#	ID	Comment	Response
1	35248	The manuscript is well done (Christian Wiencke, Alfred Wegener Institute)	Thank you.
2	35642	Decision-making tools for selecting adaptation options are discussed in a number of chapters. In Chapter 14, pages 19-20 discuss factors/criteria to be considered in decision-making, including five strategies proposed by Hallegatte (2009). This also appears in page 10 of Chapter 16. Multi-criteria analysis is discussed more in page 22 of Chapter 17. There is a sub-section on decision-making tools in page 20 of Chapter 15. These may be conslidated to avoid overlaps. (Norio Saito, Graduate School of Science and Engineering, Ibaraki University)	Overlaps across chapters have been carefully considered in the revision process.
3	35695	This is a general comment concerning reviews of existing research results and it perhaps applies to other chapters of this report, as well. Central objective of this report is to evaluate the anticipated impacts of climate change on different ecosystems and economic sectors. This is typically achieved by pairwise comparisons of a projection with climate change and baseline projection without climate change. The divergence of these projections changes in time, and when reporting results from such comparisons carried out in different studies, the point in time and the benchmark situation should be each time made clear for a reader. In most occasions, these are clear (e.g. p. 26. l 21-23) but often it is unclear whether the results are presented for some future period or point of time or at present, or whether the period of time is the same for the two compared projections (e.g. p. 31, l. 22-23). Information about the assumed trend of baseline scenarios (without climate change) would also help a reader to put the results in proper scale and context. Also more discussion about how robust the existing results about the sign or magnitude of climate change effects are to uncertainties related to assumptions underlying modeling frameworks would be helpful. (Kari Hyytiäinen, MTT Agrifood Research Finland)	An emphasis has been placed on providing such information regarding timeframes for projections and key factors affecting results. The degree of certainty regarding the sign and magnitude of projected changes are communicated through the calibrated uncertainty language associated with relevant key findings in chapter executive summaries and the WGII summary products.
4	35758	In the glossary the term Natech may be included as "The technological emergencies created by unintentional hazardous material loss of containment due to natural disasters have been referred to as Natural-hazard triggered technological accidents or na-tech events (Showalter and Myers, 1994)" (Jitendra Desai, Reliance Indusries Limited)	The glossary has been edited to contain key terms used across multiple chapters of the report.
5	35798	The overall report lacks an integration of the relevant social science literature on climate change. The report correctly notes that there are deep gaps in this literature (Chapter 1, Page 12, lines 39-42). While this is true, the report fails to adequately integrate what relevant literature already exists in the disciplines of political science and sociology. This is evident in a number of areas throughout the report, which I have described in more focused comments below. Integration of this material would greatly enhance the accuracy and comprehensiveness of the report. (Robert Brulle, Drexel University)	Such material has been assessed where possible across the chapters of the report. Please see responses to focused comments as well.
6	35883	See email attachment "attribution of extreme events.rtf" (Constance Lever-Tracy, Flinders University of South Australia)	Thank you for this input.
7	36489	I have looked across four chapters (6,7,18 and 30) in order to get an overview of what is said about ocean productivity and fisheries (including the basis for evaluating confidence). This raises two issues (i) there is quite a bit of overlap (ii) they are not consistent with each other and the overall conclusions are not clear. Someone needs to resolve these two issues which are important in order to draft a Key Conclusion on likely changes in fisheries productivity and how confident we are in it. In relation to ocean primary production (NPP),Section 6.5 line 38 of ch 6 concludes that ”models are currently useful for developing qualitative scenarios of changes in NPP..... However quantitative predictions from these models have low confidence.” I would agree with this. Subsequent sections 6.5.1 to 6.5.4 go into greater detail, but also contain conclusions that seem at odds with the above caution (e.g. ch 6, p 80, line 31-32 ”there is high confidence that changes in primary productivity and temperature will lead to large scale changes in fisheries production...”. How is this consistent with the earlier caution? Does this mean that we are confident there will be changes, but we don't know what they will be? My subsequent comments will deal with further examples where predicitons of NPP and fisheries productivity seem to be made with more confidence than is consistent with the above caution. (Keith Brander, DTU)	Overlaps and inconsistencies across and within chapters have been carefully considered in the revision process.

#	ID	Comment	Response
8	36490	The length and detail of chapters 6,7,18 and 30 is very variable. Chapter 6 – Ocean Systems – is very long and begins with a 23 paragraph Executive Summary. Chapter 7 – Food Security and Food Production Systems – is about 60% shorter and has a 4 paragraph Executive Summary. If the report is to be read by policymakers and their advisers then the latter is much better. It is unreasonable to expect reviewers to spend a lot of time going through a mass of detail that will never make it into the final report. (Keith Brander, DTU)	Efforts have been made to shorten chapters as much as possible in the revision process, while still incorporating the relevant material.
9	36491	Having two Oceans chapters (6 and 30) is confusing and requires much better integration. It is ironic that these chapters arose because the marine content of AR4 was spread over several chapters, but we end up with the same problem. There is also marine content in chapters 7 and 18 and no doubt many others that I haven't read. I do not think this can be avoided, but I do think it needs to be intergrated and cross-referenced so that the material is consistent and does not duplicate unnecessarily. (Keith Brander, DTU)	There has been careful coordination across these chapters to enhace their complementarity and linkages.
10	36899	Overall comment: It would be helpful for the readers if the report and its main messages could be streamlined. Currently the report is extremely long, it uses a rather complicated language (long sentences), has a lot of repetitions and partly contains information that is not absolutely necessary. Some of the sections that could be shortened out even left out are in the detailed comments below. But as an overall concept it would be recommendable to rethink the approach of integrating knowledge stemming from earlier reports. It is not clear why there is so much text summarizing AR2, AR3 and AR4. If readers were interested in these reports they can download them from the net, there is no need to summarize them here. It would be of more interest, and helpful for the reader, if the chapter focused only on the substantial further developments from AR4, and only if needed from AR2 and AR3. Such a summary on key changes could be dealt with in bullet points or a table format. Overall, 1 page should be sufficient. Also other reports, such as SRREN and SREX, could be summarized in one paragraph each. Otherwise cross references to these reports in appropriate places is sufficient. As a general concept for the summary of the report it could be useful to have a straight forward approach: 1) The earth currently experiences climate warming. 2) There are evidences that this warming is partly based on anthropogenic GHG emissions. 3) The changing climate has measurable effects on climate zones (incl. flora and fauna) and the trend of these changes is very likely to continue. 4) First consequence: human beings have to adapt to changing climatic conditions (e.g. agriculture). Historical records show that human beings have always adapted to changing environmental conditions and they are very good examples of current climate adaptation practices. 5) Financial losses borne by extreme events are increasing. 6) There is no scientific evidence that climate change is responsible for this increase in costs. 7) Besides heat waves and potential changes in coastal floods induced by slr there are only few, very local trends that potentially indicate an impact of climate change on extreme events, but overall scientific evidence is still missing. 8) Worldwide vulnerabilities and risk are increasing. These vulnerability increases vary regionally and are based on one or several factors, such as growing population, increasing exposures, inappropriate land use, etc. These changing vulnerability patterns are the main driver for the rise in damages and costs, etc. 9) Climate change mitigation is high on the political agenda, but efforts have not been very successful so far (e.g. the CO2 concentration in the Arctic recently overtopped 400ppm). 10) Consequently, human beings have to adapt not only to the changing climatic conditions (e.g. agriculture, housing, land use patterns), but also amend vulnerability patterns to lessen the impact of current extreme events and potential future climate extremes (events). This report provides scientific evidence and concepts and examples for viable successful adaptation. In the entire report (nearly all chapters) there is a mismatch between observed and measured vs. potential climate change impacts. Due to lack of time it was possible to only review chapter 23 thoroughly, all other chapters were scanned only briefly. In the beginning of most chapters and subchapters a climate change impact on extreme events is postulated, often even formulated as being already evident. Such impacts are possible, but not yet proven. This topic should be dealt with more sensibly; it should be taken good care of distinguishing clearly between what is known and what is modeled. Modeled or assumed changes should be clearly marked as such. The facts are: it is observed and scientifically measured that we have temperature increases and a consequent shift of climate zones (including effects on flora and fauna). So far, scientifically manifested changes in extremes are only increase in heat (waves) and less cold spells. Sea level rise is observed and measured (in some regions of the earth, not everywhere). The effects of slr on higher coastal floods are possible but not necessarily occurring everywhere. All other overall impact of climate change on extreme events are not yet scientifically proven, and the few trend evidences on some extreme events stem from very small regions and have high uncertainties (see SREX report). As mentioned above, increasing impacts of extreme events (e.g. costs) are based on (inappropriate) land use patterns and other human vulnerabilities. (PHILIPP SCHMIDT-THOMÉ, GEOLOGICAL SURVEY OF FINLAND)	The clarity and cohesiveness of chapter text has been carefully considered in the revision process, with attention to clarity about observed vs. projected statements and linkages between climate change and extreme events.
11	37077	The Mediterranean basin is much addressed in the Europe chapter, in a multidimensional way, but very sparsely in the Africa chapter. Very much asymetric (Christophe Cudennec, Agrocampus Ouest)	Further material on the Mediterranean basin has been considered in the revision process.

#	ID	Comment	Response
12	37082	The following issue is not addressed: actual climate is at some places determined by orographic effects (rainfall orogenesis, shadow effect, evapotranspiration influenced by physiography…). This is particularly the case along the Northern African coast, due to winter wet humid masses coming from the Atlantic and confronting the aligned (peri-)Atlas mountain ridges. See the synoptic analysis within Tunisia: Slimani M., Cudennec C., Feki H., 2007. Structure du gradient pluviométrique de la transition Méditerranée–Sahara en Tunisie: déterminants géographiques et saisonnalité. Hydrological Sciences Journal, 52, 6, 1088-1102, doi: 10.1623/hysj.52.6.1088 - Baccour H., Slimani M., Cudennec C, 2012. Etude synoptique conjointe des structures spatiales de l'évapotranspiration et de variables climatiques corrélées en Tunisie. Hydrological Sciences Journal, 57, 4, 818-829, DOI: 10.1080/02626667.2012.672986. - Feki H., Slimani M., Cudennec C. Incorporationg elevation in rainfall interpolation in Tunisia using geostatistical methods. Hydrological Sciences Journal, in press. This should be addressed in Chapter 2 and potentially 22. This can also have impacts on bio and agricultural geography, thus potentially on people migrations within countries since ancestral adapatation to variability may not be robust any more over (rural) territories (para 7.3, 7.4, 9.3, 12.4). (Christophe Cudennec, Agrocampus Ouest)	This topic is addressed by Working Group I, and Working Group II Chapter 22 includes a summary of observed and projected changes in climate.
13	37106	My review comments will be focused on chapters 1, 3, 4, 5, 22 and 30. While Chapter 1 sets the scene pretty clearly and provide good guidance for the rest of the report, other following chapters - in particular chapters 3, chapter 5 and chapter 22 still contains either gaps (or lack) of data and information and other weaknesses. Chapter 1 as a whole is well structured and rather clear. (Salif Diop, UNEP - SAB - DEWA)	Emphasis has been placed on improving the clarity, cohesion, and coverage of all chapters during the revision process.
14	37307	The current breakdown of regions in Part B is frustrating. It would be extremely helpful if future reports could use more coherent groupings based on climate, geography, and history. I am a specialist on the Mediterranean, but nowhere is there room to analyze the common problems of Mediterranean countries, which are currently divided among the European, Asian, and African chapters. (Samuel White, Oberlin College)	The regional divisions will be considered for the next IPCC cycle, and such comments will be considered in this process.
15	37730	I think "volatility" needs a definition, since it implies different things in the report than "variation." --- Volatility: The largely unpredictable fluctuations in economic or climatic conditions over time. Volatility is often portrayed as the deviations from the average future trajectory and distinguishes the fact that the best-estimate (average) values of an ensemble do not represent any possible actual trajectory of values into the future. The range of volatility in a single prediction may exceed the estimated variance over the entire family of predictions. (George Backus, Sandia National Laboratories)	The glossary has focused on key terms used across multiple chapters of the report. This term was considered but was not included in the glossary.
16	38059	What is the definition of climate change in this report? In places it reads like it is the response to increasing GHG and in other places it seems like it includes natural variability. (Ronald Stouffer, Geophysical Fluid Dynamics Laboratory/NOAA)	Climate change is defined in the glossary, and matches the Working Group I definition.
17	38060	For the studies where climate change includes the signal (i.e. response to GHG and etc.) and variability, it needs to be clearer how the authors make their projections of future impacts. In some cases (regions and time periods), the temperature changes over the past few decades are as large as those projected for 2100. In the case of precipitation, it is the norm for the decadal changes due to variability alone to be as large as the projected future changes (to 2100). In each case cited in the report, how do the projected impacts account for this? (Ronald Stouffer, Geophysical Fluid Dynamics Laboratory/NOAA)	An emphasis has been placed on providing such information regarding key factors affecting projected changes.
18	38220	This report covers wide range of topics regarding 'Adaptation'. It is an useful document particularly for policy makers. (Hoy Yen Chan, National University of Malaysia)	Thank you.
19	38584	The cutoff date of the publications considered for the IPCC AR5 is not clear. (Susmita Dasgupta, The World Bank)	This information is provided on the IPCC website.
20	38869	Congratulations to WGII for this draft which is already of remarkable high quality. (Klaus Radunsky, Umweltbundesamt)	Thank you.

