Expert Review Comments on the IPCC WGIII AR5 First Order Draft – Chapter 14

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10284	14					Good figure. It is useful to understand consumption pattern with embodied CO2.	Noted.
15050	14					Latin America is missed.	Accepted. Energy and Climate Partnership of the Americas (ECPA) under Latin America now listed (see http://www.ecpamericas.org/).
15040	14					It is not possible to read legends in Figure 14.10.	Accepted. A larger font will be used.
15041	14					It is not possible to read legends in Figure 14.11.	Accepted. A larger font will be used.
15038	14					It is not possible to read legends in Figure 14.8.	Accepted. A larger font will be used.
15039	14					It is not possible to read legends in Figure 14.9.	Accepted. A larger font will be used.
15395	14					This systematically ignores economic valuation in discussion of development patterns, energy use and adaptation – what are WTP measures of "healthy" vs actual diets – similarly for urban density and household lifestyle preferences. The discussion presents what is largely an energy and carbon theory of value, that ranks every action solely in terms of effects on carbon emissions. The discussion of diets is just silly – has no one read Danzig account of optimal solutions to the diet problem as a warning about oversimplified modeling (see George B. Dantzig, ''The Diet Problem.'' Interfaces 20, 4 (1990) pp. 43–47)? Diet is a matter of taste, even in the poorest countries, and there would be large welfare losses from imposing such diets that are completely missed by the failure to mention consumer valuation in any way. The level of detail about development patterns is highly excessive – it is elevator economics reciting numbers from tables without developing/obscuring any insight. The chapter discusses projections of climate impacts to 2100 as if they should guide current adaptation decisions. I believe this is at variance with the recommendations found in papers by Mendelsohn and others that decisionmakers should manage for current climate – then update. Dealing with large scale and long lived investments such as dams and afforestation required looking further forward, but predictions of local climate are not possible with the current state of GCM's. Without reliable predictions of long term climate at the required level of geographic detail, there is not enough information to change decisions from what it would be with current climate.Suggested papers by Mendelsohn: Robert Mendelsohn and Ariel Dinar Climate Change and Agriculture: An Economic Analysis of Global Impacts, Adaptation, and Distributional Effects, Edward Elgar Publishing, England, 2009. Mendelsohn, R., A. Dinar and A. Sanghi. 2001. "The Effect of Development on the Climate Sensitivity of Agriculture", Environment and Development Economics 6: 85-101. Mendelsohn, R. 2000. "Efficient Adaptation to Climate Change", Climatic Change 45: 583-600. Mendelsohn, R., W. Nordhaus and D. Shaw. 1994. "Measuring the Impact of Global Warming on Agriculture", American Economic Review 84: 753-771. Mendelsohn, R., A. Dinar, and L. Williams. 2006. "The Distributional Impact of Climate Change On Rich and Poor Countries" Environment and Development Economics 11: 1-20. Robert Mendelsohn The Impact of Climate Change on Land. Ch. 4. Climate Change And Land Policies Edited by Gregory K. Ingram and Yu-Hung Hong, Lincoln Institute of Land Policy,2011 pp 62-83.	The point is well taken. In the descriptive sections, we are just examining trends and drivers without undertaking an economic valuation of those. This is now clarified. Moreover, the section on diet is no longer in the chapter as indeed the claims are controversial. We also drastically shortened the detail of development patterns.
10448	14					Maybe the explanations can be removed	Accepted. The text will be shortend.
10449	14					Maybe the explanations can be removed	Accepted. The text would be shortend.
10450	14					Maybe the explanations can be removed	Accepted. The text will be shortend.
10799	14					Graphs and tables should replace the long paragraphs describing regional issues, thus reducing the number of pages while keeping the information.	Implemented. Text has been shortened drastically.
10936	14					Does the Asia-Pacific Partnership still exist?	Taken into account. Status of APP at time of final report should be checked and text be adjusted accordingly.

