

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
1	35747	8	0	0	0	0	United Nations projections suggest that in the next 40 years, the world's urban population will nearly double (United Nations 2012). It is also now well established that there will be almost 4 fold increase in exposure of population to extreme water level due to coastward migration. With climate change predicted to increase the frequency of severe hydro-meteorological events (IPCC, 2007), Natech risk is expected to increase in the future and will impact on a larger population. The statistic suggest most vulnerable are refineries and their storages. Recent example of Bangkok Governor MR Sukhumbhand Paribatra plan to relocate all refineries, arms depots and, presumably, oil storage tank farms out of the busy capital is in this direction. The above point need to be addressed in this chapter as a part of disaster risk reduction from urban area. (Jitendra Desai, Reliance Industries Limited)	The UN projections are already in the chapter text. The example of vulnerable industries in Bangkok is interesting; example added in 8.2.4
2	35800	8	0	0	0	0	There is a lack of integration between the perspective of risk assessment described in Chapter 2, and the governance perspective developed in Chapter 8. Specifically, Chapter 2 provides a model of the iterative risk management framework in Figure 2-2 (Page 53, Chapter 2). However, Chapter 8 uses a different model based on a governance perspective – as exemplified by the circulation of power in public decision making shown in Figure 8-1 (page 97, Chapter 8). The more complete model of decision making based on the governance perspective is described in Sections 8.4.1 and 8.4.2. In addition, Section 8.4.2.4 lines 45 & 46 refers to social learning processes (References to Bramwell 1989 and Brulle 2000). These three models of decision making (risk assessment, governances, and social learning) are dramatically different in their basic assumptions, and the respective roles of information political power and economic wealth. Yet there is no mention of any other perspective besides risk assessment in Chapter 2, and there is only a passing reference to risk assessment in Chapter 8. This lack of integration of perspectives is in my view, problematic, and needs to be addressed. Because there is a lack of engagement with the relevant social science perspectives, the two chapters end up being a polyglot of perspectives, without any coherent integration. (Robert Brulle, Drexel University)	This is a valuable point and needs attention both here and in chapter 2. The text in this chapter on risk assessment has been strengthened. we will review chapter 2 SOD to see if this has been addressed.
3	35801	8	0	0	0	0	The report systematically fails to acknowledge the well-developed literature on the role of corporations, conservative foundations, and civil society organizations in hindering the recognition of the science of climate change, and thus hindering adaptation responses. This literature needs to be added to ensure that the IPCC report accurately reflects the complete scientific literature in this area. The specific areas where this occurs are mentioned below by page and line number. (Robert Brulle, Drexel University)	We acknowledge that this comment raises important issues for WGII but Chapter 8 is not the appropriate place for these+150
4	35807	8	0	0	0	0	This social process has been well developed in sociology. I highly suggest that Dr. Riley Dunlap of Oklahoma State University be consulted in the revisions of these areas. Some of the key references that should be consulted are: Antonio, Robert J. and Robert J. Brulle. 2011. The Unbearable Lightness of Politics: Climate Change Denial & Political Polarization. Sociological Quarterly. Austin, A. 2002 Advancing Accumulation and Managing its Discontents: The U.S. Antienvironmental Countermovement Sociological Spectrum 22: 71-105 Covington, Sally (2005) Moving Public Policy to the Right: The Strategic Philanthropy of Conservative Foundations, in Faber, D. and McCarthy, D. (eds.) Foundations for Social Change. (Lanham, N.J.: Rowman & Littlefield). (Robert Brulle, Drexel University)	Linked to above; also this chapter is specifically about urban aredas
5	35808	8	0	0	0	0	REFERENCES CONTINUED: Dunlap, R. and A. McCright. 2010. Climate change denial; sources, actors and strategies. Pp 240-259 in Constance Lever-Tracy (ed.) Routledge Handbook of Climate Change and Society. Abingdon, U.K. Routledge Layzer, J.A. 2007. Deep Freeze: How Business Has Shaped the Global Warming Debate in Congress, pp. 93-125 in Michael E. Kraft and Sheldon Kamieniecki (eds.) Business and Environmental Policy: Corporate Interests in the American Political System. MIT Press: Cambridge Lo, Clarence Y.H., 1982: "Countermovements and Conservative Movements in the Contemporary U.S., Annual Review of Sociology, 1982. 8:107-134 McCright, Aaron M. and Riley E. Dunlap. 2010. "Anti-reflexivity: The American Conservative Movements Success in Undermining Climate Science and Policy. Theory, Culture & Society. 27(2/3):100-133. (Robert Brulle, Drexel University)	Linked to above
6	35809	8	0	0	0	0	REFERENCES CONTINUED: McCright, Aaron M., and Dunlap, Riley E. 2003. Defeating Kyoto: The Conservative Movement's Impact on U.S. Climate Change Policy Social Problems, August 2003, Vol. 50, No. 3, Pages 348-373 Meyer, David S, and Staggenbord, Suzanne, 1996., "Movements, Countermovements, and the Structure of Political Opportunity," American Journal of Sociology, Vol. 101, No. 6 Oreskes, N. and Erik M. Conway. 2010. Merchants of Doubt. New York: Bloomsbury Press. Pichardo, Nelson A., 1995. "The Power Elite and Elite-Driven Countermovements: The Associated Farmers of California During the 1930s," Sociological Forum, Vol. 10, No 1 (Robert Brulle, Drexel University)	Linked to above
7	36443	8	0	0	0	0	Overall this chapter has a good balance of general and case study; it is more focused on resilience than ch 25, but it is still using a linear model of 'climate change produces risks to which we must adapt (or mitigate)'. The extent to which human actions in urban areas make such places more vulnerable to climate change impacts to begin with is generally not part of the analysis. Often such hazards are of our own making, as the official investigation into the west of England floods of 2007 argued: if risky catchments had not been covered in impermeable surfaces, then the effects of high rainfall events would be less severe. Scrutiny Inquiry 2007. Scrutiny Inquiry into the Summer Emergency 2007. Final Report, Gloucestershire County Council, Gloucester. The same argument can be made for flooding and other hazards more generally: why else do the re-insurance companies record increasing levels of loss, despite mitigation measures, year by year? (Eric Pawson, University of Canterbury)	Coverage of the construction or exacerbation of climate change risk by urbanization has been strengthened, see in particular 8.2
8	36444	8	0	0	0	0	Some refs on this point: many stem from the work of Ken Hewitt in the late 1980s: Hewitt K 1983. Interpretations of Calamity from the Viewpoint of Human Ecology, Allen and Unwin, Boston; Pawson, E. Environmental hazards and natural disasters, New Zealand Geographer 2011, 67 (3), 143-47. (Eric Pawson, University of Canterbury)	Check references suggested

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9	37570	8	0	0	0	0	I have below comments on the Chapter 8: Urban Areas The difficulties have always been: Urban climate is an interrelated subject ranging from fundamental scientific pursuit to professional design. It is important to find ways to knowledge bridge scientific researches and application for planning practice together. For urban climatology, scale is the most important index. For urban planning, planning level is the most important element. It is necessary to linkage climatic scales to planning level when the urban climatic application is conducted. I strongly recommend emphasize this point and relevant information into the section 8.4.1 of chapter 8. You may also refer to the below paper: Ng, E. 2012. Towards Planning and Practical Understanding of the Need for Meteorological and Climatic Information in the Design of High-density Cities: A Case-based study of Hong Kong. International Journal of Climatology, 32 (4): 582-598. , DOI: 10.1002/joc.2292. According to my previous study, urban climatic map (Klimaataals) is an information tool for applying urban climatic information and knowledge into urban planning and widely used in 15 countries and more than 50 cities in the world. Some cities, like Stuttgart, Tokyo, Frankfurt, Hong Kong, Singapore have already successfully developed their own urban climatic map and relevant policy and planning strategies. For more information, please refer to the below paper: Ren, C., Ng, E., & Katzschner, L. 2011. Urban climatic map studies: a review. International Journal of Climatology, 31 (15): 2213-2233. DOI: 10.1002/joc.2237. If possible, it would be better to add more relevant information into the section 8.4.1.8 Planning Tool (CHAO REN, THE CHINESE UNIVERSITY OF HONG KONG)	Good point - addressed in new draft
10	38572	8	0	0	0	0	Says urban areas need improved infrastructure for adaptation, but does not cite changes driven by CC on demands for infrastructure services - many are evident from needs to endure environmental extremes. (Richard Wright, Retired, U.S. National Institute of Standards and Technology)	new draft covers this
11	38599	8	0	0	0	0	It will be worth referring to World Bank (2010): Climate Risks and Adaptation in Asian Coastal Megacities: A Synthesis Report. Washington DC. (Susmita Dasgupta, The World Bank)	now used and referenced
12	39521	8	0	0	0	0	Overall this chapter is well written and the information is well presented. However, it would be nice to see some discussion of how climate change impacts and subsequent adaptation measures may vary in peri-urban areas. There is some discussion of extended metropolitan regions, but more could (and should) be said on this topic as emergent research is available. I suggest the authors take a look at the following: http://saciwaters.org/periurban/idrc%20periurban%20report.pdf (Carrie Mitchell, International Development Research Centre (IDRC))	This issue is covered in more detail
13	40540	8	0	0	0	0	General comment -- Figures need work (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Under consideration
14	41556	8	0	0	0	0	comments send as separate file name " ipcc wg2 AR5 review FOD alka bharat India.pdf" to wg2-ar5-supportingmaterial@ipcc-wg2.gov (Alka Bharat, M.A.National Institute of technology)	OK
15	41579	8	0	0	0	0	This is a very relevant, informative and interesting chapter and covers almost all relevant issues. Nevertheless, a few topics are missing or are not fully explored yet. First of all, the concept of 'capacities' (i.e. governance capacities) is often mentioned, but hardly defined. There is already some literature in this respect, for instance: Gupta, J. et al. (2010). The adaptive capacity wheel: a method to assess the inherent characteristics of institutions to enable the adaptive capacity of society, Environmental Science and Policy 13: 459-471. I would like to suggest to define governance capacity as 'the ability to govern or the ability to intervene in societal processes in order to realize collective goals (i.e. goals related to adaptation to climate change in urban areas). Five governance capacities can be distinguished (that are implicitly mentioned in this chapter): (1) institutional: presence of legal provisions and decision-making procedures; (2) organizational: allocation of responsible public and/or private organizations and leadership; (3) resource: availability of policy instruments and financial resources; (4) collaborative: ability to ensure collaborative action between actors on different administrative levels and policy domains; (5) learning: capacity to monitor, evaluate and improve governance actions. Second, there is hardly any attention for normative aspects of climate adaptation policies. Questions that seem to be relevant are: (1) what kind of legal and policy principles should public and private actors take to heart when formulating and implementing adaptation measures?; (2) which societal interests should be protected by climate adaptation policy and in what order?; (3) To what extent are governments responsible for adaptation to climate change and what are the responsibilities to be borne by private parties and citizens? See: Driessen, P.P.J. & H.F.M.W. van Rijswijk (2011). Normative aspects of climate adaptation policies, Climate Law 2(4): 559-581. Third, according to this chapter, the realization of climate adaptation especially calls for collaborative and deliberative governance arrangements, paying regards to stakeholder participation and partnerships among multiple actors and policy levels. These arrangements are regarded as able to deal with the complex, multi-scale, cross-sectoral and long-term aspects of climate adaptation in a more adequate manner than hierarchical ones. Nevertheless, in my view there is still a role to play for good old-fashioned state intervention, especially in situations of urgency or particular protection of vulnerable groups. Furthermore, there is hardly any attention for criteria that are relevant to assess different forms of governance (i.e. networked, market and hierarchical forms). Besides more traditional criteria like effectiveness and efficiency, attention should be paid to 'legitimacy'. This concept refers to the acceptance and recognition by the public of the authority of governance arrangements towards climate adaptation and ensuring transparency, accountability and equity at the same time. (Peter P.J. Driessen. Utrecht University)	These are useful additions and clarifications; being addressed

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16	41878	8	0	0	0	0	Overall: This chapter was not well-organized yet and too long. Many parts remain as the introduction of the case studies. As mentioned in the Chapter 1, 1.1.2.3 (Page 7), the contents should be written with the calibrated uncertainty as long as possible. Otherwise, the readers hardly understand the confidential level of the cited reports, and they cannot make any decision. 1) The phenomena and effects of climate change are quite different in the region of the world (natural dimension). 2) The measures and the methods of adaptation depend on the culture and other human dimension there. Although the relationship between them is partly written, more comprehensive analysis is required. As partly mentioned in chapter 2, our generation suffered from several huge disasters in the last decade; European heat wave (2003), hurricane Katrina(2005), cyclone Nargis (2008), earthquake off the Indonesian island of Sumatra (2004), and off the Pacific coast of Tohoku Earthquake (2011). The last two earthquake are not directly related to climate change; however, there are many things that we have to learn from them for vulnerability of urban area. Are there any literature how to decide the priority to be saved under the disaster caused by climate change in urban area? It is impossible to save all. Are there any literature of the analysis for a kind of ecological foot print or material flow of the cities and their vulnerability? (Hiroaki Kondo, National Institute of Advanced Industrial Science and Technology (AIST))	Calibrated uncertainty now introduced to summary. We feel that the issues raised in the rest of the comments are addressed
17	42612	8	0	0	0	0	As a reporting IPCC sector (under the National GHG Inventory Guidelines), waste management was not discussed nor included in the sectoral chapter (Chap 10) or in the urban chapter (Chap 8). Although (as determined in AR4 reports) waste is the smallest of the sectoral contributors to GHG emissions, it should be included for completeness. It is also important to emphasize that sustainable waste management is a significant challenge in developing countries where economic resources are scarce or nonexistent at the local level. With respect to recommended literature on waste management, pls. consult the following: 1) Chapter 10 of the AR4 for WGIII with respect to literature up to that time; 2) a new World Bank report on global waste: Hoornweg et al. (2012) available at www.worldbank.org; 3) one of the few reports in the literature with quantitative information on the impact of the informal sector with respect to waste management in developing countries: Medina, M. (2008) The World's Scavengers--Salvaging for Sustainable Consumption and Production, Globalization & the Environment Series, World Bank ; and 4) Some recent and ongoing work on improved site-specific quantification of landfill methane emissions (the largest GHG source for the waste&wastewater sector)--a. Spokas, K. et al., 2011, A new process-based inventory model for landfill methane emissions inclusive of soil microclimate and seasonal methane oxidation. J. Geophys. Res.-Biogeosciences, 116, paper G04017, 19 p. b. Bogner, J. et al., 2011, Seasonal GHG emissions (methane, carbon dioxide, nitrous oxide) from engineered landfills: daily, intermediate, and final California cover soils, J. Env. Qual., 40:1010-1020. c. Spokas, K., and Bogner, J.,2011, Limits and dynamics of methane oxidation in landfill cover soils, Waste Management, 8, 823-832. This process-based model linked to global climate and soil microclimate models emphasizes the dependency of landfill methane emissions on (changing) climate with respect to both soil gas transport rates and seasonal methane oxidation rates. (Jean Bogner, University of Illinois at Chicago (UIC))	There is coverage of the lack of provision for waste collection and management ; also coverage of role of informal sector in this and the importance of the waste economy. Recommendations for detailed coverage of methane emissions management beyond the scope of this chapter
18	43134	8	0	0	0	0	A similar point to the one I make for chapter 24 (see above) could also be made for chapter 8. (Adrian HAYES, Australian National University)	Unclear what comment is
19	43476	8	0	0	0	0	This chapter is very well written and summarises in a clear and concise way the existing literature on adaptation issues in urban areas. (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	Hurrah
20	43492	8	0	0	0	0	There is a limited treatment of increased exposure and vulnerability to climate hazards occurred in some areas of the western Mediterranean, in relation to the massive increase in residential building and infrastructure. This has provoked increasing risk territories. For example in areas of the Spanish Mediterranean coast is more likely in 2012 than it had in the late 1989 and 1990. And this has been caused by a massive occupation of land dedicated to housing and infrastructure (soil sealing). An analysis of this can be seen in Olcina (2010) and Olcina, Hernandez, Rico and Martinez (2010). (Olcina Jorge, University of Alicante)	coverage of his topic strengthened with reference cited
21	44509	8	0	0	0	0	Section 8.3.2: Climate Variability and Change impacts introductory paragraph - "Climate change is likely to lead to increased occurrences and intensity of extreme weather events such as heavy rainfall, warm spells and heat events, drought, intense storm surges and sea-level rise" needs to reference SREX and WGI AR5. Make sure wording/likelihood is consistent with the findings of SREX Ch3 and WGI AR5 for each extreme listed in the opening sentence. Avoid general, overarching statements that are not supported by the underlying physical science. (Thomas Stocker, IPCC WGI TSU)	Addressed; still need to review wording so it fits with SREX
22	44510	8	0	0	0	0	Section 8.2.3.5: suggest to consult the relevant sections on air pollution in WGI AR5 Ch11. (Thomas Stocker, IPCC WGI TSU)	Have done so
23	45299	8	0	0	0	0	Energy, transport and buildings are the key sectors where there is overlap between mitigation and adaptation; this could be made clearer in relevant sections throughout the chapter. (Jo da Silva, Arup)	Addressed
24	46342	8	0	0	0	0	The term "likely" is used often throughout the chapter. I suggest this is modified to "could" or similar to avoid confusion with the quantified IPCC definitions except for those cases where the statement does reflect the degree of certainty. (Mark McCarthy, Met Office)	Addressed
25	46354	8	0	0	0	0	A number of cited refs are missing from the reference list. (e.g. Oleson 2011, Jackson et al. 2010, Revi 2006) (Mark McCarthy, Met Office)	addressed
26	46440	8	0	0	0	0	Comments to Chapter 8 – Urban areas (Review of the Chapter, from the beginning up to 8.2.4.2. Energy) (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	Where are comments?
27	46758	8	0	0	0	0	The report is very well organized and covers a wide range of topics. All major issues regarding impacts, adaptation and vulnerability are discussed in great detail. The text is easy to read and follow. (Balwinder Singh, Pacific Northwest National Laboratory)	With thanks

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28	47956	8	0	0	0	0	Figure 10 in Adachi et al. (2012) seems to be helpful for this chapter. The figure shows the past and future temperature changes in the more developed region (Tokyo) and the past and future population changes in the more developed, the less-developed, the least less-developed regions. And then, the paper discusses about the way of mitigation to future urban climate. Adachi, S. A., F. Kimura, H. Kusaka, T. Inoue, and H. Ueda, 2012: Comparison of the Impact of Global Climate Changes and Urbanization on Summertime Future Climate in the Tokyo Metropolitan Area. J. Appl. Meteor. Climatol. (in press). (Sachiho Adachi, Japan Agency for Marine-Earth Science and Technology)	Addressed with reference added
29	48286	8	0	0	0	0	Nomenclature of urban reclamation of cityscapes (Malini Nair, Indian Institute of Science)	Not clear what this is saying
30	48945	8	0	0	0	0	Can definitions be included for low, medium, or high-income countries / groups / households? (Chris Cameron, Wellington City Council)	should be in glossary
31	50481	8	0	0	0	0	1) Overall -- In preparing the 2nd-order draft, the chapter team should prioritize making each section of the chapter a polished, comprehensive treatment of topics considered. From these sections, the chapter team is then encouraged to maximize the utility of its findings, ensuring that they are robust, compelling, and nuanced. Themes to consider informing in constructing findings include decisionmaking under uncertainty, risks of extreme events and disasters, avoided damages, and limits to adaptation. To these ends, the chapter team has prepared a solid 1st-order draft. In an effort to inform further chapter development, I provide a few general and specific comments below. (Katharine Mach, IPCC WGII TSU)	Addressed
32	50482	8	0	0	0	0	2) Highlighting key findings -- In developing the 2nd-order draft, the chapter team should aim to present key findings across the sections of the chapter, using calibrated uncertainty language to characterize its degree of certainty in these conclusions. Summary terms for evidence and agreement and levels of confidence may be particularly appropriate. Through such highlighting of key findings across the chapter, a reader will be able to understand how the literature reviews and syntheses in the chapter sections--the traceable accounts--support the conclusions of the chapter, especially those presented in the executive summary. Additionally, identification of key findings across the chapter will further enable the author team to characterize, with specificity and nuance, key trends and determinants in the context of the executive summary. (Katharine Mach, IPCC WGII TSU)	Addressed
33	50483	8	0	0	0	0	3) Usage conventions for calibrated uncertainty language -- Where used, calibrated uncertainty language, including summary terms for evidence and agreement, levels of confidence, and likelihood terms, should be italicized. In addition to incorporating these terms directly into sentences, the author team may find it effective to present them parenthetically at the end of sentences or clauses. Casual usage of the reserved uncertainty terms should be avoided, as has been flagged in some specific comments throughout the chapter. (Katharine Mach, IPCC WGII TSU)	addressed
34	50484	8	0	0	0	0	4) Specificity of described observations and projections -- The chapter team should continue to strive to ensure specificity in describing observed and projected impacts, illustrative examples, information on determinants and trends, and instances of response strategies. As much as possible, the author team should continue to aim for concise and specific characterization of examples and outcomes, which could be summarized in simplified terms as follows: providing indication of relevant time periods, geographic areas, etc. for observations; providing indication of relevant time frames, scenarios for climate change or socio-economic development, geographic regions, or other assumptions for projections; and characterizing key driving factors where ranges of outcomes are presented. (Katharine Mach, IPCC WGII TSU)	useful guidelines that were used when revising
35	50485	8	0	0	0	0	5) Conditional framings, with consideration of climate change versus extreme events versus climate variability -- In discussing information on vulnerabilities and/or impacts associated with extreme events or climate change, the author team should ensure appropriate distinction between the changing climate and extreme events--given that changes in the occurrence of some types of extreme events have been observed or projected, but not all types of extreme events have been or will be affected by climate change. In discussing extreme events, changes in climate, and climate variability, the author team may wish to further consider conditional constructions that separate physical events and physical changes from corresponding conditional outcomes. Such formulations can also allow separate characterization of the author team's degree of certainty in physical changes (with reference to WG1 findings, for example) and in conditional impacts and outcomes. (Katharine Mach, IPCC WGII TSU)	Addressed
36	50486	8	0	0	0	0	6) Reduction of page length -- As much as possible, the author team is encouraged to shorten and tighten sections across the chapter, aiming for succinct and specific characterization of information and elimination of overlap across sections. The author team should additionally consider opportunities for rich and concise presentation of information through tables and figures, to displace some treatment in the body of the chapter itself. (Katharine Mach, IPCC WGII TSU)	We have sought to keep down length but very difficult to do with the vast increase in the literature that has to be covered and with most of the 700 plus comments asking for more to be included
37	50487	8	0	0	0	0	7) Figures -- Figures, as well as tables, represent an important and effective vehicle for clear communication of assessment and corresponding key findings. The chapter team is very much encouraged to further develop figures to complement assessment in the chapter text. Conceptual and synthetic figures may be particularly appropriate. (Katharine Mach, IPCC WGII TSU)	we plan to address this at the next chapter meeting
38	50488	8	0	0	0	0	8) Coordination across the Working Group 2 contribution -- In developing the next draft of the chapter, the author team should consider treatment of topics not only in this chapter, but also across the report as a whole. For each topic, the chapter team should ensure that treatment here is reduced to the essence of what is relevant to the chapter, with cross-references made to other chapters as appropriate, also minimizing overlap in this way. (Katharine Mach, IPCC WGII TSU)	We have coordinated with several other chapters and intend to strengthen this
39	50489	8	0	0	0	0	9) Harmonization with the Working Group 1 contribution to the AR5 -- At this stage of chapter drafting, the author team should carefully consider the working group 1 contribution. Wherever climate, climate change, climate variability, and extreme events are discussed, the chapter team should ensure that their treatment is harmonized with the assessment findings of working group 1. (Katharine Mach, IPCC WGII TSU)	WG I is weak on urban issued. Very difficult to model a city with its supply chains and resource flows

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40	52586	8	0	0	0	0	Understanding that coping with present extreme weather events is only half of the story in adaptation, I would still like to see more weight put on extreme weather events as catalytes to adaptation - they really are important in raising awareness on the need of adaptation and later lifting it to the political agenda. Past and present extreme climate events also function as good reference points to likely impacts to be expected in the future, making otherwise often abstract concept of climate change more easily understandable to the public and, politicians and practitioners alike. They have been succesfully used as a starting point in adaptation plans in the UK (the Local Climate Impact Profile (LCIP)-approach, www.ukcip.org.uk/lclip) and the same method was also succesfully applied in drafting of the adaptation strategy of the Helsinki metropolitan region in Finland (to be found at http://www.hsy.fi/seututieto/Documents/Ilmasto/10_2012_paakaupunkiseudun_ilmastonmuutokseen_sopeutumisen_strategia.pdf , English Abstract on page 6). This issue is discussed in chapter 8.5.2. (Simo Haanpää, Aalto University)	Addressed; example from Helsinki included
41	52701	8	0	0	0	0	It is a well organized chapter; however is largely based on information developed in developed countries or by institutions, bodies organized by developed countries' specialists. As known, the information from developing regions is reduced, but there is some, as mentioned in the following analyses and comments. As known, there are criticisms to AR4 regarding the weak reference to the lack of basic data. This is shown in the IGBP, GCOS, WCRP 's report, the WMO published in 2008, as well as it is mentioned in Chapter 8 of the IPCC Note on Water and Climate Change. The Global South, is the main deficient region. However, this chapter makes reference on monitoring, watching and early alert advisories, activities which can hardly be implemented without basic data, including the necessary information on impact of weather and climate events, in a global changing environment, on the environmental, social, economic implications of climate change. The issue of the daily changes in population density and consequential stresses, deriving from the in and out of human masses, from neighboring settlements, in many cases of a dimension equal or exceeding the permanent resident population in large cities, should be considered and include under paragraph 8.5.3. In developing regions, weather extremes and changes in the climate system (climate change impacts) bring increasing number of people into meta cities. People from foreign countries and the interior of their own countries.. Planned conurbation in developing countries must be oriented to the rational, equitable use of metropolitan areas (space and services), so to obviate or reduce the urbanization of poverty. Although much of the actions oriented to adaptation and to improving the city resilience depends on the individual and the community behavior, this fact is not sufficiently dealt with .in this Executive Summary. Migrants ' anthropological, religious and cultural backgrounds will play an important role, very particularly with the increasing migration trend, deriving from climate change effects and the increasing mechanization of agricultural activities. Finally, regarding this and the additional comments below, it might be argued that similar information is included in other sections and paragraph of this chapter. To overcome such argumentation we must remember how IPCC reports are used by decision makers and other users. Their reading is not complete as it should be. Therefore, opportune reiteration is a tool to make AR5 a more useful and usable report. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Not sure the first comment is correct. The chapter team made special efforts to ensure strong coverage of low and middle income nations and authors from these nations. Agree that more attention needs to be given to basic data needed for response and this has been strengthened. Where is evidence that weather extremes and changes in climate change impacts is bringing increasing numbers to meta cities (and are meta cities mega cities?). Is there a relevant literature on how anthropological, religious and cultural backgrounds of migrants influences CCA?
42	52702	8	0	0	0	0	REFERENCIAS from Canziani for General Comment: Future Climate Change Research and Observations. WMO TN Nº 1418 (2008). La antropología frente a los problemas del mundo moderno (The anthropology in front of the modern world problems. Levi-Strauss C., (Buenos Aires, 2011). Hermans L.: Climate change, water stress, conflict and migration Paper presented in a conference in the Hague, The Netherlands, on the same subject. September 2011. World Migration Report 2010. Chapter 1.2: Putting Slums on the Map. State of the World 's Cities 2006/7 (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	These issues are considered in 8.2.5.4
43	52810	8	0	0	0	0	This is a good chapter. However, (sorry) the words detection and attribution do not really appear in it. Each chapter is required to treat this topic by the plenary approved outline. Please take a look at the chapter 18 handouts repeatedly sent and the material in chapter 18 dealing with chapter 10 material. It is key that AR% WG2 uses consisten evidence, language and confidence statements throughout the report. (Maximilian Auffhammer, University of California, Berkeley)	Detection and attribution coverage strengthened - and summary table for this provided for chapter 18
44	52811	8	0	0	0	0	Much of the chapter takes a forward looking approach. This leaves little room for detection and attribution in the sense of chapter 18. It is important to coordinate with chapter 18 on this topic. (Maximilian Auffhammer, University of California, Berkeley)	See above
45	52812	8	0	0	0	0	Throughout the chapter there is some discussion of evidence of changes. It is important that the forward looking and ex post evidence are separated and discussed in the detetction and attribution framework. (Maximilian Auffhammer, University of California, Berkeley)	See above
46	54413	8	0	0	0	0	GENERAL COMMENTS: I would like to thank the authors for their work on the FOD. When considering the expert review comments received on your chapter and the next round of revisions, I suggest several overall priorities. (1) Keep in mind that the preparation of the SOD is the time to ensure that each section of the chapter presents a comprehensive treatment of relevant literature, and that the Executive Summary presents findings that capture the key insights that arise from the chapter assessment. (2) This is also the time to focus on distilling the chapter text, not just fine-tuning wording but editing with a critical eye to improving quality by making discussions succinct and synthetic, while still being comprehensive. (3) Cross-chapter coordination is also important at this stage, as it should now be possible to identify topics that overlap with other chapters and to coordinate with other chapter teams to minimize that overlap. (4) Cross-Working Group coordination is important as well, and relevant chapter sections should cross-reference chapters from the other Working Groups, particularly in the case of statements about changes in mean or extreme climate conditions that are assessed in the contribution of Working Group I. (5) Continue to look for opportunities for the creation of figures that synthesize across results from the literature and/or highlight conceptual themes. (Michael Mastrandrea, IPCC WGII TSU)	Advice followed in redrafting