#	ID	Comment	Response
21	38870	Unfortunately the IPCC has approved a table of contents that gives too much weight to oceans and does not give adequate considetaion for mountainous regions. It is suggested to compensate this structural flaw by including more information on mountainous regions in current chapters, such as in those on specific regions. E.g. in the chapter on North America, an additional subchapter 26.4.2 bis could be introduced called "mountainous regions" - as it is expected that enough matzerial to inform such chapter would be available. Similar, for Europe, an additional subchapter 23.6.6 Mountainous regions is suggested. (Klaus Radunsky, Umweltbundesamt)	Material on mountainous regions has been considered across chapters of the Working Group II contribution where available.
22	38871	it is noted that gaps in knowledge have not been highlighted to a significant extent. It is suggested that future versions include more such information - e.g. building on a comparison of the differences in information dependening on the region assessed. It also seems that the increase in heavy precipitation events as identified in the SREX has not yet informed research on climate change impacts associated with erosion and sediment run-off etc. This might become quite significant given the damages in Europe alone of some 38 bio €/yr. (Klaus Radunsky, Umweltbundesamt)	Further material on gaps in knowledge has been provided.
23	38872	It is suggested to include in the glossary very specific terms that might not be understood by those persons that are not expert in the specific field, e.g. hypoxia, pelagic (Chapter 6) (Klaus Radunsky, Umweltbundesamt)	The glossary has focused on key terms used across multiple chapters of the report. Terms that are used in specific chapters are also defined in those chapters.
24	38875	It is suggested that all executive summaries of individual chapters include references after each paragraph linking to the underlying text, as already provided in the executive summary of chapter 9. (Klaus Radunsky, Umweltbundesamt)	All chapters will include such references as part of their traceable accounts of key findings.
25	38876	It is strongly encouraged to provide language in the executive summaries that charactizes the uncertainty of any relevant statement following the IPCC rules on Evaluation of Evidence and Treatment of Uncertainty, addressing the level of agreement and of evidence, as appropriate. (Klaus Radunsky, Umweltbundesamt)	All chapters will include such calibrated language with their key findings.
26	38878	It is suggested to clearly separate assessments related to impacts already occurring and impacts expected in the future under certain climate scenarios. It should be avoided to mix both assessments - this would be consistent with WGI that usually separates already observed climate changes from projected climate changes specified climate scenarios. (Klaus Radunsky, Umweltbundesamt)	An emphasis has been placed on clarity about observed vs. projected statements in revisions.
27	39135	I wish you to succeed in raising public awareness on this all important global issue. So I will be very frank in my critique: My impression is, you have settled into a routine and this is something the world simply cannot afford. The situation is anything but routine. This report is portrayed in the introduction like it contains nothing much in terms of new insights, only the same conclusions based on somewhat more solid evidence, and somewhat more detailed modeling. I would urge you to be more frank and direct in your language about the urgency of this matter, or risk being ignored by the public. Science is not politically neutral, and it never has been either. Think of the atom bomb, think of all the other weapons of mass murder being designed by hard-working scientists as we speak, think of the psychologists working in advertising, the Nazi doctors, the people in the labs mixing poisons for Monsanto... Every move you make as a human being is political. If you make this report too boring, it will have no effect, and I shall have to assume -- that is either exactly how you want it to be, or perhaps you are taking a defensive stance in the face pressure from a militant CC denial lobby. Make no mistake: This is a fight, and being cautious has limited utility in a fight. Are you still independent? (Thomas Reuter, University of Melbourne)	The report strives to follow the role of the IPCC defined in its principles: assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation.

#	ID	Comment	Response
28	39272	General comments to chaps. 5,6, and 30. Although I understand that this is the 2013 IPCC FOD, a general comment is it seems evident that every chap. (5, 6 and 30) did not follow the exact rules of homogeneity in presenting the information. Every chap. follows different approaches, often dictated by the different cultural extraction of groups of authors, although I believe that following the same scheme, as dictated in the reviewer guidelines, in presenting the knowledge would help. An important report like this should be a very homogeneous document, if the information contained therein is to reach all societal sections worldwide and major effort should be done towards that direction. Although I appreciated a lot both ocean (Chap. 6) and open-ocean (Chap. 30) I think that there is a lot of overlapping information between those two chaps. It is likely that re-thinking both chaps would greatly improve the impact of the report. (Gianluca SARA, University of Palermo)	Overlaps and inconsistencies across and within chapters have been carefully considered in the revision process.
29	39273	Chap. 6 is very direct and innovative as it is the first attempt to explain CC effects in terms of a mechanism based approach; the strength of chap. 30 is the ocean region analysis and above all the attribution and detection analysis. However, although I did not read the chap. 18 (Detection and Attribution of Observed Impacts) I suspect there is some overlapping between them, too. I am not able to suggest a specific line to avoid redundancy and overlapping throughout the report, as I did not read all chapters and my expertise is extremely limited to aquatic and eco-physiological issues. Nevertheless, my suggestion is to revise the structure of the whole report. This consideration derives from the reading of these three chaps. that, despite being highly important and well-written and planned, present redundant information. (Gianluca SARA, University of Palermo)	Overlaps and inconsistencies across and within chapters have been carefully considered in the revision process. Some overlap, for example between Chapter 18 and other chapters' assessment of observed impacts, is built into the formal outline of the report.
30	39343	In the future it might be useful to have a longer period between IPCC deadlines. The 6 days between the WG1 paper submission deadline and the WGII review deadline will probably mean less scientists involved in WG1 will review WGII than is ideal. I only had time to look at a tiny portion of the report, so can't fully judge it's quality. (Gareth S Jones, Met Office)	Thank you for this feedback.
31	39344	I am rather concerned that too many attribution statements made in the report are too definitive. A statement like `observed change is attributed to climate change' suggests that all of the observed change is due to climate change, when the referenced study may suggest a smaller contribution from climate change. There needs to be more careful assessment of the attributed contribution as well as the confidence in that contribution, only the latter is being occasionally described. (Gareth S Jones, Met Office)	An emphasis has been placed on clarity about observed statements and attribution in revisions.
32	40781	General commnets. Interesitng FOD. Some good parts and some weaker sections. One needs to make clear when one is talking about coping to CV versus adapting to CC. (Coleen Vogel, Independent Consultant)	The distinction between coping and adapting has been carefully considered in the definitions of key terms and in the chapter revision process.
33	40782	The sections on water which is key in rural areas seems to be spread out too much. I would suggest trying to find ways to make these pts stronger by threading them together better. (Coleen Vogel, Independent Consultant)	Issues related to water are assessed in many chapters of the report, but Chapter 3 provides a global sectoral assessment, and the regional chapters provide assessment for their respective regions.
34	40783	There are a good deal of negative impacts and comments can one try and find win-wins or co-benefits cases between adaptation and mitigation? (Coleen Vogel, Independent Consultant)	This topic is addressed by several chapters of the report, including Chapter 20.
35	40784	Many inteesting statements are made e.g. several cases but then there is very little substantiation of what is being articulated. Need to bolster references. (Coleen Vogel, Independent Consultant)	Careful attention has been given to the support for conclusions across the report.
36	40812	No indication is given about the global cost of climate change impacts. Should the famous "Stern report" be considered as being purely speculative ? At least, a discussion of the difficulties of such a costing exercice would be helpful to policy makers. (Michel Petit, CGIET rue de Bercy)	Relevant material is discussed in Chapters 10 and 19.

#	ID	Comment	Response
37	40874	I'd like to encourage to consider OBESITY issues throughout the report. Overweight/obesity was usually seen as a peccadillo but it is a serious climate change issue in its own right. Vulnerability of overweight/obese people to climate-change related deterioration of health outcomes are one side of the medal. The energy consumption it takes to produce the biomass in obese people is another climate-change related issue. There is recent evidence that global weight gain is more damaging than rising population numbers; also in respect to energy consumption and therefore to climate change. Increasing population fatness could have the same implications for world food energy demands as an extra half a billion people on the earth. (Walpole SC et al. The weight of nations: an estimation of adult human biomass. BMC Public Health 2012, 12; 439, doi: 10.1186/1471-2458-12-439). (Birgit Kuna-Dibbert, German Aerospace Center, Project Management Agency)	Please see Chapter 11 for relevant material.
38	40879	If CCIAV is going to be introduced as the conceptual foundational term om Chapters 1 and 2,, it should be consistent throughout other adaptation chapters (especially noticable in chapters 14, 15, 16, but a suggest making such overarching conceptual conventions consistent throughout document.) It is not found in the document after Chapter 2. (Lynn Wilson, SeaTrust Institute)	Such overarching themes have been carefully considered in the revision process across chapters. The Summary for Policymakers and Technical Summary also provide introduction to conceptual foundations.
39	41140	Overall this FOD could benefit from some tightening to decrease its length and improve readability. I think the natural resource sector section (Ch 3-6) would benefit from more consistency in what's covered/addressed between the chapters, and perhaps the use of similar section titles would foster easier comparability across chapters. I also think there is value in moving the adaptation chapters (Ch 14-17) closer to the front of the report, and would seem appropriately placed after Ch 2, which emphasizes the adaptation process quite extensively. I also think that having the adaptation chapters closer to the front will provide the reader with the necessary context to further understand the sectoral chapter content, especially since many of these chapters have sections dedicated to adaptation. (Susan Evans, WWF-Canada)	An emphasis has been placed on improving the clarity and compactness of the report during the revision process. The chapter order is fixed by the formal outline of the report.

#	ID	Comment	Response
40	41141	A note on TERMINOLOGY – The field of CCIAV is encumbered with terminology and definitions have been inconsistently used resulting in varied interpretations and use throughout the literature. The AR5 has done a good job in most cases of explicitly defining, for the purpose of its use in this report, many of these terms, however there is some sloppy use of terms (such as coping vs adapting) and the relationship between these terms needs to be clarified in many cases (e.g. what is the relationship between adaptation, vulnerability, adaptive capacity and resilience?) to ensure their consistent use throughout the report. While some of this can be resolved through a detailed glossary, I think there is utility in providing a schematic that illustrates how these terms relate, and would be helpful as a reference for the reader, so as not to get bogged down by the nuanced differences between terms and to understand how these terms work together in support of a desired outcome along the adaptation process. The following exemplifies what I think needs to be presented here to provide clarity: are they synonyms, synergistic, complementary, mutually exclusive, stepping stones along an iterative process, how are they similar, how are they different. Perhaps a schematic depicting a continuum spanning from coping to resilience with stops along the way and injection points (for such things as vulnerability assessments illustrating inputs and outputs) or a modification of a "triple loop learning" diagram (see Figure 1 from reference below). Huntjens P. L Lebel, C Pahl-Wostl, j. Camkin, R. Schulze, N Kranz. 2012. Institutional design propositions for the governance of adaptation to climate change in the water sector. Global Environmental Change. 22(1):67-81. More specifically, I'd like to point out the inconsistent and sometimes inaccurate use of the word 'coping' throughout this report. Coping is often used synonymously with adapting or adaptive capacity (e.g. Chapter 2 Section 14.2.1.2, pg 8) and they do not mean the same thing. The IPCC SREX report makes a clear distinction between coping and adaptation (section 1.4.1.1 pg 51) and this should also be reflected throughout this report. Coping is about reacting to an event and responding with a shorter-term view, where as adaptation has a longer-term view and is a process of continually preparing for and adjusting to change, reduce vulnerability, and increase a system's capacity to recover from future anticipated or surprise events. The limitation of only striving to cope is that over the long-term well-being is reduced and future options for adaptation may be undermined due to the lack of strategic proactive planning. Chapter 19 does make this distinction, but it needs to be carried through to the other chapters of the report. Another specific example of where I think use of the term 'coping' should be reconsidered is in Ch 15 pg 6 line 5 "…preparing societies to cope and address the negative impacts of climate change." I would argue that "It's not just about coping [with climate change], but prospering through it" (NRTEE 2012), and we should be striving to cope, and adapt with the ultimate goal of becoming resilient. National Round Table on the Environment and the Economy (NRTEE), 2012. Facing the Elements: Building Business Resilience in a Changing Climate (Advisory Report). Climate Prosperity Series, No. 5. Ottawa, Canada. 136p.; http://nrtee-trnee.ca/climate/climate-prosperity (Susan Evans, WWF-Canada)	The distinction between coping and adapting has been carefully considered in the definitions of key terms in the glossary and in the chapter revision process.
41	41142	SOCIAL-ECOLOGICAL SYSTEMS – I don't feel the inclusion of this term or perspective has been consistently applied throughout the report (Ch 19 seems to be more explicit and consistent throughout compared to the Adaptation chapters 14-17) and given the increasing emphasis on applying resilience thinking and risk based management approaches to climate change adaptation, I would think it essential to be presented adequately here, and emphasized why it is a preferable (or beneficial) framing/perspective to take (i.e. climate change impacts are cross-cutting and responses will need to be consider the inter-dependencies of natural and human systems. In addition, focusing on building adaptive capacity and resilience within a coupled social-ecological system, will not only make the connection between people and nature explicit, but will also foster a sense of stewardship and responsibility for the state of the system we are all a part of). The IPCC SREX report recognizes this and simply states that "risk management occurs in social-ecological systems…" (pg. 53), acknowledging the significance of taking a SES perspective. I have made comments throughout the chapters I reviewed to illuminate where I feel the inclusion of this perspective falls short. For consistency and cohesion across chapters I don't think synonyms or lengthy descriptions of this coupled system should be used (e.g. "complex human-natural world coupled system" used in Ch 15) and so have noted this in my comments on the chapters I reviewed. (Susan Evans, WWF-Canada)	Interactions among human and natural systems are incorporated across the report, but an attempt has not been made to choose one term to encompass all the dimensions of these issues.