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4007	14					Under the "improved forest management" row I believe information beyond rotation length could be highlighted such as the effect of species selection, management of other C pools (e.g., dead wood) and impats of fertilization should be mentioned. Also, the references for this row are all over 7 years old, there has been tremendous new work in this area since that time	Accounted for. References updated and related-data were included. This issue is also accounted for in section 14.3.2.3 Regional examples of synergies and trade-offs between adaptation and mitigation.
6125	14					The clasification of region is very difficult. It seems that in this chapter, regions are grouped by geographycally as well as development stage. I have a sympathy with this process. However what this way of regional groupings misses is difference in culture. For example regional culture is quite different between people (region) whether they believe in polytheism or monotheism. Even among the latter people, Islam and Christianity is quite different. Those are not reflected in this classification. Another example is that Japan, China, Korea share the same culture to the certain extent in that price mechanism may not function well. On the other hand, Australia and NZ are the countries where price mechanism may well function. However, actual grouping is that China and Korea are classified as East Asia and Japan and Australia/NZ is classified as JPAUNZ. When we discuss the effectiveness of certain mitigation policies, this grouping may not necessarily be appropriate. That said, I know it is quite difficult to have another grouping because we do not have such literatures. What I wish Chapter 14 team to do is to draw readers' attention on this limitation in the footnote.	It is hard to come up with a grouping that suits all needs. We used one that was principally related to the level of economic development (plus geography) to make it consistent with the modelling exercises and useful for the purposes of our chapter. When discussing the literature, we have to follow the regional groupings of the literature, which is now stated in the chapter.
15396	14					Adapting to Category 4 and 5 hurricanes is not easy – maybe not worthwhile.	Noted. This is a comment no directly related to the text and very specific to be included.
15397	14					Don’t confuse mitigation and adaptation – not a win-win, they are not the same – don’t let mitigation test interfere with increased air conditioning as a response to heat stress.	Noted. This is an specific comment on a case in which there is not possible a win-win solution between adaptation and mitigation. Many authors have identified multiple activities in which synergies between adaptation and mitigation are not only possible, but convenient in some sectors. Part of the text that has been moved to section 14.3. This text refers to actions that could be taken at regional level to potentiate these possible synergies. However, this does not imply that mitigation and adaptation are the same or always provide win-win solutions.
18376	14					This section could be significantly shortened by removing redundancies and focusing the discussion.	We have implemented this.
10447	14					This section is not necessary here, since it is dealt with in a separate chapter	Accepted, although there is not any other independent chapter dealing with this. Part of the content of regional character was moved to section 14.3, but it is not more a self-standing section.

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18374	14					Improve linkage and coordination with Chapter 12 regarding the coverage of urbanisation trends.	Taken into account: The text has been shortened. Part of the description of urbanization trend has been moved to Chapter 12.
18669	14					14.2 – the regionalisation is changed to ?	I don't understand this comment.
3665	14					Delete or massively reduce to save space as overlapping with chapter 12.2.	Taken into account: The text has been shortened. Part of the description of urbanization trend has been moved to Chapter 12.
10285	14					T. Homma et al., "Quantitative evaluation of time-series GHG emissions by sector and region using consumption-based accounting", Energy Policy (forthcoming) will also provide consumption emissions by region including non-CO2 GHG, and additional information on the consumption CO2 emission pattern.	Accepted, will read through the paper and reference accordingly.