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
47	54414	8	0	0	0	0	EXECUTIVE SUMMARY: Thank you for developing an initial draft of an Executive Summary for the FOD. For the SOD, the author team should focus on constructing assessment findings of the form employed by other chapters. Each paragraph should present an assessment finding in bold with calibrated uncertainty language, followed by additional nonbold sentences providing further explanation and context, as well as line of sight to supporting chapter sections where the traceable account appears. Material in section 8.5 is ripe for distillation into Executive Summary findings, as well as for more explicit linkage with the other sections of the chapter across which it is synthesizing. In general, I would recommend the author team consider ways to clearly identify assessment findings in the chapter text to link with the Executive Summary, not just in 8.5 but elsewhere as appropriate. In the context of linking chapter text with Executive Summary findings, I would also suggest providing some explanation of the calibrated uncertainty language used in the Executive Summary (once it is developed) in the corresponding chapter section(s) where the traceable account appears for each finding. For example, in situations where confidence in a finding is not high (and/or evidence and/or agreement is not robust and/or high), it would be useful to understand why the author team has made this judgment (e.g., why is confidence not high, evidence not robust, and/or agreement not high). In situations where confidence is high, what is the evidence that forms the basis for these assignments. Succinct descriptions in the chapter text of this type will both highlight the basis for ES findings and help explain the author team's assessment of the literature. We in the TSU are also available to discuss these issues if that would be of use. (Michael Mastrandrea, IPCC WGII TSU)	New draft addresses these issues
48	54750	8	0	0	0	0	Several sections of the chapter provide descriptive details of issues, the chapter team may consider replacing some of this discussion with summary paragraphs and adding synthetic features like tables, figures, maps to present key findings. (Monalisa Chatterjee, IPCC WGII TSU)	look to see if use of tables and figures can help reduce length
49	54751	8	0	0	0	0	The author team may wish to have clear subsections for discussions about informal settlements. (Monalisa Chatterjee, IPCC WGII TSU)	? Lots of discussion of informal settlements in text.
50	54752	8	0	0	0	0	The examples in the chapter are primarily from developing countries and lean heavily on informal settlements issues. Literature permitting, the author team may consider adding more examples from formal urban settlements and developed countries. (Monalisa Chatterjee, IPCC WGII TSU)	There is substantial coverage of cities in high income nations
51	54778	8	0	0	0	0	Literature permitting, the chapter team is encouraged to add more cases to support their findings. Moreover, it will be useful if the enabling or deterring factors, drivers etc., are explicitly stated where ever possible. (Monalisa Chatterjee, IPCC WGII TSU)	Difficult if we are seeking to cut length.
52	54779	8	0	0	0	0	Sometimes important findings are buried in the text. The author team may wish to reorganize some of these material to highlight such findings. (Monalisa Chatterjee, IPCC WGII TSU)	Revised ES and 8.5 hopefully do this
53	54806	8	0	0	0	0	The author team should update the reference list and remove citation inconsistencies between in text citations and full citations given in the reference list. Please see supplementary document named WG2AR5-Chap8_Reference Checks.pdf at https://ipcc-wg2.gov/AR5/author/FOD/SuppMat (Monalisa Chatterjee, IPCC WGII TSU)	We are working on this
54	37572	8	1	0	0	0	This is a comprehensive report dealing with a broad spectrum of issues and the authors should be commended for the breadth obtained. One concern that I had was that urban climate wasn't really covered in detail up front. Whilst the term UHI is used throughout the chapter and some of the problems of integrating urban areas in climate assessments is included at the end, the key fact that urban areas further exacerbate the potential impact of climate change is lost. (lee chapman, university of birmingham)	Section 8.2.2.1 covers UHI and other climatic and environmental impacts of cities.
55	39011	8	1	1	0	0	It seems to be implicit in this chapter that no city in the world has detected any impacts of recent climate change, or else been able to relate changes in any of its subsystems to recent climate change. This may or may not be the current knowledge about the issue, but if it is the case, then the authors should clearly say so. (Wolfgang Cramer, Potsdam Institute for Climate Impact Research)	Addressed in ES; section 8.2.4 covers some of the observed impacts of climate change as will the case studies.
56	40600	8	1	1	92	22	The quantification of urban micro climate and bioclimate is not included in the chapter. I recommend a bibliography search on www.urbanclimate.net and urban-climate.org . Focus has to be given also on the assessment of effects not only from sociological point of view. (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	Addressed in ES; section 8.2.4 covers some of the observed impacts of climate change as will the case studies.
57	40601	8	1	1	92	22	Several projects concerning urban climate adaptation possibilities and reduction of heat stress have been run in Europe and world wide. i.e. Matzarakis, A., Endler, C., 2010: Adaptation of thermal bioclimate under climate change conditions - The example of physiologically equivalent temperature in Freiburg, Germany. International Journal of Biometeorology 54, 479-483 or special issue of Buildings and Environment about climate change and buildings in 2012 (Andreas Matzarakis, Albert-Ludwigs-University Freiburg)	To be added to the section on adaptation in developed country cities
58	40494	8	1	31	0	0	Awkward and unclear section title. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Section title changed
59	40495	8	1	33	1	34	Reverse order of subsection. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	addressed
60	40496	8	1	36	0	0	Sustainable habitat' -- What does this mean? (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Changed
61	40497	8	1	47	0	0	Urban heat and cold' -- Awkward. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Addressed
62	40498	8	1	50	0	0	Geohydrological hazards' -- Opaque section title. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Addressed
63	40499	8	2	7	0	0	transition' -- What does that mean? Unclear section title. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	But transition is explained in some detail

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
64	40500	8	2	20	0	0	Awkward section title. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	changed
65	40501	8	2	23	0	0	Awkward section title. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Changed
66	40502	8	2	28	0	0	Awkward section title. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Changed
67	46338	8	3	8	0	0	The Scope of the chapter defined in Section 8.1.2 defines three objectives: "how climate change will impact on urban centres and their populations and enterprises" "What measures can be taken to adapt to these changes" and "institutional and governance changes needed to underpin this". The executive summary doesn't provide any substantive comment on the first of these objectives, and limited comment on the second. I would recommend that the executive summary includes comment on the key impacts of climate change for urban areas as discussed in section 8.2 (Mark McCarthy, Met Office)	Addressed in the ES
68	50490	8	3	8	0	0	Executive Summary – In subsequent work on the executive summary, there are several aspects of development for the author team to consider further: 1st, it would be preferable to present the paragraphs of the executive summary with a key finding in bold text followed by explanatory non-bold text. 2nd, for each key finding and wherever else relevance, the author team should use calibrated uncertainty language to characterize its degree of certainty in these conclusions, especially considering summary terms for evidence and agreement and levels of confidence. 3rd, for each statement and/or paragraph, the author team should provide line-of-sight reference to the chapter section or sections supporting the finding, in which the reader can find the traceable account of the author team's evaluation of the current state of understanding. (Katharine Mach, IPCC WGII TSU)	Addressed
69	54753	8	3	8	0	0	Executive Summary - The author team should use calibrated uncertainty language. Moreover, the author team may rephrase some of these key findings to emphasize the policy relevant aspects of these findings. (Monalisa Chatterjee, IPCC WGII TSU)	addressed
70	40507	8	3	8	5	24	Executive Summary – too many major points, not well-framed. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Rewritten
71	49074	8	3	8	5	24	The executive summary of chapter 8 should be more in line with what is current practise in previous IPCC reports and the other chapters. It may be sufficient to change the italic text into boldfaced text. (Oyvind Christophersen, Climate and Pollution Agency)	Addressed
72	49077	8	3	8	5	25	We state that there is no reference to degree of confidence (agreement and evidence) in this summary, and assume that this will be included later (Oyvind Christophersen, Climate and Pollution Agency)	included
73	49075	8	3	10	3	10	Please consider to replace "centrally" with "significantly". (Oyvind Christophersen, Climate and Pollution Agency)	Why this change? Centrally is much stronger
74	47393	8	3	20	3	21	Repetition of word "responsibilities" in sentence - replace one by "jurisdictions" (Caroline Larrivee, Ouranos inc.)	addressed
75	49078	8	3	20	3	22	Suggest to rewrite, and dividing one sentence into two; " Local governments are responsible for many (most?) of the measures on climate change adaptation in urban areas. This makes sense since local risks and vulnerabilities are rooted in local conditions." (Oyvind Christophersen, Climate and Pollution Agency)	addressed
76	40503	8	3	29	0	0	Needs key conclusion in sentence. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	addressed
77	36445	8	3	32	35	0	adaptive capacity: need to recognise here and later that many of the actions of local government actively undermine this (by consenting developments in risky places due to developer pressure for example) (Eric Pawson, University of Canterbury)	Point is good but not sure this is the right place for this
78	46034	8	3	34	3	36	These are the same old problems facing urban areas (Luis E. Garcia, World Bank)	but scale of problem not the same
79	40504	8	3	38	0	0	Needs key conclusion in sentence. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Done
80	47394	8	3	38	3	41	Another specific issue of low and mid-income nations is the rate and magnitude of urban development which also brings great challenges that many high-income nations do not have to deal with. (Caroline Larrivee, Ouranos inc.)	added to text
81	45390	8	3	40	3	41	We suggest noting that addressing poverty and other challenges by social policies can further at the same time climate change adaptation and mitigation. Thus, corresponding policies of both fields can be complementing, interrelated, or even the same. (Rafael Tuts, United Nations Human Settlements Programme)	addressed
82	40505	8	3	43	0	0	Needs key conclusion in sentence. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	addressed
83	48944	8	3	43	0	44	It is not clear here how the role of housing is of critical importance, or how significant the 'under-estimation' of this role may be (Chris Cameron, Wellington City Council)	addressed
84	46339	8	3	43	3	44	Can this be incorporated in page 4 lines 34 to 38? (Mark McCarthy, Met Office)	addressed
85	36446	8	3	46	0	0	also very obviously: flood plains and areas prone to slips and rockfall (Eric Pawson, University of Canterbury)	added to text
86	40506	8	3	46	0	0	Needs key conclusion in sentence. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	addressed
87	50491	8	3	49	3	49	"likely" – The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	addressed
88	47395	8	4	1	4	8	In terms of inter-dependencies, power is the infrastructure upon which almost all other infrastructure depends - it should be one of the first ones (with water supplies). Also, there is repetition of "telecommunications" and "communications system" (are they the same?). (Caroline Larrivee, Ouranos inc.)	All other systems depend upon energy or power which is what point 6 of ES expands upon
89	47396	8	4	6	4	8	Add to sentence "... and have the capacity to mainstream adaptation measures or allow for more transformative changes (for example by modifying processes to allow for these types of changes)." The concept of "transformative" changes or approaches MUST appear in the executive summary section of this chapter. (Caroline Larrivee, Ouranos inc.)	Now included in ES

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
90	52703	8	4	14	0	0	A phrase emphasizing the importance of outreaching activities would be appropriated. The massive conurbation, leading to meta-cities, by UN Habitat will bring into human settlements the above mentioned diversity in a large number. Hence people should be formally and informally educated. In this regard, it should be also noted that, the Executive Summary should put more emphasis in the increasing rate of migrations reaching dense populated cities, particularly in developing countries. (*) REFERENCE: State of the World Cities 2006 / 7 UN-Habitat, in page viii, Overview. (*) See Chapter 1.4, in the above mentioned publication (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	The point is already made. Have also to avoid over emphasis on mega cities (there are relatively few of them and many of them have more people moving out than in) and exaggerations in statistics on rate of increase in levels of urbanization
91	41926	8	4	18	4	19	To harmonize with the other subheadings in italic for paragraphs, this part needs also an additional text (Guéladio Cissé, Swiss Tropical and Public Health Institute (Swiss TPH))	Done
92	38242	8	4	21	4	22	Executive Summary. "Many urban locations will face particular challenges related to water – including ensuring sufficient supplies (and the capacities to manage with reduced freshwater availability) and managing waste water flows." Question: Is it possible to indicate which continent(s)/region(s) of the world that will suffer the most from such reduced freshwater availability? (Abdalah Mokssit, Direction de la Météorologie Nationale (DMN))	Rephrased
93	41927	8	4	21	4	22	Same comment as line above. Furthermore challenges related to water must recall and underline FLOODS (Guéladio Cissé, Swiss Tropical and Public Health Institute (Swiss TPH))	addressed
94	47397	8	4	22	4	22	Add in sentence "... and managing waste and storm water flows." (Caroline Larrivee, Ouranos inc.)	addressed
95	47398	8	4	24	4	25	"The last five years have brought many examples of city governments assessing THEIR needs." (instead of "what needs") (Caroline Larrivee, Ouranos inc.)	rephrased
96	47399	8	4	25	4	28	The need is not only to designate a unit within a city but also formalize (institutionalize) the involvement of multiple services in the adaptation planning and implementation process - a mandate given by city authorities to ensure all relevant services participate is key to the success of adaptation. (Caroline Larrivee, Ouranos inc.)	Institutionalisation of process, instead of a unit, is recommended in the ES, point 18
97	47400	8	4	28	4	29	Over and above reviewing building codes, it may be more the climate data info which the codes refer to that need to be revised along with the ways to interpret this info (or how to apply codes in the face of an evolving risk). (Caroline Larrivee, Ouranos inc.)	Addressed in point 12 of ES
98	47401	8	4	29	4	31	Sentence beginning with "City governments that have taken..." seems incomplete. (Caroline Larrivee, Ouranos inc.)	Sentence complete in the revised ES
99	45287	8	4	34	4	34	this applies not only to informal settlements (Jo da Silva, Arup)	addressed
100	47402	8	4	40	4	45	While there is a need for better data, there is mostly a need to explain 1) how to interpret and use the climate change scenarios and projections properly and adequately, 2) how to establish tolerance to risk and manage the risks accordingly, and 3) how to develop robust adaptation strategies that perform well for a range of possible scenarios. (Caroline Larrivee, Ouranos inc.)	review para in light of these suggestions
101	48946	8	4	42	0	43	It would be useful to explain what is meant by 'second and third order impacts' - perhaps with an example (Chris Cameron, Wellington City Council)	Agreed but needs to be in glossary
102	47566	8	4	42	5	5	Contradictory: "Few cities have quantified risks..." X "City-based disaster risk reduction has 30 years of experience in identifying..." (Andrea Young, State University of Campinas - UNICAMP)	The first statement is changed to 'Few cities have quantified climate risks' and the second statement is not in the ES text anymore.
103	49079	8	4	49	4	49	An explanation of "green infrastructure" should be given (Oyvind Christophersen, Climate and Pollution Agency)	Needs to be in glossary
104	52704	8	5	0	0	0	8.1 Following the phrase ending on this line, add the following: This situation might be worsened with the impact of internal and external migration. This required coordination with the effects of climate change in the neighboring rural areas REFERENCE: The special issue on the History of Urban Environmental Imprint. Regional Environmental Change (Springer) Volume 12 N° 4, June 2012 provides examples of inter dependency between cities and their hinterland. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Issue of migration more complex than this and dealt with later in the chapter
105	36447	8	5	1	3	0	same point as on p 3; and p 27, lines 6-12 (Eric Pawson, University of Canterbury)	The two findings relate to the role of local government but in different ways. Not changed
106	41228	8	5	1	5	1	This seems to be the case in Australia - some innovative regional responses developing at the sub national level to fill the gap- cite: Norman, B, & Nakanishi, H, 2011, Planning for extreme weather events and climate change: innovative regional planning responses in Australia, Asian Planning Schools Association, Tokyo, September 2011 and variable capacity and experience at the local government level needing suport from higher levels of government: cite Gurrán, N, Hamín, E, Norman, B 2012, 'Climate change mitigation, adaptation and local planning' in Gurrán, N Australian Urban land Use Planning: Principles and Practice, Sydney University Press, Sydney, pp. 241-254 (Barbara Norman, University of Canberra)	Added to 8.4
107	46340	8	5	5	5	5	I would question "30 years of experience" as being rather specific. Haven't some cities (e.g. Stuttgart) employed climate scientists within their urban planning departments for much longer than that? Germany and many countries in Asia have a long standing association between urban climatic mapping and policy and urban planning, with extensive literature e.g. review paper here: Ren, C., Ng, E. Y.-y. and Katzschner, L. (2011), Urban climatic map studies: a review. Int. J. Climatol., 31: 2213–2233. doi: 10.1002/joc.2237 (Mark McCarthy, Met Office)	Text adjusted. The 30 years of experience relates to the work in Latin America of La Red and Allan Lavell and the new perspectives they brought to this
108	46441	8	5	5	5	6	In the following sentence: "City-based disaster risk reduction has 30 years of experience in identifying needed measures for risk reduction based on detailed local studies of hazards, risks and vulnerabilities.", please specify which city (or cities) has a: "30 years of experience". Probably it means some UN organization, but this could not be attributed to all cities of the world. (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	see comment above

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
109	48947	8	5	8	0	9	How should the analysis of changes over time be done - are there some examples or further explanation? (Chris Cameron, Wellington City Council)	Discussion of urban indicators for this later in text
110	43802	8	5	13	0	0	After emissions. May add the following : "In addition, urbanisation process has resulted into increased urban heat island effect leading to higher cooling energy demand in many of the major cities of the world. " This highlights--- (Manju Mohan, Indian Institute of Technology Delhi)	UHI covered in the revised ES, but not increased cooling energy demand. Take up in chapter
111	46442	8	5	13	5	14	Please, complete the information in the following sentence: "This highlights the importance of adaptation that also delivers mitigation co-benefits, as discussed in WG III.", related to WG III. At least includes the Chapter number. (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	Revised in the new ES to AR5 Working Group III report - reference to specific chapter is outstanding
112	39522	8	5	22	5	24	It's not clear to me exactly what this sentence is trying to articulate. It should be revised for improved clarity. (Carrie Mitchell, International Development Research Centre (IDRC))	Sentence revised
113	49076	8	5	31	5	31	Please consider to replace "centrally" with "significantly". (Oyvind Christophersen, Climate and Pollution Agency)	Why this change? Centrally is much stronger
114	48777	8	5	39	6	9	This sounds rather like a conclusion than an introduction (ALEXIA LESEUR, CDC Climat Research)	addressed
115	45391	8	5	47	5	48	Another key role that the management of land use plays vis a vis adaptation planning is "keeping development out of hazardous (e.g., flood-prone) areas". (Rafael Tuts, United Nations Human Settlements Programme)	addressed
116	35474	8	5	50	5	50	I would suggest using consistent terminology between the chapters: in Ch 14, the term adaptation options is used instead of possibilities - both of the terms seem to refer to the same thing (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	adaptation options rather than possibilities? Options implies discreet bounded set of choices. Text changed where appropriate
117	38900	8	5	51	5	51	..The first it... change to ... The first is... (anthony brazel, arizona state university)	Addressed
118	42290	8	5	51	5	51	"it" to be "is" (Luhui Yan, Tanzujii)	addressed
119	47567	8	5	51	5	53	"depends on past plans" (not just past plans, but present and future....) reality and technology have changed (Andrea Young, State University of Campinas - UNICAMP)	the text is not saying that present and future are not important but making the point that what exists 'now' that is the result of past policies and investments has a major influence on adaptive capacity
120	52705	8	6	19	0	0	Add information on the following issue: Conurbation call for a tight coordination between the settlements involved, in particular when wastes repositories in the peripheries of the larger populated nuclei are involved. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Point is valid but this is not the place to insert this
121	41343	8	6	21	6	37	This paragraph is very detailed and might better fit into Chapter 8.1.3. In my opinion this paragraph should rather give an overview what constitutes urban areas. (Sven Harmeling, Germanwatch)	this belongs in the section 'scope of the chapter' - some adjustment in text as recommended here have been made
122	45392	8	6	21	6	37	A methodological note: This paragraph does critically discuss the term "urban", but does not finally offer a definition with which the chapter (or report) is working with. (Rafael Tuts, United Nations Human Settlements Programme)	Addressed
123	54754	8	6	21	6	37	The author team should coordinate with chapter 9 on definitions of urban (and rural) areas. Perhaps a box could be prepared that could be shared/crossreferenced between chapters 8 and 9. (Monalisa Chatterjee, IPCC WGII TSU)	most nations have no definition for what constitutes their rural population other than this is the population that is not urban
124	40508	8	6	40	0	0	Cite: Rosenzweig, C., W.D. Solecki, S.A. Hammer, and S. Mehrotra (Eds.), 2011: Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network. Cambridge University Press. -- A major report related to climate change and cities. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	This section is on the urban context. Commentator needs to specify what particular point the recommended reference made that needs to be here
125	54755	8	6	40	0	0	Section 8.1.3. The author team should synthesize this section and present a summary of all findings. (Monalisa Chatterjee, IPCC WGII TSU)	we can look to see if this section can be tightened and so shortened a little
126	48778	8	6	40	12	5	These two sections are interesting but quite long (for an introduction) (ALEXIA LESEUR, CDC Climat Research)	see above
127	35826	8	6	45	0	46	These are solid but dated references to civil society and its role in climate change. I suggest that the following more recent publications also be considered: Bäckstrand, K., and Löövbrand, E. 2007. Climate Governance Beyond 2012: Competing Discourses of Green Governmentality, Ecological Modernization and Civic Environmentalism, pp. 123-147 in Mary E. Pettenger (ed.) The Social Construction of Climate Change: Power, Knowledge, Norms, Discourses, Ashgate: Burlington VT. Brulle, Robert J. 2010. Politics and the Environment, in Kevin T. Leicht and J. Craig Jenkins (eds), The Handbook of Politics: State and Civil Society in Global Perspective Springer Publishers, New York, NY Brulle, Robert J. 2013. The Development, Structure, and Influence of the U.S. National Climate Change Movement in Climate Change Policy and Civil Society, edited by Yael Wolinsky, Washington DC: Congressional Quarterly Press Fischer, Joern, Robert Dyball, Ioan Fazey, Stephen Dovers, Paul R. Ehrlich, Catherine Gross, Robert J. Brulle, Carleton Christensen, and Richard J. Borden. 2012. "Human Behavior and Sustainability," Frontiers in Ecology and the Environment Fogel, Cathleen 2007. Constructing Progressive Climate Change Norms: The US in the Early 2000s, pages 99-120 in Mary E. Pettenger (ed.) The Social Construction of Climate Change: Power, Knowledge, Norms, Discourses, Ashgate Press: Burlington VT. Rootes, C. and Brulle, R.J. 2011 Environmental Movements, in McAdam, D., and Snow, D. (eds.) The Blackwell Encyclopedia of Social and Political Movements. Blackwell: New York, NY (Robert Brulle, Drexel University)	? The paragraph to which this refers is not about civil society. Will review these references in relation to discussions of civil society elsewhere in this chapter
128	54756	8	6	51	6	53	Table 8.1 - The author team may wish to add a column on changes in total urban area/density. (Monalisa Chatterjee, IPCC WGII TSU)	Where is the data for this?

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
129	45393	8	7	3	7	5	It is implied that rapid urbanization is associated with economic success and an abundance of available resources. This is not necessarily the case -- rapid urbanization may be driven, for example, by a lack of security in the countryside. Likewise, given the (often unmet) demands that rapid urbanization places on the provision of urban infrastructure and services, rapid urbanization in the developing world often does not translate into a superabundance of available resources available to fund adaptation. (Rafael Tuts, United Nations Human Settlements Programme)	Rapid urbanization (the increase in the proportion of the population living in urban areas) is associated with economic success. There are some exceptions but these are acknowledged. So too is the failure of economic success to generate resources for adaptation
130	43803	8	7	5	0	0	After adaptation. May add the following: As illustrated by a case study conducted for the megacity Delhi (Mohan et al., 2011 a), a regression analysis over 1997-2008 was performed between population growth, Gross State Domestic Product (GSDP) and total built-up area to know the dependency of one over another. A significant positive relationship was observed between built-up area and population growth ($r^2 = 0.86$, $p = 0.05$) while another positive relationship is also observed between built-up area and GSDP ($r^2 = 0.92$, $p = 0.05$). " But in most----- (Manju Mohan, Indian Institute of Technology Delhi)	this is too specific to one city to be used as a reference for the much more general point made (drawn from analyses of many nations)
131	52706	8	7	11	0	0	Extreme events and the changes in the climate system, affecting productivity and leaving to agricultural and / or other productive relocation, or the flooding of low coastal areas and islands, will increase migration rates, with increasing impacts on cities, affecting the three basic securities (water, food and physical security, due to crimes). Therefore, an addition along this lines is suggested (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	This is a section on the urban context. Issues of migration related to climate change are included elsewhere. Where is the evidence for instance that increased migration rates increase crime rates?
132	46341	8	7	24	7	24	The statement that low to middle income nations have most of the world's large cities appears to contradict statements earlier in the paragraph and in the first paragraph of the page. Should be better clarified how prosperity and large cities relate through the 19th, 20th and 21st Centuries. (Mark McCarthy, Met Office)	There is no contradiction to earlier statements as the world's largest economies include many middle-income nations eg China and India
133	46035	8	7	26	7	26	How about Mexico? (Luis E. Garcia, World Bank)	the text does not list all megacities and points to nations that have more than one megacity.
134	52707	8	7	28	0	0	Since the meta-city built-up around the City of Buenos Aires adds about one third of Argentina total population, and this development will no doubt be repeated in other cities of the world, it is felt that the concept of meta-city, as large conurbation should be introduced. Planning for the slums appropriate development, not only in the building up of their housing but also the availability of resources and services, as well as the legal rules and the burden to govern such heterogeneity would call for the consideration of this designation. REFERENCE: Chapter 2, in te State of the World's cities 2006/7 (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Key issue here is actually that only a small proportion of the world's population lives in mega cities or meta cities and many of these actually have more people moving out than in. It is also unclear how Buenos Aires can be considered a meta-city when the conventional definition for this is 20 million plus
135	50492	8	7	28	7	28	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	changed
136	47403	8	7	33	7	34	Sentence beginning with "Also the growth in the size and importance of cities whose economies ..." is not clear (or incomplete). (Caroline Larrivee, Ouranos inc.)	Addressed
137	39010	8	7	36	0	0	The reader is not turning to the IPCC in order to find sentences that begin with "Perhaps" and even less to find sentences that continue as " the main difficulty that this chapter faces is in providing a summary of trends for settlements that have more than half the world's population when there is such diversity among the world's urban centres in terms of the scale and nature of risks that climate change will bring, the extent to which each urban centre's population lives in good quality homes served with conventional infrastructure and services that provides the basis for adaptation (what this chapter terms accumulated resilience) and the extent to which urban governments are acting or able to act on adaptation and being supported to do so by higher levels of government and where needed international agencies." (Wolfgang Cramer, Potsdam Institute for Climate Impact Research)	this qualification is needed to emphasize just how much urban contexts vary
138	54757	8	7	49	8	2	Table 8.2 - The usage of 0-30%, 30-80%, and 80-100% may be confusing, the author team may consider using 30%, 50% and 20% instead. (Monalisa Chatterjee, IPCC WGII TSU)	the ranges given are important for accuracy - you cannot change these to a single figure
139	52708	8	8	4	0	15	The above mentioned heterogeneity reflects in a series of social, educational and even administration issue, calling for specific solutions. UN-Habitat has provided some guidance material, for Asia. These would serve the purpose in other regions. REFERENCE: Housing the poor in Asian cities. UN Habitat & UN ESCAP, 2008 (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Addressed later in the chapter
140	54758	8	8	4	8	15	Since diversity is a key factor in assessments about urban areas, the author team may wish to add a table to highlight some of the averages and anomalies observed in statistical variables like life expectancies, etc.. (Monalisa Chatterjee, IPCC WGII TSU)	data not available for this
141	43918	8	8	7	0	0	must be in present indefinite - varies may be replaced with "vary" (Muhammad Amjad, Global Change Impact Studies Centre)	addressed
142	46036	8	8	13	8	13	Water piped to their homes, but what about the quality of the water delivered and quality of the service? (Luis E. Garcia, World Bank)	But the UNICEF-WHO JMP statistics do not measure this; are there any other sources that do?
143	52709	8	8	17	0	24	As already mentioned outreaching activities are a must in this scenario. The UN ISDR has valuable information on the issue of warning, adaptation and resilience. A recent document published by in the WMO Bulletin should be referred in this paragraph. REFERENCE: WMO Bulletin: Reaching Users with Climate Services. Volume 60 (2), 2011. Article by the UN-ISDR Secretariat on "Making cities resilient" page 117. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	This point does not seem relevant to this paragraph; the point suggested here is made later
144	46037	8	8	17	8	18	This seems a truism (Luis E. Garcia, World Bank)	"Recent analyses of disaster impacts show that urban centres concentrate a high proportion of the population most affected by extreme weather events" why is this a truism?