#	ID	Comment	Response
42	41143	RESILIENCE AND RESILIENCE ASSESSMENTS – I don't feel this report consistently integrates the concept of resilience throughout, and given its significance in understanding what's required to enable social-ecological systems to remain functional, respond, and recover from anticipated or surprise events, I think this report would benefit from a review of how this concept is threaded through the chapters of this report. For example, although Chapter 2 does provide a decent integration of the concept, section 14.2.1.2 pg.8 on adaptive capacity does not mention the relationship between resilience and adaptive capacity, which I think necessary. This also speaks to my earlier point about the need for a clear and concise schematic or table depicting relationships between terms. Although Chapter 20 expands on resilience, it does so in a very narrowed way and with a predefined endstate in mind, sustainable development. Thus should not be seen as a general overview of the concept or its application to adaptation planning where there is a non-development objective (e.g. to maintain a place of cultural value, or maintain an ecosystem for its biodiversity value). In addition, there is an emerging perspective in how to apply resilience thinking to managing our social-ecological landscape, that focuses on identifying those features of a system that provide strength and durability (sources of resilience) that if protected or maintained will help to reduce vulnerability. The premise behind this approach is – ecosystems that benefit from local sources of strength and durability are likely better than others at enduring environmental shocks and surprises, and thus would adapt better under conditions of rapid change. I believe this approach warrants review in this assessment report (see Christie and Sommerkorn, 2012 citation below). I have tried to identify where this could be incorporated through other comments, but thought it necessary to highlight as a general comment so coordinating authors could determine where best this would fit in the report. Christie P, Sommerkorn M. 2012. RACER: Rapid Assessment of Circum-arctic Ecosystem Resilience, 2nd Ed. Ottawa, Canada: WWF Global Arctic Programme. 72 p. (Susan Evans, WWF-Canada)	Resilience is defined in the glossary for the report, and the concept is incorporated into many chapters in the report.
43	41429	Having read chapter 14, 15, 16 it seems to me that many aspects have been mentioned several times, often in different contexts. Although this might be advantageous as it stresses many existing links between topics, I suggest to also feature one section on each of those overarching issues. Those topics are e.g. ecosystem-based adaptation, climate change and business, institutional/policy frameworks/structures, etc.). Further, non of those three chapter explicitly addresses the new emerging issue of loss and damage. Although not fully related to climate change adaptation, I suggest to include a section on this as some aspects of it clearly relate to adaptation (i.e. the limits of adaptation). Also, although the title of those three chapters clearly differentiates the content of those, I have the impression that, as already pointed out earlier, many aspects have been mentioned a couple of times. The structure does not quite seem clear to me and I would suggest to revise it by coordinating with the coordinating authors of the three chapters. For instance, why is the section on "measuring adaptation" not to find in chapter 15 but in chapter 14? Also, the section on maladaptation (chapter 14) would, from my understanding, better suit into chapter 15 as it clearly belongs to adaptation implementation. Moreover, chapter 14 has a paragraph on the NAPAs while chapter 15 gives some details of the NAPs. This structure needs to be revised to prevent a limited understanding of readers who only read one of those chapters. (Sven Harmeling, Germanwatch)	Overlaps across and within chapters as well as the complementarity of chapter coverage have been carefully considered in the revision process.
44	41574	Somewhere there needs to be a description of : a) the projected GLOBAL climate changes that are assumed (and againstwhich the global impacts chapters are assessed; and b) the projected SOCIO-ECONOMIC-TECHNOLOGY-GOVERNANCE futures (BOTH global and regional) that underpin the Assessment. I suggest the regional s-e scenarios be described in Ch21, and the global s-e scenarios + global CC scenarios be described in Ch1 (Martin Parry, Imperial College)	An emphasis has been placed on providing such information regarding climate trajectories and key non-climate factors affecting projected changes.
45	41577	My compliments to all authors on the current draft, and what clearly promises to be a highly valuable Assessment. The current state of the chapters appears well advanced. (Martin Parry, Imperial College)	Thank you.

#	ID	Comment	Response
46	41578	I have a general question about the volume(s) as a whole: I am not clear a) where the reader will find a summary of the global climate change projections which the global chapters use to assess potential future impacts. If is is not currently planned for inclusion, then I would recommend you consider adding this to Chapter 1; and b) where the reader can find a discussion of the NON-climate projected characterisations of the the future which BOTH the global and regional chapters use in their assessment to evaluate vulnerability and potential impacts. Again, if this is not currently planned, then I would recommend it be added to Ch1. (Martin Parry, Imperial College)	Chapter 1 includes overviews of this material.
47	42158	Overall excellent job. Congratulations to all lead authors and contributors. The Chapters are well organised, clear and comprehensive. The facts and other information are presented in a logical, rational manner. (Premchand Goolaup, Mauritius Meteorological Services)	Thank you.
48	42212	I do not see a discussion of the impact of global warming on issues such as species diversity and possible extinction anywhere, apart from a few remarks on the present situation in Ch. 18. I should at least be be mentioned in the introduction, e.g. with reference to Fig. 5.17 in US National Research Council: Climate Stabilization Targets: Emissions, Concentrations, and Impacts over Decades to Millennia. National Academies Press, 2010. This publication covers several of the same topics as the IPPC 5th assessment, and sometimes better. (Bent Sorensen, Roskilde University)	Please see Chapter 4 for relevant material.
49	42272	I suggest to include a new section in 4.2.4 devoted to Winderosion, just like section 3.2.6 which deals with Watererosion. Winderosion (or desertification) has to do with bare soils, dryness of soils, and wind speed. Rainfall impacts the dryness of soils and above a threshold wind speed winderosion is possible. Climate change can influence changes in rainfall and wind speed and therefore winderosion should be discussed in relation to climate change. See also section 9.4.3 (page 792); section 16.4.1.2 (page 1194) and section 24.4.4.3 (page 1869 line 40-47). More information on winderosion can be found on http://www.rala.is/rade/ (Klaas Van der Hoek, RIVM)	This topic is included in Chapter 4, but not as a separate section. Please refer to the Working Group I contribution for assessment of changes in rainfall and wind patterns.
50	42296	Maybe we add carbon tax and carbon trading such political ways, to help us better adapt to climate change. (Luhui Yan, Tanzuji)	Target of the comment is unclear, but mitigation of climate change is covered by Working Group III.
51	42335	This is an exceptional piece of work which contains (as far as I can tell) all of the relevant literature on the various topics. I congratulate the authors on an excellent document (Paula Blackett, Agresearch ltd)	Thank you.
52	42336	Comments on any portions of the Executive Summaries also pertain to the material in the underlying section. (Indur Goklany, Independent)	Understood.
53	42337	Because of the fact that model results are critical to many of the conclusions in this report, there should be a discussion of how much credence can be given to them, including an end-to-end estimates of uncertainties and errors/confidence intervals associated with such results. These estimates should consider the cumulative uncertainties considering uncertainties related to emission scenarios, climate change models, the various biophysical models, and autonomous adaptations used in impacts analyses. Until such analyses have been undertaken and their results evaluated, it is premature to assign levels of certainty to any results based on such modeling. In other words, assign levels of certainty to specific conclusions/findings only after the uncertainty analyses have been accomplished. I look forward to evaluating these analyses in the next draft. In the meantime, I recommend scrubbing most, if not all, characterizations of the level of certainty/confidence assigned to the various conclusions/findings. (Indur Goklany, Independent)	Please refer to the guidance note on treatment of uncertainties for explanation of the approach for assigning calibrated language to findings. A short description is also included in Chapter 1. Uncertainties relevant to conclusions are discussed across chapters of the report.
54	42454	All chapters should note that, in general, projections of future impacts tend to systematically overestimate negative impacts and underestimate positive impacts of climate change, and this should be factored into any interpretation of results from these studies. See Goklany (2007b, 2009d, 2012a). See also comments on (a) Chapter 4, page 2, line 29, and (b) Chapter7, page 2, lines 23-26, which are applicable to the other chapters as well. (Indur Goklany, Independent)	The report assesses both positive and negative effects of climate change, based on the available literature.

#	ID	Comment	Response
55	42455	Because each chapter relies heavily on model results, each chapter should include a discussion of how much credence can be given to them, including an end-to-end estimate of uncertainties and errors/confidence intervals associated with such results. These estimates should consider the cumulative uncertainties considering uncertainties related to emission scenarios, climate change models, and biophysical (niche) models. It should also discuss how methodological assumptions might affect results for the impacts of climate change, and whether these result in systematic biases or not (see Goklany 2012a). These should also discuss whether any efforts have been made to validate the various models, and what the results of such efforts have shown. Until such analyses have been undertaken and their results evaluated, it is premature to assign levels of certainty to any results based on such modeling. In other words, assign levels of certainty to specific conclusions only after the uncertainty analyses have been accomplished. In theory, it would make sense too have a single chapter address these issues for all resources/sectors affected by climate change, but the details of the discussion would vary, depending on the precise resource/sector under discussion. (Indur Goklany, Independent)	Please refer to the guidance note on treatment of uncertainties for explanation of the approach for assigning calibrated language to findings. A short description is also included in Chapter 1. Uncertainties relevant to conclusions are discussed across chapters of the report.
56	42456	I have provided references alluded to in my comments for all chapters in a single WORD file, "References_Goklany", which I'll upload, per instructions. (Indur Goklany, Independent)	Thank you.
57	42457	Editors should check that discussion on matters related to policies and measures does not use policy-prescriptive language. See, e.g., comment on chapter 3, page 28, line 33. (Indur Goklany, Independent)	The policy neutrality of text has been carefully considered in the revision process.
58	42458	A number of chapters refer to a 2 degree C limit. It should be noted explicitly that there is no scientific and economic basis for this, lest constant repetition inadvertently convinces the casual reader that this has support in the scientific and economic literature. See, also, Tol (2007). (Indur Goklany, Independent)	Relevant text has been considered to ensure accurate discussion of the nature of a 2C limit.
59	42583	Overall for WG2: It seems to me that a key aspect that is being overlooked, it appears, across all IPCC WG2 documentation, is the need to consider a 'whole of climate approach', especially when referring to decision systems that are affected by climate variability and/or change. Indeed, the only reference I can locate to this concept appears briefly in Chapter 2, p22. However, in terms of Foundations for Decision Making and with the need to create very good and close working relationships with commercial industry as well as government, I would suggest that real-world decision making actually occurs across a wide range of temporal (and spatial) scales and this issue really needs to be addressed by IPCC. I am never quite sure what the intended audience is for IPCC Reports but if it is to include commercial industry – as well as government – then a more holistic approach is seriously needed. (Roger Stone, University of Southern Queensland)	Characterizing the interactions of climate change and climate variability, as well as interactions among physical, biological, and social systems is a key theme across the report.
60	42610	The document as a whole could greatly benefit from coordinated linkages between the chapters addressing CCIAV on a 1) sectoral basis (Chap 10: energy, industry, agriculture, etc), 2) regional basis (Chap 21-30: Asia, Africa, etc.), and 3) with respect to post-AR4 literature citing measurements and modeling at various scales ranging down to the local level (most of the remaining chapters). In particular, a clear series of new global maps illustrating key conclusions with regard to CCIAV that could be linked to regional and local maps as appropriate, as well as to sectoral figures and tables, could and should be developed to the extent possible from current literature. This would be extremely useful to the research community (to understand current status & trends) and to policymakers (to inform future policy decisions). (Jean Bogner, University of Illinois at Chicago (UIC))	An emphasis has been placed on cross-references and other linkages among chapters in the revision process.
61	42611	Please clarify the specific role and selection process for the "Volunteer Chapter Scientist" listed for multiple chapters. (Jean Bogner, University of Illinois at Chicago (UIC))	Volunteer chapter scientists support the process of chapter development
62	42878	As adaptation experiences are relatively recent and mostly field-based, the report suffers a bit from its reliance on peer reviewed articles. Unfortunately, most of the relevant recent experience and innovations on adaptation is only captured in informal reports or gray literature. There is not much that the WGII authors can do to correct this bias, but it gives some chapters a somewhat academic feel. (Sofia Bettencourt, World Bank)	Non-journal literature is also assessed by chapters across the report.