11677	14					As for the analysis on consumption-based emissions, regional analysis by sector done in many studies should be also comprehensively reviewed. Although a sectoral analysis of consumption-based emissions is reviewed on page 29-31, it seems that only one study is reviewed. It has been widely acknowledged in many studies that while manufacturing industries in many developed countries are net CO2/GHG emissions importers, those industries in developing countries with high CO2 intensity are net emissions exporters (e.g. Figure 14.20, Peters et al. (2011), Nakano et al. (2009), Barett et al. (2011), Homma et al. (forthcoming). For example, Sinden et al. (2011) which focus on an analysis of aluminium sector in EU, show that the net import of CO2 emission embodied in aluminium imported into Europe results in one-third of aluminium consumed in Europe in 2004, therefore, it can conclude that the impacts of EU-ETS on the aluminium consumed in EU is marginal. On the other hand, Homma et al. (forthcoming) in which consumption-based emissions including CH4 and N2O are analyzed, reveal that regional tendency of consumption -based GHG emissions in agricultural sector is different from that in manufacturing sector due to the different trade structure. That is, the major agricultural commodities importers like Japan and the EU15 are consistently net GHG emissions importers for the agricultural sector from 1990 to 2005 while major exporters like the U.S., Australia and New Zealand are consistently net GHG emissions exporters. Reference: G. E. Sinden, G. P. Peters, J. Minxd and C. L. Webere (2011) “International flows of embodied CO2 with an application to aluminium and the EU ETS,” Climate Policy, 11 (5), pp. 1226-1245. Barrett J., Owen A., Sakai M. (2011) UK Consumption Emissions by Sector and Origin, Report to the UK Department for Environment, Food and Rural Affairs by University of Leeds,http://randd.defra.gov.uk/Document.aspx?Document=FINALEV0466report(2).pdf	Agreed. The last section of 14.2. 5.2 selectively addresses the consumption based emission at sectoral level. The text will be revised.
3666	14					Delete or massively reduce to save space as overlapping with chapter 11.2.	Accepted. The text was reduced here.
18377	14					Much of the material presented in this section should be merged with the discussion in section 14.2 in order to cover past trends and possible future (projected) developments in one place. Based on this, section 14.3 could instead focus on identifying and discussing the resulting barriers and opportunities. Also, some of the material presented in section 14.3.2.4 refers to impact studies which are better covered by WGII; instead cross-referencing to the relevant sections in the WGII report should be included here.	We now merged sections 14.2 and (previous) 14.3 in the new 14.2 to address this issue.
10451	14					The sectoral issues has to be rewritten with more references	Accounted for. References were included.

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3667	14					Delete or massively reduce to save space as overlapping with chapter 12.2.	Taken into account: The text has been shortened. Part of the description of urbanization trend has been moved to Chapter 12.
5897	14					Please shorten the text - you do not need to give information in the text and in the figures. In addition, you deviate from the main topic too much. Please concentrate on things relevant for development and mitigation, avoid delving into studies and you should come up with about one third the length of the text.	Accounted for. The text was reduced to 2 pages and refocused on development and mitigation.
3668	14					Delete or massively reduce to save space as overlapping with chapter 12.2.	Accounted for. The text was reduced to 2 pages and refocused on development and mitigation in order to avoid traslaping with Chapter 11.
18379	14					In addition to the CDM and JI discussion, could you expand your analysis to address in how far regional policies are able to encourage investment and/or generate funds as agreed in Wellington (section 3.4 page 9)? Also, for some material in section 14.3.4.2 the specific regional focus and related distinction to Chapter 16 is not clear.	There really is not much regional policy on these matters and thus hard to discuss.
3670	14					Delete or massively reduce to save space as overlapping with chapter 16.	Yes, implemented.
3671	14					Cut chapter by 60%, reduce amount of graphs. Overlaps with chapter 15.2.3.	Accepted. Check with Ch. 15 regarding overlaps.
18378	14					Please note redundancies regarding the discussion of the APP (page 65, lines 1-24 and page 82, lines 19-31)	Accepted – text revised.
10930	14					An underlying theme in this section is that regional cooperation may have advantages and trade is mentioned a lot. A barrier is leakage. However, as discussed a little in this paper, it is perhaps beneficial to base climate policy around regional groupings as it will reduce leakage. This may be a relevant reference in several places? Peters, G.P., Hertwich, E.G., 2008. CO2 Embodied in International Trade with Implications for Global Climate Policy. Environmental Science and Technology 42, 1401-1407.	Accepted.
3672	14					Cut chapter by 60% to save space.	Accepted.