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
145	52710	8	8	31	0	39	The provision of fresh vegetables and other fresh food, initially developed in the outskirts and around the cities, has been displaced, in many cases far away, with adverse effects in the costs and quality of food stuff. REFERENCE: History of Urban Environmental Imprint: Introduction to a multidisciplinary approach to the long-term relationships between western cities and their hinterland.. Regional Environmental Change, Volume 12, Number 2, June 2012.pp 249 (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Point about cities drawing on more distant resources is already stated. Is there evidence that this has had adverse effects on the costs and quality?
146	54759	8	8	31	8	39	It will be very useful to integrate this discussion on expanding area and footprint with increasing urban population. (Monalisa Chatterjee, IPCC WGII TSU)	but ecological footprint is driven by high consumption and not necessarily by population growth
147	45394	8	8	34	8	35	Around here would suggest noting the great variability of the ecological footprint of various cities; for example, that the biological diversity of Capetown (which covers a substantial portion of the world's smallest floral kingdom) is much greater than that of most other cities. (Rafael Tuts, United Nations Human Settlements Programme)	Ecological footprint measurements do not take this into account
148	39242	8	8	39	8	45	the findings of this paragraph can be supported by citing the following book : Climate change effects on groundwater resources. A global Synthesis of Findings and recommendations, edited by Treidel, H., Martin-Bordes, J.-L. and Gurdak J. CRC Press. This book presents many studies of groundwater in various regions of the world (Eric Martin, Meteo-France)	But this para is not about water shortages
149	36448	8	8	48	50	0	there is a very useful McKinsey report on India on these matters: McKinsey 2010: India's urban awakening: building inclusive cities; sustaining economic growth, www.mckinseyquarterly.com/Indias_urbanization_A_closer_look_2640 (Eric Pawson, University of Canterbury)	I cannot see how this reference adds to what is stated. This report was also criticized for its lack of attention to the issues raised in these lines
150	45395	8	9	2	9	2	Suggest to add the following text IN CAPS: "It also depends on support AND ENABLING FRAMEWORKS from higher levels of government". (Rafael Tuts, United Nations Human Settlements Programme)	added
151	50493	8	9	7	9	7	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	addressed
152	48779	8	9	9	0	0	In this section, one could say a word on the specific localization of cities (near water, either on the cost or near a river, as cities used water for their development, so in vulnerable areas) (ALEXIA LESEUR, CDC Climat Research)	Suggestion incorporated into the text
153	48282	8	9	12	0	0	The urban areas have to be rewritten with more references. Theory without examples does not work. Where are the geography based examples? What about vulnerability of cities? Current and future vulnerability studies? (Malini Nair, Indian Institute of Science)	This is an introductory section and later sections have many examples
154	54760	8	9	12	0	0	Section 8.1.4. To reduce length and repetition of findings discussed in other chapters, the chapter team may wish to focus on vulnerability in the context of urban areas. (Monalisa Chatterjee, IPCC WGII TSU)	But the text does focus on urban areas
155	40509	8	9	12	9	42	Add reference to: Mehrotra et al. (2011) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	This reference is used and quoted in later sections; this is just an introductory section with the detail discussed in later sections
156	37573	8	9	14	0	0	The following paper provides many examples of what is discussed in this paragraph: Tomlinson, C.J., Chapman, L., Thornes, J.E. & Baker, C.J. (2011) Including the urban heat island in spatial heat health risk assessment strategies: a case study for Birmingham, UK. International Journal of Health Geographies 10:42 (lee chapman, university of birmingham)	This is a summary section, this reference will be reviewed for relevance in section 8.2
157	41345	8	9	14	9	42	As the Chapter is called "Vulnerability and Resilience" please add some definitions and differentiations of the term resilience in regard to vulnerability. (Sven Harmeling, Germanwatch)	In definitions for whole report
158	46038	8	9	19	9	20	This seems a truism (Luis E. Garcia, World Bank)	cannot see why this is a truism
159	41344	8	9	24	9	24	It would be good to name some other scholars who have defined the term vulnerability. (Sven Harmeling, Germanwatch)	Chapter faces difficulties in keeping to recommended length; so many authors have written on this
160	52104	8	9	24	9	24	The author team could also provide a reference here to the report glossary, which provides a definition for vulnerability. (Katharine Mach, IPCC WGII TSU)	Addressed
161	43135	8	9	31	0	0	The words: "and vulnerable sectors" look duplication/repetition and better need to be replaced by the word "that" (SHAHBAZ MEHMOOD, Global Change Impact Studies Centre)	Addressed
162	48283	8	9	33	0	0	Tourism is vulnerable to climate change. Coral reefs are obvious examples. In addition, there might be changes that include rising sea-levels, disappearing marshes, disappearing biodiversity that affect tourism. It is not provided here (Malini Nair, Indian Institute of Science)	Addressed
163	45396	8	9	42	9	42	Here or elsewhere, where discussing the vulnerability of urban systems, would be a good place to make the important point that, whereas resilience may well involve redundancy in system design, traditional infrastructure investment decision-making based on cost-benefit-type approaches may well OVERLOOK OR FAIL TO VALUE this redundancy. Coincidentally this is a point that Jo da Silva has made verbally, e.g., in a panel discussion at the Resilient Cities Congress 2012 in Bonn, but which is not mentioned in her paper which is cited at this point. (Rafael Tuts, United Nations Human Settlements Programme)	addressed
164	37668	8	9	43	0	0	It would seem important to discuss the quantification of resilience and the cost of adaptation that results in resilience. Add(?):U.S Department of Homeland Security concerns for infrastructure resilience to natural and manmade disasters has resulted in methods to determine the cost, characterization, timing, and benefits of resilience (Vugrin et al 2011, Vugrin and Camphouse, 2011). Extensions of this work include the estimation of the resilience costs and benefits under uncertainty such as that associated with climate change (Vugrin and Turnquist, 2012). [Vugrin E.D., D.E. Warren, and M.A. Ehlen, 2011: A resilience assessment framework for infrastructure and economic systems: Quantitative and qualitative resilience analysis of petrochemical supply chains to a hurricane. Process Safety Progress, 30(3), 280–290 DOI: 10.1002/prs.10437] (George Backus, Sandia National Laboratories)	Point added and reference added; we will check that Chapter 10 has a more comprehensive coverage of this

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
165	37669	8	9	43	0	0	Reference: [Vugrin E.D., R.C. Camphouse, 2011. Infrastructure resilience assessment through control design. International Journal of Critical Infrastructures, 7(3)243 - 260. DOI: 10.1504/11.42994] [Vugrin, E. and M.A. Turnquist, 2012: Design for Resilience in Infrastructure Distribution Networks. Sandia National Laboratories. Report SAND2012-6050 Albuquerque, NM. Available at: http://www.sandia.gov/CasosEngineering/docs/Vugrin_resilient_design_2012_6050.pdf] (George Backus, Sandia National Laboratories)	as above
166	40510	8	9	45	0	0	Add reference to: Mehrotra et al. (2011) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	This and other chapters in the book from which this comes are now referenced where relevant
167	45397	8	9	47	9	47	Suggest to add the following new text (IN CAPS): "In urban centres where VIRTUALLY all buildings meet health and safety standards, WHERE LAND USE PLANNING KEEPS PEOPLE OUT OF HARM'S WAY and there is universal provision for...." (Rafael Tuts, United Nations Human Settlements Programme)	addressed
168	46039	8	9	47	9	48	Seems utopic. Most buildings maybe? (Luis E. Garcia, World Bank)	Not utopic - what is standard practice in most urban centres in high income nations
169	41928	8	9	47	10	8	After these lines , a recall of the relevance of vulnerabilities mapping even in urban context may be of interest (Guéladio Cissé, Swiss Tropical and Public Health Institute (Swiss TPH))	Comes later
170	45398	8	9	52	9	53	Suggest to add the following new text (IN CAPS): "This means a disproportionate climate impact on low-income groups IN DEVELOPING COUNTRIES...." (Rafael Tuts, United Nations Human Settlements Programme)	addressed
171	52711	8	9	54	0	0	Maybe a word of warning would be a necessary addition, to enforce the need that modern building shall accomplish with the required building standards, to make them more resilient. A reference to the Ten-point checklist, provided by ISDR would be appropriated. REFERENCE: See reference under the comment on page 8, lines 17 to 24 (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Good suggestion - but the need to revise or adjust infrastructure and building standards is made in 8.1.4.2
172	37670	8	10	12	0	0	This section gives no indication of how quantify those interrelationships and the associated risks. Add(?): A Sandia National Laboratories study estimated the cost of climate change-induced risk for 70 interacting industries within the interconnected U.S. states (Backus et. al., 2012). These industries are largely urban in nature and the study focused on the vulnerability to the impact of variation in water availability due to climate change .[Backus, G., T. Lowry and D. Warren, 2012: The near-term risk of climate uncertainty among the U.S. states. Climatic Change, Online First 23 June 2012. Doi: 10.1007/s10584-012-0511-8] (George Backus, Sandia National Laboratories)	Addressed
173	54761	8	10	16	0	0	Section 8.1.4.2. The author team should synthesize this section and present a summary of all findings. (Monalisa Chatterjee, IPCC WGII TSU)	This is in summary
174	37574	8	10	18	0	0	A useful paper discussing local resilience: Rogers, C.D.F., Bouch, C., Williams, S., Barber, A.R.G., Baker, C.J., Bryson, J.R., Chapman, D.N., Chapman, L., Coaffee, J. Jefferson, I. & Quinn A.D. (2012) Resistance and Resilience – Paradigms for Critical Local Infrastructure. Proceedings of the ICE: Municipal Engineer 165:73-83 (lee chapman, university of birmingham)	Added
175	46040	8	10	33	10	35	For example in Barranquilla, Colombia (Avila, 2008) (Luis E. Garcia, World Bank)	Could only find power point presentation on this. Also this para is a summary para and constraints on chapter length do not allow us to provide examples
176	45399	8	10	37	10	38	Suggest to add the following new text (IN CAPS): "... but the ability to avoid OR MINIMIZE the need to recover". (Rafael Tuts, United Nations Human Settlements Programme)	addressed
177	45400	8	10	41	10	41	Suggest to add the following new text (IN CAPS): "... from other jurisdictions OR HIGHER LEVELS OF GOVERNMENT...." (Rafael Tuts, United Nations Human Settlements Programme)	Text amended
178	44977	8	10	44	0	0	Cities in high-income nations and many in middle-income nations have become more resilient to extreme weather (RAIS AKHTAR, ALIGARH MUSLIM UNIVERSITY)	addressed
179	44978	8	10	45	0	0	(and most other potential catalysts for disasters) through a range of measures that have responded to risks and to the (RAIS AKHTAR, ALIGARH MUSLIM UNIVERSITY)	addressed
180	44979	8	10	46	0	0	political processes that demanded such responses (RAIS AKHTAR, ALIGARH MUSLIM UNIVERSITY)	addressed
181	39523	8	10	47	10	47	Sentence starting with "The resilience..." is confusing and needs revision. (Carrie Mitchell, International Development Research Centre (IDRC))	have modified text
182	46443	8	10	49	10	49	Please, in the reference to Rosario city, included in: "change impacts (see for instance Hardoy and Ruete 2013 on Rosario)", the country (Argentina) must be incorporated, since there are several Rosario cities in the world. For the confirmation of the country see the corresponding reference: "Hardoy, Jorgelina and Regina Ruete 2013: Incorporating climate change adaptation into planning for a liveable city in Rosario, Argentina. EnvironUrb 25(1). " (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	text changed
183	47404	8	10	49	10	49	Hardoy and Ruete publication in 2013? (Caroline Larrivee, Ouranos inc.)	yes
184	45401	8	10	49	10	50	Suggest to add the following new text (IN CAPS): "What strongly influences resilience to extreme weather for urban dwellers is the quality of buildings (homes and workplaces)", THE EFFECTIVENESS OF LAND USE PLANNING TO CONTROL DEVELOPMENT IN FLOOD-PRONE AREAS... (Rafael Tuts, United Nations Human Settlements Programme)	Addressed
185	45402	8	11	8	11	9	Suggest to add the following new text (IN CAPS): "...for the extent to which it has reduced hazards, reduced risk, reduced exposure AND BUILT ADAPTIVE CAPACITY...." (Rafael Tuts, United Nations Human Settlements Programme)	This point is discussing what has been done in the past that is not a response to climate change but that has provided a good basis for such a response

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186	45288	8	11	8	11	11	this implies de facto that mitigation which relates to 'reducing hazards' is part of resilience. Typically there is not an option to 'reduce hazards', e.g. Earthquakes (Jo da Silva, Arup)	addressed
187	50494	8	11	8	11	43	For these paragraphs, the author team should consider providing supporting citations. (Katharine Mach, IPCC WGII TSU)	addressed
188	45403	8	11	15	11	15	Suggest to add the following new text (IN CAPS): "Building and infrastructure standards AND LAND USE PLANNING REGULATIONS...." (Rafael Tuts, United Nations Human Settlements Programme)	point about land use regulations made later in the paragraph
189	54762	8	11	31	11	33	It may be preferable if this sentence is rephrased to further clarify the point. (Monalisa Chatterjee, IPCC WGII TSU)	addressed
190	47405	8	11	32	11	33	"... responding dynamically to and effectively to evolving and changing climate-related risks ..." Instead of "changing climate change related risks" (Caroline Larrivee, Ouranos inc.)	addressed
191	45404	8	11	48	11	48	Suggest to further explain the concept of 'bouncing forward' around here. (Rafael Tuts, United Nations Human Settlements Programme)	Text amended
192	50495	8	12	7	0	0	Section 8.1.5. In describing conclusions from the 4th assessment report, it would be beneficial to more specifically cite and reference the findings described here, for example providing references to the specific relevant chapter sections from the 4th assessment report. (Katharine Mach, IPCC WGII TSU)	To be done
193	46041	8	12	23	12	23	See for example Friedman, 2005. As an example of this type of linkages, because of the 2011 tsunami (although not a climate related event), a significant percentage of Japan's export-focused automakers found themselves overnight facing devastated inventories, heavily damaged production facilities and an almost complete inability to deliver vehicles to any market outside of the country (http://www.autobytel.com/acura/news/japanese-earthquake-and-tsunami-most-important-automotive-story-of-2011-108986/) (Luis E. Garcia, World Bank)	Good point although this is not the place for this as this is a section reporting on what was in the fourth assessment
194	48284	8	12	28	0	0	Many impacts will be unanticipated and total impacts are also poorly estimated by considering only direct impacts. Key global vulnerabilities include inter-regional trade and migration patterns" Please provide examples (Malini Nair, Indian Institute of Science)	Good point although this is not the place for this as this is a section reporting on what was in the fourth assessment
195	42900	8	12	32	0	0	The statement "Key vulnerabilities are most often related to climate phenomena that exceed thresholds for adaptation ..." should be modified because climate and climate phenomena are related to hazard not to the vulnerability. Here there is an inconsistency with phenomena-hazard-vulnerability-risk conceptual framework (José Daniel Pabón-Caicedo, Universidad Nacional de Colombia)	addressed
196	37988	8	12	50	12	50	planned by for by -> delete by or for (Rafiq Hamdi, Royal Meteorological Institute of Belgium)	addressed
197	42291	8	12	50	12	50	"by for by" to be "by" (Luhui Yan, Tanzuji)	addressed
198	52712	8	13	0	0	0	8.1.5 - This paragraph omits the important reference to the lack of basic data. This shortcoming was remarked in the IGBP, WCRP, GCOS, s report of the Workshop held in Melbourne to evaluate AR4. In spite of the many efforts devoted by UN and its specialized agencies, still persists the lack of basic geophysical, biological data as well as socio economic related information. This shortcoming has to be emphasized. REFERENCE: Future Climate Change Research and Observations. WMO TN N° 1418 (2008) (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	addressed
199	47406	8	13	1	13	10	other uncertainties include role of perception (perception and tolerance to risk) as well as a better understanding of social processes behind decision-making, etc. (Caroline Larrivee, Ouranos inc.)	addressed
200	41580	8	13	3	13	31	I would suggest to add a additional key uncertainty to the text: Inadequate knowledge on the governance capacities that are needed to ensure adaptation action and effectiveness, efficiency and legitimacy of different modes of governance. Furthermore I think that the list of items that contribute to our understandig of resilience is incomplete. In this chapter more topics are mentioned that are relevant, especially in section 8.4. (Peter P.J. Drissen, Utrecht University)	addressed
201	41346	8	13	8	13	8	Add "Loss and Damage". (Sven Harmeling, Germanwatch)	addressed
202	46343	8	13	13	0	0	This section should also include statement of the advances made in the field of urban climatology. E.g. "More physical understanding, and improved numerical models of key urban climate processes. (Mark McCarthy, Met Office)	Addressed
203	44980	8	13	15	0	31	More inequalities have been notices between people and more people have migrated to metropolitan areas which have let more sanitation and drinking water problems.Haphazard urban development in and around metropolitan cities, for instance Delhi, has been a source of urban air pollution and conflicts. (RAIS AKHTAR, ALIGARH MUSLIM UNIVERSITY)	These points are not very clear and not referenced. Many metropolitan areas have had relatively slow net in-migration and the deficiencies in provision for water and sanitation are more due to inadequate governance
204	47568	8	13	15	13	16	"A much larger and more diverse literature" "The volume of relevant literature".....is repetitive or could cite some references (Andrea Young, State University of Campinas - UNICAMP)	Addressed. References not added here as these are evident throughout the text
205	41347	8	13	27	13	27	Add "blue" in regard to "green [and blue] infrastructure" (Sven Harmeling, Germanwatch)	Addressed
206	54763	8	13	30	13	31	The chapter team may reconsider the use of 'soft' (Monalisa Chatterjee, IPCC WGII TSU)	WHY? Do we need to be more precise - institutional?
207	52713	8	13	32	0	0	Some additional information should be included, reporting on the recent developments, starting with the Global Convention of Cities on Climate ("México City Pact), in 2010, and followed by the Durban Local Government Convention, 2-4 December 2011, prior to COP-17, reflects the City governors ' decision to combat global warming, establishing a set of voluntary commitments to promote strategies and actions to reduce GHG emissions and adapt cities to the impacts of climate change. REFERENCE: ICLEI: International Council for Local Environmental Initiatives (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Addressed

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208	41348	8	13	32	13	32	Since 2007 there has been a great deal of literature on the governance of adaptation (see for some examples http://www.adaptgov.com/wp-content/uploads/2012/03/Conference-Abstracts-BOOK_FINAL_19mar.pdf). Please add this as a separate bullet point. (Sven Harmeling, Germanwatch)	Addressed
209	36449	8	14	0	0	0	the use of 'urbanisation' in this chapter is confusing. The correct useage is that it means an increase in the % of people living in cities. In fact, often when the term 'urbanisation' is being used, what is meant is 'urban growth': which can refer to either increases in absolute numbers of urban dwellers or increases in the geographical extent of urban areas (Eric Pawson, University of Canterbury)	this is clarified in the earlier discussion of urbanization definitions. The correct usage is actually the increase in the proportion of the population in settlements designated by government as urban (not cities)
210	36421	8	14	0	17	0	Somewhere within this discussion, Brian Stone's work should be cited. It is missing and likely relevant: Please find his page with relevant information at: http://www.urbanclimate.gatech.edu/ (Shepherd Marshall , University of Georgia)	Yes. It is important to reference Brian Stone's work here. Did so.
211	47957	8	14	1	0	0	Section 8.2.2 This chapter mainly focuses on the adaptation to future urban climate. However, the reviews of studies about urban effects on the local climate and the future projection of urban climate are inadequate. Urban climate study has a long history more than 100 years. The references and topics discussed in the text seem not to cover the key papers. This issue is likely not treated in the report of WG I. Thus, the effects of urban development and global climate change on the urban climate should be described in the text more carefully. (Sachiho Adachi, Japan Agency for Marine-Earth Science and Technology)	This assessment is designed to include recent research and given tight page limitations it is not possibly to include the "classics"
212	38901	8	14	1	15	54	have author(s) go to references and make sure they are cited, and if there are references listed but not used in text. E.g., nowhere could I find Grimmond et al 2012 in the reference list. I don't see Stone et al 2010 used in text. (anthony brazel, arizona state university)	Included more references to this material
213	54764	8	14	3	0	0	Section 8.2.2.1. The author team may consider adding a table to present some of the key conclusions from this section. (Monalisa Chatterjee, IPCC WGII TSU)	Created a table of conclusions
214	36418	8	14	5	14	13	Seto and Shepherd (2009) and the recent U.S National Academy of Science Report on Urban Meteorology (Especially Chapter 3 should be added: Seto, K., and J.M. Shepherd, 2009: Global urban land-use trends and climate impacts. Current Opinion in Environmental Sustainability, doi:10.1016/j.cosust.2009.07.012. NAS Report on Urban Meteorology http://www.nap.edu/catalog.php?record_id=13328 This report came out in June/July 2012 has many science and stakeholder discussions relevant to this chapter. I highly recommend that the authors review this document as it revises this chapter. (Shepherd Marshall , University of Georgia)	Included these references
215	46444	8	14	21	14	21	In the following reference: "(Romero Lankao and Dodman 2011:114)", please verify the meaning of the number 114, after the year 2011. Possibly, it is the page number, but it is not included in many other references. The corresponding reference is: "Romero-Lankao, Patricia and David Dodman 2011: Cities in transition: transforming urban centers from hotbeds of GHG emissions and vulnerability to seedbeds of sustainability and resilience: Introduction and Editorial overview, Current Opinion in Environmental Sustainability 3(3), May, 113–120." (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	made appropriate changes to the text
216	50496	8	14	26	14	27	For the latter part of the sentence ("these are likely to be exacerbated by climate change"), the author team should consider and cross-reference the findings of the special report on extremes (chapters 3 and 4) and of the working group 1 contribution to the 5th assessment report. Additionally, casual usage of the word "likely" should be avoided here, as it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	made adjustments to the text and made references to the stated documents
217	46344	8	14	26	14	36	I would suggest this paragraph is not a fair reflection of the state of urban climate knowledge.UHI has strong seasonal, diurnal, and meteorological dependencies which have strong influence on how significant (or not) it is as an impact on various sectors. This is discussed in many of the references cited. The issue of anthropogenic heat emissions are presented, but the authors have not discussed why this is significant or what impact it has on the urban environment. Anthropogenic heat emissions are a link between energy, wealth (availability of heating/cooling), the urban microclimate (dumping heat to the local environment), and the large scale climate (driving the energy demand) so perhaps this issue would be worthy to expand within this chapter. (Mark McCarthy, Met Office)	incorporated these elements and references into the text
218	47222	8	14	26	14	36	In addition to the effects of city size, there are numerous studies now finding that UHI is often the dominant forcing agent in large cities -- a finding very much consistent with the evidence discussed in this section. In addition to Stone, 2007 -- as cited -- the following studies support this finding: Zhou, L., Dickinson, R. E., Tian, Y., Fang, J., Li, Q., Kaufmann, R. K., et al. (2004). Evidence for a significant urbanization effect on climate in China. Proceedings of the National Academy of Sciences of the United States of America, 101(26), 9540-9544; E. Kalnay,M. Cai, H. Li, et al. Estimation of the impact of land-surface forcings on temperature trends in eastern United States, Journal of Geophysical Research, 111, D06106; G. Ren, Z. Chu, Z. Chen, et al., Implications of temporal change in urban heat island intensity observed at Beijing and Wuhan stations, Geophysical Research Letters, 34, doi:10.1029/2006GL027927 (2007); F. Fujibe, Detection of urban warming in recent temperature trends in Japan, International Journal of Climatology, 29, 1811–22 (2009). (Brian Stone, Georgia Institute of Technology)	added references as appropriate
219	47712	8	14	26	14	49	I suggest adding a mention that the UHI effect (and other alterations to regional climate from urbanization) has been viewed as as an important analogue to global climate change temperature impacts (Changnon 1992). Changnon, S.A. 1992: Inadvertent weather modification in urban areas: Lessons for global climate change. Bulletin of the American Meteorological Society. 73, 619-627 (Winston Chow, National University of Singapore)	included Fujiibe; other references are older than normally included in AR5

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
220	47958	8	14	28	14	29	The readers may misunderstand this sentence describes the general knowledge of the heat island. It is better to emphasize these studies are analyses on the view point of climatology. For instance, "For example, the past long-term trend in surface air temperature in urban centres has been found to be associated with the intensity of urbanization." (Sachiho Adachi, Japan Agency for Marine-Earth Science and Technology)	made the associated changes
221	43804	8	14	31	0	0	After Stone, 2007) . May add the following: "The inter comparison of the annual mean minimum temperatures of two stations within Delhi (Safdarjung and Palam) post 1970's onwards showed that the night time temperatures trends have synchronized well with the pace of urbanization in the city. Warming trends in temperature reflects local warming and future studies are required to study it's Impact on global warming (Mohan et al., 2011 b)" (Manju Mohan, Indian Institute of Technology Delhi)	added text to make reference to this point
222	43136	8	14	38	14	39	The sentence: "In London - of the city" needs to add that it happens throughout the year or throughout a season (SHAHBAZ MEHMOOD, Global Change Impact Studies Centre)	made adjustment to the text.
223	46345	8	14	38	14	49	There are a vast number of studies that quantify the urban heat island and Stewart 2011 (Int J. Climatology) demonstrates the difficulties associated with quantifying UHI and provides a good critique of the literature and the two examples provided (Wilby, Smith and Levermore) aren't really representative of the breadth of evidence. Perhaps it would be useful to separate out the scales at which drivers of urban change would occur, as they are somewhat mixed together in this paragraph. For example (1) Change in microscale to mesoscale urbanisation affects local climate through creating a UHI, (2) How this urbanisation interacts with regional climate through sea-breeze, Katabatic winds etc, (3) Changes in synoptic scale meteorology (e.g. changes in high pressure systems conducive to high UHI events), (4) Large scale climate change resulting from global radiative forcing from GHGs. (Mark McCarthy, Met Office)	incorporated some of these points into the discussion
224	46346	8	14	38	14	49	20th Century urbanisation has been a significant source of local and regional climate change in some places. For example Fujibe paper referenced in preceeding paragraph demonstrates this for Japan. It is conceivable that for many places such additional urban growth will result in additional warming of similar magnitude or greater than from global climate change. (Mark McCarthy, Met Office)	good point, integrated it into the text
225	47959	8	14	38	14	49	It is not clear why the cases of London and New York are referred. Tokyo is the largest agglomerate in the world. More than 200 people die by heat stroke per year and the heat environment in the city is a big social issue. There are a large number of literatures in the urban climate study in Tokyo. I recommend referring these studies as well as London and New York. (Sachiho Adachi, Japan Agency for Marine-Earth Science and Technology)	included reference to Tokyo and as possible included Tokyo reference; also combined with comment from 225
226	48742	8	14	38	14	49	Future projections of urban heat island under the global warming conditions were also conducted for Tokyo, the largest megacity in the world. Here is the brief description of the reference. The surface air temperature of Tokyo in August is projected to increase about 2°C during the 2070s in average of 5 GCMs under the SRES A1b scenario, while the range of uncertainty in GCMs is about 2°C. Another warming of about 0.5°C is projected due to the maximum possible land-use change. As the result, total urban heat island intensity will increase from 1.5°C to 2.0°C until 2070s (Adachi et al., 2012). Reference: Adachi, S. A., F. Kimura, H. Kusaka, T. Inoue, and H. Ueda 2012: Comparison of the Impact of Global Climate Changes and Urbanization on Summertime Future Climate in the Tokyo Metropolitan Area, Journal of Applied Meteorology and Climatology, doi:10.1175/JAMC-D-11-0137.1 (Masayuki Hara, Japan Agency for Marine-Earth Science and Technology)	good point, included text into the document
227	46445	8	14	39	14	39	Idem before for the reference: "(Wilby 2007: 35)" See also line 44 of the same page (14) and chapter (8). (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	made adjustment to the text.
228	46446	8	14	40	14	41	Idem before for the reference: "(Smith and Levermore 2008: 4559)". (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	made adjustment to the text.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
229	47711	8	14	41	14	46	<p>Most aspects of urbanization increase the UHI effect strength, however change of the UHI effect with regards to climate change is a more complicated question. The strength of the UHI effect is linked to weather conditions such as cloud fraction, wind speed, atmospheric pressure and moisture content in both case studies (Runnalls and Oke 2000; Morris et al. 2001; Wilby et al. 2003; Oswald et al. 2012), and theory (Oke 1982). In this 'First Order Draft' manuscript the cited study (and cited studies within the Wilby 2007 study) show that in London, according to one GCM, the weather conditions are projected to change such that the UHI intensity in London will increase in the future. Thus the question information user's should ask is will the weather conditions relevant to the UHI effect change (for a region or globally) to make the UHI effect stronger or weaker in the future. Climate projections show a general decrease in global cloud cover, but there are regions of increase. In the AR4, WG1 chapter 10 it states on p. 767 that projections indicate consistently "an increase in the altitude of clouds overall". This change as a function of altitude and latitude are specifically addressed as "outside the tropics the increases aloft are rather consistent", "near-surface amounts increase at some latitudes", "the mid-level mid-latitude decreases are very consistent" and "much of the low and middle latitudes experience a decrease in cloud cover". However it also states "there are a few low-latitude regions of increase, as well as substantial increases at high latitudes." Thus ultimately most areas will have less cloud cover and higher clouds that lead to stronger UHI effects, but there will be areas where the change leads to weaker UHI effects. The affect of precipitation on the summertime UHI strength is not quantified however the accompanying increases in water vapor, cloud cover and even latent heat flux likely reduce the UHI effect strength. Again in the AR4, WG1 chapter 10 it states on p. 768 that "There are widespread decreases in mid-latitude summer precipitation, except for increases in eastern Asia. Decreases in precipitation over many subtropical areas are evident in the multi-model ensemble mean, and consistency in the sign of change among the models is often high (Wang, 2005)". Projections in surface pressure can be a proxy for variables linked to the UHI effect strength; the UHI phenomenon is stronger during conditions of high pressure. Again in the AR4, WG1 chapter 10 it states on p. 770 that "Sea level pressure differences show decreases at high latitudes in both seasons in both hemispheres. The compensating increases are predominantly over the mid-latitude and subtropical ocean regions, extending across South America, Australia and southern Asia in JJA, and the Mediterranean in DJF. Many of these increases are consistent across the models. This pattern of change ... has been linked to an expansion of the Hadley Circulation and a poleward shift of the mid-latitude storm tracks (Yin, 2005)." The change in surface pressure will certainly impact the pattern of UHI effect strength and thus further complicate projections of UHI effect change The UHI effect will continue to impact cities in the future but the change globally, and regionally, is not well quantified. It should be expected at minimum that some areas will show increases in UHI effect strength and event frequency while others will exhibit decreases. In the 'First Order Draft' manuscript it would be nice this point could be elaborated upon, or at least an explanation of why London's UHI effect strength/frequency will increase in the future. References: Runnalls, K. E., and T. R. Oke, 2000: Dynamics and controls of the near-surface heat island of Vancouver, British Columbia. <i>Physical Geography</i>, 21, 283-304. Morris, C. J. G., I. Simmonds, and N. Plummer, 2001: Quantification of the influences of wind and cloud on the nocturnal urban heat island of a large city. <i>Journal of Applied Meteorology</i>, 40, 169-182. Wilby, R. L., 2003: Past and projected trends in London's urban heat island. <i>Weather</i>, 58, 251-260. Oswald, E. M., R. B. Rood, K. Zhang, C. J. Gronlund, M. S. O'Neill, J. L. White-Newsome, S. J. Brines and D. G. Brown, 2012: An investigation into the spatial variability of near-surface air temperatures in the Detroit, MI metropolitan region. <i>Journal of Applied Meteorology and Climatology</i>, 51, 1290-1304. DOI: 10.1175/JAMC-D-11-0127.1 T.R. Oke, 1982: The energetic basis of the urban heat island. <i>Quart. J. Roy. Meteor. Soc.</i>, 108, 1-24. (Evan Oswald, UofMichigan)</p>	these are excellent points. Elements of them have been incorporated into the draft, especially the general framing issues and those made in the recent literature since the AR4
230	50497	8	14	44	14	46	<p>For this statement, it would be preferable to indicate as possible the relevant climate/socio-economic scenario for the projection. (Katharine Mach, IPCC WGII TSU)</p>	Added detail on the projection
231	46347	8	14	45	14	45	<p>Recent studies with physically based models such as Oleson (2012) and McCarthy et al. (2010) show mixed signal with reductions in UHI in many areas of the world and increases in some areas in response to climate change simulations. McCarthy et al. (2011 full citation below) looks specifically at London and Manchester and in contrast to the Wilby reference cited we do not find an increase in UHI in 2050s. Refs: Oleson, K.W., 2012: Contrasts between urban and rural climate in CCSM4 CMIP5 climate change scenarios, <i>J. Climate</i>, 25, 1390-1412, DOI:10.1175/JCLI-D-11-00098.1. McCarthy, M. P., Harpham, C., Goodess, C. M. and Jones, P. D. (2011), Simulating climate change in UK cities using a regional climate model, HadRM3. <i>Int. J. Climatol.</i> doi: 10.1002/joc.2402 (Mark McCarthy, Met Office)</p>	integrated text in the paragraph and adjusted surrounding text
232	46348	8	14	47	14	49	<p>The final sentence of this paragraph simply notes that this study exists, but does not comment on its conclusions. (Mark McCarthy, Met Office)</p>	added detail to the text
233	43805	8	14	49	0	0	<p>After (Manton, 2010). May add the following: "During a field campaign undertaken during summer, 2008 named DELHI-I (Delhi Experiments to Learn Heat Island Intensity-I), the heat island intensity (UHI) was observed to be as high as 8.3°C in this megacity (Mohan et al., 2012). This study also compares UHIs in major cities of the world based on field observations. The mean UHI (4.7°C) in Delhi is higher than those observed in New York (3°C reported in year 2002) and Paris (2.6°C reported in year 2006). The maximum UHI (8.3°C) observed in DELHI-I measurements falls in the range of those reported in London (8°C, year 2003), Beijing (7.9°C, year 2002) and Tokyo (8.1°C, year 1992). Though observed during different timespan within 2-6 years, this comparison gives a fairly good idea of the range of possible UHI's across the major cities of the world. (Manju Mohan, Indian Institute of Technology Delhi)</p>	a lot of detail of UHI in specific cities was added to a new UHI section later in the chapter

