
338	9	69	0	0	0	Table 9-3 The caption should explain the meaning of incidence of extreme poverty, etc,. (Chatterjee, Monalisa, IPCC WGII TSU)
339	9	69	0	0	0	Table 9-3: It would be more effective to present the data provided as a figure to be consistent with Figure 9-2. (Estrada, Yuka, IPCC WGII TSU)
340	9	69	0	0	0	Table 9-4. The relevant climate/socio-economic scenario, globally, should be specified, for examples using scenarios beyond regional levels of temperature increase. Additionally, it would be preferable to use footnotes within the table to indicate which sources support which examples. (Mach, Katharine, IPCC WGII TSU)
341	9	70	0	0	0	Table 9.5: I would add an indication of the strength of the evidence for each row in this table (UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND)
342	9	70	0	0	0	Table 9-5: The layout of the table could be improved. Perhaps, “Finding and Estimate” could be the left most column and move the “Study: Author/s” column to the right to be consistent with other tables in the assessments. Also, since the information presented in the “Country/Region” column contains additional information such as Model names etc., the heading title should be renamed or create a new column with an appropriate title to accommodate those additional information. (Estrada, Yuka, IPCC WGII TSU)
343	9	70	0	0	0	Table 9-5. In the caption for the table, the agricultural focus of the table should be specified. Additionally, within the "findings and estimates" column, the relevant time frame and climate/socio-economic scenario should be specified for all examples, as can be supported by the underlying studies. For the 4th example for Asia, it would be helpful to indicate if this annual spending for coping is in addition to current spending (that is, what is the baseline?). (Mach, Katharine, IPCC WGII TSU)
344	9	71	0	0	0	Table 9-6 Comment: Supplement the case of China in the table row of "Changing amount or area of land under cultivation" - expansion of paddy fields in northeast China (Gao and Liu, 2011) (Gao, J. and Y. Liu, 2011: Climate warming and land use change in Heilongjiang Province, Northeast China. Applied Geography, 31(2), 476-482.) (WANG, Xiao-Ling, National Climate Center, China Meteorological Administration)
345	9	71	0	0	0	Table 9-6 Perhaps the sources for these findings can be placed in a separate column. (Chatterjee, Monalisa, IPCC WGII TSU)
346	9	71	0	72	0	Table 9-6 and Table 9-7: Perhaps, sources could be placed in a separate column to increase readability. TSU can provide help in refining these tables. (Estrada, Yuka, IPCC WGII TSU)

#	Ch	From Page	From Line	To Page	To Line	Comment
347	9	72	0	0	0	Table 9-7. Within the entry for demand-side mechanisms, policies, chapter 25 should be cross-referenced in terms of the Murray Darling Basin Authority. Additionally, the box reference should be to chapter 25. (Mach, Katharine, IPCC WGII TSU)
348	9	73	0	0	0	Figure 9-1 contains a world map with national borders. It is suggested to use a map without borders to avoid unnecessary disputes. (CHINA)
349	9	73	0	0	0	Figure 9-2 contains a world map with national borders. It is suggested to use a map without borders to avoid unnecessary disputes. (CHINA)
350	9	73	0	0	0	Figure 9.1: The legend should be labeled (ex. Percentage of emergency room visits for asthma), so the reader does not have to search through the caption to get a basic sense of what the figure is illustrating. It might also be helpful to make it clearer that these are predicted percentage increases or to include the baseline year these predicted values are compared against. (UNITED STATES OF AMERICA)
351	9	73	0	0	0	Figures 9-1 and 9-2 are difficult to read. TSU can provide help in polishing these figures. (Chatterjee, Monalisa, IPCC WGII TSU)
352	9	73	0	0	0	Figure 9-1 and Figure 9-2: The scales are practically impossible to read. The inclusion of the continent in the background is supposed to be illustrative, but it's distracting. Suggest removing or moving elsewhere so that the map will not interrupt the readability of the data. (Estrada, Yuka, IPCC WGII TSU)
353	9	73	0	0	0	Figure 9-2. The blue shading of countries should be clarified within the caption for the figure. Additionally, what is meant by "percentage of rural population" could be clarified--percent of the population that is rural? (Mach, Katharine, IPCC WGII TSU)