#	ID	Comment	Response
63	43073	The logic of the report is difficult to capture. The report tries to overcome the complexity of the report with Chapter 1, which shows the "Point of Departure", but his is not sufficient to understand the outline of the whole report. The report consists of a mix of very generell aspects, like Decision making (Ch. 2) and others which are very applied science like Ch. 7. To the reader it is not what is the reasoning behind the structure of the chapters. (Andreas Meyer-Aurich, Leibniz-Institute for Agricultural Engineering Potsdam-Bornim)	Please refer to the approved outline of the Working Group II contribution. The drafts of the summary for policymakers and technical summary also provide an indication of approaches to integrating the key findings across the report.
64	43111	With apologies, I could not review in detail for personal reasons. After a quick look, an issue concerning completeness of intellectual coverage stands out to me. The report does not cover how natural, internal, multi-decadal variation can be taken into account when making decisions about adaptation. This issue is quite different than adaptation decisions based on scientific advice on human induced climate change and solar or volcanic induced climate change, because internal, multi-decadal variation is just beginning to be documented and understood and predictability is not skilful. The observation record is short making progress slow. Never-the-less, readers of the WGII report should be aware of the possible impact of internal variation on decision making. There are some decisions on policy and adaptation that will not be affected by internal variation. For example the need to reduce global emissions of CO2 is urgent and immediate. The fact that internal variation may speed up or slow down global warming for periods of 20 to 40 years does not affect the need for immediate action because the internal variation will average out over a few decades. However some adaptation decisions will depend critically on multi-decadal, internal variation. For example, if a farming enterprise needs to change crop, or change the location of the farm, in response to global warming, the impact of internal variation could affect when the decision has to be made by a decade or more. The new risks that internal variation brings up will have to be taken into account. I recommend that the Report give at least a few pages of coverage to what we know about internal variation and its regional climate impacts. This might best appear in Chapter 30 Open Oceans. Details could be given for regions where impacts are known or suspected, e.g. Chapters 22 to 27. (Gary MEYERS, CSIRO)	Interactions between climate change and climate variability are addressed in chapters across the report.
65	43172	As each chapter deals with different sectors having particular terminology therefore, it is suggested that a separate list of used acronyms may be added in the beginning of chapters. (GHAZANFAR ALI, GLOBAL CHANGE IMPACT STUDIES CENTRE (GCISC))	The report will include a list of acronyms.
66	43173	Some of the sentenses are too long to understand their cruks and might be broken into shorter sentenses for better understanding. (GHAZANFAR ALI, GLOBAL CHANGE IMPACT STUDIES CENTRE (GCISC))	An emphasis has been placed on improving the clarity and compactness of the report during the revision process.
67	43227	Some of the sentences are heavily loaded with very important information. Such sentences may be split into multiple sentences to avoid any confusion on reader's part. (Muhammad Zia ur Rahman Hashmi, Global Change Impact Studies Centre)	An emphasis has been placed on improving the clarity and compactness of the report during the revision process.
68	43238	The need for a general strategy of balancing sectoral with regional chapters becomes evident from the marine chapters where the challenge of such differentiation may be especially high. This includes the need to define more clearly the different roles of the two chapter types. According to my understanding the division into regions should follow human and political (including economical) interest and associated geographical criteria more than criteria building on ecosystem aspects which would usually be a focus of the sectoral chapters. An ideal regional treatment would lead to synthetic text across working group material for each relevant region, with reference to relevant chapters in WGI, WGII sectoral chapters, and to those of WGIII. This strategy would help avoid simple overlap and support the development of new insight. Last not least, page numbers might decrease in due course. (Alternative strategies of differentiation between sectoral and regional chapters might be more useful and should be discussed.) (Hans-O. Pörtner, Alfred-Wegener-Institute for Polar and Marine Research)	Overlaps and inconsistencies across and within chapters have been carefully considered in the revision process. The regional chapters are intended to integrate relevant material from the Working Group I and Working Group III contributions, as specified in the formal outline for the report.

#	ID	Comment	Response
69	43490	It would be desirable to add the following works of bibliography in the chapters listed:Cap 2. Olcina, J., 2007: Research into climate risk in Spain: challenges for the future, in Spanish Climatology. Past, present and future [Cuadrat, J.M. and Martín Vide, J. (coords.)], Prensas Universitarias de Zaragoza, 421-449. Cap 8. Olcina, J., 2010: Spatial planning processes, territorial planning law and flood risk in the region of Valencia (Spain), in Risks Challenging. Publics, scientists and governments. [Menoni, S. ed.] Taylor and Francis Group, 191-204. Olcina, J., Hernández, M., Rico, A.M., Martínez, E., 2010: Increased risk of flooding on the coast of Alicante (Region of Valencia, Spain), Natural Hazards, 10, nº 11, 2229-2234. Cap 11. Olcina, J. Martín, D., 2012: Variations of oxigen in the air and its impact on human health, Boletín de la Asociación de Geógrafos Españoles, 56, Madrid, 431-437. Cap 23. Olcina, J., 2008: Droughts and their economic and territorial effects on the Iberian peninsula, Environmental Economics [Burny, Ph.; Petrescu, D. C. (editors)], Les Presses Agronomiques de Gembloux, ASBL, 173-192. Sauri, D. Serra, A. Olcina, J., Vera, J.F., 2011: Climate change and Europe's regions: Key findings. Case study Spanish Mediterranean coast. ESPON Climate. Climate Change and Territorial Effects on Regions and Local Economies / Stefan Greiving (Coordinator) / ESPON (European Observation Network for Territorial Development and Cohesion), 30-39. Rico, A.M., Olcina, J. and Sauri,D. 2009: Tourist land use patterns and water demand: Evidence from the Western Mediterranean, Land Use Policy, 26, nº 2, 493-501. (Olcina Jorge, University of Alicante)	Thank you for this input.
70	44133	Chapters 1, 2 and Appendix 1. The new definitions of vulnerability and associated terms (such as sensitivity, adaptive capacity, exposure, resilience, hazard etc.) as given in the glossary are rather irritating. Many climate change related studies have taken up the vulnerability concepts based on the TAR or AR4 and made progress in the operationalization of the approach for this scientific community. As shift in the definitions in this report would have considerable effect on the scientific community, especially regarding the development of climate change vulnerability or impact assessments. A thorough discussion on the reasons behind the change in terminology in a prominent position in e.g. chapter 1 (beyond chapter 1.3.1 on the SREX report) would help the community to understand the underlying reasons. Given the terms currently defined in the glossary, I have the following suggestions and comments: 1. The glossary partly adopts the terms of the scientific community on natural hazards (e.g. vulnerability, exposure, hazards) but on the other hands keeps definitions of the climate change community of the AR4 (e.g. sensitivity), which are now party redundant (e.g. similarity between sensitivity and vulnerability). The currently used terms definitions derived from different context are therefore mixed. A good overview over links between vulnerability definitions in different scientific communities is given in Costa & Kropp 2012 (Costa, L., Kropp J.P., Linking components of vulnerability in theoretic frameworks and case studies. Sustainability Sciences, (14 February 2012), pp. 1-9, doi:10.1007/s11625-012-0158-4). One should question what is the added value or the intention of the IPCC in introducing components such as Hazard or Disaster Risk and make such a sharp cut with the vulnerability definition that has been adopted over a decade by the climate change community. Despite the criticism and multiple interpretations of the vulnerability concept in the AR4 one thing has become clear: The structuring of vulnerability as a function of exposure, sensitivity and adaptive capacity has given the climate change community a weak but widely used framework that underpinned a large number of assessments. In this sense I would not favor such strong departure from the definition of vulnerability as in AR4. Some comparability problems and further confusion might arise. For example, the term exposure in AR5 is as the inventory of people or artefacts at risk, while previously it has been more equated to changes in frequency and magnitude of climate variables or their indirect effect. Finally, by framing vulnerability simply as "the	Please refer to the glossary for the definitions of these terms, which are also discussed in many chapters of the report. Chapter 19 provides graphical introduction to the relationships between these terms and risk, which is the overarching concept in this context.

#	ID	Comment	Response
70.2	44133	propensity or predisposition to be adversely affected" the concept loses some of its integrative dimension. In AR4 vulnerability was a function of something, now vulnerability is a "predisposition". The meaning of vulnerability has become even more blurred. 2. The difference between adaptive capacity and resilience does not become clear. It has been suggested that adaptive capacity is one of the dimensions of resilience (see Turner et al 2003: framework for vulnerability analysis in sustainability science, PNAS July 8, 2003 vol. 100 no. 14 8074-8079). In fact resilience can be seen as rather encompassing term incorporating notions of adaptive capacity, coping capacity, and deficiencies on preparedness. The term resilience as currently adopted in the AR5 misses a very important point of the climate change debate, this is, how to maintain a system functioning under a continuous change. As currently defined, resilience is the capacity to keep a systems functioning after a hazardous event. Hazard is essentially a discrete event (no arguing about that) and it is long know that climate change is a progressive and continuous change on top of which hazard events occur. 3. While climate impacts and sensitivity could entail adverse and beneficial consequences of climate change, the terms exposure, risk, vulnerability and hazards refer solely to adverse consequences of climate change. Given the potential of various positive effects of climate change (e.g. viniculture), where are these represented in the current concept of terms? I suggest a thorough discussion on weather and to what extend the definitions of the natural hazards community can be adopted for climatic changes. 4. The use of the terms Hazard and Disaster Risk is redundant since the risk of a disaster implies first the occurrence of an hazard! The intensity of a hazard and the properties of the system it impacts determine if a disaster occurs. Defining disaster risk as the "likelihood of severe alterations in the functioning of society" causes great confusion since the only likelihood possible to determine (at some extent) is the likelihood of the hazard. In addition, resilience is defined as the capacity to anticipate, accommodate and recover from a HAZARD and not a disaster, making the use of "disaster risk" rather unnecessary. (Anne Holsten, Potsdam Institute for Climate Impact Research)	
71	44235	Overall, the structure and the content of the chapters do not reflect the Panel approved outline of the WGII report. This should be harmonized. Moreover, in many cases overlaps can already be identified from the Panel approved outline of the WGII report. These overlaps appear not to be coordinated in the current version. Besides the reviewer comments on overlaps, chapter authors should actively attempt to coordinate such overlaps from the approved outline. (Dominik Reusser, Potsdam Institute for Climate Impact Research)	Overlaps and inconsistencies across and within chapters have been carefully considered in the revision process. Consistency with the approved outline has also been carefully considered.
72	44433	I have only have a few small comments. These are mainly connected to the part of the report that I was to take part in, but as I have not received the text since some early efforts I will comment briefly here (Claire Armstrong, University of Tromso)	Please see responses to specific comments.
73	44439	These WGI TSU and Co-Chair review comments have been prepared by Thomas Stocker, Gian-Kasper Plattner and Simon Allen. (Thomas Stocker, IPCC WGI TSU)	Thank you.
74	44440	The WGI TSU and Co-Chair review comments cover issues identified in the WGII FOD related to the WGI contribution to the AR5 with regard to consistency, missing references, and sometimes reassessments of WGI-material in the WGII contribution. We did flag a number of issues in most (but not all) of the Chapters. We do not attempt to propose alternative text etc. but simply flag the issues. In few cases, mostly FAQs, we go as far as saying that we are concerned by seeing WGI-type material assessed in WGII, but that's generally complemented by an encouragement to either ensure feedback from the relevant WGI authors, avoid duplication of assessments from WGI in the WGII report, and/or ensure consistency with the WGI AR5 contribution. In many cases we feel that providing the physical science basis context by referring to the WGI AR5 rather than doing a separate assessment would already help substantially in avoiding duplication of assessments and ensuring consistency between WGII and WGI. (Thomas Stocker, IPCC WGI TSU)	An emphasis has been placed on ensuring consistency with the Working Group I contribution during the revision process.
75	44441	When referencing 'AR4' it is often not clear if this is referring to what was summarized about AR4 in the WGII regional chapters, or the WGI AR4 regional chapter (Christensen et al. 2007). (Thomas Stocker, IPCC WGI TSU)	Cross references have been clarified as much as possible.