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
234	43806	8	14	49	0	0	REFERENCES: (1) Mohan et al., 2011 a: Manju Mohan, S. K. Pathan, Narendrareddy K., Anurag Kandya and Suchita Pandey: Dynamics of Urbanization and its Impact on Land-Use/Land-Cover: A Case Study, of Megacity Delhi, Journal of Environmental Protection, Scientific Research Publishing, USA ; Vol. 2, No. 9, November 2011, pages 1274-1283. (http://www.SciRP.org/journal/jep) http://dx.doi.org/10.4236/jep.2011.29147 (Manju Mohan, Indian Institute of Technology Delhi)	added reference
235	43807	8	14	49	0	0	REFERENCES: (2) Mohan et al., 2011b: Manju Mohan, Anurag Kandya and B. Arunachalam: Urban Heat Island Effect over National Capital Region of India: A Study using the Temperature Trends, Journal of Environmental Protection, Scientific Research Publishing, USA Vol. 2, No. 4, June 2011, pages 465-472. (http://www.SciRP.org/journal/jep) http://dx.doi.org/10.4236/jep.2011.24054 (Manju Mohan, Indian Institute of Technology Delhi)	added reference
236	43808	8	14	49	0	0	REFERENCES: (3) Mohan et al., 2012: Manju Mohan, Yukihiro Kikegawa, B.R. Gurjar, Shweta Bhati, Anurag Kandya and Koichi Ogawa: Urban Heat Island Assessment for a Tropical Urban Airshed in India, Atmospheric and Climate Sciences, 2012, Volume 2, pages 127-138. (http://www.SciRP.org/journal/acs) doi:10.4236/acs.2012.22014 Published Online April 2012. (Manju Mohan, Indian Institute of Technology Delhi)	added reference
237	44422	8	14	51	14	51	Should "2013" be changed. (Tae sung Cheong, National Disaster Management Institute)	changed reference
238	36419	8	14	51	15	15	If find this section to be extremely lacking in terms of current work. For example, Chapter 3 of the NAS report presents an array of current studies on numerous aspects urban-weather relationships. On the urban-precipitation relationships, work by Shepherd, Niyogi, Jin, Bornstein and others are not represented, yet these are some of the key studies on the topic: At a minimum, I recommend inclusion of the following studies: Shepherd, J.M., J.A. Stallins, M. Jin, and T.L. Mote, 2010: Urbanization: Impacts on clouds, precipitation, and lightning. Monograph on Urban Ecological Ecosystems. Eds. Jacqueline Peterson and Astrid Volder. American Society of Agronomy-Crop Science Society of America- Soil Science Society of America, 354 pp. Niyogi, P. Pyle, M. Lei, S. Arya, C. Kishtawai, M. Shepherd, F. Chen, and B. Wolfe, 2011: Urban modification of thunderstorms: Urban Modification of Thunderstorms – An Observational Storm Climatology and Model Case..... Shepherd, J.M., W.M Carter, M. Manyin, D. Messen, and S. Burian, 2010: The impact of urbanization on current and future coastal..... Additionally on the coastal interactions and urban process, a recent paper by Carter et al. (2012) is relevant: Carter, W.M., J.M. Shepherd, S. Burian, and I. Jeyachandran, 2012: Integration of lidar data into a coupled mesoscale-land surface model: A theoretical assessment of sensitivity of urban-coastal mesoscale circulations to urban canopy. Journal of Atmospheric and Oceanic Technology. doi: http://dx.doi.org/10.1175/2011JTECHA1524.1 Again, I re-emphasize, please read Chapter 3 of the NAS report for an overall survey of the literature on all aspects of the urban - climate problem, it is fairly current and will broaden the bread of some of the work currently cited on UHI, temperature, precipitation, and storms. (Shepherd Marshall , University of Georgia)	important additional references for their areas of specialization. Added several references into the text
239	47960	8	14	54	15	1	The reference of air flow in Tokyo is missing. -Modeling study Kusaka, H., F. Kimura, H. Hirakuchi, M. Mizutori, 2000: The effects of land-use alteration on the sea breeze and daytime heat island in the Tokyo metropolitan area. Journal of the Meteorological Society of Japan, 78(4), 405-420. -Analytical study of observation Fujibe, F., 2003: Long-term Surface Wind Changes in the Tokyo Metropolitan Area in the Afternoon of Sunny Days in the Warm Season. Journal of the Meteorological Society of Japan, 81(1), 141-149. (Sachiho Adachi, Japan Agency for Marine-Earth Science and Technology)	these are good points, but the level of detail seems to be too much given space limitations
240	37990	8	15	0	0	0	Add a paragraph about the link between urbanization, surface runoff, and climate change see for example Hamdi et al. (2011): Effects of urbanization and climate change on surface runoff of the Brussels Capital Region: a case study using an urban soil-vegetation-atmosphere-transfer model. International Journal of Climatology, 31, 1959-1974. (Rafiq Hamdi, Royal Meteorological Institute of Belgium)	made some additions to the text and included reference
241	46349	8	15	4	15	5	The references cited discuss only heat effects, and only in Oleson et al do they specifically demonstrate the importance of urban properties, while Trusilova shows importance of correct scale of urbanisation (not shown in the global model of Oleson). It is not made clear to reader that this sentence refers to temperature as preceding sentence is on fog, cloud and precip in coastal megacities (Oleson and Trusilova refs do not explicitly discuss coastal megacities). (Mark McCarthy, Met Office)	made adjustments in the text to highlight the relevance to temperature regimes
242	48780	8	15	7	0	0	The EPICEA project, on Paris area, can be mentioned as an example of modeling exercise at the urban scale. (ALEXIA LESEUR, CDC Climat Research)	good comment but space limitation do not allow for inclusion
243	46350	8	15	7	15	7	There are considerable papers in the literature that apply urban scale modelling to a variety of global cities and climate related problems so I don't think this statement is correct. (Mark McCarthy, Met Office)	upon review and consideration, changed the text to reflect suggestion
244	54765	8	15	7	15	15	The author team may wish to add a figure here to explain the 'urban effect' (Monalisa Chatterjee, IPCC WGII TSU)	considered but not included because of space limitations
245	46351	8	15	9	15	9	No reference given for comment on precip. There is considerable literature base on urban induced precip and it is a complex response to competing mechanisms that act to either suppress or enhance precip, and processes affecting intense precip can also have different response from the mean signal. (Mark McCarthy, Met Office)	changed text to reflect suggestion
246	46352	8	15	9	15	9	No reference given for wind speed and plant productivity changes. (Mark McCarthy, Met Office)	eliminated text pending a reference to back up the statement
247	37989	8	15	11	15	11	Grimmond et al. (2012) is not included in the list of reference (Rafiq Hamdi, Royal Meteorological Institute of Belgium)	added; should have been Grimmond 2011
248	46353	8	15	11	15	11	Jackson and Oleson references relate to temperature while preceding sentences cover precip, wind, and vegetation so could be misinterpreted. (Mark McCarthy, Met Office)	made appropriate changes to the text
249	46448	8	15	30	15	30	Idem as in the case of the reference of Romero Lankao and Dodman 2011:114: "(Grimm et al. 2008: 758)." (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	made adjustment to the text.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
250	45289	8	15	31	15	31	reference to Blackburn & da Silva publication (2013); JdS knows nothing about this! Please remove this reference - or amend to reflect the fact that JdS is not involved. (Jo da Silva, Arup)	eliminated reference
251	47569	8	15	32	15	35	In megacities multi-polarity is necessary because of scale (region). The difficulties of transition are not clear. (Andrea Young, State University of Campinas - UNICAMP)	made adjustment to the text.
252	46447	8	15	35	15	35	Please, explain for non-specialists the following: "-- leading to a transition from uni-polarity to multi-polarity (Laquian 2011)". (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	made adjustment to the text.
253	46449	8	15	40	15	41	Idem before for the reference: "Wilbanks and Kates 2010: 726". Please, verify other references. (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	made adjustment to the text.
254	38902	8	15	50	0	0	what is OTHER REF?? (anthony brazel, arizona state university)	error - "other ref" text should have been eliminated
255	41349	8	16	9	16	21	Please integrate the political dimension into this temporal dimension as political timelines work very different compared to sustainability timelines. (Sven Harmeling, Germanwatch)	term of office issue - and implications for managing climate change; and the inability to serve more than one term. FUSS Mark for refs.
256	54766	8	16	26	16	30	The author team may consider highlighting 'urbanization as drivers of climate change and urban areas affected by climate change' as one of the key component in the framing of the chapter. (Monalisa Chatterjee, IPCC WGII TSU)	defining urbanization can influence micro climates; but urbanization in of itself is not a driver of climate change
257	50498	8	16	35	16	35	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	will banish likely
258	46042	8	16	38	16	38	This seems contradictory to what is said in Chapter 1, lines 53 and 54 of page 18 and lines 1 and 2 of page 19. Also in SREX (IPCC 2012). (Luis E. Garcia, World Bank)	need more details to be actionable; chapter one of this report?
259	46355	8	16	38	16	38	Suggest provide reference to relevant section of WG1 report for appropriate comment on hurricanes and tropical cyclone activity under climate change. (Mark McCarthy, Met Office)	not sure this is possible to do at this time.
260	50499	8	16	42	16	42	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	will banish likely
261	46356	8	16	42	16	43	Suggest provide reference to relevant section of WGII regional chapters for commentary on precipitation change. (Mark McCarthy, Met Office)	not sure this is possible to do at this time.
262	41350	8	16	49	16	52	Please add that although African cities lack capacity and awareness of climate change, the relative immaturity of infrastructures may offer some opportunities to build up more climate-resilient infrastructures than it would be the case in highly advanced infrastructures which show a strong degree of path dependency. (Sven Harmeling, Germanwatch)	this is an important issue but seems more appropriate for the adaptation part of the chapter. 8.3 or 8.4.
263	45405	8	16	50	16	50	For the African cities citation, suggest to add 'Broto et al. 2013', and add the following reference to the bibliography: Broto, Vanese Castan et al. 2013. "Climate change adaptation, local governance and poverty alleviation in Maputo. Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	added reference
264	45406	8	16	52	16	53	For the Latin America citation, suggest to add 'Luque et al. 2013', and add the following reference to the bibliography: Luque, Andres, Gareth Edwards, Christophe Lalande 2013. "Climate change governance at the local level: new tools to respond to old deficiencies in Esmeraldas, Ecuador." Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	added reference
265	54767	8	17	4	17	13	The author team may wish to use 'context specific urban risks' as one of the key component in the framing of the chapter. (Monalisa Chatterjee, IPCC WGII TSU)	good comment but space limitation do not allow for inclusion
266	52714	8	17	7	0	0	After the end of the first phrase the addition of the risks of human settlements located in river flood plains are also prone to flooding in extreme precipitation/ severe storm conditions, and even with persistent precipitations, in flat lands, with specific edaphic characteristics. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	made adjustment to the text.
267	47570	8	17	10	17	13	It seems that - this phrase is more related to temporal dimensions (pag 16 section 8.2.2.3) (Andrea Young, State University of Campinas - UNICAMP)	moved the text up. Good suggestion
268	54768	8	17	27	0	0	Section 8.2.3. The author team should synthesize this section and present a summary table with key findings. Moreover, the author team may wish to provide observed and projected impact information where ever possible. Futhermore, the author team could also use - direct and indirect imapcts in their organizing principle. (Monalisa Chatterjee, IPCC WGII TSU)	the author team made some adjustments in the text to reflect this change - including the additon of new sections
269	37089	8	17	27	18	15	Please add more references and their results, such as Ren, G.Y. et al., 2008, Urbanization effects on observed surface air temperautre in North China, J.Climate, 21:1333-1348; Jones, P.D., et al., 2008, Urbanization effects in large-scale temperature records, with an emphasis on China, J.G.R., 113: D16122, doi: 10.1029/2008JD009916; Jiang et al., 2010, Changes in wind speed over China during 1956-2004, Theor.Appl.Climatol., doi: 10.1007/s00704-009-0152-7; Hulme, M., 1994, Recent and future climate change in East Asia, International J. Climatology, 14: 637-658 (ZONG-CI ZHAO, National Climate Center)	good reference but they seem to focus on urbanization and climate, rather than urbanization, climate and climate change.
270	44885	8	17	27	19	15	I wonder why wind velocity/storms are completely omitted here. As far as I know recent findings hint at a decrease of extreme wind events in mid latitudes and an increase in high latitudes. See also chapter 21 p. 31 l. 6-9, p. 33 l. 10-13 of this WG2 IPCC report. (Sabine Wurzler, LANUV NRW)	It is felt that the literature on this topic is still under significant debate and not relevant for urban scale discussion
271	50500	8	17	29	17	30	For this statement, the author team should consider and incorporate the findings of the special report on extremes (see chapter 3) and of the working group 1 contribution to the 5th assessment report. Additionally, casual usage of the word "likely" should be avoided, as it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	made relevant changes

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
272	46357	8	17	29	17	34	Should this section also consider the impacts of climate variability and change in the mean state, as well as extreme events? While extremes focus impacts and disasters there are areas where the aggregated impact of change in the mean are important (e.g. heating/cooling demand and impact on energy use). I would also suggest that the opening sentence should be made consistent with and cite the SREX report http://www.ipcc-wg2.gov/SREX/ and the references currently cited used to highlight the specific considerations these potential changes could have for urban areas. (Mark McCarthy, Met Office)	will include reference to mean temperature
273	35643	8	17	30	0	0	Sea level rise is not an extreme weather event. (Norio Saito, Graduate School of Science and Engineering, Ibaraki University)	clarified text.
274	36420	8	17	39	17	47	Shepherd et al. (2011) recently discussed the interactions of urban environments on precipitation and flooding: Shepherd, J.M., T.L. Mote, S. Nelson, S. McCutcheon, P. Knox, M. Roden, and J. Dowd, 2011: An overview of synoptic and mesoscale factors contributing to the disastrous Atlanta flood of 2009, Bull. of the Am. Meteor. Soc. 92, 861-870. doi: 10.1175/2010BAMS3003.1. The NAS report also has several thoughts on this topic as well. (Shepherd Marshall, University of Georgia)	added reference
275	45407	8	17	44	17	44	For the Kampala citation, suggest also to add 'Lwasa 2013', and add the following reference to the bibliography: Lwasa, Shuaib. 2013. "Bridging adaptation to climate change across city scales in Kampala". Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	edited text and included reference
276	46358	8	17	45	17	47	The final sentence of this paragraph simply notes that these studies exist, but does not comment on their conclusions. (Mark McCarthy, Met Office)	edited text to make the statement more clear
277	42732	8	17	50	0	0	Comment on Section 8.2.3.2: The magnitude of storm surge depends on the depression and wind speed in a cyclone and is basically independent from sea level rise. The prediction of future cyclone intensity (or storm surge) is more uncertain than that of mean sea level. (Hiroyasu Kawai, Port and Airport Research Institute)	clarified text to illustrate the relative role of SLR and storm surge
278	52715	8	17	53	0	0	The predominant chaotic development of slums means remarkable losses in some services, like energy. Similar losses may be noted with the standard construction, when the municipal controls are lenient. The building-up of intelligent cities would be tied with such scenarios. Therefore, for the sake of future greener cities' development, s, this issues should be pointed out. REFERENCE: Urbanization: The role the poor play in urban development. Booklet 1 & - Booklet 2, Low income housing. Series: Housing the Poor in Asian cities (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	good comment but space limitation do not allow for inclusion
279	46759	8	18	0	0	0	In section 8.2.3.5 (Air pollution and public Health), augmentation of air pollution due to the poor ventilation in the urban landscape (e.g. narrow street canyons) may be discussed. Proximity of urban areas and industries is a great concern for health of the people living in the urban areas. These should also be discussed in this section. (Balwinder Singh, Pacific Northwest National Laboratory)	good comments. Created a context specific introductory statement
280	37671	8	18	2	0	0	It would seem important to include the recent studies that indicate the concerns from sea-level rise. Note that the National Research Council report also includes a world wide discussion. Add(?): ...National Research Council, 2012, Sallenger et al., 2012,... [National Research Council, 2012: Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. Committee on Sea Level Rise in California, Oregon, and Washington; Board on Earth Sciences and Resources; Ocean Studies Board; Division on Earth and Life Studies, The National Academies Press, Washington DC, 250 pp.] [Sallenger, A.H., K.S.Doran, P.A. Howd, and Peter A. 2012. Hotspot of accelerated sea-level rise on the Atlantic coast of North America. Nature Climate Change,1758-6798 http://dx.doi.org/10.1038/nclimate1597] (George Backus, Sandia National Laboratories)	important references but seem more appropriate for the coastal chapter of WGII
281	41351	8	18	9	18	10	Not only port cities are at risk but also cities that feature "dangerous" industries in close proximity to the ocean (e.g. oil-, chemical-, nuclear industries, etc.), as they put large groups of populations at risk. (Sven Harmeling, Germanwatch)	good comment, added intro statement to include other types of facilities
282	43137	8	18	9	18	10	The word "today" better be replaced with the word "time slab" with which the coastal flooding in the 2070s is compared (SHAHBAZ MEHMOOD, Global Change Impact Studies Centre)	edited the text
283	43919	8	18	9	18	10	The word "today" better be replaced with the word "time slab" with which the coastal flooding in the 2070s is compared (Muhammad Amjad, Global Change Impact Studies Centre)	edited the text
284	54769	8	18	9	18	18	The author team may wish to add a figure here to show sea level rise for few coastal cities. (Monalisa Chatterjee, IPCC WGII TSU)	good comment but space limitation do not allow for inclusion
285	46359	8	18	17	18	18	Sea level rise projections have very high level of uncertainty, can the authors/literature better define why the risk reduction measures are considered "urgent"? (Mark McCarthy, Met Office)	made adjustment to the text.
286	40511	8	18	21	0	0	Cite: Blake, R., A. Grimm, T. Ichinose, R. Horton, S. Gaffi n, S. Jiong, D. Bader, L. D. Cecil, 2011: Urban climate: Processes, trends, and projections. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 43–81. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	added reference
287	41352	8	18	23	18	26	Please add that heat waves will also increase the use of AC's, which in turn will increase energy consumption and thus contribute to rising carbon emissions. (Sven Harmeling, Germanwatch)	added comment
288	38903	8	18	25	0	0	(refs) need to fill in (anthony brazel, arizona state university)	included general reference to cover this point with some slight edits
289	47571	8	18	25	18	25due increased evapo-transpiration (reference?) (Andrea Young, State University of Campinas - UNICAMP)	Same as previous comment.
290	46360	8	18	27	18	28	No reference is provided for this statement and "more intense cold" and "increased climate variation" are poorly defined descriptions. Continued occurrence of cold waves due to natural variability of climate is one outcome. More frequent and even colder cold-waves due to increases in the variance of climate is another, and I am not aware of strong evidence for the literature of this second statement. (Mark McCarthy, Met Office)	deleted text for now; looking for appropriate references.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
291	46361	8	18	28	18	29	Is Thorsson et al. the most appropriate reference for warming occurring in many difference rgions of the world? Would it be better to reference the regional chapters of WGII and comment on the implications Thorsson et al. imply from this in terms of human thermal comfort? (Mark McCarthy, Met Office)	made adjustment to the text.
292	37991	8	18	29	18	29	A lot of studies in the recent litetrature indicate that the UHI will decrease or at least stay constant in the future (Oleson et al. 2012, JC, 25, 1390-1412, 2012) (Rafiq Hamdi, Royal Meteorological Institute of Belgium)	made adjustment to the text; added to the new UHI section.
293	37672	8	18	42	0	0	This section should include some quantification of impacts, particularly, the economic impacts (income and employment) of drought and water scarcity. Add(?): Reduced water availability can affect industry, and thereby livelihoods and economic security. Urban water scarcity can grow due to urban demand changes cause by population and business emigration from neighboring areas affected by reduce water supply. Reduced water supply from drought also affects the urban water-supply component of water availability. An analysis of the impact of climate change-induced variation in water availability among 70 industries within the U.S. states shows multiplicative affects of water scarcity on other industries. For example, rural change in agriculture, due to drought, can have a significant impact on the chemical and equipment sectors within the urban area. (George Backus, Sandia National Laboratories)	made adjustment to the text but because of space limitations could not include all the comment
294	37673	8	18	42	0	0	Reduced cooling water can affect chemical, textile, and energy production with knock-on effects among the supplier or downstream industries. For the U.S. through 2050, risk from water scarcity exceed \$1 trillion dollars and causes an employment loss of nearly 7 million labor years (Backus et al., 2012) [Backus, G., T. Lowry, and D. Warren, 2012: The near-term risk of climate uncertainty among the U.S. states. Climatic Change, Online First 23 June 2012. Doi: 10.1007/s10584-012-0511-8] (George Backus, Sandia National Laboratories)	added comment and reference
295	40512	8	18	45	0	0	Cite: Barata, M., E. Ligeti, G. De Simone, T. Dickinson, D. Jack, J. Penney, M. Rahman, R. Zimmerman, 2011: Climate change and human health in cities. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 179–213. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	added reference
296	46362	8	18	45	0	0	Athanassiadou et al. (2010) An assessment of the impact of climate change on air quality at two UK sites Atmospheric Environment Volume 44, Issue 15, May 2010, Pages 1877–1886 (Mark McCarthy, Met Office)	added reference and made some adjustment to text
297	37319	8	18	45	19	2	This short section is based mainly on health-oriented studies. But there is a huge literature in atmospheric science on the topic of the effects of climate change on air quality that has developed since AR4. That literature is more ambiguous about the effects of climate change on air quality. It shows that there is good evidence that climate change would generally increase ozone in the US and Europe, but that the pattern of that change is not clear, with some areas increasing and some decreasing. The effects on PM are also unclear, as are effects on ozone and PM outside of the US and Europe. Effects on particular urban areas are highly uncertain and may include increases and decreases. WGI reviewed this science in Chapter 11, and the short summary here should be in line with that science, and the references in this section should be replaced or augmented by studies from atmospheric science. The best review papers I know of are: Weaver, C. P. et al. (2009) Bulletin of the American Meteorological Society, 1843-1863. Jacob, D. and D. Winner, 2009: Effect of climate change on air quality. Atmospheric Environment, 43(1), 51-63. This should also be coordinated with Chapter 11, where they give a more complete analysis of the effects of climate change on air pollution. (J. Jason West, University of North Carolina)	incorporated these elements and references into the text
298	44886	8	18	45	19	2	Talking about particles and changing precipitation patterns: soil dust is also a problem. Furthermore air pollution is not only causing allergies and asthma, but there is strong evidence that elevated particle concentrations also cause cardio vascular diseases and premature death. See e.g., the latest WHO report. Another point that is missing with regard to high air pollution levels: in most cases bad air quality on a larger scale is linked to situations with low wind speeds and in winter with low inversion heights. At least it is like this in mid latitudes. See also p. 17-18 in section 11.2.8.2 of this report. (Sabine Wurzler, LANUV NRW)	incorporated these elements and references into the text
299	45290	8	18	47	19	2	No mention of vector-borne disease; suggest this is included due to increasing incidence caused by climate change (Jo da Silva, Arup)	added reference but need additional references
300	52716	8	18	49	0	0	Write surface Ozone instead of tropospheric Ozone. The Ozone in the troposphere acts as a GHG, instead, surface Ozone, as clearly pointed out in AR4, is a critical oxidant, affecting individuals, animals and plants. REF: AR4 WG 2 contribution. Chapter 8 , paragraph 8.2.6.1Ground level Ozone. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	changed to surface level ozone
301	46044	8	19	0	0	0	Section 8.2.4 Exposure and sensitivity of urban sectors: Although these things may happen, they seem like the worst possible outcomes. There is also much uncertainty and a more balanced assessment would be useful. It seems it goes too much on the " doomsday" scary side. (Luis E. Garcia, World Bank)	the intent is to scare people. But I need to acknowledge that there is uncertainty.
302	52719	8	19	0	0	0	8.2.4 A critical problem in urban sectors (rich, poor or slums) deal with the domestic wastes collection. Extreme weather effects generates a number of serious problems, starting from the blockage of sewage systems under heavy precipitation events. Wastes generate nasty odors and pollution under hot conditions, etc. The urban population wellbeing is seriously affected. Some comments are necessary.. Maybe paragraph 8.2.4.1 may host this need. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	added some text; need to insert additional references
303	52717	8	19	2	0	0	The selection of trees and plants for the city environs is an important factor in preventing this scourge, This may be added to this paragraph. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	this is more of an adaptation issue which can be raised in the later sections of the chapter
304	52718	8	19	7	0	0	After geomorphologic and topologic (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	I am not sure of the requested changes

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
305	47572	8	19	12	19	12or rainfall increases in intensity and duration. (reference?) (Andrea Young, State University of Campinas - UNICAMP)	adjustments were made to the text to connect statement with appropriate reference material
306	46363	8	19	13	19	14	References needed for flooding and landslip risks. (Mark McCarthy, Met Office)	adjustments were made to the text to connect statement with appropriate reference material
307	54770	8	19	17	0	0	Section 8.2.4. The author team should synthesize this section and present a summary of all findings. (Monalisa Chatterjee, IPCC WGII TSU)	given page limitations it seen as difficult to add papers and as a result the structure remained as is
308	45293	8	19	17	24	19	The sector (i.e. Social and public services, transportation and telecommunications etc.) headings for this section do not match up to those in section 8.3.3 which makes comparison/understanding what adaptation action can be taken confusing. (Jo da Silva, Arup)	Changed the titles and sectioning to better reflect the issues raised in the text
309	37575	8	19	29	0	0	Don't think that 'we' should be used here! (lee chapman, university of birmingham)	Edited
310	47407	8	19	32	19	34	Add to sentence "The interaction between climate change and existing environmental stresses [...] and other highly uncertain OR NON-LINEAR processes." (Caroline Larrivee, Ouranos inc.)	Inserted text
311	50501	8	19	45	19	45	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Removed
312	37674	8	19	48	0	0	There are new studies that attempt to quantify the impact of climate change on infrastructure, at least in the U.S., and it would seem important to note them here. Add(?): The U.S. National Climate Assessment effort has looked at the impacts of climate change on infrastructure considering the water, land, and energy nexus, as well as the impact of climate on a large number of industries (Skaggs et al, 2101, Wilbanks et al., 2012). [Skaggs, R., T.C. Janetos, K.A. Hibbard, and J.S. Rice, 2012: Climate and Energy-Water-Land System Interactions: Technical Report to the U.S. Department of Energy in Support of the National Climate Assessment, Report PNNL-21185, Pacific Northwest National Laboratory, Richland, Washington. Available at: http://www.pnnl.gov/main/publications/external/technical_reports/PNNL-21185.pdf] [Wilbanks, T., S. Fernandez, et al, 2012: Climate Change and Infrastructure, Urban Systems, and Vulnerabilities: Technical Report For The U.S. Department of Energy in Support of the National Climate Assessment. Oak Ridge National Laboratory, Oak Ridge, Tennessee. Available at: www.esd.ornl.gov/eess/Infrastructure.pdf] (George Backus, Sandia National Laboratories)	not sure this is possible to include these document do at this time because they are still under a peer review process
313	47408	8	19	50	20	3	The notion of infrastructure deficit should include the lack of proper maintenance and rehabilitation which is mostly a problem in higher-income nations but a major source of vulnerability to climate change. See Engineers Canada, 2008, Adapting to Climate Change: Canada's First National Engineering Vulnerability Assessment of Public Infrastructure, Engineers Canada, 76 p. See also Engineers Canada, 2011, PIEVC Engineering Protocol for Infrastructure Vulnerability Assessment and Adaptation to a Changing Climate. (Caroline Larrivee, Ouranos inc.)	an important point but not sure if the noted reference is peer reviewed and therefore not included at this point
314	40513	8	20	11	21	11	Cite: Major, D. C., A. Omojola, M. Dettinger, R. T. Hanson, R. Sanchez-Rodriguez, 2011: Climate change, water, and wastewater in cities. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 113–143. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	added reference
315	46043	8	20	29	20	30	This is mainly because of population growth and may be difficult to attribute it to climate change. (Luis E. Garcia, World Bank)	added text to make reference to this point
316	50502	8	20	31	20	31	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	changed the text
317	41929	8	20	38	20	38	After the first sentence an emphasize may be on the threats from floods on drinking water quality taken from dug wells in many African cities (particularly the medium and small sized cities). Possible reference: Cissé et al.2010 (Guéladio Cissé, Swiss Tropical and Public Health Institute (Swiss TPH))	changed the text
318	46364	8	20	38	20	38	"most likely have significant impacts on urban water availability" this needs to be carefully referenced.and ensure that the uncertainty is appropriately reflected. (Mark McCarthy, Met Office)	eliminated text and merged remaining reference text with paragraph above
319	50503	8	20	38	20	38	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	changed the text
320	46365	8	20	41	20	42	The final sentence of this para is not referenced and seems to assume reduced water availability which is not going to be the case everywhere. (Mark McCarthy, Met Office)	eliminated text
321	37675	8	20	42	0	0	There are studies that quantify some of these affects, at least for the U.S. Add(?): Several studies estimate how climate change will alter the relationship among water users and the implied tensions over the supply and the demand for water (Skaggs et al., 2012, Tidwell et al., 2011, Roy et al., 2012). [Skaggs, R., T.C. Janetos, K.A. Hibbard, and J.S. Rice, 2012: Climate and Energy-Water-Land System Interactions: Technical Report to the U.S. Department of Energy in Support of the National Climate Assessment, Report PNNL-21185, Pacific Northwest National Laboratory, Richland, Washington. Available at: http://www.pnnl.gov/main/publications/external/technical_reports/PNNL-21185.pdf] [Tidwell, V.C., P. H. Kobos, L.A. Malczynski, G. Klise, C. R. Castillo, 2011: Exploring the Water-Thermoelectric Power Nexus. Journal of Water Resources Planning and Management, Posted online on 21 Dec 2011. doi: 10.1061/(ASCE)WR.1943-5452.0000222] [Roy, S.B., L.Chen, E.H. Girvetz, E.P. Maurer, W.B. Mills, and T.M. Grieb, 2012 Projecting Water Withdrawal and Supply for Future Decades in the U.S. under Climate Change Scenarios, Environmental Science & Technology, 46 (5), 2545-2556 DOI: 10.1021/es2030774] (George Backus, Sandia National Laboratories)	added references
322	45291	8	21	11	21	11	Worth mentioning that existing drainage systems can be compromised by lack of solid waste management; previously a problem in Bandar Lampung, Indonesia, where a new Integrated Solid Waste Management (ISWM) master plan has been developed to address this issue. (Jo da Silva, Arup)	good point but seems a bit tangential to the discussion and given space limitations was not included