3673	14					Cut chapter by 60% to save space.	Accepted. Section on cooperation in the energy sector has been reduced substantially.
18373	14					The section on trade is in parts very well developed but would benefit from a better linkage to the sectoral issues discussed in sections 14.2 and 14.3.	Rejected due to lack of space. This would be desirable, but requires additional space, which we do not have.
10454	14					This section is very dense to read and it would be preferable to put in some bullet points	Rejected. We don't use bullet points, but we streamlined the whole section such that readability is improved. The section is now split into subsections.
10937	14					A relevant refence on the effect of trade on climate policy is Peters, G.P., Minx, J.C., Weber, C.L., Edenhofer, O., 2011. Growth in emission transfers via international trade from 1990 to 2008. Proceedings of the National Academy of Sciences 108, 8903-8908.	Accepted.

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18375	14					Please coordinate coverage and discussion of REDD(+) with Chapters 11 and 15 in order to develop specific regional focus of the assessment.	Taken into account. Parts of the text (e.g the box on Latinamerican forestry activities) were deleted. In line with the new structure of the chapter the current text focuses on regional cooperative efforts where synergies between mitigation and adaptation are necessary. What is written in this text does not repeat neither contradict what is written in chapters 11 nor 15.
10455	14					A problem with this section is that synonyms are numerous and it would be preferable if one gets an index for easy reference	Taken into account -there will be an index (glossary) included
16229	14					This para. states good example for S-S co-operation, but I guess it's good to talk and encourage developing countries for more co-operation by make a spot and give more examples of developing countries that have a good resources and give advice how they could share and exchange to gain more benefits for them as a developing countries. Co-operation between Asia and Africa is good example; e.g. China, India and Malaysia at Asia side; South Africa, Algeria and Egypt on the other hand. It's good also to encourage the Regional Banks to support that co-operation.	Taken into account - this is convered in s 14.4.3.4 as supported by the literature.
7417	14	0				Spillover effects , burden sharing, and burden shifting are important dimensions at the regional level when assessing climate change policies but unfortunately are not well covered in this chapter and executive summary lacks any statements related to these dimensions.	These issues are discussed in detail in chapter 13 and to some degree in chapter 15. The division of labor appears appropriate this way.
16955	14	0				This seems to be a really interesting chapter and I regret not having had time to review it in depth. It does need closer coordination with some other chapters, I think most notably Chapters 4, 5, and 12. I confine my remarks to just one, very specific issue, though my remarks on interpreting the data may have broader implications across the chapter (and maybe more widely).	We now interlink our chapter much more closely with chapters 4, 5, and 12.
14897	14	0				It would be useful to revise the chapter with an eye toward greater clarity as to the answers to some key framing questions, namely: What is the potential value of this chapter? Who is the audience? What sort of information would you like them to take from it? What is the key story that this chapter tells?	We streamlined the chapter now so that answers to these questions are now more apparent.
14898	14	0				1) More clarity and consistency about the definitions of the regions would be helpful. Section 14.1.3 states that the chapter considers 10 specific regions (p. 7/27-31), but elsewhere the chapter refers to different sets of regions (e.g. p. 43/Table 14.4 and p. 45/Table 14.5 – 6 regions; 40/Figure 14.25 – OECD, BRIC, Other; 41-42/Figure 14.26 – other regions; 52/Table 14.6; 57/fig 14.41; 58/f14.43). Are the key points in the chapter about the 10 identified regions or about supranational regions in general? Or are they about country groups at differing levels of economic development?	We stick to our 10 region definition whereever the data is available; this definition is particularly suitable to assess the development and mitigation challenges of different regions. Otherwise we have to use the regional classifications as used in the literature.
14899	14	0				a. The chapter also deals with subnational regions in pp.49-50.	We dropped this.
14900	14	0				b. Some of the figures in 14.1 suggest that belonging to a region could explain development level; others suggest that certain development indicators are independent of region. How to make sense of this in the narrative?	The charts are meant to simply illustrate regional differences without implying causality. This is now clarified.