#	ID	Comment	Response
76	44442	Many references to WGI (to AR4 and/or AR5 FOD) and/or to the IPCC SREX currently are too unspecific, i.e., lack the information of which Chapter of the report is been referred to. Often the entire report, or the SPM-only, is referred to as a whole. We suggest to be as specific as possible and to refer to the Chapters in the underlying report whenever possible. (Thomas Stocker, IPCC WGI TSU)	Cross references have been clarified as much as possible.
77	44443	FAQs: We suggest that the FAQs within the WGII contribution to AR5 carefully stay within the remit of WGII, i.e., when the Physical Science Basis is mentioned, this should merely serve as a starting point but then the FAQ should focus on exposure, vulnerability, impacts etc.. It is crucially important that the WGI-relevant starting points provided in these WGII FAQs are consistent with the assessment in WGI. (Thomas Stocker, IPCC WGI TSU)	An emphasis has been placed on ensuring consistency with the Working Group I contribution during the revision process.
78	44444	FAQs: We note that in contrast to the WGI approach to FAQs, in the WGII FOD FAQs are mostly short and do thus not allow for detailed answers. This approach, in our view, bears the risk to produce non precise language or gloss over caveats and subtleties. In order to help the reader, we strongly suggest that cross-references for "futher reading" or "detailed information" are provided as an integral part of the short FAQs, and that information on associated uncertainties be added. (Thomas Stocker, IPCC WGI TSU)	The purpose of the FAQs is to provide succinct answers to key questions. They are intended to complement the detailed information provided in chapter text, and will be placed in the chapter to signal this complementarity.
79	44639	Large amount of scientific literature has been studied and the review of it is very valuable. I think that hydrologists should limit themselves to the attribution of changed hydrological processes to higher temperature and other meteorological variables which are being used in hydrological models. For the attribution to the anthropogenic climate change it is necessary to have studied atmospheric physics and have some practice with programming (parametrisation of) atmospheric models. I would like to take it in such a way that at every mention of anthropogenic climate change in WGII, it should be remembered that it is conditioned on the results and judgement of the WGI. The change in temperature and weather variability is obvious and therefore it is necessary to make much more measurements and much more modelling within uncertainty framework to identify various possibilities the climate change might proceed. Preparation work for adaptation in many variants should follow from this. The predictions should go at most to 2050 – it is about the time for which it makes sense to predict. If shorter series are modelled the ensembles could be larger (inputs with perturbed parameters and with different realisations (with the same parameter set). As far as the use of climate change scenarios, and the GCMs and RCMs, is concerned, more scientific rigour is needed in validation of GCM and RCM results. The problems of the current generation models with the validation of precipitation on the observed period is a crucial thing for hydrologists. It follows from this that the uncertainty in predictions is very large. It is to be hoped that more computing power will be made available to the meteorologists (for computing much larger ensembles). Also improvement in measurement techniques could help to produce a better parametrisation of precipitation. To the scale of evaluating the “strength” of detection and attribution: I think it is quite a reasonable system. Even more detailed way would be to use NUSAP system or some ideas from it (www.nusap.net). It takes explicitly into account both the fact that a paper has been refereed in a journal of a certain quality (impact factor) and the range of opinions among the specialists on the problem. So the opposing views are not left out completely. There is also another publication bias than that mentioned in the report. The authors of the studies, in which they had identified changes, would like to attribute them to CO2, because they think it will be publishable in a better journal. And the editors are not very rigorous because such papers will be cited. On a number of places reservoirs, especially for waterpower are mentioned. It is necessary to remember that reservoirs (and systems of reservoirs) are always multipurpose and that mostly the purposes are in contradiction. There are methods how to get optimal use even with taking into account things which are not easily evaluated in money (as ecosystems). (Sarka D. Blazkova, T.G. Masaryk Water Research Institute)	These points have been considered in the revision process.

#	ID	Comment	Response
80	44640	The (large) hydropowers and pumping hydropowers are especially useful for the electricity network because they can start operation on the timescale of seconds while other energy sources (with the exception of gas power plants) are starting in minutes. Also hydropowers have much more flexibility (they can operate from about 25% of full capacity up to 100% and have no problem changing up and down quickly). This is particularly useful after blackout because they can start building the network flexibly changing their capacity as is needed while other sources and off-takes are being connected. During normal situations they work like regulators in times of peaks. Reservoirs have been built in the course of human history from a very low degree of development (and in old developed civilisations) up to now whenever it was necessary. In the conditions of climate change we will need more reservoirs (because of higher temperatures and larger variability). As far as the impact of precipitation is concerned I would suggest taking the way from the paper of Prudhomme et al. (2010), i.e. the scenario-neutral approach. There are studies mentioned saying that hydropowers harm the ecosystems. O.K. as far as this is a review but it was also taken into the Executive Summary (chapter 3, page 3 line 22-23). I would distinguish two cases: Less developed countries: in the competition between various water uses there will be always the water, food and energy for people more important than any ecosystems other than their agriculture. In developed countries there are methods how to satisfy to a certain degree most of the needs. To be concrete I would mention the American (Fish and Wildlife Service, now USGS) methodology IFIM (Instream Flow Incremental Methodology) and PHABSIM (Physical Habitat Simulation) which is also used in Europe or a similar approaches developed elsewhere (e.g. France). Here it is important that one should decide in the beginning what he/she is going to protect, because the natural conditions, as they are in any moment, are not optimal for most species and all their stages of development. Large floods can quite change the ecosystem and it is quite natural. So, the IFIM methodology helps to find consensus about the management schemes of reservoirs which take into account also the needs of some preferred or unique species. For small hydropowers on streams one can use PHABSIM as well. The operator then should not let the water level drop under the minimum flow. It is often disregarded and therefore it is necessary to have a good system of enforcement. When there is an important drought the agreed takes-off from reservoirs cannot be kept and all uses are gradually limited (except the cooling of nuclear power plants). Such situations will probably happen in the climate change, so all water users and people protecting ecosystems should get used to this idea. We will need more reservoirs because the temperatures are going up and there is overwhelming uncertainty about precipitation. Please explain all abbreviations below each table or figure I hope the inscriptions in figures will be readable in printed version. (Sarka D. Blazkova, T.G. Masaryk Water Research Institute)	These issues are discussed in Chapter 3 and across the regional chapters of the report. Abbreviations will be defined in each chapter, and the report will include a list of acronyms.
81	44659	" Good presentation, easy reading, different chapters and theirs contains are well organized and written in comprehensible way. " (Dieudonné Pascal YAKA, Burkina Meteorological Authority (B.M.A.) ; University of Ouagadougou (U.O.))	Thank you.
82	45159	Introduction: It is a difficult task for a reviewer, facing such a mass of data and information, to perform a full, detailed, objective and unbiased assessment, and at the same time search for virtues, inconsistencies and/or errors, if there were any of them at all… So I will instead offer a series of general comments and insight, based upon my own expertise, observations and readings of these chapters. I agree, even if only to a certain degree, that a continued trend in the excessive emissions of greenhouse-effect gases, vapours and particles (GHE-GVP) might drive to a potential destructive scenario, resulting from anthropogenic climate change and global warming (ACC-GW), and to a general deterioration and complication of the living conditions in our planet. This is what in general has been stressed by IPCC-4 (http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_sp.pdf; http://www.ipcc.ch/; http://unfccc.int/portal_espanol/items/3093.php), and from what I see this position continues, for the most part, to be justified and adopted by WGII AR5. However, I believe that there are other variables that are granted only marginal attention, or that have been placed aside or even forgotten, perhaps at purpose, but requiring increased attention and priority. I will underline them as my contribution to this reviewing process. (Sergio Mora Castro, Independent Consultant)	Thank you for this input.

#	ID	Comment	Response
83	45160	Is ACC-GW already forcing an increase in the intensity and frequency of extreme hydrometeorological hazards?: Assumptions and preliminary calculations appearing at WGII AR5 seem to "reconfirm" and indicate that an increase in the emission of GHE-GVP will induce an inevitable and irreversible trend in the frequency, intensity and incidence of hydrometeorological hazards. Other opinions differ from this position, while indicating that this is not so evident, or not so true and not so easy to verify (Wilby et al. 2010). Gray (2011) and Klotzbach and Gray (2012) categorically and even emphatically conclude that it is not possible, under the present circumstances, to accurately assess this influence, since precise climatic forecasts cannot be made beyond the short term (1 to 10 days maximum), and otherwise considering the mechanics and thermodynamic balances of the atmosphere, particularly on its infrared radiation capture and release processes. Also, they explain, with their own data and arguments, that no significant change in the frequency and intensity of tropical cyclones is to be foreseen, even along with the expected increase of CO2 emissions. They recommend caution when using speculations to orient public policy and choose national priorities. (Sergio Mora Castro, Independent Consultant)	These topics are assessed in the Working Group I contribution.
84	45161	Increasing risk, does it derive from increasing climate-related hazards or from increasing vulnerability?: Up to date and according to the most reliable sources, the real impact of ACC-GW over the extent, intensity and frequency, if any, of climate-related disasters has been no more than marginal, compared to the respective effects of natural climate variability and to the constant increase in societal vulnerability -exposure, fragility, socioeconomic values at stake, deterioration of the environment and quality of life, poverty, etc.- (Mora 2006; Mora 2009; Mora 2010a, Mora et al 2010b, and 2010c; Mora et al. 2012a, and 2012b). (Sergio Mora Castro, Independent Consultant)	This topic is assessed in Chapter 10 and in much more detail in the IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX), released in 2012.
85	45162	A matter of proportions and relativity: ACC-GW vs. other hazards: According to the World Health Organization (WHO; Table 1), the average yearly death toll derived from ACC-GW, combining all its variables, reaches up to 150,000 people. This figure is more than worrisome but it must be validated, particularly when compared to the 750,000 fatalities, 152 million people affected, and the countless economic losses occurring every year and caused by other natural hazards, not related to ACC-GW (e.g. earthquakes, volcanoes, climate variability, torrential debris flows, El Niño-La Niña-ENSO, land degradation, etc.) and by public health hazards (Table 1 - SEE ATTACHED FILE <MoraCastro_Supplement.doc>). Therefore, it seems adequate and wise to rethink and redefine focuses and priorities. (Sergio Mora Castro, Independent Consultant)	The focus of this report is on the effects of climate change, and how climate change interacts with the effects of other stressors.
86	45163	Table 1. Estimated number of fatalities caused by several types of hazards, after the World Health Organization (WHO) et al. Hazard Estimated fatalities/year Source Climate change 150,000 WHO, WMO, UNEP; 2003. Climate change and human Health: Risk and responses, Summary. Geneva: World Health Organization; http://apps.who.int/bookorders/anglais/detart1.jsp?sesslan=1&codlan=1&codcol=15&codcch=551 Malnutrition 4 million; affects ½ of the world population World Health Organization; 2002. The World health report. Reduc-ing risk, promoting healthy life; http://www.who.int/whr/2002/en/index.html Insufficiency of micronutrients (Zn, Fe, Vit. A) 2 million Lack of good quality potable water 2 million Malaria 1.1 million World Health Organization & UNICEF; 2005. World malaria re-port; http://www.rollbackmalaria.org/wmr2005/html/toc.htm AIDS 3 million World Health Organization; 2008. Report on the AIDS epidemics: http://apps.who.int/bookorders/anglais/detart1.jsp?sesslan=1&codlan=1&codcol=88&codcch=54# Air pollution (indoors and out-doors) 2.5 million World Health Organization; 2004. The World health report. Chang-ing history; http://www.who.int/whr/2004/en/ (Sergio Mora Castro, Independent Consultant)	The focus of this report is on the effects of climate change, and how climate change interacts with the effects of other stressors.