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
323	50504	8	21	11	21	11	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	eliminated text because it was highly speculative
324	40514	8	21	14	22	16	Cite: Hammer, S. A., J. Keirstead, S. Dhakal, J. Mitchell, M. Colley, R. Connell, R. Gonzalez, M. Herve-Mignucci, L. Parshall, N. Schulz, M. Hyams, 2011: Climate change and urban energy systems. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 85–111. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	added reference
325	35475	8	21	16	21	21	Also communication networks rely on electricity - for example in Finland many of base transceiver stations for telecommunications function only 3 hours without electricity (although this is mostly a problem for the smaller urban areas and rural areas), and rescue services among others rely on telecommunications for their operations. The Safety Investigations Authority of Finland published in Sept 2011 an investigation report of the thunderstorms of summer 2010, their impacts and the problems found in the operations of the authorities responsible for rescue and emergency services. A summary of the report in English and the report (in Finnish) are available at http://www.turvallisuustutkinta.fi/en/1279614262854 (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	added sentence and citation
326	47409	8	21	23	21	30	Reference to add for "Past experiences with power outages indicate some knock-on effects...". See Chang, S. et al. 2007, Infrastructure failure dependencies in extreme events: power outage consequences in the 1998 Ice Storm, Nat Hazards 41:337-358. (Caroline Larrivee, Ouranos inc.)	added reference
327	50505	8	21	35	21	35	"likely" -- If this term is calibrated uncertainty language, it should be italicized. Casual usage of the reserved likelihood term should be avoided. Additionally, it would be much preferable to provide a more specific reference to the relevant chapter of the 4th assessment report. (Katharine Mach, IPCC WGII TSU)	edited text
328	50506	8	21	43	21	43	"likely" -- If this term is being used for the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. If there is not a probabilistic basis, a level of confidence may be appropriate. The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	eliminated text pending a reference to back up the statement
329	43138	8	21	43	21	44	The word "are" better be placed between "waves" and "also" in the sentence (SHAHBAZ MEHMOOD, Global Change Impact Studies Centre)	eliminated sentence
330	43920	8	21	43	21	44	The word "are" better be placed between "waves" and "also" in the sentence (Muhammad Amjad, Global Change Impact Studies Centre)	eliminated sentence
331	46366	8	21	48	21	48	This final sentence is not referenced. (Mark McCarthy, Met Office)	eliminated sentence
332	47573	8	21	48	21	49	In most cases within individual cities, potential increases in summertime energy demand from climate change will exceed reductions in winter energy demand reductions. (reference??) (Andrea Young, State University of Campinas - UNICAMP)	include Hammer et al 2011 reference for this. Changed reference to specifically focus on electricity energy demand for AC
333	54771	8	21	51	22	12	The author team may wish to highlight the 'impacts across sectors' discussion in a different sub section. (Monalisa Chatterjee, IPCC WGII TSU)	restructured the section titles and subtitles to reflect this change
334	46450	8	21	52	21	53	Please, gives a reference to this sentence: "Climate change may interrupt Brazil's hydroelectric supplies, with negative knock-on effects on the economies of many urban centres." Itaipu dam produce alone about 20 000 MW of electricity and it is very improbable that the hydroelectric supply of this dam in Brazil will be interrupted completely due to climate change. Consequently, specify better, eventually indicating that "Climate change may reduce Brazil's hydroelectric supplies..." (Rubén Piacentini, Institute of Physics Rosario (CONICET - National University of Rosario))	softened the text to include a statement that Brazil hydroelectric will be negatively impacted by CC; added references in English; seem to be many other good references but they are Portuguese
335	47574	8	21	52	21	53	Climate change may interrupt Brazil's hydroelectric supplies, with negative knock-on effects on the economies of many urban centres (reference??). (Andrea Young, State University of Campinas - UNICAMP)	added reference
336	52720	8	21	53	0	0	An addition would be opportune to mention that with regional/international energy interconnections other than national urban centers are affected with the interruption of hydropower supply. REF: The Itaipu and Yacireta hydropower systems supply energy to four countries . (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	made appropriate changes to the text
337	35476	8	22	0	0	0	The chapter does not deal with telecommunications; they are however very important for many central functions of societies including rescue and emergency services. Without the telephone and Internet connections also many services are cut off in countries like Finland including banks and stores. Some warnings for natural disasters and hazards are given by radio, but still most of the information is only available in the Internet on the web pages of different authorities. (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	included a general statement regarding the importance of climate change impacts on telecommunications - added Jacob ref.
338	37959	8	22	7	22	12	Mirasgedis et al. (2007) have also examined this effect for a southern European country (Greece). Mirasgedis, S., Sarafidis, Y., Georgopoulou, E., Kotroni, V., Lagouvardos, K., Lalas, D.P. (2007), Modelling framework for estimating impacts of climate change on electricity demand at regional level: Case of Greece, Energy Conversion and Management 48, 1737-1750. (Elena Georgopoulou, National Observatory of Athens)	pulled ref and added citation
339	41879	8	22	7	22	12	After the mega-quake and successive disaster of Fukushima Daiichi Nuclear Power Plant, almost all the nuclear power plant stopped in Japan. Then 10-15% of power generation is declined even conventional thermal power plant is enhanced. Now forecasting of power demand is operated everyday (e.g. Tepco, 2012, http://www.tepco.co.jp/en/index-e.html) to try to secure stable power supply. From this information individuals can manage their demand to some extent. (Hiroaki Kondo, National Institute of Advanced Industrial Science and Technology (AIST))	great background information, but given space limitations not included as this time
340	43139	8	22	8	0	0	Temperate cities in Australia better be replaced with "Cities in the temperate regions of Australia" (SHAHBAZ MEHMOOD, Global Change Impact Studies Centre)	changed text

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341	43140	8	22	11	0	0	disproportionate looks better than "disproportional" (SHAHBAZ MEHMOOD, Global Change Impact Studies Centre)	since it is direct quote - remained as is.
342	43921	8	22	11	0	0	replace disproportionate with "disproportional" (Muhammad Amjad, Global Change Impact Studies Centre)	text as per requested
343	46367	8	22	14	22	14	Is this projection consistent with the projections in WGII regional chapter? (Mark McCarthy, Met Office)	This point does not seem to be reference in North American, chap. 26 FOD
344	40515	8	22	16	0	0	Cite: Rosenzweig, C., W. Solecki, A. DeGaetano, M. O'Grady, S. Hassol, and P. Grabhorn (Eds.), 2011: Responding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation: Synthesis Report. New York State Energy Research and Development Authority. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Pulled ref and added citation
345	40516	8	22	19	23	17	Cite: Mehrotra, S., B. Lefevre, R. Zimmerman, H. Gerçek, K. Jacob, S. Srinivasan, 2011b: Climate change and urban transportation systems. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 145–177. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	added reference
346	45292	8	22	19	23	17	The discussion of transport does not sufficiently recognise the importance of transportation in enabling the flows of goods and services. The role of transportation in relation to food, medical supplies and fuel is particularly critical. The issues are as much about logistics as transportation. Consider renaming 8.2.4.3 & 8.3.3.6 'Transportation, Logistics and Telecommunications'. This section feels weak as it doesn't sufficiently highlight the importance of telecommunications in enabling knowledge to be shared, thereby helping individuals and authorities to make informed decisions before, during and after events. There is a body of literature on the role of telecommunications in post-disaster situations, ranging from challenges in Aceh following the Indian Ocean tsunami to street mapping in Haiti following the recent earthquake to aid cash distribution via mobile phone. (Jo da Silva, Arup)	good points. Have added a bit on logistic role of telecommunications particularly in the context of post disaster recovery. Did not change the section title because the objective was to focus on specific sectors.
347	47575	8	22	21	22	24Extreme climate event disruptions outside cities can impact urban economies (reference ?) (Andrea Young, State University of Campinas - UNICAMP)	added references as appropriate
348	45408	8	22	26	22	26	Analysis could be enriched by including also research findings of mobility studies concerning climate change and changes in the mobility habits/patterns (other aspect: governments moving from transportation infrastructure planning to mobility planning). See for instance Banister, David. 2008. "The Sustainable Mobility Paradigm." Transport Policy 15 (2): 73-80. OR Moriarty, Patrick, and Damon Honnery. 2008. "Low-Mobility: The Future of Transport." Futures 40 (10): 865-872. (Rafael Tuts, United Nations Human Settlements Programme)	good point but seems a bit tangential to the discussion and given space limitations was not included
349	47410	8	22	30	22	30	Repetition of word "extreme" in sentence "The daily functioning of most transport systems is already sensitive to weather extremes including extreme precipitation...". (Caroline Larrivee, Ouranos inc.)	changed to "fluctuations"
350	43477	8	22	37	22	38	Aviation and maritime transport seem to be missing here. You may want to add something like this: Very few studies have examined the vulnerability of air and seaborne transport and infrastructure. However, it is very likely that the impacts of climate change will also translate into a greater number and longevity of weather-related delays of flights with extreme weather possibly occurring more frequently and more severely, thereby bringing further disruptions for aviation (Eurocontrol, 2008) and maritime transport (Becker et al. 2012). Becker, Austin, Satoshi Inoue, Martin Fischer, and Ben Schwegler. 2012. "Climate Change Impacts on International Seaports: Knowledge, Perceptions, and Planning Efforts Among Port Administrators." Climatic Change 110 (1): 5–29. Eurocontrol. 2008. The Challenges of Growth, Air Traffic Statistics and Forecasts, The European Organisation for the Safety of Air Navigation. Eurocontrol. http://www.eurocontrol.int/statfor . (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	pulled refs and added text
351	43478	8	22	40	22	41	Maybe add a general reference on this such as: Dimitriou, Harry T, and Ralph Albert Gakenheimer. 2011. Urban transport in the developing world : a handbook of policy and practice. Cheltenham, UK; Northampton, MA: Edward Elgar. (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	Pulled ref and added citation
352	41353	8	22	40	22	45	Integrating adaptation measures into the design of infrastructural systems is often referred to as "climate proofing". It would be good to refer to this term at some point in this section. (Sven Harmeling, Germanwatch)	adaptation and climate proofing is more fully developed later in this chapter
353	43479	8	22	41	22	41	The term "more successful" cities is slightly ambiguous, maybe leave it out (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	removed the term
354	44423	8	22	42	22	42	Please more specific descriptions about "developing transport network in Asia cities" for understanding easily. (Tae sung Cheong, National Disaster Management Institute)	edited the text to be more clear
355	43480	8	22	44	22	45	Adaptation and mitigation measures don't only have to fit into the design of a project, but they will have to fit to each other. A note on this may add value, e.g.: Adaptation and mitigation measures will have to be integrated to maximise co-benefits and synergies and minimise trade-offs (Biesbroek et al. 2009, Hamin and Gurran 2008). Biesbroek, G. Robbert, Rob J. Swart, and Wim G.M. van der Knaap. 2009. "The Mitigation–adaptation Dichotomy and the Role of Spatial Planning." Habitat International 33 (3) (July): 230–237. doi:10.1016/j.habitatint.2008.10.001. Hamin, Elisabeth M., and Nicole Gurran. 2009. "Urban Form and Climate Change: Balancing Adaptation and Mitigation in the U.S. and Australia." Habitat International 33 (3) (July): 238–245. doi:10.1016/j.habitatint.2008.10.005. (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	pulled the ref and added text
356	47411	8	22	47	22	48	In addition to being costly to adapt, the environmental risks (spills, etc.) are high with consequences greater than when they happen closer to areas with more emergency services (and means) available. (Caroline Larrivee, Ouranos inc.)	good point. Made a brief mention of the issue

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
357	41354	8	22	47	22	53	This paragraph looks very positively at warming temperatures in the world's northern regions. However, especially in terms of the development of sea ports and longer shipping seasons it is essential to mention the large negative environmental impacts of these undertakings. (Sven Harmeling, Germanwatch)	good point. Made a brief mention of the issue
358	54772	8	22	47	22	53	The author team may consider making the urban aspect in this discussion more explicit. (Monalisa Chatterjee, IPCC WGII TSU)	done
359	52721	8	22	52	0	0	Maybe it would be opportune to change thawing of the ground by thawing of permafrost, or both, so to spray the utilization of appropriate wording and the use of our own glossary (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	changed text
360	47412	8	23	11	23	13	This sentence also applies for most other sectors (water, energy, etc.). (Caroline Larrivee, Ouranos inc.)	yes, agreed. More general issues of adaptation are dealt with later in the chapter
361	52722	8	23	18	0	0	It is suggested to include a paragraph to mention the increasing adverse effect of individual transportation. The larger automotive parks will generate more CO2, O3 and particulates. Also will bring again the scourge of acid precipitations/depositions, due to larger generation of nitrous oxide. Acid depositions will also increase due to the decaying quality of fossil fuel, more Sulphur oxides would be generated through their combustion. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	good point but seems a bit tangential to the discussion and given space limitations was not included. These issues are dealt with extensively in chapter 12 of WGII report
362	46045	8	23	20	0	0	Section 8.2.4.4: Built Environment, and Recreation and Heritage Sites: Maybe this section could be expanded with more about heritage sites? (Luis E. Garcia, World Bank)	good point, but at the moment severe space limitations restrict the amount of text that can be devoted to this issue
363	54773	8	23	20	0	0	Section 8.2.4.4. Instead of having separate sections like this to reduce repetition, the author team may wish to add a table to highlight some of these key impacts. (Monalisa Chatterjee, IPCC WGII TSU)	good point. We will try to develop a table
364	38312	8	23	36	23	36	The reference is Grossi, 2007 instead of Carlota (CRISTINA SABBIONI, CONSIGLIO NAZIONALE DELLE RICERCHE)	made change
365	45409	8	23	36	23	36	An African city example to mention about here would be low-lying Saint-Louis, Senegal, a World Heritage Site that at present is actively planning to relocate families from locations most exposed to sea level rise and storm surge. (See Silver, Jonathan, et al. 2013. "Climate change, urban vulnerability and economic development in Saint-Louis and Bobo Dioulasso: Learning from across West African cities". Local Environment: The International Journal of Justice and Sustainability". Forthcoming.) (Rafael Tuts, United Nations Human Settlements Programme)	Integrated into text
366	50507	8	23	40	23	40	"likely" – The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	edited the text
367	47576	8	23	46	23	47	A wide variety of ecosystem services and green infrastructure will be impacted by climate change. If green infrastructure is a part of solution (as a measure of adaptation) why it will be impacted by climate change? The discussion is confusing... See pag 34 (line 4 to 7). (Andrea Young, State University of Campinas - UNICAMP)	good point need to ensure there internal chapter coherence between this section and later discussion of ecosystem services in the context of adaptation
368	50508	8	23	52	23	52	"likely" – If this term is being used for the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	edited the text
369	35477	8	24	0	0	0	The autonomous adaptation of urban citizens in central in coping with extreme weather events. Urban adaptation also requires different kinds of skills from adaptation to weather events and climate variability and change in the rural areas. Also traditional knowledge can be missing. I think discussion of autonomous adaptation of urban citizens would be an important addition to the chapter. (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	It is covered in 8.4
370	52723	8	24	4	0	0	Add: Increased surface Ozone generation will adversely affect trees and plants as well human health. REF: Thompson J.R. & J.F Farrar.-Monitoring requirements for Biological Syst.. Special Environ. Report N° 15. WMO N° 563, 1980 (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	good comment; ref seems old; upon review elements of argument already were integrated into the text
371	41355	8	24	9	24	19	Please add a reference to the Chapter on Health (Chapter 11). (Sven Harmeling, Germanwatch)	done
372	52724	8	24	19	0	0	Surface Ozone affects human health and wellbeing. REF: Chapter 8, WG 2 's contribution to AR5. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	noted reference to public health chapter of WG II
373	52725	8	24	20	0	0	The crucial managing problems associated with the urban wastes collection and disposal, in a heavily urbanized world will be adversely affected by climate change, particularly due to extreme weather conditions. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	good point but need to find reference on this issue - did not identify as of 20 2 2013
374	35478	8	24	24	24	24	It would be useful if the term transition would be defined and explained shortly here at the beginning of the chapter (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	revised the introduction section and made adjustments to the text
375	37676	8	24	27	0	0	Comment 1: This section lacks examples of how to deal with the uncertainty and how estimate the cost associated with adaptations. Add(?): Several U.S. studies have considered the cost of inaction for specific U.S. states (Wilbanks et al., 2012, Niemi 2009a, 2009b, 2009c, Repetto 2011a, 2011b, 2012a, 2012b, 2012c, 2012d, Backus et al., 2012). The Sandia National Laboratories study considers both uncertainty and the interactions across the individual, continental U.S. states for 70 industries, for climate-induced changes in water availability, though the year 2050 (Backus et al., 2012). Modeled business and population migration produce significant spillover effects into neighboring states, with states dependent on mining and agriculture having disproportional impacts. + you might find the maps and graphics in the Wilbanks or Backus reference useful for illustrating the relative climate impacts across states+ [Wilbanks, T., S. Fernandez, et al, 2012: Climate Change and Infrastructure, Urban Systems, and Vulnerabilities: Technical Report For The U.S. Department of Energy in Support of the National Climate Assessment. Oak Ridge National Laboratory, Oak Ridge, Tennessee. Available at: www.esd.ornl.gov/eess/Infrastructure.pdf] (George Backus, Sandia National Laboratories)	draw from the examples provided by the reviewers.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
376	37677	8	24	27	0	0	Comment 2: [Niemi E. (2009a). An Overview of Potential Economic Costs to Washington of a Business-As-Usual Approach to Climate Change. The Program on Climate Economics, Climate Leadership Initiative, Institute for a Sustainable Environment, Eugene, OR: University of Oregon.] [Niemi E. (2009b). An Overview of Potential Economic Costs to Oregon of a Business-As-Usual Approach to Climate Change. The Program on Climate Economics, Climate Leadership Initiative, Institute for a Sustainable Environment, Eugene, OR: University of Oregon.] [Niemi E. (2009c). An Overview of Potential Economic Costs to New Mexico of a Business-As-Usual Approach to Climate Change. The Program on Climate Economics, Climate Leadership Initiative, Institute for a Sustainable Environment, Eugene, OR: University of Oregon.] [Backus, G., T. Lowry and D. Warren, 2012: The near-term risk of climate uncertainty among the U.S. states. Climatic Change, Online First 23 June 2012. Doi: 10.1007/s10584-012-0511-8] (George Backus, Sandia National Laboratories)	pulled refs; added to the document
377	37678	8	24	27	0	0	Comment 3: [Repetto, R. 2012a: Economic And Environmental Impacts Of Climate Change In Virginia, DEMOS, New York, NY. Available at: http://www.demos.org/publication/economic-and-environmental-impacts-climate-change-virginia] [Repetto, R. 2011a: Economic And Environmental Impacts Of Climate Change In Nevada, DEMOS, New York, NY. Available at: http://www.demos.org/publication/economic-and-environmental-impacts-climate-change-nevada] [Repetto, R. 2012b: Economic And Environmental Impacts Of Climate Change In Florida, DEMOS, New York, NY. Available at: http://www.demos.org/publication/economic-and-environmental-impacts-climate-change-florida] [Repetto, R. 2011b: Economic And Environmental Impacts Of Climate Change In Arizona, DEMOS, New York, NY. Available at: http://www.demos.org/publication/economic-and-environmental-impacts-climate-change-arizona] (George Backus, Sandia National Laboratories)	pulled refs: added to the document
378	37679	8	24	27	0	0	Comment 4: [Repetto, R. 2012c: The Rising Risks of Climate Change in Massachusetts, Energy Future Coalition, Washington DC. Available at: http://www.energyfuturecoalition.org/files/webfmuploads/Repetto%20Paper%20Massachusetts.pdf] [Repetto, R., 2012d: New Mexico's Rising Climate Risks, UN Foundation, New York, NY. Available at: http://www.energyfuturecoalition.org/files/webfmuploads/04-18-12%20Repetto%20Paper%20New%20Mexico.pdf] (George Backus, Sandia National Laboratories)	pulled refs; added to the document
379	35479	8	24	40	24	41	This is an important observation and from the perspective of the practitioner, the uncertainty involved in the magnitude of climate change impacts and the possibility of "over-investing" is often the main barrier in implementing adaptation actions. (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	made some subtle to highlight the point
380	52727	8	24	42	0	0	After the first phrase add the following: An obvious transitional management issue is related to the urban wastes' repositories, for many reasons installed around the current cities' boundaries. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	added
381	41356	8	24	43	24	49	It would be good to mention the term "climate proofing" at some point in this paragraph. (Sven Harmeling, Germanwatch)	made a variety to small changes to the text as well as including the term "climate proofing"
382	47413	8	24	47	24	49	Among the other strategies to incorporate uncertainty are sensitivity analyses, scenario planning, examining tolerance to risk, etc. See namely "Adaptation Futures" Conference, Arizona 2012. (Caroline Larrivee, Ouranos inc.)	good points, added material to the text
383	52726	8	24	50	0	0	Add the following: The need to expand the agriculture frontier, for increasing food production, will bring cropping activities closer to the urban boundaries. This means that the fumigation effects will add a new health hazard to urban inhabitants as well as adversely affect water supply. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	added
384	35480	8	25	3	25	3	Please clarify the first sentence as the meaning to the reader can be unclear (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	made adjustments to the text to make it more clear
385	35481	8	25	18	25	22	It is a bit unclear to me how the last two sentences of this paragraph relate to the title of this chapter (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	revised the text to make the points more clear
386	47414	8	25	20	25	21	"Further research is needed to evaluate the merits of stand-alone adaptation plans, AS OPPOSED TO approaches that seek..." instead of "as against" (Caroline Larrivee, Ouranos inc.)	changed
387	36450	8	25	27	0	0	Geoff Wilson's recent work could be usefully used here: Community Resilience and Environmental Transitions, Ashgate 2011 (Eric Pawson, University of Canterbury)	pulled ref and added citation
388	54774	8	25	27	25	33	An example here will be very useful. (Monalisa Chatterjee, IPCC WGII TSU)	revised text to introduce an example
389	46046	8	25	27	25	39	Cost, however is high. See for example what would cost to bring power lines underground in the Washington DC area in http://washingtonexaminer.com/d.c.-bills-target-pepco-underground-power-lines/article/2501796 . This was as a consequence of a June 2012 storm (see http://www.accuweather.com/en/weather-news/deadly-super-derecho-strikes-m/67383 and http://www.aim.org/newswire/different-countries-same-results-massive-power-outage-in-india-echoes-dcs-derecho-aftermath/) (Luis E. Garcia, World Bank)	Adjustments were made to the text to include cost consideration
390	35482	8	25	30	25	31	Concentrated urban form and extensive infrastructure networks could also be opposite indicators or factors for vulnerability, that is if you have concentrated urban form you have less extensive infrastructure networks (as the urban area is smaller), especially technical networks such as water and sanitation pipelines, electricity cables and lines and heating distribution pipelines (combined heat and power). Also for example, in times of power cuts you have the possibility to by-pass the damages when you have higher density of electricity lines. Maybe this needs a little more explanation here (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	Good and appropriate comment. Adjustments were made to the text to make this section more precise

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391	45410	8	25	30	25	31	We challenge the implication or assertion here that concentrated urban form makes cities more vulnerable to climate change. Much depends on location. Additionally more extensive, dispersed infrastructure networks may well be more vulnerable to disruption. Believe that this assertion sends the wrong message. And, indeed, the very next sentence, which speaks positively of 'compact cities', seems to contradict this assertion. (Rafael Tuts, United Nations Human Settlements Programme)	Good and appropriate comment. Adjustments were made to the text to make this section more precise
392	45411	8	25	41	25	42	Urban systems that do not have built-in redundancy may be highly vulnerable before a 'tipping point' occurs. A 'weak link in the chain' analogy may be more appropriate here. (Rafael Tuts, United Nations Human Settlements Programme)	not sure of the requested changes
393	45412	8	25	48	25	48	Reference to earthquakes appears out of place in a discussion of climate change impacts. (Rafael Tuts, United Nations Human Settlements Programme)	revised text to present the example of earthquakes in a larger intellectual context
394	36451	8	26	0	0	0	it is good to see multiple stressors and historical analogues appearing (Eric Pawson, University of Canterbury)	great.
395	48237	8	26	1	26	12	As there is considerable uncertainty on the projections and causal relation of all the factors described here that are often indirect, the association is not clear and the argument in line 6 that "climate change can spur migration" is less convincing. There are also counter evidence that shows that migration can decline due to climate factors (See for instance Findley 1994, cited in Black 2001 p.7). The linkages between environmental change, conflict and migration remain to be proven since there is even some evidence on migration responses to environmental stress that points in the opposite direction. If left, in line 11, the word "but" should be replaced by "and". (Jason Garcia-Portilla, University of Sussex)	made the replacement in line 11
396	54775	8	26	3	26	12	The chapter team should cross reference relevant regional chapters. (Monalisa Chatterjee, IPCC WGII TSU)	reference to the regional chapters was included
397	52728	8	26	12	0	0	After the quotation add the following: Nevertheless, in mountain regions ´ cities particular meteorological situations, with foehn wind conditions intensified by climate change, would critically affect the urbanites ´ psychosis, exacerbating conflicts and bringing problems in heterogeneous populations (migrants involved). (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	added sentence
398	47415	8	26	14	26	19	Among the main issues connecting climate impacts with disaster recovery is access to clean water (not in the list of tensions mentioned in second sentence of that paragraphe). (Caroline Larrivee, Ouranos inc.)	included reference in the text
399	47416	8	26	22	26	24	"The links between humanitarian work and climate change are increasingly recognized, but further collaboration between [...] AND INTERNATIONAL FUNDING AGENCIES" This should be added to the sentence since they develop criteria for selecting which projects to develop and can greatly influence which adaptation strategies are favored. (Caroline Larrivee, Ouranos inc.)	added text
400	54776	8	26	38	26	46	The author team may wish to reconnect with 'impact of urbanization on climate change' discussion here. (Monalisa Chatterjee, IPCC WGII TSU)	good comment but space limitation do not allow for additional text on this matter
401	42292	8	26	44	26	44	"is that" to be "that" (Luhui Yan, Tanzuji)	changed
402	47577	8	26	52	26	53	From these cases, it is evident that well-governed cities demonstrate a capacity to adapt and to learn from crises (Which cases????) (Andrea Young, State University of Campinas - UNICAMP)	edited text to highlight the cases in question.
403	54777	8	26	52	26	53	It will be preferable if more information about these cases are provided. (Monalisa Chatterjee, IPCC WGII TSU)	edited text to highlight the cases in question.
404	47961	8	27	2	0	0	Section 8.3 The mitigation of urban heat island is one of the ways of adaptation to climate change, especially for the developed urban centre. Therefore, I suggest that the studies of UHI mitigations are introduced and discussed in this section. (Sachiho Adachi, Japan Agency for Marine-Earth Science and Technology)	UHI mitigation is discussed later in this section
405	47417	8	27	18	27	20	There is less and less uncertainty about the nature of present and future hazard risk - maybe more concerning the magnitude and specific location of these risks. (Caroline Larrivee, Ouranos inc.)	addressed
406	46047	8	27	19	27	20	So, they are of little use for these purposes? (Luis E. Garcia, World Bank)	This is not what the paragraph is emphasizing
407	52729	8	27	27	0	0	It is not only profuse bibliography. Also the UN ISDR has increased its participation regarding the strengthening of climate resilience in different city ´ s levels, but also has expanded its regional activities. REF: A Regional UN ISDR Office is assisting LA countries, from Panama City (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Role of UNISDR discussed later
408	40517	8	27	27	27	35	Add reference to: Rosenzweig and Solecki (2010) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	This is a general paragraph, references are given later
409	47418	8	27	32	27	35	"What is important is the recognition by local governments of the need for a unit that has responsibilities for this ..." - there is also the recognition of the need to formalize links between municipal services (adaptation has many cross-cutting issues to deal with that will involve many services to identify the problems correctly, select and implement the proper solutions (ones that do not cause other undesired impacts) and for monitoring progress. The term unit should not be reduced to one service in a local government. (Caroline Larrivee, Ouranos inc.)	Good suggestion - incorporated into text
410	45413	8	27	53	27	54	For an analysis of national-local interactions in selected middle- and low-income countries, see Kehew, Robert, et al. 2013. "Formulating and implementing climate change laws and policies in the Philippines, Mexico (Chiapas) and South Africa: A local government perspective". Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (An earlier version of this paper appears as Kehew, Robert et al. 2012. "Urban climate governance in the Philippines, Mexico and South Africa: National- and State-Level Laws and Policies", in Otto-Zimmermann, Konrad, ed. 2012. Resilient Cities 2: Cities and Adaptation to Climate Change: Proceedings of the Global Forum 2011. Dordrecht: Springer, 305-316.) (Rafael Tuts, United Nations Human Settlements Programme)	Paper not yet available; to be included in the next draft