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14901	14	0				c. How important are regions for all of these issues? In some cases (e.g., journal articles, high tech exports (Fig 14.6)) individual countries may be more important than regions. In other words, does belonging to a region explain variance? Is there less variance across countries than across regions?	Point well taken. We have now streamlined this discussion and focused more on issues where regions matter.
14902	14	0				To streamline the text and reduce its length, it may be helpful to	Have done this.
14903	14	0				(continued from comment above) Cut back on text that is duplicative with sectoral chapters (e.g., in 14.3.2). For example, examine the following issues in comparison with specific chapters: (i) Agriculture with chapter 11; (ii)Regional scale trading initiatives: EU/ETS, WCI vis a vis 13.6; (iii) Urbanization with chapter 12; (iv) Finance with chapters 13, 14, 16; (v) the public/private finance discussion overlaps with chapter 13. Also it would be valuable to integrate the discussion of trade flows with trade discussion in chapter 13.	We have implmented the suggested cuts
14904	14	0				Leapfrogging – This seems like an important issue, and one regarding which it seems the chapter could go into greater depth. More detailed and precise discussion of the capacity barriers to leapfrogging and how they play out across various countries and regions would be useful, for example. Also, are there historical analogs in which leapfrogging occurred successfully that could provide examples for how to break through financial, capacity constraints?	We have added some more discussion on this. Unfortunately, the literature is rather thin on this important issue and are conclusions reflect this uncertainty.
14905	14	0				a. Adaptation -- The integration of mitigation and adaptation strategies is likely to be important in some contexts. The AR5 should find some way to highlight and address this issue in the overall report and presumably in WGIII. Chapter 14 would seem to be a good place to do it, given the regional nature of these strategies and how they intersect.	Accepted. There is some discussion on the relation adaptation-mitigation in the chapter. Particularly referred to regional cooperation schemes in subsection 14.3 .
14906	14	0				Regional cooperation – With respect to regional cooperation, are there lessons to be learned about what differentiates successful and less successful regional cooperation initiatives?	This is now drawn out more clearly. The problem is, however, that the level of regional cooperation (outside of the EU) is rather low so that it is hard to make the distinctions between successful and less successful cases.
14907	14	0				The text is dense in places. Presentation of text is therefore highly important – bolding text, using bullets, etc. to provide visual distinction and relief is very important for this chapter and for the whole report. A number of sections of this chapter could be improved in this way, for example, the executive summary and the discussion of regional cooperation mechanisms.	We will address this in the next round of the report.
14908	14	0				It is important to standardize units throughout the chapter and indeed, the AR5. For example, Figure 14.21 is expressed in GTC, whereas most discussion refers to CO2.	Yes, will stribe to standardize where possible.
18362	14	0				The treatment of trade and embedded emissions is a very sensitive issue and a clear vision of its coverage should be developed in cooperation with Chapters 4, 5 and 13.	As it is an important part of our story, we decided to retain it here. But we are cooperating closely with the other chapters on the treatment of the issue; we also discuss the sensitivity and uncertainty incolved in measuring these issues.
18368	14	0				General comment: Chapter 14 could be improved through a sharpening of key findings and better integration across the different chapter sections. The TSU is thus submitting a range of questions that can guide the author team in focusing their discussions in the relevant sections.	Have focused message and streamlined chapter.