#	ID	Comment	Response
87	45164	Policy, agenda setting and priorities: Country policy and preventive processes shall be defined according to local conditions and specificities, taking into account how each society faces extremes and if at the end, it seems socioeconomically and environmentally feasible, sound, and admissible for developing countries to reduce development expectations to adapt to conditions imposed by already richer, emerging and industrialized countries, with no clear intention of limiting their economic stability, particularly during these times of economic crisis, and therefore with agendas and priorities of their own. Each country must have the opportunity to choose its own priorities, according to the realities faced. But even if the initiatives proposed by the Hyogo Frame of Action (http://www.unisdr.org/eng/hfa/docs/HFA-brochure-Spanish.pdf) and the United Nations Strategy for Climate Change Adaptation (http://www.eird.org/publicaciones/Climate-Change-DRR.pdf) make sense and are reasonable, the excessive attention given to ACC-GW has created an unfortunate perverse effect of diverting focus and resources from other equally or sometimes even more pressing and complex issues. (Sergio Mora Castro, Independent Consultant)	Thank you for this perspective. The focus of this report is on climate change.
88	45165	On the other hand, climate change doesn't necessarily bring only negative impacts and effects. Since positive ones are seldom discussed at IPCC and at the WGII AR5 document, I recommend balancing positions by considering opinions and options, such as those formulated at: • http://www.environmentalgraffiti.com/offbeat-news/the-top-5-positive-effects-of-global-warming/728?image=2 • http://unfccc.int/essential_background/background_publications_htmlpdf/climate_change_information_kit/items/288.php • http://en.wikipedia.org/wiki/Economic_impacts_of_climate_change • http://www.epa.gov/climatechange/effects/agriculture.html; http://news.nationalgeographic.com/news/2007/10/071017-greenland-warming.html • http://www.google.com./search?q=positive+impacts+of+climate+change&hl=en&source=hp&gbv=2&gs_sm=3&gs_upl=3838l5039l0l5351l7l7l0l0)l0l0l109l577l6.1l7l0&oq=positive+impacts+of+climate+change&aq=f&aqi=g1g-v1g-j1g-b1&aql= • http://www.amazon.com/Cool-Skeptical-Environmentalists-Global-Warming/dp/0307266923 • http://en.wikipedia.org/wiki/Bj%C3%B8rn_Lomborg (Sergio Mora Castro, Independent Consultant)	The report assesses both positive and negative effects of climate change, based on the available literature.
89	45166	In any case, there is evidently no panacea and no single solution at reach, particularly after the very disappointing outcomes of the meetings in Copenhagen-2009 (http://unfccc.int/meetings/copenhagen_dec_2009/meeting/6295.php), Cancún-2010 (http://unfccc.int/meetings/cancun_nov_2010/items/6005.php), and Durban-2011 (http://unfccc.int/meetings/durban_nov_2011/meeting/6245.php). There remain many inconclusive issues and outcomes from these reunions, with a bitter and somber panorama depicting an impasse, with plenty of placebos, and partial and politically correct answers, but mostly leading to nowhere. (Sergio Mora Castro, Independent Consultant)	As this is a general comment, no specific response is given.

#	ID	Comment	Response
90	45167	References cited (pdf versions are available upon request): Gray, W. 2010. Gross errors in the IPCC-AR4 report regarding past and future changes in global tropical cyclone activity (a Noble Disgrace). Science and Public Policy Institute. 122pp; http://hurricane.atmos.colostate.edu/Includes/Documents/Publications/gray2011.pdf ; http://hurricane.atmos.colostate.edu/ Klotzbach, P; Gray, W; 2012. Extended range forecast of Atlantic seasonal hurricane activity and landfall strike probability for 2012. Department of Atmospheric Science, Colorado State University; Fort Collins, CO 80523. 43pp; http://hurricane.atmos.colostate.edu/Forecasts/2012/june2012/jun2012.pdf Mora, S; Keipi, K; 2006. Disaster Risk Management in development projects: models and checklists. Bull. Engineering Geology and the Environment (2006) 65:155-165. DOI 10-1007/s10064-005-0022-1; http://www.springerlink.com/content/y56j7l5m73603441/ Mora, S. 2009. Disasters are not natural: Risk management, a tool for development. Geological Society, London, Engineering Geology Special Publications 2009; v.22; p.101-112; doi10.1144/EGSP22.7; http://egsp.lyellcollection.org/cgi/reprint/22/1/101.pdf?ijkey=t0zzngz8DHPBz9N&keytype=finite Mora, S. 2010a. Disasters should not be the protagonists of Risk Management. Keynote speech at the 11th International Con-gress, International Association of Engineering Geologist and the Environment. Auckland, New Zealand. 2010. 18pp; http://www.scribd.com/doc/40784124/Manejo-del-riesgo-Sergio-Mora-geologo Mora S, et al. 2010b. Multiple hazards assessment in Haiti. Government of Haiti, World Bank, Inter-American Development Bank, United Nations system.65 pp. http://gfdrr.org/docs/Haiti_Multi-Hazard_RiskAssessment_Report_EN.pdf; http://community.understandrisk.org/group/haitijanuary12thandbeyond/forum/topics/multihazards-assessments; http://www.iris.edu/hq/haiti_workshop/docs/Report-MULTIHAZARDS-HA-English-SergioMora-Final-Red.pdf Wilby, R; Mora, S; Abdallah, A; Ortiz, A. 2010c. Confronting climate variability and change in Djibouti through risk manage-ment. Geologically Active – Williams et al. (eds). © 2010 Taylor & Francis Group, London, ISBN 978-0-415-60034-7. 11th International Congress, International Association of Engineering Geology and the Environment; Auckland, New Zealand. pp. 511-522. Mora, S. et al. 2012a. Multi-natural hazards assessment in Haiti. 2012. Phase 2: NATHAT 2. GoHA, the World Bank, GFDRR. Three volumes (i. Regional analysis, ii. Natural hazards at the metropolitan area and selected neighborhoods, Port-au-Prince, iii. Methodological guide for multi-hazards assessments) (in final preparation; pdf draft version available upon request, for restricted use) Mora et al. 2012b. Slope instability hazard in Haiti: Emergency assessment for a safe reconstruction. Banf, Alberta, Canada. Keynote speach. Landslides and Engineered Slopes: Protecting Society through Improved Understanding – Eberhardt et al. (eds) © 2012 Taylor & Francis Group, London, ISBN 978-0-415-62123-6. Munich Re. 2012. Natural catastrophes 2011. Analyses, assessments, positions. Earthquake, flood, nuclear accident. http://www.munichre.com/publications/302-07225_en.pdf (Sergio Mora Castro, Independent Consultant)	Thank you for this input.
91	45177	I found very challenging to address the large content and scope of studies of the impact of climate change. I am very impressed by this wide-ranging review, given the large increase in the number of studies since AR4. PART A: GLOBAL AND SECTORAL ASPECTS is organized by thematic chapters describing the concepts and general principles of climate change impacts. PART B: REGIONAL ASPECTS details the mechanisms by which climate affects ecosystem and human and provide a synthesis per regions. There are some repetitions across chapters, which are difficult to avoid. To illustrate principles (part A), examples are needed, which are then described in part B. And to understand examples in part B, general principles are often reminded. For example, phenology, i.e. timing of life cycle events, is defined several times. Similarly, the general concept of change in distribution (poleward and upward shifts in plant and animal ranges) is repeated across many chapters. So, I suggest that Part A refers to specific examples, such as special highlighted case studies, in Part B. And Part B refers to general principles, which may be highlighted by dedicated boxes, in Part A. (Stephanie Jenouvrier, Woods Hole Oceanographic Institution)	Overlaps and cross referencing across chapters have been carefully considered in the revision process.

#	ID	Comment	Response
92	45178	I suggest that in Part B, every chapter follows the exact same structure. I noticed that there was an effort to adopt a common structure but it was not rigorously respected. First, this will tremendously help the reader to find the information he/she is looking for. Second, this will help to define the gaps in our understanding of climate change impacts. Indeed, some sections may appear empty by using the same exact structure, because there is some unbalance arising from the fact that some impacts, responses, taxa, or regions are better studied than other. (Stephanie Jenouvrier, Woods Hole Oceanographic Institution)	All regional chapters follow the approved outline for the Working Group II report. Regional chapters are afforded flexibility to cover these topics in a manner that reflects differences across regional contexts.
93	45179	Bellow I provide guidelines for what could be the common structure of the regional chapters, which is inspired from the structure adopted in chapter 30 following the general recommendation from the outline: - Introduction - Major conclusions from previous assessments - Present and future physical and chemical climate change. Here a specific list of common change across region to be strictly respected, would be very helpful (e.g. 1. temperature, 2. …, with a final "another/ specific" category particular to the region: e.g. sea ice in polar regions or ocean stratification for open ocean). I like the fact that observations and predictions are treated successively. - Global Detection and Attribution of Regional Changes in Ecosystems to Anthropogenic Climate Change. This section gives a broad picture of the impacts of climate change. Here it may be useful to define specific sub- categories. Structuring a section by ecological organizational levels (i.e. physiological changes; phenology; population; distribution; community and species interactions…) already appears several times and is a good idea. A sub-section on other stressors could be also included. - Regional Impacts, Risks, and Vulnerabilities: Present and Future. This section provides a detailed picture of the change with sub-regional information. It should follow the same categories as in the previous section. I like the fact that observations and predictions are treated successively. In some other chapters, understanding and projecting impacts are treated separately, which introduce some repetitions. Indeed, when reviewing projection of impacts, one often needs to provide an explanation, which is based on our understanding of said impact. Thus, I suggest addressing these two questions successively like in Chap 30. - Sectoral Impacts, Adaptation, and Mitigation Responses - Concluding Remarks: Emerging Issues, Data Gaps, and Research Needs - Case Studies. This is an excellent idea to provide case studies, especially because it would be more easy to relate these cases to examples to be cited in Part A. Some case studies appear in other chapters. Having them all at the end will be helpful to guide the reader. However, it will be good to have case studies including ecological and human impact, adaption and mitigation, when possible. I also really like the effort done to review the current knowledge by summarizing the findings in Tables and Figures (see Chapter 30 and tables of Chapter 25). I think it would be very useful to have such tables/ figures for all regional chapters. (Stephanie Jenouvrier, Woods Hole Oceanographic Institution)	Thank you for these suggestions. All regional chapters follow the approved outline for the Working Group II report. Regional chapters are afforded flexibility to cover these topics in a manner that reflects differences across regional contexts.

#	ID	Comment	Response
94	45846	Admittedly I have not read every chapter of the first order draft yet, but I feel that it is worth mentioning that some literature states that there should be more integration of the three conventions initiated at Rio 1992 (climate change plus biodiversity and desertification) to promote a more holistic and coordinated approach. Synthesised extract from Hiller, B.T. (July 2012) PhD dissertation (unpublished): Concurrently, greater recognition and integration of environmental degradation at the international policy level would help stimulate action. The UNCCD is the chief global agreement to address environmental degradation and the linked human development challenges, however greater focus on synergies and interlinkages with the two other conventions initiated at the UNCED in 1992 – the Convention on Climate Change and the Convention on Biological Diversity – is needed (Dudley et al., 2010; Gislattodir & Stocking, 2005). Encouragingly, the CBD 2011-2020 strategic plan included agreement to restore ecosystems of particular importance to water security, human health, and sustainable livelihoods, comprising at least 15% of all degraded ecosystems (SER, 2011). However, the rhetoric must be translated into effective projects that synergise all global environmental change components (Gislattodir & Stocking, 2005). Specific references: SER, 2011, Call to Action, Message from the 4th World Conference on Ecological Restoration to the Convention on Biological Diversity, Merida, Yucatan, Mexico August 21-25, 2011. Dudley, N., Stolton, S., Belokurov, A., Krueger, L., Lopoukhine, N., MacKinnon,K., Sandwith, T.& Sekhran, N., (Eds.) 2010, Natural Solutions, Protected Areas Helping People Cope with Climate Change, Funded and commissioned by IUCN WCPA, TNC, UNDP, WCS, The World Bank and WWF. Gisladottir, G. & Stocking, M., 2005, Land Degradation Control and its Global Environmental Benefits, Land Degradation & Development, 16: 99-112, 2005. (Bradley Hiller, World Bank)	Thank you for providing these sources, which have been considered in the revision process.
95	45860	Again, admittedly I have not read every chapter of the first order draft yet, but is there consideration of the role of political economy on climate change? This seems a key component given its criticality in both national and international settings. Definition and extract from recent World Bank report (June 2012) 'Managing the Invisible: Understanding and Improving Groundwater Governance': Political economy refers to the way the political environment and economic system influence each other (WB, 2012). It is concerned with the distribution of power and wealth between different groups and indivduals, and the processes that create, sustain and transform those relationships over time (Collinson, 2003). Understanding the political economy context of reforms is useful in designing and implementing development strategies and policies (WB, 2009a). Specific references: Collinson, S., 2003, Power, Livelihood and Conflict: Case Studies in Political Economy Analysis for Humanitarian Action, Humanitarian Policy Group Report 13, Overseas Development Institute, London, UK. WB, 2009a, Problem Driven Governance and Political Economy Analysis, Washington DC. WB, 2012, Guidelines for Political Economy in the Urban Water Sector, Draft Report, Manghee, S., Ed., Water Anchor. (Bradley Hiller, World Bank)	Topics related to governance are assessed in various chapters of the report, including Chapter 2 and Chapters 14-16.
96	45994	Of the 30 Chapters, I only reviewed 8 (2,3,8,14,15,20,21,27), although I felt the need to also read Chapters 1, 18, and 19 to better appreciate the context of the report. I Didn't review tables or figures. My comments, therefore, are framed within this limitation. In general, I found that the sequence in the presentation of the material is good, although I would have preferred a somewhat different structure. I found that there are Chapters that contain the thrust of the message and chapters that provide additional details and/or information. For example, Chapters 1,2, 21, some material of Chapters 14 to 17, and Chapters 18,19, and 20 provide the central message. Chapters 3 to 13 provide the same information in more detail and seem to be the source for some of the previously mentioned Chapters. Finally, the regional Chapters 22 to 30 are a good initial attempt to answer the often asked question about how all these aspects apply to one's own geographical region. These last chapters bring the issues nearer to the various stakeholders in different countris and I feel would also be useful for organizations such as the World Bank and/or the regional banks and other regional organizations. (Luis E. Garcia, World Bank)	Chapter order follows the approved outline of the Working Group II contribution.