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
411	45414	8	28	14	28	14	Also see Bulkeley, Harriet and Rafael Tuts. 2013. "Understanding urban vulnerability, adaptation and resilience in the context of climate change". Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	Included
412	52730	8	28	28	0	0	It is felt that reference on the various actions being taken by large cities in the world, as coordinated during COP17 (Durban) and Rio + 20, should be included. REF: In Rio + 20 Agreement between the city governors of Mexico, Sao Paulo and Buenos Aires. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Added earlier in the chapter
413	35680	8	28	29	28	39	This paragraph could use a little more specificity. On line 33, the authors make reference to the fact that "governments' social policies and priorities" influence the social and spatial distribution of risk, but can they be more specific about what they mean by "social policies and priorities?" Are they talking about employment policy, zoning, housing? (Craig Johnson , University of Guelph)	addressed
414	41357	8	28	41	28	43	Please add the City of Durban ("eThekweni Municipality") as an exception to this sentence. Instead of focusing on climate change mitigation measures it has done a great deal of climate change adaptation interventions. (Sven Harmeling, Germanwatch)	Durban's innovations in adaptation are detailed later - but Durban's initial focus (with external support) was also on mitigation
415	45415	8	28	41	28	43	We challenge the universality of this assertion. As we have seen through the work of the UN-Habitat Cities and Climate Change Initiative, the entry point in secondary cities in least developed countries more often relates to adaptation rather than to mitigation. For a sample reference, see Silver, Jonathan, et al. 2013. "Climate change, urban vulnerability and economic development in Saint-Louis and Bobo Dioulasso: Learning from across West African cities". Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	This assertion has been adjusted; initially there was more support for mitigation
416	47223	8	28	41	28	53	A recently published study surveys the climate action plans of the largest US cities and finds a much greater emphasis on greenhouse gas mitigation than UHI mitigation: Stone, Vargo & Habeeb. 2012. Managing climate change in cities: Will climate action plans work? Landscape and Urban Planning, 107: 263-271. This finding seems particularly relevant given the findings referenced above that UHI is the dominant driver of historical warming trends in many large cities. (Brian Stone, Georgia Institute of Technology)	We cannot see how this comment fits with the paragraph referenced.
417	46048	8	28	44	28	47	Makes sense. Watershed management was en vogue also for example after Mitch in Central America. It is good of course, but of little use to manage extreme flood events which will happen anyway no matter what. (Luis E. Garcia, World Bank)	text adjusted
418	47578	8	28	48	28	48	The reference is incorrect (INPE, UNICAMP, USP, 2010). The correct reference is Nobre et al (2011). (Andrea Young, State University of Campinas - UNICAMP)	we could not find Nobre et al 2011 but presume that this should be Nobre et al 2010
419	41358	8	28	49	28	49	There is an important study of two Brazilian cities in regard to climate change: http://cc2011.earthsystemgovernance.org/pdf/2011Colora_0318.pdf (Sven Harmeling, Germanwatch)	text adjusted and reference added
420	47579	8	28	49	28	49	Soares de Moura, 2009 (???) this reference is incomplete, it does not appear in the references. (Andrea Young, State University of Campinas - UNICAMP)	Reference added
421	40518	8	29	2	30	29	Add reference to: Mehrotra et al. (2011) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Not clear where this should be added; this source is referenced elsewhere
422	46049	8	29	8	29	9	If this refers to floods, this also seems contradictory to what is said in Chapter 1, lines 53 and 54 of page 18 and lines 1 and 2 of page 19. Also in SREX (IPCC 2012). (Luis E. Garcia, World Bank)	wording adjusted.
423	52731	8	29	9	0	0	This line and some more should inform about the activities that the WMO, UN-ISDR, C 40, etc, on their actions towards the development of "intelligent, resilient cities" (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	ISDR Resilient Cities and other initiatives mentioned later in this section
424	47419	8	29	11	29	13	"Exposure to disaster risk from weather events [...], including the needed expansion OR UPGRADES / REHABILITATION in infrastructure [...]" (Caroline Larrivee, Ouranos inc.)	wording adjusted.
425	47580	8	29	22	29	27	This paragraph is a little repetitive. See pag 9 - Vulnerability and Resilience (from line 36 to 42). (Andrea Young, State University of Campinas - UNICAMP)	Cannot see repetition
426	47420	8	29	32	29	32	"[...] disasters the INCLUDE smaller disaster events [...]" (typo in sentence) (Caroline Larrivee, Ouranos inc.)	text adjusted
427	35681	8	29	46	29	50	This is a very awkward paragraph. Perhaps an example would help to illustrate the point that is being made. (Craig Johnson , University of Guelph)	text adjusted
428	41359	8	30	5	30	11	Please add those two important programmes: Cities and Climate Change Initiative (http://www.unhabitat.org/categories.asp?catid=550) and Clinton Climate Initiative (http://clintonfoundation.org/main/our-work/by-topic/climate-change.html) (Sven Harmeling, Germanwatch)	The first is now included. The second does not really deal with disaster risk reduction or adaptation
429	45416	8	30	11	30	11	To this list could be added UN-Habitat's Cities and Climate Change Initiative. See www.unhabitat.org/ccci . (Rafael Tuts, United Nations Human Settlements Programme)	Added earlier in the chapter
430	54781	8	30	32	0	0	Section 8.3.3. The author team should synthesize this section and present a summary of all findings. Moreover, to reduce repetition the author team may wish to remove some of the discussions on impact and vulnerability. (Monalisa Chatterjee, IPCC WGII TSU)	we feel it is important to have specifics about different sectors so these are seen by those working in different sectors; text edited to cut down on discussions of impact
431	38598	8	30	32	30	32	As most of the urban areas in low and middle income nations have adaptation deficits (deficits in dealing with current climate-related risks), the issue of adaptation deficit should be highlighted. Case studies on quantification of adaptation deficits vis- à-vis adaptation to climate change, if any, should be included. (Susmita Dasgupta, The World Bank)	addressed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
432	45294	8	30	32	44	7	Social infrastructure, education and healthcare are not included in 8.3.3. (but they are in 8.2.4). These are critical sectors for developing health and knowledge at the individual as well as community level within cities and are therefore critical components of a resilience strategy. Hospitals and schools are also considered as critical infrastructure that needs to remain operational under a range of shocks and stresses, therefore their location and design require careful consideration. (Jo da Silva, Arup)	these are included in a later section
433	54780	8	30	34	0	0	The author team may wish to add a table highlighting 'what has been done' and 'what needs to be done' (Monalisa Chatterjee, IPCC WGII TSU)	what literature?
434	45417	8	30	39	30	39	For an intriguing example from a secondary city in a developing country (Indonesia), see Cities and Climate Change Initiative. 2011. "Coloured Water -- Assessment of climate change vulnerability in Kelurahan Pabean Pekalongan Central Java", accessible at www.unhabitat.org/ccci , under 'reports'. (Rafael Tuts, United Nations Human Settlements Programme)	example and reference added
435	50509	8	30	42	30	42	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	changed
436	47581	8	31	1	31	6	This statement is strange (?), I do not fully agree with this idea, because the de-industrialization has a number of causes, motives and economic interests that were behind the global economic model (capitalism of the last 30/40 years and the power of capital). See Harvey, D. (2006). (Andrea Young, State University of Campinas - UNICAMP)	Statement was not meant to be in contradiction to Harvey. Wording revised
437	35682	8	31	8	31	10	Can the authors provide examples of lower cost infrastucture that can be introduced in peri-urban areas? (Craig Johnson , University of Guelph)	Wording adjusted.
438	35683	8	31	12	31	20	Re. the opportunities for "proactive adaptation" outside larger cities, to what extent is there a conflict with agriculture and other rural livelihoods? To what extent would urban growth and development create new forms of vulnerability for populations whose livelihoods are dependent on agriculture? (Craig Johnson , University of Guelph)	Wording adjusted and new sentence added
439	50510	8	31	15	31	15	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	changed
440	45418	8	31	26	31	26	For an exception where the impact of extreme weather upon the informal economy was indeed considered (in this case flooding upon the local batik industry), see Cities and Climate Change Initiative. 2011. "Coloured Water -- Assessment of climate change vulnerability in Kelurahan Pabean Pekalongan Central Java", accessible at www.unhabitat.org/ccci , under 'reports'. (Rafael Tuts, United Nations Human Settlements Programme)	added
441	46050	8	31	28	31	29	It is being accepted that climate change effects are already being felt. As for climate extremes however, SREX states that in the coming two or three decades these signals are relatively small compared to natural climate variability over this time frame. This emphasizes the need not to take attention away from climate variability in these cases in the short term. (Luis E. Garcia, World Bank)	added
442	47582	8	31	28	31	29 "particularly in the informal economy" ??? The individuals in the informal economy are not necessarily vulnerable (or poor). (Andrea Young, State University of Campinas - UNICAMP)	text changed
443	36452	8	31	31	33	0	the work of Peter Newman and associates needs to be acknowledged better than it is. Newman, Peter, Beatley, Timothy, Boyer, Heather. Resilient cities : responding to peak oil and climate change, Island Press, WDC: 2009; Newman, Peter, Jennings, Isabella, Cities as sustainable ecosystems: principles and practices, Island Press, WDC: 2008 (Eric Pawson, University of Canterbury)	This is an excellent book but its focus is far more on mitigation with little discussion of adaptation to climate change impacts. It is referenced elsewhere
444	45419	8	31	33	31	33	For 32 case studies of the relation of the green economy to specific cities, see the 'Urban Patterns for a Green Economy' series of 4 publications, published by UN-Habitat in 2012 and available for download at www.unhabitat.org (search under 'publications'). (Rafael Tuts, United Nations Human Settlements Programme)	Addressed
445	39524	8	31	35	31	41	This is an important paragraph, and I think it is worth stressing the importance of the role of informal waste collectors in urban environmental management. Without them thousands of tonnes of recycable materials would not be collected. Much of this material would end up at landfills, in temporary dumpsites, or burnt. During floods or periods of heavy rains, temporary dumpsites can clog sewers and canals, making flooding worse. Waste materials can also contaminate water sources. (Carrie Mitchell, International Development Research Centre (IDRC))	agreed
446	45295	8	31	35	31	41	See earlier comment above about waste management and drainage channels (Jo da Silva, Arup)	addressed
447	52732	8	31	39	0	0	Since the City of Buenos Aires has adopted a policy for Urban Wastes Recycling, including dry matter, and has established a Registry for Urban Recuperation People, it would be opportune to include this reference REF: http://www.buenosaires.gov.ar/med_ambiente/dgpru/area/area_de_desarrollo_de_reciclado_urbano.php?menu_id=18912# (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Dozens of cities have similar policies to this and space limitations make it difficult to cover these; internet reference suggested does not work when tried
448	44424	8	31	48	32	2	it should be changed by general manner because it is too specific. (Tae sung Cheong, National Disaster Management Institute)	left in as a specific example is needed
449	47421	8	31	51	31	52	Defences can threaten beach tourist industry and also destroy important ecological habitats and cause further erosion to areas unprotected (magnify the hazard or move further along the coast putting at greater risk other elements that are not protected) (Caroline Larrivee, Ouranos inc.)	Text on this added to - but difficult to add all of this without a refernce
450	46051	8	31	52	31	53	Unnecessary quip (Luis E. Garcia, World Bank)	why an unnecessary quip? There are evictions and redevelopments that are pushing out low income groups done
451	45304	8	32	4	32	5	Refer to Aon (2011) Global Risks Report (Jo da Silva, Arup)	done
452	54782	8	32	16	32	22	The author team may wish to integrate this discussion in the potential impact section. (Monalisa Chatterjee, IPCC WGII TSU)	8.2 and 8.3 now clearer separation of these
453	45609	8	32	25	33	19	Not only food security, but also food safety is imporant. Warmer weather can cause serious food safety concerns. (Soojeong Myeong, Korea Environment Institute)	Addressed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
454	54783	8	32	27	32	48	The author team may wish to integrate this discussion in the vulnerability and potential impact sections. (Monalisa Chatterjee, IPCC WGII TSU)	To be discussed at next author meeting
455	50511	8	32	34	32	34	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	OK
456	47422	8	32	40	32	42	The radical changes listed should also include consumer habits. (Caroline Larrivee, Ouranos inc.)	addressed in dietary shift statement earlier
457	52733	8	32	49	0	0	It would be a good reference to insert in this line the reference of the historical changes in the food and water supplies in a large city. See the reference: Swaney D.P. et al Historical Changes in the Food and Water supply systems of the New York City Metropolitan Area. Regional Environmental Change, Vol 12, Nº 2-2012 (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Would have liked to include this but pressure to keep chapter length down means we decided not to include this
458	47565	8	33	0	53	0	The section (8.3.3.3. Adapting Housing and Settlement) and (8.4.2.2. Household-based Adaptation in Urban Areas) are very similar. (Andrea Young, State University of Campinas - UNICAMP)	overlap cut
459	41360	8	33	10	33	10	You might refer to "green roofs" in regard to urban agriculture. (Sven Harmeling, Germanwatch)	Addressed
460	41361	8	33	10	33	19	In fact, urban agriculture is becoming more and more "trendy" in some western cities such as Berlin or London (cf. http://amalthea.kevio.gr/wp-content/uploads/2011/10/UA-City-Case-Study-London.pdf) (Sven Harmeling, Germanwatch)	Agreed but not sure what to add to the text. Urban agriculture has a long history in many European cities
461	47583	8	33	15	33	15	(Just attention)....."social incomes – for instance conditional credit or cash transfers" (e.g. Brazil' Bolsa familia programme). The "Bolsa Família" is a benefit for improving the family situation, it is not "access to credit". (Andrea Young, State University of Campinas - UNICAMP)	addressed
462	52734	8	33	19	0	0	Regarding the urban impact on the environment, different urban ecological imprints may be mentioned. A critical issue comes out when a city catches its freshwater supply from an urban estuary. The sewage flows must required particular management methods. This is a common fact in many countries as it is the case of urban waste repositories, under climate change conditions. Both issues call for an additional paragraph REF: Nixon S.W. & R.W. Fulweller- Ecological footprints and shadows in an urban estuary, Narragansett Bay (USA). Regional Environmental Change, Vol 12, Nº 2, 2012 (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	interesting point but not clear how it relates to this section on food security
463	54784	8	33	24	33	44	The author team may wish to integrate this discussion in the impact section. (Monalisa Chatterjee, IPCC WGII TSU)	Addressed
464	44425	8	33	24	34	48	In this sentence, Japan's plan recovering from earthquake and tsunami disaster in 2010 should be added for good example (Tae sung Cheong, National Disaster Management Institute)	are there references with that regard?
465	41362	8	33	29	33	29	Add "people with disabilities" to the vulnerable groups. (Sven Harmeling, Germanwatch)	addressed
466	45610	8	33	33	33	38	Cases from Hurricane Katrina may be an example for building damage from extreme weather. See page 112 and 113 of "Adapting building and cities for climate change (Roaf, Crichton, and Nicol, 2009)" (Soojeong Myeong, Korea Environment Institute)	Added
467	48285	8	34	0	0	0	No mention of the drought of South-West United States. In addition the watershed districts literature is well developed in Texas and Western United States. This is not written here. Refer Texas Watershed Programme : www.tx.nrcs.usda.gov/programs/watersheds/index.html (Malini Nair, Indian Institute of Science)	Web reference does not work; we are limited by constraints on length from adding additional examples
468	45611	8	34	7	34	7	Detailed information on Melbourne 2009 is missing at reference section (Soojeong Myeong, Korea Environment Institute)	Reference changed
469	47423	8	34	9	34	21	Reference to add: Giguère, M. 2009, Mesures de lutte aux îlots de chaleur urbain, INSPQ, Québec, 95 p. (Caroline Larrivee, Ouranos inc.)	Added
470	35684	8	34	9	34	39	I think too much of the discussion about housing and extremem heat is drawing upon examples and evidence from cities (like Chicago and London) in northern temperate climates. Although these are of course important cases to consider, the discussion could also be usefully expanded to include large cities in the tropics where heat waves and growing dependence on air conditioning will contribute to further exposure and GHG emissions. (Craig Johnson , University of Guelph)	Agree with pointand text adjusted - but where is the literature on this?
471	47584	8	34	10	34	10	"This includes upgrading homes with low thermal mass and limited ventilation." Yes, but...it is noteworthy, this approach is applicable in locations that have large daily temperature variations. (Andrea Young, State University of Campinas - UNICAMP)	added
472	45612	8	34	11	34	11	Roberts 2008a is missing at reference section (Soojeong Myeong, Korea Environment Institute)	Reference added
473	47585	8	34	11	34	11	There is something wrong with the reference " (Roberts, 2008a)". This is not about thermal mass. DEBRA ROBERTS (2008)."Thinking globally, acting locally – institutionalizing climate change at the local government level in Durban, South Africa. (Andrea Young, State University of Campinas - UNICAMP)	Thanks for noticing this; the right reference has been added: Simon Roberts Effects of climate change on the built environment Energy Policy, Volume 36, Issue 12, December 2008, Pages 4552–4557 http://dx.doi.org/10.1016/j.enpol.2008.09.012
474	41363	8	34	17	34	17	Make a reference to Toronto's Cooling Centers (cf. http://wx.toronto.ca/inter/it/newsrel.nsf/0/a88c8f6d6291d6b685257a3a0042b732?OpenDocument) (Sven Harmeling, Germanwatch)	done

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
475	45296	8	34	51	37	21	The discussion on water does not sufficiently emphasise the importance of integrated water resource management founded on catchment analyses; the need to take proactive measures to recharge groundwater aquifers and limit/control abstraction through licensing. Integrated approaches which consider water supply and flood risk jointly are essential. See: a. The UN World Water Development Report (WWDR4). Link available to download here: http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/wwdr4-2012/ b. UNEP 2012. The UN-Water Status Report on the Application of Integrated Approaches to Water Resources Management. Available to download here: http://www.unwater.org/rio2012/report/press-release-19june.html . Released based on the findings of a UN (likely UNEP) survey of 130+ national governments; the survey and report specifically produced to inform decision-making at Rio+20 and with over 80 percent of countries have reformed their water laws in the past twenty years as a response to growing pressures on water resources from expanding populations, urbanization and climate change. The survey focussed on progress towards the implementation of internationally-agreed approaches to the management and integrated water resource management (IUWM). c. Also useful (though a little dated) are FAO 2006. Mapping Existing Global Systems and Initiatives, and UN-Water (2008). Status Report on IWRM and Water Efficiency Plans for CSD16. Both the above available here: http://www.unwater.org/documents.html (Jo da Silva, Arup)	A valuable comment; the text has been revised in respond to this
476	35685	8	35	20	35	23	Over what time period are these cost estimates meant to apply? (Craig Johnson , University of Guelph)	The original paper does not specify
477	46052	8	35	20	35	23	Hard to imagine where this money is going to come from. Be it MDGs, the Water Vision, Rio+20 or whatever, everybody makes these kind of calculations. (Luis E. Garcia, World Bank)	Agreed but it seemed worth including these to show scale of problem
478	46054	8	35	26	0	0	Section 8.3.3.4.1 Adaptation strategies for water: It seems it refers to water supply and not water in general (Luis E. Garcia, World Bank)	Title changed
479	35686	8	35	30	35	31	what do the authors mean by "appropriate action?" (Craig Johnson , University of Guelph)	Addressed
480	40519	8	35	30	35	31	This sentence should be revised with an accompanying paragraph explaining the bridges and barriers to adaptation and water, and moved to the end of the section. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Text adjusted
481	46053	8	35	40	35	41	Reservoirs increase water availability in dry periods by regulating flows, but there is no over-all increase in water availability. (Luis E. Garcia, World Bank)	Seasonal water shortages added
482	35483	8	36	0	0	0	The Helsinki Metropolitan Area Climate Change Adaptation Strategy (HSY 2012) (in Finnish, will be published in English in August 2012 http://www.hsy.fi/tietoahsy/julkaisut/Sivut/Julkaisut.aspx) has also policies of water management, in planning and preparedness planning of water and waste water management, extreme weather events and climate variability and change are taken into account. Also for example dimensioning principles of the water management system (including storm water and waste water lines) will be revised from the point of view of weather events and climate change impacts. (Susanna Kankaanpää, Helsinki Region Environmental Services Authority (HSY))	Added
483	39061	8	36	6	0	0	incorrect reference "Mukheibir and Ziervogel 2009", should read "Mukheibir and Ziervogel 2007". (Pierre Mukheibir, University of Technology Sydney)	addressed
484	45420	8	36	47	37	21	We believe that the conceptual approaches of Integrated Flood Management and Sustainable Urban Drainage Systems are very relevant to this discussion. See, for example, Associated Programme on Flood Management, Integrated Flood Management Concept Paper, at http://www.wmo.int/apfm . (Rafael Tuts, United Nations Human Settlements Programme)	Addressed
485	41364	8	36	49	37	21	This section is very short. Climate change will have some major effects in regard to storm water management. Also, there is no reference to sea-level rise and what this will mean for future storm water management. (Sven Harmeling, Germanwatch)	Addressed
486	41581	8	36	49	37	21	Within a few weeks a paper will be published on realizing green roofs for storm-water retention, based on an empirical study in five 'frontrunning' cities (Basel, Chicago, London, Rotterdam and Stuttgart). This paper could provide additional information for this section. See: H. Mees, P.P.J. Driessen, H.A.C. Runhaar and J. Stamatelos (2012). Who governs climate adaptation? Getting green roofs for storm-water retention of the ground, Journal of Environmental Policy and Management. (Peter P.J. Driessen, Utrecht University)	Source to be reviewed for consideration in final draft
487	46055	8	37	13	37	21	This is what IWRM was supposed to mean at the beginning! (Luis E. Garcia, World Bank)	added
488	47424	8	37	13	37	21	Repetition of sentences from section 8.3.3.4.1 page 36 lines 38 to 44 (Caroline Larrivee, Ouranos inc.)	addressed
489	40520	8	37	24	38	2	Cite: Hammer et al. (2011) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	addressed
490	47425	8	37	32	37	33	There may be missing a comma in sentence between the terms "energy" and "poverty". (Caroline Larrivee, Ouranos inc.)	addressed
491	37680	8	37	45	0	0	Comment 1: There is no real reference for Huang 2008 in the bibliography, and I don't know what reference that could be. There is quantified work on how hurricanes affect the petroleum industry and how to calculate the value of investments that provide resilience. Add(?): Hurricanes are an example of the extreme events and storm surge that can affect the petrochemical industry. Vugrin et al (Vugrin et al., 2011) estimates the cost and benefits of investments that produce various levels of resilience in the petrochemical supply chain. An extension of that work directly incorporates the type of uncertainty appropriate to determining the cost and investments in the context of future climate change (Vugrin and Turnquist 2012). (George Backus, Sandia National Laboratories)	addressed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
492	37681	8	37	45	0	0	Comment 2: [Vugrin E.D., D.E. Warren, and M.A. Ehlen, 2011: A resilience assessment framework for infrastructure and economic systems: Quantitative and qualitative resilience analysis of petrochemical supply chains to a hurricane. Process Safety Progress, 30(3), 280–290 DOI: 10.1002/prs.10437] [Vugrin, E. and M.A. Turnquist, 2012: Design for Resilience in Infrastructure Distribution Networks. Sandia National Laboratories. Report SAND2012-6050 Albuquerque, NM. Available at: http://www.sandia.gov/CasosEngineering/docs/Vugrin_resilient_design_2012_6050.pdf] (George Backus, Sandia National Laboratories)	Good suggestion - but this point was introduced into 8.3.3.1
493	35687	8	38	1	38	2	are there any inferences we should draw from the fact that private autonomous actions will be dominating adaptation in the energy sector? (Craig Johnson , University of Guelph)	Point clarified in the text
494	54785	8	38	5	0	0	Section 8.3.3.6. The author team may consider adding a table here to present some of the key findings in the sub categories discussed in the section. (Monalisa Chatterjee, IPCC WGII TSU)	See ES
495	40521	8	38	5	39	45	Cite: Mehrotra, S., B. Lefevre, R. Zimmerman, H. Gerçek, K. Jacob, S. Srinivasan, 2011b: Climate change and urban transportation systems. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 145–177. and Jacob, K.H., G. Deodatis, J. Atlas, M. Whitcomb, M. Lopeman, O. Markogiannaki, Z. Kennett, A. Morla, R. Leichenko, and P. Vancura. 2011. Transportation. In Responding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation in New York State, edited by C. Rosenzweig, W. Solecki, A. DeGaetano, M. O'Grady, S. Hassol and P. Grabhorn. New York, NY: Annals of the New York Academy of Sciences. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	added
496	43481	8	38	9	38	10	The note on underground trains may be expandable as it lacks a reference and is stated elsewhere (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	addressed
497	46056	8	38	9	38	10	A reference and some examples would be welcome. (Luis E. Garcia, World Bank)	addressed
498	43482	8	38	14	38	15	The term "more successful" cities is slightly ambiguous, maybe leave it out (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	Not sure why; it is the more successful cities that have attracted new investment that tend to spread spatially
499	43483	8	38	15	38	15	Spatial growth in cities varies quite substantially from region to region, this should be acknowledged here (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	This point is acknowledged elsewhere. It is also rare for large and successful cities not to expand spatially
500	43484	8	38	17	38	17	Make clear that this is only one example. Another from a developing countrzy context might add value too. (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	we could not find another example of this from a low or middle income country
501	43485	8	38	33	38	33	It is fair to replace the "may" increase the cost... with "is likely" to ... (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	We are warned not to use 'likely' by the IPCC secretariat
502	43486	8	38	34	38	35	You could refer to examples from elsewhere e.g. Hamin, Elisabeth M., and Nicole Gurrán. 2009. "Urban Form and Climate Change: Balancing Adaptation and Mitigation in the U.S. and Australia." Habitat International 33 (3) (July): 238–245. doi:10.1016/j.habitatint.2008.10.005. (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	ADDED
503	45421	8	38	40	38	40	See Asian Development Bank. 2005. Climate Proofing: A Risk-based Approach to Adaptation. The Philippines. (Rafael Tuts, United Nations Human Settlements Programme)	Not sure this is needed
504	37576	8	39	4	0	0	Railways dealt with less rigour than roads. A review on climate change and the railway industry here: Baker, C.J., Chapman, L. Quinn, A.D., & Dobney, K. (2010) Climate change and the rail industry. Proc. IMechE, Part C: Journal of Mechanical Engineering Science 224:519-528 (lee chapman, university of birmingham)	ADDED
505	37577	8	39	4	0	0	Specific railway impact for reference: Dobney, K., Baker, C.J., Chapman, L. & Quinn, A.D. (2010) The future cost to the UK's railway network of heat related delays and buckles caused by the predicted increase in high summer temperatures due to climate change. Proceedings of the Institution of Mechanical Engineers, Part F, Journal of Rail and Rapid Transit 224:25-34. (lee chapman, university of birmingham)	Added
506	50512	8	39	9	39	9	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	changed
507	41365	8	39	13	39	15	Those lines describe how to adapt the road system to climate change (Durban). As the previous and well as the subsequent paragraph rather feature the rail system I propose to relocate those lines to the next paragraph. (Sven Harmeling, Germanwatch)	addressed
508	43487	8	39	21	39	22	Reference needed (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	Statement is backed by the followed sentences that includes references.
509	43488	8	39	27	39	28	Reference needed (Oliver Lah, Wuppertal Institute for Climate, Environment and Energy)	Statement is backed by the followed sentence that includes reference.
510	47586	8	39	36	39	37	"Better-off households were more likely to possess their own vehicles, while poorer households rarely owned cars, waded through floodwaters in bare feet...." But this is not a rule, many people are affected when they are driving cars (even the poor). Besides, in general poor countries don't have a good public transport system. (Andrea Young, State University of Campinas - UNICAMP)	This text is part of an example that is generally true in most urban centres in low and middle income nations.
511	45422	8	39	38	39	40	Also worth citing here is UN-Habitat Global Report on Human Settlements 2011: 81-82, already in your bibliography. (Rafael Tuts, United Nations Human Settlements Programme)	This is cited elsewhere; these pages do not include a reference to the point made in this sentence
512	41366	8	39	42	39	45	Please elaborate further on this. (Sven Harmeling, Germanwatch)	We did not find an urban specific literature on this - and this issue is covered in more detail in chapter 10
513	47426	8	39	50	39	51	"[...] urban areas such as purifying water, ABSORBING RUNOFF, cleansing air and moderating TEMPERATURE" (instead of climate) (Caroline Larrivee, Ouranos inc.)	addressed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
514	47587	8	39	50	39	51	'Green infrastructure' denotes ecological features, ranging from wetlands to forests , that provide critical (or fundamental ?) services to urban areas such as purifying water, cleansing air, and moderating climate (Newman 2010). CRITICAL seems problematic. (Andrea Young, State University of Campinas - UNICAMP)	Critical is often used in the sense of something that is Indispensable or essential and that is how it is used here
515	48306	8	39	51	39	51	Carbon sequestration should be mentioned as an ecosystem service of green infrastructure (e.g. Foster et al. 2011, The value of green infrastructure for urban climate adaptation, Technical Report, The Center for Clean Air Policy, www.ccap.org) (Luitgard Schwendenmann, The University of Auckland)	added, along with reference
516	54786	8	40	6	40	37	It may be preferable if enabling factors and drivers are identified in the case study. (Chapter 2 has defined these concepts, please see page 33.) (Monalisa Chatterjee, IPCC WGII TSU)	will consider for next draft
517	46057	8	40	49	40	52	The question is not one measure instead of another, but a combination of "hard" and "soft" measures. It is not possible to control large scale flood events though catchment management alone. (Luis E. Garcia, World Bank)	wording adjusted
518	47427	8	41	1	41	6	Same ideas as in first paragraphe of the same section (page 39, line 50 to page 40 line 2). (Caroline Larrivee, Ouranos inc.)	Edited to remove repetition
519	41229	8	41	5	41	5	Agree- Australian practice - Norman, B, 2010, A low carbon and resilient urban future, report for the Department of Climate Change and Energy Efficiency, Australian Government, Canberra (Barbara Norman, University of Canberra)	added
520	52735	8	41	6	0	0	It may be useful to remark the need to mitigate automotive vehicle emissions. As far as the joint WMO-UNEP publications on environmental issues, VOCs' emissions and the photochemical generated gases, like Ozone, will harm trees and plants. Further, the increasing automotive park would give rise to acidic precipitations. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	this issue to be covered in the mitigation-adaptation co-benefits section
521	41582	8	41	6	41	6	This reference is incorrect. This should be: H.L.P. Mees and P.P.J. Driessen (2011). Adaptation to climate change in urban areas; climate-greening London, Rotterdam, and Toronto, Climate Law 2: 251-280. (Peter P.J. Driessen, Utrecht University)	Addressed
522	47713	8	41	8	41	50	Another good example of city investment in green infrastructure (that integrates heat island mitigation and sustainable water use) can be seen in Phoenix, where low-water use plants (xeriscaping) has been successfully applied both in Downtown Phoenix and also promoted by various cities in the metro area towards individual homeowners - see Chow et al. 2012 for more details. Chow, W.T.L., D Brennan, and A.J. Brazel. 2012: Urban heat island research in Phoenix, Arizona: Theoretical contributions and policy applications. Bulletin of the American Meteorological Society. 93(4), 517-530. (Winston Chow, National University of Singapore)	Will try to get this in - but we need to cut this section
523	46058	8	41	13	41	13	This doesn't sound hydrologically right, unless additional explanation is given. (Luis E. Garcia, World Bank)	Don't understand why
524	46059	8	41	16	41	19	Additional explanation would be good as to why a more costly option ends up being the most cost-effective. (Luis E. Garcia, World Bank)	for this, refer to the reference
525	54787	8	41	21	41	28	The author team may wish to coordinate with chapter 15 that discuss role of spatial planning. (Monalisa Chatterjee, IPCC WGII TSU)	OK
526	45423	8	41	28	41	28	For a discussion of ecosystems services and adaptation in Maputo, Mozambique, see Broto, Vanese Castan et al. 2013. "Climate change adaptation, local governance and poverty alleviation in Maputo. Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	The reference has been added although id has little detail on ecosystem services
527	54788	8	41	48	41	50	It may be preferable if the findings of the study is also shared. (Monalisa Chatterjee, IPCC WGII TSU)	Too constrained with regard to length for this
528	54789	8	41	53	41	54	It may be preferable if more information about the relevant policies is also shared. (Monalisa Chatterjee, IPCC WGII TSU)	As above
529	41583	8	42	10	42	10	The reference to Heleen-Lydeke et al is incorrect. This should be: Mees et al. 2011 (Peter P.J. Driessen, Utrecht University)	Reference modified
530	40522	8	42	16	43	15	Cite: Gaffin, S.R., M. Imhoff, C. Rosenzweig, R. Khanbilvardi, A. Pasqualini, A.Y.Y. Kong, D. Grillo, A. Freed, D. Hillel, and E. Hartung, 2012: Bright is the new black — multi-year performance of high-albedo roofs in an urban climate. Environ. Res. Lett., 7, 014029, doi:10.1088/1748-9326/7/1/014029. -- Also cite other work by Gaffin. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Gaffin's work is cited in three reference
531	47428	8	42	27	42	27	Extensive and intensive green roofs are differentiated mainly in terms of cost, substrate thickness and type of plants. The first sentence of the paragraphe is misleading. (Caroline Larrivee, Ouranos inc.)	text changed
532	47224	8	43	5	43	15	The chapter makes no mention of waste heat as a driver of UHI and its management as an adapation strategy -- one highly compatible with conventional GHG mitigation. Several studies find waste heat to be an important component of UHI: M. Hart & D. Sailor, Quantifying the influence of land-use and surface characteristics on spatial variability in the urban heat island, Theoretical and Applied Climatology, 95, 397–406 (2009); D. Sailor&L. Lu, A top-down methodology for developing diurnal and seasonal anthropogenic heating profiles for urban areas, Atmospheric Environment, 38, 2737–48 (2004). (Brian Stone, Georgia Institute of Technology)	Addressed
533	54790	8	43	7	43	9	It may be preferable if the findings of the study is also shared. (Monalisa Chatterjee, IPCC WGII TSU)	text changed
534	54791	8	43	12	43	12	It may be preferable if more information about the local conditions is also shared. (Monalisa Chatterjee, IPCC WGII TSU)	No room; constraints on paper length and need to cut this section
535	50513	8	43	24	43	24	"likely" -- If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. If there is not a probabilistic basis, a level of confidence may be appropriate. The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	changed
536	47588	8	43	38	43	39	"Public health systems may need to increase attention to disease vector control (e.g. screening windows, eliminating breeding grounds (or water, reservoirs) for the mosquitoes....." Maybe WATER or RESERVOIR. (Andrea Young, State University of Campinas - UNICAMP)	Text kept as is because of extreme constraints on length. If we add details on water as breeding grounds, need to distinguish between water sites favoured by different disease vectors

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
537	52736	8	43	40	0	0	Recent developments, introducing formal training on environmental issues, including the multifarious effects that climate and environmental changes exert of public health, should be mentioned as an example on the ways and means to improve wellbeing and health in urban areas. A reference on the need to expand this action might be useful. REF: In 2012, the University of Buenos Aires has introduced a chair on Environment and Medicine oriented to complement the medical doctors training to improving their activities vis à vis of climate and environmental changes (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	training added
538	47429	8	43	42	43	44	If this is addressed in another section (human health?), there should be a reference to it. (Caroline Larrivee, Ouranos inc.)	The health chapter first draft did not have details on this - need to check with chapters 10 and 11 on this
539	41367	8	43	46	43	49	You might refer to this schooling project in Mozambique (cf. http://sheltercentre.org/sites/default/files/Mozambican-floods-response_0.ppt) (Sven Harmeling, Germanwatch)	Sadly we cannot use a power point - that also has no author and no references
540	45424	8	44	23	44	23	Also relevant to cite here is Kehew, Robert, et al. 2013. "Formulating and implementing climate change laws and policies in the Philippines, Mexico (Chiapas) and South Africa: A local government perspective". Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	reference added
541	54792	8	44	33	0	0	The author team may wish to coordinate with chapter 2 about the concepts 'enabling factors' and 'drivers'. (Monalisa Chatterjee, IPCC WGII TSU)	Plan to do this in the next authors meeting
542	40523	8	44	33	46	12	Cite: McCarney, P., H. Blanco, J. Carmin, M. Colley, 2011: Cities and climate change. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network , C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 249–269. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	citation included
543	54793	8	45	2	45	9	The author team should synthesize this discussion with other section on infrastructure. (Monalisa Chatterjee, IPCC WGII TSU)	Have focused on urban aspects of infra; plan to check repetition with chapter 10 within the SOD
544	54794	8	45	12	0	0	The author team may wish to coordinate with chapter 2 that discusses decision making in detail. Chapter 2 also has two figures (2.2 and 2.4) explaining the risk management and decision making process. (Monalisa Chatterjee, IPCC WGII TSU)	Will review this as we redo the figures
545	44175	8	45	12	51	20	There is a relatively recent Special Issue on urban adaptation in Current Opinion in Environmental Sustainability (Vol. 3, No. 3, pp. 113-198) that is not cited in the section. Some of the papers of the SI could contribute either in terms of practical examples, i.e. North America, or Europe, or in terms of urban conceptualisation of urban vulnerability in particular. (Sirku Juhola, Aalto University)	Some of the articles are already cited e.g. Leichenko 2011; Angelovski & Carmin; Romero & Qin.
546	45425	8	45	33	45	35	The supranational level with regard to laws and policies needs to be taken into account (e.g. European Union). (Rafael Tuts, United Nations Human Settlements Programme)	Done
547	47430	8	45	49	45	52	The sentence beginning with "For example, if long-standing sector policies do not take climate change into account ..." seems a really key element that should be found in the executive summary. For the moment, there is nothing concerning governance and the need to align governance processes - this is what will allow truly transformative changes and promote more coherent adaptation. (Caroline Larrivee, Ouranos inc.)	This now incorporated in the ES
548	45426	8	46	28	48	28	For a discussion of how existing national enabling frameworks actually may stymie efforts at the local level to incorporate disaster risk management concerns into urban land use planning, see forthcoming Policy Note 3 by UN-Habitat's Cities and Climate Change Initiative, which should be accessible at www.unhabitat.org/ccci by 31 December 2012. (Rafael Tuts, United Nations Human Settlements Programme)	Could not find this reference
549	47431	8	46	44	46	46	Another related issue is the type of investment preferred by international donor agencies - ones that are visible (for example hard infrastructure) whereas the more effective adaptation solutions lie in "soft" infrastructure (such as stronger institutions, processes, ...). (Caroline Larrivee, Ouranos inc.)	The point about the preference for hard infrastructure rather than soft is made; to link this to the international donor agencies, a source is needed
550	54795	8	47	1	0	0	The author team may wish to synthesize the discussions here with those in section 8.4.3. (Monalisa Chatterjee, IPCC WGII TSU)	Addressed through some cross references
551	45427	8	47	1	47	43	An important example of mainstreaming adaptation into municipal planning occurs in the Philippines. For a brief description, see Kehew, Robert, et al. 2013. "Formulating and implementing climate change laws and policies in the Philippines, Mexico (Chiapas), and South Africa: A local government perspective". Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (An earlier version of this paper appears as Kehew, Robert et al. 2012. "Urban climate governance in the Philippines, Mexico and South Africa: National- and State-Level Laws and Policies", in Otto-Zimmermann, Konrad, ed. 2012. Resilient Cities 2: Cities and Adaptation to Climate Change: Proceedings of the Global Forum 2011. Dordrecht: Springer, 305-316.) (Rafael Tuts, United Nations Human Settlements Programme)	Citation included
552	47432	8	47	1	47	43	There should just be a note in this section to mention the need to be careful not to seek to mainstream where the existing practice or procedure is not sustainable (refer to Maria Lemos U of Michigan, from Adaptation Futures conference Arizona 2012). (Caroline Larrivee, Ouranos inc.)	Could not find this reference
553	41368	8	47	23	47	23	This reference states that there is an emerging consensus that adaptation planning should be an integrated and cross-sectoral process (cf. Parry, Martin, Osvaldo Canziani, Jean Palutikof, Paul van der Linden and Clair Hanson (editors) (2007), Climate Change 2007: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge and New York, 976 pages; Sanchez-Rodriguez, Roberto (2009), "Learning to adapt to climate change in urban areas. A review of recent contributions", Current Opinion in Environmental Sustainability Vol 1, pages 201–206.) (Sven Harmeling, Germanwatch)	Added two references and note that sectoral strategies are a way to build in a pragmatic way to cross-sectoral and more comprehensive approaches

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
554	40524	8	47	46	48	22	Add reference to: Rosenzweig and Solecki (2010) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Reference added
555	45428	8	47	51	47	51	Also worth citing here is UN-Habitat Global Report on Human Settlements 2011, already in your bibliography. (Rafael Tuts, United Nations Human Settlements Programme)	Reference added
556	50514	8	48	4	48	4	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	OK - reworded
557	35803	8	48	11	0	22	This paragraph notes that civil society organizations can support adaptation responses, but ignores the empirical fact that civil society organizations, in the form of the climate skeptic movement, can also impede adaptation responses by casting doubt on the science of climate change. This needs to be added to keep the report in line with the peer reviewed empirical literature on the climate change countermovement. (Robert Brulle, Drexel University)	This is not an issue for this chapter
558	41369	8	48	14	48	15	Add Durban (particularly the Durban Platform) to the list of cities that engage a variety of stakeholders at early stages. (Sven Harmeling, Germanwatch)	Done
559	54796	8	48	27	48	52	The author team may consider adding a table with successful experiences. (Monalisa Chatterjee, IPCC WGII TSU)	Not sure there are enough successful experiences (i.e. that have moved to serious implementation) to do this
560	41370	8	48	34	48	42	This paragraph would also very well fit into Section 8.3.3.7. (Sven Harmeling, Germanwatch)	We feel it belongs here
561	45429	8	48	40	48	40	A useful developing country example is Maputo, Mozambique. See Broto, Vanese Castan et al. 2013. "Climate change adaptation, local governance and poverty alleviation in Maputo". Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	Reference added
562	47589	8	48	47	48	49	"Co-benefits may be particularly important in the global South...." (Why??) "People in the developing world take advantage of the resources at their disposal (labour, capital, entitlements) and are willing to accept a necessary level of risk...." This idea is not clear, maybe those who have control over capital and resources. (Andrea Young, State University of Campinas - UNICAMP)	Text revised, there is no comprehensive assessment of the comparative advantage of co-benefits in richer and poorer countries.
563	45430	8	48	48	48	52	On the discussion climate change policies versus development policies, see UN-Habitat Global Report on Human Settlements 2011: 154 (Rafael Tuts, United Nations Human Settlements Programme)	Reference added
564	40525	8	49	15	50	10	Add reference to: Rosenzweig and Solecki (2010) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Recommended reference included elsewhere; not here as this is an article on NYC and example refers to "urbanisation of poverty" and infrast deficits so it would be the wrong reference for this topic.
565	41584	8	49	15	50	10	There is already some more literature (although limited) on science-policy interactions and climate adaptation. See for instance: Peter P.J. Driessen, Pieter Leroy, Wim van Viersen (eds.) (2010). From climate change to social change; perspectives on science-policy interactions, International Books, Utrecht (isbn 9789057270611). This books discusses different approaches in the science-policy interface, such as transdisciplinarity, boundary work, transition processes, social learning, climate science policy roles and science system analysis. (Peter P.J. Driessen, Utrecht University)	Text adjusted
566	45431	8	49	18	49	20	An important emerging economy example where policy development process places great emphasis on understanding the scientific underpinnings of climate change is South Africa. See their National Climate Change Response Green Paper (November 2010). (Rafael Tuts, United Nations Human Settlements Programme)	This is not an urban issue - and the chapter has considerable detail about the example of Durban and its emphasis on getting a strong scientific base for adaptation planning
567	47433	8	49	18	49	20	Add reference: Bourque, A., A. Musy, C. Larrivé, 2009, Ouranos: un modèle original pour le développement de connaissances menant à l'adaptation aux changements climatiques, in Liaison Énergie Francophonie, # 85, pp. 61-66. (Caroline Larrivee, Ouranos inc.)	To be reviewed and considered for the next version
568	47434	8	49	37	49	39	Add reference: Bourque, A., A. Musy, C. Larrivé, 2009, Ouranos: un modèle original pour le développement de connaissances menant à l'adaptation aux changements climatiques, in Liaison Énergie Francophonie, # 85, pp. 61-66. (Caroline Larrivee, Ouranos inc.)	as above
569	37682	8	49	47	0	0	There is some useful work the can be extended to other regions. Add(?): Roy et al (Roy et al., 2012) developed county-level estimate of future water shortages due to climate change for the U.S. They consider the changing water demand among the economic sectors and the changing water supply (including ground water withdrawal). [Roy, S.B., L.Chen, E.H. Girvetz, E.P. Maurer, W.B. Mills, and T.M. Grieb, 2012 Projecting Water Withdrawal and Supply for Future Decades in the U.S. under Climate Change Scenarios, Environmental Science & Technology, 46 (5), 2545-2556 DOI: 10.1021/es2030774] (George Backus, Sandia National Laboratories)	Citation added
570	40526	8	49	47	0	0	Cite: Horton, R.M., V. Gornitz, D.A. Bader, A.C. Ruane, R. Goldberg, and C. Rosenzweig, 2011: Climate hazard assessment for stakeholder adaptation planning in New York City. J. Appl. Meteorol. Climatol., 50, 2247-2266, doi:10.1175/2011JAMC2521.1. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Reference added
571	48781	8	49	47	0	49	The World Bank study (2011) on "climate change adaptation and natural disasters preparedness in the coastal cities of North Africa - Alexandria, Tunis and Casablanca- can be mentioned, as it is an example for developing countries (ALEXIA LESEUR, CDC Climat Research)	Reference added
572	45432	8	49	47	49	47	For a discussion of this point, see Kehew, Robert. 2009. "Projecting globally, planning locally: A progress report from four cities in developing countries", in World Meteorological Organization. 2009. Climate Sense. Leicester: Tudor Rose: 161-164. (Rafael Tuts, United Nations Human Settlements Programme)	added to text, needs adding to references
573	46060	8	49	47	49	47	Merits to be highlighted in the executive summary and conclusions of this chapter (Luis E. Garcia, World Bank)	This has been done

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
574	47435	8	49	51	49	53	"While science and climate change information is increasingly available, socio-economic drivers of vulnerability and impacts AS WELL AS BARRIERS TO adaptation are less well studied or understood" Also add reference: Measham et al. 2011, Adapting to climate change through local municipal planning: barriers and challenges, Springerlink. (Caroline Larrivee, Ouranos inc.)	Reference added
575	37171	8	50	1	0	0	Reference Pérez et al is not properly quoted. It should be: Andrade Pérez, A., Herrera Fernandez, B. and Cazzolla Gatti, R. (eds.) (2010). Building Resilience to ClimateChange: Ecosystem-based adaptation and lessons from the field. Gland, Switzerland: IUCN. 164pp. (Angela Andrade, Conservation International Colombia)	Reference not in the chapter
576	47436	8	50	7	50	8	Add references for this: Cash, D.W. et al., 2003, Knowledge systems for sustainable development, PNAS 100(14): 8086-8091; and Cash, D.W., et al. 2006, Scale and cross-scale dynamics: governance and information in a multi-level world, Ecology and Society 11(2) (Caroline Larrivee, Ouranos inc.)	This is CITED earlier - no need to include here
577	52737	8	50	12	0	0	The implementation of agencies to protect the urban environment in large cities, in Argentina, has enabled the approval of laws and regulations to adapt to and to mitigate climate change. The so called "Agencia para la Protección del Ambiente (APRA) (Agency for the Environment Protection) is devoted to this very purpose. Furthermore, the Agreement signed by the Buenos Aires, Mexico and Sao Paulo 's City governments will replicate this action in other countries in Latin America. In consequence, it is suggested to add the following phrase: Similar developments are taking place in some Latin American countries. Specific manuals and guidance material as well as outreaching actions have been developed. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	There is no reference here and it does not fit in this section
578	54797	8	50	13	0	0	Section 8.4.1.8. A table listing all such tools with brief explanation will be very useful. (Monalisa Chatterjee, IPCC WGII TSU)	To be considered at the next author meeting
579	40527	8	50	13	51	20	Add reference to: Mehrotra et al. (2011) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Reference added
580	45433	8	50	13	51	20	An important 'planning tool' that merits further discussion here or elsewhere is land use zoning. For discussion see forthcoming Policy Note 3 by UN-Habitat's Cities and Climate Change Initiative, which should be accessible at www.unhabitat.org/ccci by 31 December 2012. (Rafael Tuts, United Nations Human Settlements Programme)	Point strengthened in text with other references, but this reference was not found
581	45298	8	50	34	50	42	The limitation of most assessments is that they are spatial assessments. Further tools need to be developed that consider the urban environment as a system (ref. da Silva et al, 2012) (Jo da Silva, Arup)	Reference added
582	47437	8	51	6	51	9	among the list of other policies goals, include: sustainable development goals, biodiversity protection goals, etc. (Caroline Larrivee, Ouranos inc.)	Added mention of urban sustainability - it is an e.g. listing so not meant to be comprehensive
583	54798	8	51	23	0	0	Section 8.4.2.1. The author team may wish to add a separate subsection for the discussion on micro finance. (Monalisa Chatterjee, IPCC WGII TSU)	There is discussion of this. Microfinance does little for adaptation as it does not fund the addressing of infrastructure or service deficiencies or addressing othwer collective needs
584	45297	8	51	23	58	28	Section 8.4.2. does not identify the importance of urban practitioners - architects, engineers, planners etc. - and the role that professional institutions are networks will play in shifting practice. Examples include: the ICE's Brunel Lecture series (current 9th Lecture focussing on the engineer's role in disaster risk reduction); the theme of the ICE's Asia-Pacific regional conference in Sri Lanka in Jan 2013 is 'Natural Disasters: the Engineer's role in preparedness, mitigation and recovery'; the World Economic Forum Disaster Reponse Network with national chapters in Indonesia, India, Japan and Mexico; CIRIA reports such as 'C688 Flood Resilience and Resistance' (McBain et al, 2010) (Jo da Silva, Arup)	Added to text - and added reference to lecture
585	45613	8	52	6	52	11	It may be necessary to introduce some activities implemented under the Private Sector Initiatives, UNFCCC Nairobi Work Programme. (Soojeong Myeong, Korea Environment Institute)	There are lots of "action" items reported under NWP - but might just cite 2 - 3 that are targeting support for cities and adaptation planning (e.g. ISET, ICLEI, UN-Habitat) -- see http://unfccc.int/adaptation/nairobi_work_programme/partners_and_action_pledges/items/5005.php?detail=j&id=60&nwp=act&dir=DESC&seite=1&anf=0&id_org=&work_area=5&region=&sector=6&del_activity=
586	41371	8	52	23	52	33	In terms of innovative insurance mechanisms there is also a mechanisms needed to address the emerging issues of Loss and Damage. (Sven Harmeling, Germanwatch)	Comment included in chapter on loss and damage - but detailed discussion of this belongs in other chapters
587	42295	8	52	24	52	24	"on example" to be "one example" (Luhui Yan, Tanzuji)	OK
588	42293	8	52	30	52	30	"may may" to be "may" (Luhui Yan, Tanzuji)	OK
589	52738	8	52	53	0	0	UN-Habitat has developed guidance material which should be mentioned. REF: Housing Finance: Ways to help the poor pay for housing- Booklet 5, of Housing for the poor in Asian Cities. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Reference is not on adaptation - many other relevant UN Habitat publications are cited in the chapter.
590	46061	8	53	32	53	33	Is this a "because we say so...Believe us, we know..." approach? (Luis E. Garcia, World Bank)	We stand behind this statement : More generally, where information is highly uncertain or not consistent with past experience, as is the case for the prediction of extreme weather events and potential losses, public policy has a role to ensure action e.g. to fill gaps in insurance markets where insurers are unable or unwilling to act (Fankhauser et al., 2008, Mills 2007, SREX 2012, UN-Habitat 2011).

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
591	54799	8	53	43	0	0	Examples are mostly from informal settlements, the author team may wish to add other examples. (Monalisa Chatterjee, IPCC WGII TSU)	Sub-title changed to emphasise content and new text added to the first half of the opening para to acknowledge that community organisation also takes place in well governed cities, but that the focus of this section is where community groups have to play a major role in adaptation
592	45434	8	53	43	54	40	Here an important conceptual distinction can be made between 'adapting' and 'coping'. See, for example, Bulkeley, Harriet and Rafael Tuts. 2013. "Understanding urban vulnerability, adaptation and resilience in the context of climate change. Local Environment: The International Journal of Justice and Sustainability. Forthcoming. (Rafael Tuts, United Nations Human Settlements Programme)	Agreed, this is a critical difference. We overclaim adaptation in the chapter - much of what we describe is coping. I have applied the SREX distinction here. The recommended reference does not yet seem to be published but will be useful when it is, if it can be incorporated in a later draft.
593	47590	8	53	45	53	45	"Urban residents in high-income nations typically do not need to form community organizations..." (Why??) Do they simply order to execute the works? or Are they already organized? (Andrea Young, State University of Campinas - UNICAMP)	See response to 591; residents in cities in high-income nations get basic infrastructure and services automatically; they do not need to organize to make such demands
594	46062	8	53	45	53	47	They did not do this because of climate change (Luis E. Garcia, World Bank)	Re-phrased as a result to indicate the underlying resource and potential for CBOs to take on climate change adaptation is supported.
595	54800	8	54	19	54	21	It is not clear what are the ventilation or temperature reducing features in this figure. (Monalisa Chatterjee, IPCC WGII TSU)	For more details, reader should look to original paper which has much more detail on this. As the text says, provision for ventilation, creepers or other material on roofs and false ceilings helped to keep down temperatures. The original paper from which this draws has other drawings showing these - although the one included in this report also points to the false ceilings
596	46063	8	54	23	57	30	Most of this is common sense with or without climate change (Luis E. Garcia, World Bank)	See response to comment 594
597	45305	8	54	43	56	15	See the IFRC's work on community-based disaster risk reduction programming. http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CF8QFJAA&url=http%3A%2F%2Fwww.ifrc.org%2Fdocs%2FEvaluations%2FEvaluations%25202012%2FGlobal%2FGlobalKey_Determinants_12.pdf&ei=VNofUNP_NM7RsgbB1YDgBQ&usg=AFQjCNEFQi7DSv1fz6sw6e0tRsqSt8P_6g and http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&ved=0CGEQFjAB&url=http%3A%2F%2Fwww.ifrc.org%2FPageFiles%2F96986%2FFinal_Characteristics_Report.pdf&ei=VNofUNP_NM7RsgbB1YDgBQ&usg=AFQjCNGA_K4EoiYat5WAzVqc9ykYp41Ojw (Jo da Silva, Arup)	Text adjusted, reference added
598	39525	8	55	24	55	29	Recent research from Jakarta contradicts one of the general statements in this paragraph that community action can not provide network infrastructure. Please see peer-reviewed book chapter on a 'master meter' scheme in one low-income informal settlement in north Jakarta where households in a pilot study were connected to the network of one of the city's private water utility companies (Indrawan Prabaharyaka and Vincent Pooroe. 2010. Participatory Urban Water Supply in Jakarta Slum Area in K. Irvine, T. Murphy, V. Vanchan, and S. Vermette (eds.) Water Resources and Development in Southeast Asia, Learning Solutions, Pearson Learning Solutions, NY.). (Carrie Mitchell, International Development Research Centre (IDRC))	Chapter reviewed and case added.
599	45435	8	55	32	55	34	An example of improvisation of everyday sanitation in informal settlements: McFarlane, C. 2011. Sanitation in Mumbai's Informal Settlements: Governance, Infrastructure, and Cost Recovery. In Migration and Integration: Reflections on Our Common Future. Bade, K.J, Lorentz, B. & Pries, L. Europaische Verlagsanstalt, Leipzig. 123-136. as well McFarlane, C. 2008. Sanitation in Mumbai's informal settlements: state, 'slum' and infrastructure. Environment and Planning A 40(1): 88-107. (Rafael Tuts, United Nations Human Settlements Programme)	a good example of community action, and we have this in the text - but this does not directly contribute to discussion of climate change adaptation
600	52739	8	56	15	0	0	Reference on the coordinate action APRA Buenos Aires undertakes with NGOs in informal settlements, improving inner streets improvement as well as enhancing security measures for settlements 'development, vis à vis of climate change should be mentioned here. REF: Refer to the Law N° 3871, already mentioned above (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	a generic point - the need for legislation to support community action, already well covered. The specific case is difficult to reference.
601	54801	8	56	18	0	0	Section 8.4.2.4. The chapter team may wish to add a table with examples of cases where civil society has been actively participating in urban environment management issues highlighting the enabling factors and drivers. (Monalisa Chatterjee, IPCC WGII TSU)	Figure 8.1 developed for this - but requires further consideration and elaboration
602	45436	8	56	18	56	19	Discussion should include a critical note on the legitimacy, accountability, and costs/benefits of civil-social organizations' involvement. See for instance UN-Habitat Global Report on Human Settlements 2011: 111-113, already in your bibliography. (Rafael Tuts, United Nations Human Settlements Programme)	An important issue but cannot see why urban adaptation chapter is the place for this
603	35804	8	57	21	0	30	This discussion ignores the role conservative and corporate philanthropic organizations play in funding the climate change countermovement, and how this funding acts to hinder climate change adaptation by fostering doubt about the reality of climate change, and promoting the development of the climate change countermovement. This empirical reality of the role of conservative and corporate philanthropy should be included to address the extent of the refereed empirical literature. (Robert Brulle, Drexel University)	An important issue but cannot see why urban adaptation chapter is the place for this