#	ID	Comment	Response
97	45995	The whole report is quite extense involving an impressive number of pages. Therefore, it would perhaps be amenable to be divided in volumes. For example: A volume 1 could include the central message. It could start with a context section of the AR5 with Chapters 1 and 2 and also Chapter 21 about regional context here (I found that this chapter provided answers to many questions I had and perhaps moving it up would provide a better context to help better interprete some of the material in later Chapters). A section about adaptation could then follow, since it is one of the central messages, although I am not sure if that should include all four Chapters 14 to 17 or some rearrangement of their material. I looked only at Chapters 14 and 15 but seemed to me there was repetition of some of the material. Finally, perhaps a final section could include Chapters 18 ("what we know"), 19 ("what we should be most worried about"), and 20 ("what to do"). In summary, the proposed volume 1 would include the central message and in addition, could benefit from an Executive Summary. A volume 2 could then pehaphs include the details about sectoral aspects (Chapters 3 to 13) and a Volume 3 may include the regional Chapters 22 to 30. (Luis E. Garcia, World Bank)	Chapter order follows the approved outline of the Working Group II contribution. The report also includes a summary for policymakers and a technical summary.
98	45996	I found that some Chapters are well structured and include an Executive Summary, conclusions, and a section about frequently asked questions. I found this useful and perhaps the same structure could be adopted in all of the Chapters. On another perspective, I didn't see any substantial discussion about the links of the water-energy nexus and climate change in any of the chapters I read (perhaps because there is another IPCC report about it?) or about the implications and links with Green Growth. These two are topics that are receiving much attention lately and attention should be drawn towards links with climate change. (Luis E. Garcia, World Bank)	All chapters will include an executive summary and frequently asked questions. The water-energy nexus is addressed in several chapters of the report, including Chapters 3 and 10 and chapters focused on regional issues. Issues relevant to "green growth" are also addressed in several chapters across the report, including Chapters 8, 20, and chapters focused on regional issues.
99	45997	The procedure followed by authors of the different chapters is to review and critically assess the literature and then develop a synthesis of current understanding based on that. It is important to be able to clearly differentiate what is what the literature says and what is that the authors concluded as a result of their critical assessment. Some chapters, like Chapter 15 and Chapter 20, do this fairly well in my opinion. They summarize what the literature says and then say what their authors conclude. In other chapters, however, it is difficult to appreciate that distinction. Some paragraphs read more like statements (with their respective references) and it is not so clear whether this statement comes from the chapter authors (backed up by the references) or by the references themselves. At times this may get confusing and disorienting as some statements seem contradictory. This is to be expected coming from the literature, but it would help if the chapter authors would point that out. Also, not all what the literature says should be taken at face value and that is true even for peer reviewed articles. (Luis E. Garcia, World Bank)	Clarity of presentation of conclusions of the assessment and their supporting evidence drawn from the literature has been an emphasis in the revision process.
100	46147	A list of the references can be found in the file References_LG.doc sent to wg2-ar5-supportingmaterial@ipcc-wg2.gov (Luis E. Garcia, World Bank)	Thank you for this input.
101	46282	In general, I think this chapter needs something how African farmers have adapting to climate change for decades and that the rest of the world can learn from the innovations they've been using, including agroforestry and farmer-managed natural regeneration. There needs to be more about how we can learn from what they've already been doing in fields and forests and more recognition of how those innovations can be replicated and scaled-up in Africa and all over the world. (Danielle Nierenberg, Nourishing the Planet--Worldwatch Institute)	These topics are discussed in Chapter 22.
102	46422	General comments (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	Thank you for this input.
103	46423	IPCC AR5-WGII is an excellent Report that summarize in detail the results obtained by the climate change scientific community the last years, introducing new results and conclusions. In relation to the items of the different Chapters that I analyzed, in general, they were very well written. In what follows, I make suggestions about the possible improvement of AR5-WGII. (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	Thank you for this input.

#	ID	Comment	Response
104	46424	Measurement (or model calculation) uncertainties needs to be detailed in all figures/images as error bars, indicating if they correspond to 1 or 2 standard deviations, or at least must be indicated in the corresponding figure/image caption. (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	An emphasis has been placed during the revision process on providing indication of the spread of results and the factors influencing that spread, across relevant topics.
105	46425	Please, try to make the different images with the same (high) quality. With the powerful graphical softwares that are now available, it is possible to make excellent 2D and 3D representations. Some of the figures are of high quality but in others this is not the case. Also, the numbers and words of some figures are ussually too small (see for example the Evaluation of Chapter 1) (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	All figures will go through a layout process to produce high quality and readable graphics.
106	46426	It will be of interest to relate the present IPCC AR5, WGII Report with the UNEP one on "Scientific Assessment of Ozone Depletion and its Interactions with Climate Change" (2002, 2006 and 2010 Assessments). In particular in the last Assessment, all Chapters include in the title the world "climate" (see http://ozone.unep.org/Assessment_Panels/EEAP/eeap-report2010.pdf) and a detailed study on Ozone depletion – Solar UV radiation - Climate change interconnections has been published. The different Chapters are: Chapter 1. Ozone depletion and climate change: Impacts on UV radiation. Chapter 2. The human health effects of ozone depletion and interactions with climate change. Chapter 3. Effects of solar ultraviolet radiation on terrestrial ecosystems. Patterns, mechanisms, and interactions with climate change. Chapter 4. Effects of UV radiation on aquatic ecosystems and interactions with climate change. Chapter 5. Effects of solar UV radiation and climate change on biogeochemical cycling: Interactions and feedbacks. Chapter 6. Changes in air quality and tropospheric composition due to depletion of stratospheric ozone and interactions with climate. Chapter 7. Effects of solar UV and climate change on materials. (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	This topic is discussed in the Working Group I contribution and in relevant chapters of the Working Group II contribution.
107	46476	There is inconsistency in the way the term 'climate change' is deployed. Though it is defined well, eg glossary of SREX, it is sometimes associated with GHG change, and at other times to describe change that is dominated by CV. Eg "Existing climate variability and other confounding factors have made it difficult to detect current climate change" uses in the sense of being different from CV. (Neville Smith, Bureau of Meteorology)	An emphasis has been placed on ensuring the consistency of usage of terms with the glossary for the report.
108	46477	Having now read both Chp 6 and Chp 30 I conclude there is excessive overlap and duplication. Much of the large-scale conclusions of chapter 30 for the open ocean are also covered in Chp 6, but not always with the same evidence or with the same assessment around the robustness of evidence, degree of agreement, or level of confidence. In almost all cases (perhaps with the exception of coastal upwelling systems) Chp 30 is more conservative and careful with its assignations, particularly in terms of seeking multiple lines of evidence. Chp 6 covers many of the same regions as Chp 30, but is more selective (which Chp 30 will need to be in reducing pages) (Neville Smith, Bureau of Meteorology)	Overlaps and inconsistencies across chapters have been carefully considered in the revision process.
109	46822	Need to make sure units are not split across lines, or separated from the number preceding them. Also make sure superscript is used where needed (particularly for -1). (Genevra Harker, HarmonicQuay Ltd)	All chapters will be copy edited to ensure consistent formatting.
110	46825	Be consistent whether e.g. and i.e. have a comma after them or not. (Genevra Harker, HarmonicQuay Ltd)	All chapters will be copy edited to ensure consistent formatting.
111	46826	Be consistent with commas after authors when referring to the references. (Genevra Harker, HarmonicQuay Ltd)	All chapters will be copy edited to ensure consistent formatting.

#	ID	Comment	Response
112	46959	Overall, at least when considering decision making processes, this draft is focused on adaptation rather than on potential impacts and the implication for policy processes. This appears to make a strong assumption in favour of adaptation as a response to climate change. Indeed in the light of some of the above comments it appears to make a strong normative assumption in favour of the utilitarian ethics of conventional economics as the best policy process. The literature referenced above suggests that this assumption is both irrational and undemocratic as costs cannot be robustly predicted and most people in the world would put justice, prudence, courage and moderate consumption above maximising economic growth which promotes greed, selfishness and over-consumption. (Mark Charlesworth, Keele University)	Adaptation is covered by the Working Group contribution, while mitigation is covered by the Working Group III contribution. Many chapters of the Working Group II contribution also address interactions between climate change and development.
113	47389	Emphasis placed on low and middle-income nations' needs. This is very good and absolutely necessary. However, some high-income nations (Canada, US) have infrastructure deficit as well due to insufficent maintenance and reinvestment in existing infrastructure, making the built environment quite vulnerable to climate change. As well, some regions (particularly low-income sectors, and often areas where First Nations live) also have infrastructure deficit. It could be useful to remind this in the chapter so that the high-income nations do not assume that they are immune to climate change impacts for their infrastructure. (ref: Mirza, S. 2007, Danger Ahead: The Coming Collapse of Canada's Municipal Infrastructure, Federation of Canadian Municipalities, Ottawa.) (Caroline Larrivee, Ouranos inc.)	This issue is discussed in several chapters across the report. In this context, see Chapter 26.
114	47390	Need for transformative changes should be emphasized more in chapter. Part of the issue for urban areas are the patterns and rate of development, type of infrastructure as well as certain paradigms in urban development that need to change because they are inappropriate in the face of climate change. This is especially relevant if low and middle-income nations follow the same patterns of development as higher income nations. This is also linked to the notion of tolerance to risk and the need for further studies in this area (how to establish this threshold with multiple stakeholders and what it means in terms of decisions to be made). (Caroline Larrivee, Ouranos inc.)	Please see the discussion of these issues in Chapters 8 and 20, as well as chapters focused on world regions. Chapters 16 and 19 also include relevant material.
115	47391	There are many existing initiatives that are not necessarily documented, especially concerning cities that are active in terms of adaptation. While the case studies referred to illustrate to some extent the types of actions and strategies being put in place, it could be useful to mention that there are actually many efforts by local and regional (subnational) governments to adapt to climate change or build capacity. There are not many references for this as it is often in grey and non-peer-reviewed literature. However, the Resilient Cities (from the 2010 and 2011 forums, see http://www.springer.com/environment/global+change+-+climate+change/book/978-94-007-0784-9) do capture some of these initiatives. See Otto-Zimmermann, K. ed. 2011: Resilient Cities. Cities and Adaptation to Climate Change. Proceedings of the Global Forum 2010, ICLEI, Springer, 573 p. (Caroline Larrivee, Ouranos inc.)	This topic is discussed in Chapter 8 and in Chapters 14-16.
116	47392	Cross-cutting chapters: 5 (Coastal systems and low-lying areas); 7 (Food production systems and food security); 9 (Rural areas); 11 (Human health); 12 (Human security); 20 (Climate-resilient pathways: adaptation, mitigation and sustainable development). Other cross-cutting issues are ones of governance and tolerance to risk. (Caroline Larrivee, Ouranos inc.)	No comment is made.
117	47962	The report is a result of a result of tireless work and a commitment to advance knowledge on climate change. It is well sritten and synthetises very well a huge body of knowledge. Compliments to all authors. My review focusses on only a few chapters out of the nearly 2500 pages long document. (Jaroslav Mysiak, Fondazione Eni Enrico Mattei; and Euro-Mediteranean Center for Climate Change)	Thank you for this input.
118	48049	overlaps in adaptation sections of some chapters (e.g. ch.14 and urban areas: section 8.3, ch. 9 on vulnerabilities, ch. 19: sections on maladaptations and vulnerability types, trends,etc), overlaps in sectors (e.g. recreation and tourism discussed in chapters 5, 9, 10), overlaps in costs of adaptation, insurance, risk transfer across chapters (So-Min Cheong, University of Kansas)	Overlaps and inconsistencies across chapters have been carefully considered in the revision process.

#	ID	Comment	Response
119	48100	Definition of vulnerabilty This report uses the definition from the SREX, which is a departure from AR4. Therefore, care should be taken that this is mentioned when needed, and that any text from the AR4 using the word "vulnerability" either remains valid with the new definition, or is appropriately adapted. (Philippe Marbaix, Université catholique de Louvain)	An emphasis has been placed on ensuring the consistency of usage of terms with the glossary for the report.
120	48101	On part B (regional): A better harmonisation of the content and structure of regional chapters would likely improve comprehensiveness and readability : - harmonisation of the table of contents across regional chapters, in all cases were there is no regional specificity that requires an additional topic (on the basis of existing material and the scoping document) - harmonisation of key topics presented in graphics and tables : in particular, some graphics on extreme events, which are not in the WGI atlas, could be treated in an a similar manner in all regional chapters and/or chapter 21. (Philippe Marbaix, Université catholique de Louvain)	All regional chapters follow the approved outline for the Working Group II report. Regional chapters are afforded flexibility to cover these topics in a manner that reflects differences across regional contexts.
121	48235	The same regional analysis done for Africa on 22.6. New Emerging Issues, includding 22.6.1. Climate as a Push Factor – Migration and 22.6.1.1. Migration Drivers should be done for most other regions, especially those developing, which might have particular situations that can be similar. However it should be avoided the repetition of the same theoretical framework on migration in each of the chapters. (Jason Garcia-Portilla, University of Sussex)	This issue is discussed from a global perspective in Chapter 12.
122	48305	Uniformity of structure and more examples are needed. Certain regions like risk require math and you have to write it out (Malini Nair, Indian Institute of Science)	An emphasis has been placed on clarity of discussion and narrative in the revision process.
123	48309	I do not believe that any speaker of plain English would ever say "medium evidence", "medium agreement" or even "medium confidence". The natural adjective is "moderate", or often "moderately reliable" in the case of "evidence". Large as the number of edits will be, I urge WG2, and the IPCC as a whole, to substitute "moderate" for "medium" in these locutions while there is still time, and so to improve public acceptance of the report. (J. Graham Cogley, Trent University)	The report uses the terms defined in the guidance note on treatment of uncertainties for lead authors.
124	48418	In chapter 18 I noticed a number of instances of ambiguity as to whether confidence in an assessment was the work of the assessed authors or of the assessors. This - that is, avoiding the ambiguity - is something that might be worth bringing to the attention of WG2 authors generally. (J. Graham Cogley, Trent University)	An emphasis has been placed on clarifying that confidence is an indication of the level of certainty regarding conclusions of the assesment.
125	48419	The meanings of both "detection" and "attribution" seem to be variable. Whether a recognition of any change at all, exceeding natural variability, counts as a "detection", or whether the word should be bestowed only on recognitions of changes that might be attributable to anthropogenic forcing, is surely a matter of broad concern across the IPCC. There is perhaps less ambiguity about "attribution". The IPCC seems to wish that this word be interpreted to mean"attribution to anthropogenic forcing"; nevertheless there are abundant examples in the literature, and some in IPCC writing, in which the word is used for attribution to other things. The yoking of these two words strictly to anthropogenic forcing should perhaps be reviewed in the interest of clarity. A related problem with "detection" is that many claims that a change has been detected fail to exclude natural variability, often because records are too short for natural variability to have become well characterized. I do not know how to solve this problem, but the minimum requirement - that detection should exclude natural variability - should perhaps be brought to the attention of IPCC authors. (J. Graham Cogley, Trent University)	Please see Chapter 18 for discussion of these issues.

#	ID	Comment	Response
126	48473	I haven't had a chance to go through all the pdf chapters in detail I'm afraid, but from a rapid examination (and the glossary) there doesn't appear to be an explicit chapter, or even chapter section, on impacts, adaptation and vulnerability of ecosystems and their component biodiversity. While I understand that many chapters will (and do) explore many of the relevant issues related to biodiversity and/or ecosystem services, my personal opinion is that an explicit chapter or chapter section is a much easier resource for people to access - along the lines of the AR4 chapter on "Ecosystems, their Properties, Goods and Services". Given the increasing evidence of the importance of biodiversity to ecosystem function and service provision (e.g. Naeem et al, (12) The functions of biological diversity in an age of extinction. Science, 336, 1401-1406), and the acknowledged importance of ecosystems and their services particularly to the poorest and most vulnerable in societies (which this review appears to cover well), that, in my view, is a notable omission. (David Hole, Conservation International)	Please see Chapter 4 for relevant material.
127	48833	Chapter 20 seems to conflict significantly with chapter 4 of WGIII. Moreover, chapter 4 of WGIII is extremely systematic, well referenced, well written, well argued, in stark contrast to the quality of chapter 20. These conflicts must be reconciled. (Doreen Stabinsky, College of the Atlantic)	Overlaps and inconsistencies across chapters and Working Group reports have been carefully considered in the revision process.
128	49016	Tipping point is an important term used in this report almost for the first time in an IPCC report. This is valuable, but it is also important how you define such terms. The definition seems to restrict the term to only irreversible changes, while in other report the term is limited to the "tipping" from one state to another hand may both be reversible (although sometimes only over a long time) and irreversible. Please consider this carefully and the use in the report. (Oyvind Christophersen, Climate and Pollution Agency)	This term has been carefully considered, and the definition has retained a focus on irreversibility as a key component of designation of a tipping point in the Working Group II context.
129	49562	There are many instances in the report which say "this has not yet been done systematically", "this has not been applied systematically", "details remain obscure", "upward and downward trends were identified" etc etc.. What the readers expect are less ambiguous statements. It would be a futile to attempt to give global indicators as they would neither be representative nor be useful. It would be far more useful if the domain of interest is confined to particular regions. (Amithirigala Jayawardena, International Centre for Water Hazard and Risk Management (ICHARM))	An emphasis has been placed on providing findings that are as specific and informative as possible, based on the available evidence.
130	49806	The whole Report seems to assume that emissions of greenhouse gases are harmful to the climate. Since there is no evidence to support such an assumption the whole report is unnecessary. The delusion has arisen from the personal interpretation of absurdly oversimplified models iof enegy processes in the climate which have been promoted by the IPCC. The models have been unable to provide any predictive value and their assessment by those who have prepared them displays a conflict of interest and is therefore valueless. Despite these misconceptions there is some useful material in considering adaptation to climate changes which will happen anyway because of natural influences (Vincent Gray, Climate Consultant)	The physical science basis of climate change is assessed in the Working Group I contribution.

#	ID	Comment	Response
131	49869	Chapters 22-30: Co-ordination would be useful between regional chapters and with chapter 21 in the presentation of observed and projected climate changes over sub continental regions. For example, currently Figure 22-1 in the Africa chapter, shows projected changes at sub-continental scale (for six economic regions) based on CMIP3 and CMIP5 GCM data. Ch 23 on Europe distinguishes 5 sub-regions, and summarises projected climate using RCM-based downscaled data from ENSEMBLES (to be updated with CMIP5 projections downscaled in CORDEX). Ch 24 divides Asia into six regions, and shows selected published SRES-based results for countries in each as well as selected CMIP5 GCM projections for the whole of Asia. Ch 25, Australasia, depicts historical and projected mean annual temperature change separately for Australia and NZ, and then mapped multi-model averages for CMIP5 seasonal and annual precipitation change projections over the whole region. Ch 26 on North America, offers a narrative description of observed and projected climate trends, with maps showing exceedance frequencies for high summer temperature, low winter precipitation, snow amount and low runoff extremes. Ch 27 on C and S America, provides two detailed tables of observed and projected climate changes (mean climate and extremes) for regions of varied scale taken from individual publications. All projections pre-date CMIP5 and are largely based on CMIP3 (including downscaled information). Ch 28, Polar Regions, provides very little new information on observed or projected climate variables in the Arctic and Antarctic regions (sea ice, permafrost and other cryosphere changes are covered, but I would class these as impacts). Ch 29 on small island states make use of results from the WG I Annex 1 (atlas) based on observations and multi-model CMIP5 projections of JJA mean annual temperature change and April-September annual precipitation change for four small island regions. Ch 30 on Open Oceans, has a table summarising the CMIP5 GCM projections for sub-regions of seven categories of ocean. (Timothy Carter, Finnish Environment Institute)	An emphasis has been placed on providing more consistent regional climate information across the regional chapters.
132	49870	Chapters 22-30: Some regional chapters consider socioeconomic scenarios; others do not. Some co-ordination might be helpful here between chapters and with chapter 21, which is yet to consider how to address such futures. New socioeconomic scenarios are under development (SSPs), but will probably not find their way into the assessed literature for WG II chapters. However, they may be used as context for evaluating the findings of WG II in the SPM and Synthesis Report, so some liaison between chapters would seem to be in order. (Timothy Carter, Finnish Environment Institute)	Socioeconomic scenarios are introduced in Chapter 1 of the report, and the relevance of socioeconomic development to impacts and adaptation has been considered across the regional chapters.
133	52140	"AR5 has evolved in the understanding of essential interaction between climate change adaptation and sustainable development. It has been pointed out that impact of climate change can reverse past development achieved and efforts to alleviate poverty. Scientific value of the document is immense and highly commendable. Every information is supported by solid scientific publications " (Shelley Bhattacharya, Visva Bharati University)	Thank you.
134	52274	I would like to suggest that each of the regional chapters be urged to include a table that for each of a number of subregions (after all, IPCC regions are very large and encompassing) gives the major impacts that those in that region should be considering. I prepared such a table following the first US National Assessment, subdividing impacts into those affecting: (a) the environment; (b) society and the economy; and (c) people's lives (i.e., the lives of individuals)--this was published at MacCracken, M. C., 2001: Climate Change and the US National Assessment, pp. 40-43 in McGraw Hill Yearbook of Science and Technology 2002, McGraw-Hill, New York, 457 pp. As you may recall, the IPCC WG 2 SAR failed to really give regional breakdowns, leading in the near-term to the requirement to cut and paste the SAR in order to produce a report on regional impacts, and in the long-term to the IPCC WG 2 assessments now have regional chapters. But, the regions are so large (e.g., Africa, Asia) and have such a range of issues in different subregions that I think it very important that each of these chapters prepare a more detailed table that draws on results in the chapter and from the other disciplinary chapters. (Michael MacCracken, Climate Institute)	Regional chapters highlight key issues for subregions where possible.

#	ID	Comment	Response
135	52275	Coupled to my other general comment about each of the regional chapters having a table that identifies major issues in the region's subregions, I would also suggest that each of the disciplinary chapters have a table that gives a geographic breakdown of where in the world various of the types of impacts that are identified are most important. Finding a way so that those interested in particular places do not have to search out their results is just critical for the reader, and can help to make the Technical Summary and SPM much easier to assemble and use as communication tools. (Michael MacCracken, Climate Institute)	Sectoral chapters indicate regional examples where possible, and the summary products for the Working Group II contribution emphasize an integration of information across regions and sectors.
136	52744	The overall impression I get from the draft chapters I have read is that the need to consider more 'transformative' forms of adaptation is (rightly) recognised, but the kind of decision-making and governance processes for deciding where such transformation is necessary and how to bring it about in legitimate and effective ways remain relatively unexamined. Ideally, more should be done to meet the expectations that may have been raised for readers (especially in chapter 16). (Tim Rayner, University of East Anglia, Tyndall Centre for Climate Change Research)	These issues are dicussed in Chapter 2, the chapters on adaptation (14-16), and Chapter 20.
137	54951	Throughout the report, there are many references to manuscripts submitted for publication but not yet accepted. I think these should all be reviewed and those that are not accepted yet should not be referred to. (H. Resit Akcakaya, Stony Brook University)	Only publications that have been accepted by the literature cutoff date of August 31, 2013 will be included in the final report.