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
604	40528	8	57	33	58	6	Include Urban Climate Change Research Network (UCCRN) and also cite: Rosenzweig et al. 2011 (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Included
605	45437	8	57	33	58	6	Here it would be appropriate to mention the Urban Climate Change Research Network, which has released its 1st Cities and Climate Change Assessment Report. (Rafael Tuts, United Nations Human Settlements Programme)	Included
606	35688	8	57	48	57	49	IDRC has also recently announced a new call on "safe and inclusive cities" that includes some focus on poverty, inequality and climate change (Craig Johnson, University of Guelph)	Very helpful reference, added to 8.4.3
607	39526	8	57	49	57	49	IDRC is also funding urban adaptation work in South Asia, Southeast Asia, the Middle East, and Latin America and the Caribbean. Please see www.idrc.ca/ccw for more details. (Carrie Mitchell, International Development Research Centre (IDRC))	Very helpful reference, added to 8.4.3
608	52740	8	58	21	0	0	The agreement signed by the Buenos Aires, Mexico City and Sao Paulo 's governments also involves the sharing of experiences and the dissemination of information. This development should be mentioned (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	This is interesting if we can find peer review literature on this relationship we will review for inclusion.
609	54802	8	58	31	0	0	Section 8.4.3. The author team may consider adding a figure to show the landscape of funding focused on urban adaptation. (Monalisa Chatterjee, IPCC WGII TSU)	See Table 8.4
610	50515	8	58	39	58	39	"likely" -- The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	OK
611	45438	8	58	43	58	43	At present the Table 8.3 referenced here is quite generic. Believe it would be strengthened with an additional column that shows examples, e.g., the Adaptation Fund, or the Indonesia Climate Change Trust Fund. Then these would be discussed in the text. (Rafael Tuts, United Nations Human Settlements Programme)	This is now 8.4 and has been given more detail. Chapter team to consider whether it is possible to make this more specific. A seminar on financing urban adaptation is being organized before the next author meeting
612	47438	8	59	11	59	12	Local fiscal incentives for mal-adaptation also exist in North-America. Add to sentence [...] which in turn promote urban sprawl or development in areas at risk" and add reference: Drejza, S., Bernatchez, P., Dugas, C., 2011. Effectiveness of land management measures to reduce coastal georisks, easterne Québec, Canada. Ocean & Coastal Management, 54 (4) : 290-301. DOI: 10.1016/j.ocecoaman.2011.01.001. (Caroline Larrivee, Ouranos inc.)	reviewed and amended text.
613	45439	8	59	15	59	19	An important policy principle to discuss around here is the issue of an 'unfunded mandate' -- assigning local governments important new responsibilities without commensurate resources. For a critique of climate change laws and emerging policies in three countries from this perspective, see Kehew, Robert et al. 2013. "Formulating and implemetning climate change laws and policies in the Philippines, Mexico (Chiapas), and South Africa: A local government perspective". Local Environment: The International Journal of Justice and Sustainability". Forthcoming. (An earlier version of this paper appears as Kehew, Robert et al. 2012. "Urban climate governance in the Philippines, Mexico and South Africa: National- and State-Level Laws and Policies", in Otto-Zimmermann, Konrad, ed. 2012. Resilient Cities 2: Cities and Adaptation to Climate Change: Proceedings of the Global Forum 2011. Dordrecht: Springer, 305-316.) (Rafael Tuts, United Nations Human Settlements Programme)	Text amended and reference included
614	48782	8	59	52	0	53	One can mention the ongoing discussion about the use of the auctioning of EU allowances of CO2 (ALEXIA LESEUR, CDC Climat Research)	To be reviewed in next author meeting
615	45300	8	60	14	61	17	Section 8.4.3.2 does not sufficiently highlight the importance of mainstreaming adapation in existing infrastructure investment, as opposed to additional investment for adaptation. (Jo da Silva, Arup)	No academic review literature found on this - this flags the discussion between an IPCC assessment and practice review. author team to look at recent OECD material on this
616	47439	8	60	14	61	17	Part of the issue is also the type of adaptation solution that international financing mechanisms are prepared to support, i.e. visible "hard" infrastructure which is more often than not risks resulting in a form of mal-adaptation. (Caroline Larrivee, Ouranos inc.)	This point has been strengthened in the SOD
617	45440	8	60	19	60	19	In the case of the Green Climate Fund, a provision whereby Member States can nominate 'competent subnational entities' including local governments to receive funding is a recent development of relevance here. (Rafael Tuts, United Nations Human Settlements Programme)	This to be reviewed at the next author meeting
618	45441	8	60	19	60	19	For a discussion of this point, see UN-Habitat's Cities and Climate Change Initiative. 2011. Policy Note 1: "Adaptation Finance: Are Cities in Developing Countries Slipping Through the Cracks?" Accessible at www.unhabitat.org/ccci, under 'publications'. (Rafael Tuts, United Nations Human Settlements Programme)	Reference included
619	45442	8	60	26	60	28	This sentence ('The proliferation of multiple, single purpose funding mechanisms'...) implies that cities are already well served by adaptation funding mechanisms, and that any more would run counter to the 'principles of sound development'. On the contrary, at present cities suffer from a lack of access to adaptation finance. For an analysis of lack of access by cities to 14 international climate finance sources reviewed, see Beltran, Pascual. 2012. "International financing options for city climate change interventions: An introductory guide". City Development Initiative for Asia. This topic is also discussed in the UN-Habitat Global Report on Human Settlements 2011: 158, already in your bibliography. (Rafael Tuts, United Nations Human Settlements Programme)	UN Habitat reference included; recommended paper by Beltran to be reviewed
620	46963	8	60	44	60	52	Govt. of Bangladesh has prepared Climate Change Strategy and Action Plan as an "early mover" which is true. However, Govt. is not able to set up strong institutional framework and organizations to implement this strategy and action plan. One fifth of the money of the climate change trust fund is yet to utilize after 3 years. There was no strong committee or management team to decide the national priority projects in order to implement this strategy. It is strongly felt that there needs a full time national council or organization where professional people will be hired who can work with dedication to implete this strategy. (A K M Saiful Islam, Bangladesh University of Engineering and Technology)	This is an important observation we will consider in redrafting the text, but without published peer review literature what we can say is limited.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
621	45443	8	61	3	61	5	For more detailed analysis and quantification of the proportion of urban projects within National Adaptation Programmes of Action, see UN-Habitat's Cities and Climate Change Initiative. 2011. Policy Note 1: "Adaptation Finance: Are Cities in Developing Countries Slipping Through the Cracks?" Accessible at www.unhabitat.org/ccci , under 'publications'. (Rafael Tuts, United Nations Human Settlements Programme)	Very helpful reference, incorporated
622	35644	8	61	4	0	0	47 LDCs developed NAPAs to date. (Norio Saito, Graduate School of Science and Engineering, Ibaraki University)	now edited, with no time-bound statement.
623	52741	8	62	4	0	0	The implementation of agencies like APRA and the furthering of their activities, due to the abovementioned agreement aims to reverse the situation mentioned herewith. . Appropriate reference is suggested simply because the enlargement of the Buenos Aires, Mexico and Sao Paulo group with other large cities in LA will activate institutional interlinking. (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Thank you we will consider this comment and look for peer review literature.
624	54804	8	62	15	62	17	Figure 8.4. It will be preferable if the process is explained using an example. (Monalisa Chatterjee, IPCC WGII TSU)	agreed, if we can find an example, this figure needs some work it presents a knowledge gap or science first view of policy change where coproduction is more appropriate. We need to reconfigure this figure to downplay linearity.
625	40529	8	62	26	62	53	Cite: Jacob, K., Blake, R., Horton, R., Bader, D. and O'Grady, M. (2010), Chapter 7: Indicators and monitoring. Annals of the New York Academy of Sciences, 1196: 127–142. doi: 10.1111/j.1749-6632.2009.05321.x (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Very helpful reference, new text incorporated
626	46064	8	62	42	62	53	Most of this is common sense with or without climate change (Luis E. Garcia, World Bank)	elements either deleted or edited for urban specificity
627	47440	8	62	42	62	53	Among the key questions to be addressed: Does it protect/increase biodiversity or critical habitats? Is it fair/just? (Caroline Larrivee, Ouranos inc.)	Key questions rewritten
628	45303	8	62	42	62	54	The International Federation of Red Cross and Red Crescent Societies is seeking to address this issue in its work investigating the characteristics of a safe and resilient community. Please see the research into this area the Federation has been developing with Arup International Development; Arup (2012) Characteristics of a Safe and Resilient Community. IFRC: Geneva. http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&ved=0CGMQFjAB&url=http%3A%2F%2Fwww.ifrc.org%2FPageFiles%2F96986%2FFinal_Characteristics_Report.pdf&ei=otcfUNjNDsjLtAakiYCYBQ&usq=AFQjCNGA_K4EoiYat5WAzVqc9yKyp41Ojw (Jo da Silva, Arup)	integrated into text.
629	47591	8	62	52	62	53	"Does it have potential co-benefits with poverty reduction and mitigation interventions and prepare the base for transformatory adaptation?" This question is not clear, the policies of poverty reduction are essential for adaptation. (Andrea Young, State University of Campinas - UNICAMP)	Agreed; this point has been strengthened in 8 3
630	41372	8	62	54	62	54	Add this question: "Does it reduce the burden to future generations?" (Sven Harmeling, Germanwatch)	Added
631	52742	8	63	0	70	0	Should the suggestions made be included in Chapter 8, this paragraph requires changes, (Osvaldo Francisco Canziani, Academia Argentina de Ciencias Ambientales)	Balance between points in FOD 8.5 adjusted so there is more coherence between 8 4 8 5 and the ES
632	54415	8	63	2	0	0	Section 8.5: As mentioned in my general comments, this section provides excellent fodder for the development of Executive Summary findings. I also recommend more explicit linkage of the material in this section with the other sections of the chapter where relevant material is assessed to enhance the traceability of conclusions being drawn. (Michael Mastrandrea, IPCC WGII TSU)	Agreed; now there is much more coherence between 8.5 and the ES
633	37090	8	63	2	70	46	Conclusions should provide some summaries if the urbanizations are good or bad issues for human being and climate, as well as others. (ZONG-CI ZHAO, National Climate Center)	Done with the addition of an introductory paragraph.
634	36453	8	63	6	12	0	worth saying here that it is city governments in the US that have made the running on climate change initiatives, not the Federal government. (Eric Pawson, University of Canterbury)	Included
635	40530	8	63	6	63	12	Cite: Rosenzweig et al., Nature (2010) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Done.
636	47441	8	63	9	63	11	Add reference: Gardner, S. and D. Noble eds. 2008, Stepping up to the climate change challenge: Perspectives on local government leadership, policy and practice in Canada, Municipal Knowledge Series, Municipal World. (Caroline Larrivee, Ouranos inc.)	Can't find this reference
637	47592	8	63	10	63	10	"...wicked problems..." This idea is not clear. Nature can be ruthless in areas without human settlements. In reality, the historical problems of urban areas has been revealed by climate change, because a large number of people has been constantly affected. (Andrea Young, State University of Campinas - UNICAMP)	Removed term
638	47593	8	63	14	63	16	"Because of the complexities and uncertainties involved, most action to date has focused on 'no-risk' and 'low cost' interventions where climate change adaptation is a co-benefit of existing work streams, rather than a new, stand alone work area." This paragraph is a little confused. Complexities and uncertainties involved in terms of what? 'No-risk' - yes, society or politicians can ignore the risks, but 'low cost' is not a sign of wrong decision. The co-benefit exists with the benefit (it is a sub-product?), therefore the adaptation is not seen as an effective benefit? (Andrea Young, State University of Campinas - UNICAMP)	Reworked text.
639	41585	8	63	16	63	16	An additional reference could be made to: Runhaar, H., H. Mees, A. Wardekker, J. van der Sluijs & P.P.J. Driessen (2012). Adaptation to climate change related risks in Dutch urban areas: stimuli and barriers, Regional Environmental Change (DOI 10.1007/s10113-012-0292-7 published online). (Peter P.J. Driessen, Utrecht University)	Reference added.
640	45444	8	63	26	63	26	If important, suggest to develop this distinction between adaptation 'measures' and adaptation 'capacity' earlier in the chapter. (Rafael Tuts, United Nations Human Settlements Programme)	Done.

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
641	47594	8	63	26	63	27	"A focus on adaptation measures rather than building adaptive capacity or resilience is especially problematic in the urban areas of the global South." "Here, "adaptive capacity is limited by resources". It means, financial resource? But, the hurricane in New Orleans (U.S.), the forest fire in northern Catalonia (in Spain). It is not Southern. (Andrea Young, State University of Campinas - UNICAMP)	Does not refer only to financial resources - but human, skills etc. The point being made is this is a specific important concern in the global south - but not exclusively so. There may be extreme disasters that show a lack of capacity in the global North but overall the scale of the lack of capacity is much larger in low and most middle income nations
642	50516	8	63	28	63	28	The author team should consider the wording on this line to ensure a formulation that would not be interpreted as potentially prescriptive. (Katharine Mach, IPCC WGII TSU)	Addressed
643	47442	8	63	29	63	31	"This suggests a need for more open-ended and flexible concepts such as adapting well, climate smart and resilience AS WELL AS SUSTAINABLE ADAPTATION" Add references: Eriksen, S. and K. Brown, 2011, Sustainable adaptation to climate change, in Climate and Development 3 (2011) 3-6; and, Eriksen, S. et al. 2011, When not every response to climate change is a good one: Identifying principles for sustainable adaptation, Climate and Development 3 (2011), 7-20 (Caroline Larrivee, Ouranos inc.)	Text adjusted as suggested
644	54803	8	64	3	0	0	Section 8.5.2. Instead of paragraphs, the author team may wish to add a table with summary of key conclusions. (Monalisa Chatterjee, IPCC WGII TSU)	Table would not work effectively for conclusions
645	50517	8	64	9	64	9	"likely" – If this term is being used per the uncertainties guidance for authors (reflecting a probabilistic basis for its assignment), it should be italicized. If there is not a probabilistic basis, a level of confidence may be appropriate. The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Removed sentence
646	47595	8	64	12	64	12	".....opportunity to urbanise the adaptation agenda" (???) It is confused. (Andrea Young, State University of Campinas - UNICAMP)	Disagree - this is clear.
647	40531	8	64	14	64	23	Cite: Major, D. C., A. Omojola, M. Dettinger, R. T. Hanson, R. Sanchez-Rodriguez, 2011: Climate change, water, and wastewater in cities. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 113–143. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Added reference
648	41586	8	64	16	64	39	The reference to Heleen-Lydeke et al 2011 in lines 16, 29 and 39 are incorrect. This should be: Mees and Driessen 2011. (Peter P.J. Driessen, Utrecht University)	Thanks for this and apologies for mis-referencing throughout the FOD
649	43922	8	64	29	0	0	Change Spand with "spent" (Muhammad Amjad, Global Change Impact Studies Centre)	Corrected spelling error
650	45306	8	64	37	64	47	This paragraph overlooks the fundamental importance of energy as infrastructure which builds resilience. Reducing energy demands and energy load sharing through networked infrastructure helps mitigation as well as adaptation. This differs from the standard approach of 100% back up diesel for example. (Jo da Silva, Arup)	Text changed. For the final draft, we need to consider more attention to the specifics of redundancy and safe failure
651	47596	8	64	44	64	44	"...of green and blue infrastructure..." These expressions seem like greenwashing. I don't know? Maybe, they are scientific expressions, but they cause doubts. (Andrea Young, State University of Campinas - UNICAMP)	These are standard terms
652	45445	8	65	1	65	1	The relevance of the city examples provided (Chicago, Toronto) should be fleshed out. (Rafael Tuts, United Nations Human Settlements Programme)	Not appropriate in a summary section
653	41587	8	65	8	65	53	The reference to Heleen-Lydeke et al 2011 in lines 8 and 53 are incorrect. This should be: Mees and Driessen 2011. (Peter P.J. Driessen, Utrecht University)	Addressed
654	40532	8	65	46	66	9	Cite: Sussman, E., Major, D. C., Deming, R., Esterman, P. R., Fadil, A., Fisher, Esq., Fred Fucci, A., Gordon, R., Harris, C., Healy, J. K., Howe, C., Port, G., Robb, K., Smith, J. A. and Suchman, G. (2010), Chapter 5: Law and regulation. Annals of the New York Academy of Sciences, 1196: 87–112. doi: 10.1111/j.1749-6632.2009.05319.x (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Reference included
655	52587	8	65	46	66	9	I appreciate the change in tone in this chapter from stressing the cross-sectoral needs of adaptation to taking into account the very much sectoral nature of municipal jurisdiction - after all, it indeed is the municipal administration that in the end is responsible for most adaptation actions and offering information in a form that they can easily understand and take into account is a key issue in promoting adaptation. (Simo Haanpää, Aalto University)	Noted.
656	40533	8	66	11	66	19	Add reference to: Rosenzweig and Solecki (2010) (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Added reference
657	41588	8	66	12	66	12	The reference to Heleen-Lydeke et al in line 12 is incorrect. This should be: Mees and Driessen 2011 (Peter P.J. Driessen, Utrecht University)	CHANGED
658	45307	8	66	21	66	26	As per earlier comment: practioners in this area include architects, engineers, planners etc. (Jo da Silva, Arup)	This point added in earlier sections
659	40534	8	66	28	66	37	Cite: Horton, R.M., V. Gornitz, D.A. Bader, A.C. Ruane, R. Goldberg, and C. Rosenzweig, 2011: Climate hazard assessment for stakeholder adaptation planning in New York City. J. Appl. Meteorol. Climatol., 50, 2247-2266, doi:10.1175/2011JAMC2521.1. and Blake, R., A. Grimm, T. Ichinose, R. Horton, S. Gaffin, S. Jiong, D. Bader, L. D. Cecil, 2011: Urban climate: Processes, trends, and projections. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network, C. Rosenzweig, W. D. Solecki, S. A. Hammer, S. Mehrotra, Eds., Cambridge University Press, Cambridge, UK, 43–81. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Refs inserted
660	50518	8	66	33	66	33	"likely" – The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Removed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
661	47443	8	66	34	66	37	Add reference: Moffet, V., M.Alibert and C. Larrivée, 2011, Interdisciplinary and multi-institutional approaches to climate change adaptation, in K. Otto-Zimmermann (ed.) Resilient Cities: Cities and Adaptation to Climate Change Proceedings of the Global Forum 2010, Springer, 213-221 (Caroline Larrivee, Ouranos inc.)	Reference included
662	47444	8	66	44	66	45	typos in sentence (Caroline Larrivee, Ouranos inc.)	No typos found
663	47597	8	66	45	66	45	".....and national level fiscus (or focus??) in many nations (Kazmierczak and Carter 2010)." (Andrea Young, State University of Campinas - UNICAMP)	Spelling correct
664	41590	8	67	1	67	54	Additional information for this section from Dutch experiences is to be found in: Runhaar, H., H. Mees, A. Wardekker, J. van der Sluijs & P.P.J. Driessen (2012). Adaptation to climate change related risks in Dutch urban areas: stimuli and barriers, Regional Environmental Change (DOI 10.1007/s10113-012-0292-7 published online). The paper has a special focus on flooding and heat stress. (Peter P.J. Driessen, Utrecht University)	Ref inserted
665	54805	8	67	3	0	0	Section 8.5.3. Instead of paragraphs, the author team may wish to add a table with summary of key conclusions. (Monalisa Chatterjee, IPCC WGII TSU)	Table would not work effectively for conclusions
666	44426	8	67	5	70	2	This sentence is too long and have too much contents. Where key messages are rather general, they tend to appear rather repetitive. (Tae sung Cheong, National Disaster Management Institute)	Section has been edited and shortened
667	47445	8	67	8	67	10	"[...] for these to become effective [...]" - also to ensure coherence and promote widespread implementation. (Caroline Larrivee, Ouranos inc.)	Edit inserted
668	35805	8	67	19	0	27	The empirical literature on the climate change countermovement has demonstrated the impact that this movement has in erecting political obstacles to responding to climate change. Currently, the local tea party is opposing adaptation measures as part of Agenda Twenty One of the Rio Treaty as a government conspiracy. This is a significant political obstacle and needs to be addressed in this part of the report. (Robert Brulle, Drexel University)	This is an important point but the chapter on urban adaptation is not the place for this discussion
669	39151	8	67	19	67	27	This is a rare example of authors considering the political dimension of the climate challenge. EVERY chapter should have a section on political dimensions, if not in this report (too late?) then perhaps in the next one. (Thomas Reuter, University of Melbourne)	Noted.
670	47446	8	67	19	67	27	In this section, add reference: Koch, I. C. Vogel, Z. Patel, 2007, Institutional dynamics and climate change adaptation in South Africa, Mitigation Adaptation Strategies and Global Change, 12:1323-1339 (Caroline Larrivee, Ouranos inc.)	Does not have specific urban focus so not used.
671	41589	8	67	20	67	36	The reference to Heleen-Lydeke et al 2011 in lines 20, 35 and 36 are incorrect. This should be: Mees and Driessen 2011. The reference to Mes and Driessen, 2011 in line 24 should be 'Mees and Driessen, 2011'. (Peter P.J. Driessen, Utrecht University)	Thanks and apologies
672	47598	8	67	45	67	42	missed the ")" in the end - after year 2011 . ".... department which leads to marginalisation (Roberts 2010, Hardoy and Romero Lankao, 2011 (Andrea Young, State University of Campinas - UNICAMP)	Corrected
673	46065	8	68	12	68	13	This contradicts the main thesis of Chapter 20 (Luis E. Garcia, World Bank)	This paragraph has been removed
674	45446	8	68	15	68	20	Believe that this is too sweeping a generalization in favor of the global North versus the global South. As relatively weak political players, the poor in the global North not infrequently, for example, suffer from the location of undesirable environmental facilities (e.g. sewage treatment plants) adjacent to their homes that the 'rich and powerful' will not tolerate in their 'backyards'. (Rafael Tuts, United Nations Human Settlements Programme)	Agree that the poor in the North are disadvantaged - but this point does not exclude that possibility - rather it emphasises the scale difference in the poverty problem between the north and south.
675	46066	8	68	24	68	25	I suppose that "poverty reduction" refers to safe and cost-effective development and not to adaptation? (Luis E. Garcia, World Bank)	Reworded to make link to adaptation clearer
676	45447	8	68	35	68	35	For another such manual, see UN-Habitat's Cities and Climate Change Initiative. 2011. Planning for Climate Change. Accessible at www.unhabitat.org/ccci , under 'publications'. (Rafael Tuts, United Nations Human Settlements Programme)	Included
677	52588	8	68	42	68	52	This chapter resonates well with my first comment; past and present extreme events function as good reference points to possible impacts of climate change, making otherwise often abstract concept of climate change and the uncertainties inevitably present more easily understandable to the public and, politicians and practitioners alike (as does for example the Local Climate Impact Profile (LCIP)-approach used in the UK; www.ukcip.org.uk/lclip). Scenario work is another usefull tool and I'm happy to see it mentioned here. (Simo Haanpää, Aalto University)	Noted.
678	50519	8	68	43	68	43	"likely" - The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Removed.
679	45448	8	68	47	68	47	Is this a true 'either-or' choice as implied, between 'scenario planning' and 'scaled down projections'? (Rafael Tuts, United Nations Human Settlements Programme)	Good point - edited text to soften the distinction.
680	41591	8	68	50	68	51	The reference to Heleen-Lydeke et al in line 50-51 is incorrect. This should be: Mees and Driessen 2011 (Peter P.J. Driessen, Utrecht University)	changed
681	47447	8	68	51	68	52	Sentence incomplete (Caroline Larrivee, Ouranos inc.)	Sentence removed.
682	37683	8	68	52	0	0	Comment 1: There are (U.S.) examples of the cost due to inaction. Similar text was suggested for section 8.2.5.1 Add(?): Several U.S. studies have consider the cost on inaction for specific states ((Wilbanks et al., 2012, Niemi 2009a, 2009b, 2009c, Repetto 2011a, 2011b, 2012a, 2012b, 2012c, 2012d, Backus et al., 2012). [Wilbanks, T., S. Fernandez, et al, 2012: Climate Change and Infrastructure, Urban Systems, and Vulnerabilities: Technical Report For The U.S. Department of Energy in Support of the National Climate Assessment. Oak Ridge National Laboratory, Oak Ridge, Tennessee. Available at: www.esd.ornl.gov/eess/Infrastructure.pdf] [Niemi E. (2009a). An Overview of Potential Economic Costs to Washington of a Business-As-Usual Approach to Climate Change. The Program on Climate Economics, Climate Leadership Initiative, Institute for a Sustainable Environment, Eugene, OR: University of Oregon.] (George Backus, Sandia National Laboratories)	Addressed

#	ID	Ch	From Page	From Line	To Page	To Line	Comment	Response
683	37684	8	68	52	0	0	Comment 2:[Backus, G., T. Lowry and D. Warren, 2012: The near-term risk of climate uncertainty among the U.S. states. Climatic Change, Online First 23 June 2012. Doi: 10.1007/s10584-012-0511-8] [Repetto, R. 2012a: Economic And Environmental Impacts Of Climate Change In Virginia, DEMOS, New York, NY. Available at: http://www.demos.org/publication/economic-and-environmental-impacts-climate-change-virginia] [Repetto, R. 2011a: Economic And Environmental Impacts Of Climate Change In Nevada, DEMOS, New York, NY. Available at: http://www.demos.org/publication/economic-and-environmental-impacts-climate-change-nevada] (George Backus, Sandia National Laboratories)	as above
684	37685	8	68	52	0	0	Comment 3: [Repetto, R. 2012b: Economic And Environmental Impacts Of Climate Change In Florida, DEMOS, New York, NY. Available at: http://www.demos.org/publication/economic-and-environmental-impacts-climate-change-florida] [Repetto, R. 2011b: Economic And Environmental Impacts Of Climate Change In Arizona, DEMOS, New York, NY. Available at: http://www.demos.org/publication/economic-and-environmental-impacts-climate-change-arizona] [Repetto, R. 2012c: The Rising Risks of Climate Change in Massachusetts, Energy Future Coalition, Washington DC. Available at: http://www.energyfuturecoalition.org/files/webfmuploads/Repetto%20Paper%20Massachusetts.pdf] [Repetto, R., 2012d: New Mexico's Rising Climate Risks, UN Foundation, New York, NY. Available at: http://www.energyfuturecoalition.org/files/webfmuploads/04-18-12%20Repetto%20Paper%20New%20Mexico.pdf] (George Backus, Sandia National Laboratories)	addressed
685	45449	8	69	18	69	18	Cape Town is such an exceptional case, covering as it does a substantial portion of the world's smallest floral kingdom, that it is not clear that this circumstance is as widespread as is implied here. (Rafael Tuts, United Nations Human Settlements Programme)	Paragraph removed
686	40535	8	69	48	70	2	Cite: Jacob, K., Blake, R., Horton, R., Bader, D. and O'Grady, M. (2010), Chapter 7: Indicators and monitoring. Annals of the New York Academy of Sciences, 1196: 127–142. doi: 10.1111/j.1749-6632.2009.05321.x (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Reference included
687	40536	8	70	3	0	0	Needs concluding statement rather than ending on barriers. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	Provided
688	42294	8	70	18	70	18	earthquake and volcano are not linked to climate change? There are some doubts. As ice melts and waters runs off, tremendous amounts of weight are lifted off of Earth's crust. As the newly freed crust settles back to its original, pre-glacier shape, it can cause seismic plates to slip and stimulate volcanic activity according to research into prehistoric earthquakes and volcanic activity. http://news.mongabay.com/2006/0628-earthquakes.html http://www.trust.org/alertnet/blogs/climate-conversations/is-climate-change-increasing-earthquakes/ (Luhui Yan, Tanzuji)	Referred to IPCC secretariat
689	50520	8	70	18	70	18	It might be most accurate on this line to say something like "disasters resulting from hazards not linked to climate or climate change, such as earthquakes." 1st, it might be clearest to emphasize the connection to climate, not just climate change. 2nd, since volcanic eruptions can influence climate, it would be potentially clearest to highlight only the example of earthquakes. Tsunamis might be another example to consider mentioning, although of course they are not completely separate from the earthquake example. (Katharine Mach, IPCC WGII TSU)	Text adjusted
690	47448	8	70	20	70	24	There should be something in the response concerning poverty (see section 8.5.3 Assumption that good development produces adaptation). (Caroline Larrivee, Ouranos inc.)	Text adjusted
691	47449	8	70	37	70	45	There should also be something in this response concerning the fact that 1) good data alone will not solve all problems, 2) many decisions (policy revisions, emergency plans, etc.) do not need high resolution future climate projections, 3) adaptation is very much an iterative process, that allows for revisiting initial assumptions and adjusting according to the best available knowledge, and 4) methods exist to deal with uncertainties (sensitivity analyses, scenario planning, etc.). (Caroline Larrivee, Ouranos inc.)	Text adjusted
692	50521	8	70	43	70	43	"likely" – The author team should avoid casual usage of this reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	Text has been reworded.
693	38904	8	71	1	92	22	authors must thoroughly check all references cited in text with this list (anthony brazel, arizona state university)	Thanks
694	45301	8	72	34	72	35	reference to Blackburn & da Silva publication (2013); JdS knows nothing about this! Please remove this reference - or ammend to reflect the fact that JdS is not involved. (Jo da Silva, Arup)	changed
695	45302	8	75	11	75	12	Correct reference is: da Silva, Jo, Kernaghan, Sam and Luque, Andres (2012) A systems approach to meeting the challenges of urban climate change. International Journal of Urban Sustainable Development. November 2012. (Jo da Silva, Arup)	addressed
696	41592	8	79	8	79	9	The reference to Heleen-Lydeke 2011 in lines 8-9 is incorrect. This should be: H.L.P. Mees and P.P.J. Driessen 2011. (Heleen-Lydeke is the first name of the author). (Peter P.J. Driessen, Utrecht University)	addressed
697	47599	8	79	41	79	42	This reference is incorrect.. The correct reference is - NOBRE, C. A.; YOUNG, A. F.; SALDIVA, P.H.; MARENGO, J.A; NOBRE, A. D.; OGURA, A.; THOMAZ, O.; PARRAGA, G. O. O.; SILVA, G.C.M.da; VALVERDE, M.; SILVA, G.; SILVEIRA, A.C.; RODRIGUES, G. de O. (2011). Vulnerabilidade das Megacidades Brasileiras às Mudanças Climáticas: Região Metropolitana de São Paulo. Relatório Final (Final Report). Editores Carlos A. Nobre e Andrea F. Young. INPE, UNICAMP. USP, IPT. São Paulo, Brasil, 178 pp. (Andrea Young, State University of Campinas - UNICAMP)	Should not just the editors be listed?
698	38709	8	83	3	83	3	"Melbourne 2009": something missed. (Shiguang Miao, Institute of Urban Meteorology, China Meteorological Administration, Beijing, China)	addressed
699	45450	8	90	1	90	1	The date of this publication was 2010. (Rafael Tuts, United Nations Human Settlements Programme)	addressed
700	45451	8	90	7	90	8	The date of this publication was 2010. (Rafael Tuts, United Nations Human Settlements Programme)	addressed
701	45452	8	90	14	90	15	The date of this publication was 2009. (Rafael Tuts, United Nations Human Settlements Programme)	addressed

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702	45453	8	90	16	90	17	The date of this publication was 2010. (same as line 7/8) (Rafael Tuts, United Nations Human Settlements Programme)	addressed
703	45454	8	90	18	90	19	The date of this publication was 2010. (same as line 1) (Rafael Tuts, United Nations Human Settlements Programme)	addressed
704	50522	8	93	0	0	0	Table 8-1. The author team may wish to consider options for presenting some of this material in a map-based format. See, for example, figures in chapter 4 of the special report on extremes. The TSU is available to assist with associated layout and technical development; please contact Monalisa Chatterjee and Yuka Estrada if this option is of interest. (Katharine Mach, IPCC WGII TSU)	This is of interest; we plan to work on better graphics at the next lead author meeting
705	40537	8	94	0	0	0	Table 8.2 - This table is very unclear. (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	would be good to get advice on what was unclear
706	41373	8	94	0	0	0	This figure is not very comprehensive. I would suggest the following captions for each (vertical) section: Urban areas that have little recovery capacity Urban areas that can to some extent recover Urban areas that can adequately recover Resilient urban areas Urban areas in transformation (Sven Harmeling, Germanwatch)	Captions adjusted
707	50523	8	94	0	0	0	Table 8-2. As a minor point, the casual usage of the word "likely" in the 1st box under "climate resilience" should be avoided, as it is a reserved likelihood term. (Katharine Mach, IPCC WGII TSU)	addressed
708	40538	8	96	0	0	0	Table 8.3 -- What is meant by 'green urban development' (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	text changed.
709	53928	8	96	0	0	0	Table 8-3: It may be more effective to make a figure to describe the information provided in this table. (Yuka Estrada, IPCC WGII TSU)	We are considering how best to do this
710	40539	8	97	0	0	0	Figure 8.1 -- What is meant by 'circulation of power' (Cynthia Rosenzweig, NASA Goddard Institute for Space Studies/Columbia University)	We plan to develop this figure at the next working group meeting
711	53929	8	97	0	0	0	Figure 8-1: The visibility of this figure needs to be improved. It would be helpful for readers to have a further description on how to follow this scheme. For instance, it was not clear for me how to interpret the middle part of the figure; how does power circulation affect decision making? Do Science experts and governments come to decision making on mitigation and adaptation separately (not sure what the arrows in the middle are indicating)? (Yuka Estrada, IPCC WGII TSU)	We plan to develop this figure at the next working group meeting
712	53930	8	99	0	0	0	Figure 8-4: Would it be possible to incorporate the role of "local government" in this figure? That is the important concept discussed in these sections, but neither Figure 8-3 or Figure 8-4 illustrates local government. (Yuka Estrada, IPCC WGII TSU)	We plan to develop this figure at the next working group meeting