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18369	14	0				Guiding question: What can be learnt from linking the analysis of differences in regional mitigation capacities to the assessment of regional cooperation options for mitigation? Given that mitigation capacity is low in all developing countries, what are the implications of this insight for different world regions: • Should Africa focus on leapfrogging and technology transfer alone? • How could development and mitigation in resource rich countries be linked to induce investments in important infrastructure (see relevant literature of Venables and van der Ploeg)? • What are implications for industrialized countries in terms of selecting suitable partners (Africa or BRICS countries) when thinking about different investment strategies? • What does this mean in the context of the green growth and sustainable development debate? • Which role do envisaged urbanization trends in Africa in the context of mitigative capacity and cooperation options play, with megacities yet to be built and the development of rural areas largely shifting out of focus of decision makers? In order to answer some of these questions, a number of issues need more focus and attention: at present, sections 14.2, 14.3 and 14.4 remain largely disconnected. Although there is interesting material presented in each of these sections, the assessment carried out does not connect the insights gained in order to build up a coherent storyline. While 14.2 provides an interesting description of the status quo, section 14.3 does not identify opportunities and barriers that may be relevant in altering the trends identified in 14.2 or forging regional cooperation initiatives in the sectors discussed (energy, agriculture, urbanisation), and in section 14.4, the sectoral focus is almost completely lost.	We are now addressing some of these questions in the chapter. To answer all of them is difficult as there are complex country and regional specificities to consider. Some brief reply to the bullets: Africa has the potential to leapfrog but will only succeed if the substantial barriers to doing so are removed (with international help). The urbanization challenge is now discussed in the chapter. The other bullets really go beyond the scope of our chapter.
18370	14	0				Improve linkage to Chapter 3 regarding the usage of relevant assessment criteria in the assessment of policies.	We closely liaise with chapter 3 on this (although the X-Cuts in Vigo were poorly planned and did not advance the linkages to chapter 3 much as there was too much general discussion).
18371	14	0				The following sections could be improved through a better internal linkage: introductory section (14.1.5.1 and Figure 14.6), section on leapfrogging & technology transfer (14.3.3), section on investment and finance (14.3.4) and section on technology-focused agreements (14.4.3). Also, as the treatment of sub-national issues is beyond the focus of this chapter, the treatment of sub-national regions in section 14.3.3.1 may be removed.	Now done. Thanks for pointing this out.
18372	14	0				Guiding question: What do we learn from consumption based accounting? Although the relevant sections on consumption are well developed their purpose for the chapter remains unclear. What needs to be more clearly developed in the assessment is a clear insight to what we learn from consumption based accounting and international emission flows (see related comment on embedded emissions and trade). Its role as a useful tool to assess the distribution of mitigation efforts needs to be evaluated in strong coordination with Chapters 4 and 5.	We now discuss more clearly the relevance of consumption-base accounting. They matter as they pose special challanges for mitigation for carbon exporters and carbon importers (also, e.g. in terms of border tax adjustments).
18380	14	0				Please remember to convert all monetary units to 2010 US$ (methodology, common exchange rates and deflators are provided by Metrics & Methodology CLAs).	Yes will do (when the literature allows it).
19005	14	0				In your analysis of development trends and implications on emissions at the regional level in section 14.2, please include relevant regional scenario analyses such as from the Asian Modeling Exercise, EMF 22/27, or Low Carbon Societies. You may wish to liaise with your colleagues from Chapter 6 for more information on this. You may also wish to discuss with chapter 6 authors using regionally specific results from the scenario database, which is compiled for the purpose of the AR5.	We are in close touch with chapter 6 on these matters.

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18665	14	0				86 pages, 46 over target! A disaster in comparison to chapter 13, more of a rough outline than a draft	Now heavily stramlined.
18666	14	0				Is the aim to describe the situation in different regions and compare them or to discuss how regional coop. can drive mitigation? The first part is to a big extent covered by earlier chapters (though the division into regions tend to differ in an uncontrolled way).	The chapter does both and now says it more clearly; the overlapy have been reduced and we are the only chapter to present data and issues at a highly regionally disaggregated level (10 regions). The regional definition we try to maintain throughout.
18667	14	0				A problem is that the division used seems to be mainly geographical or economic/geographical – not according to existing cooperations.	This is true and, in our view, necessary for the regional heterogeneity portion of our chapter (14.2); we explicitly discuss this now in the chapter.
18668	14	0				The chapter contains a lot of descriptive material – will have to be sorted out since the expectation is to have 40 pages.	Yes, now mostly sorted out.
18670	14	0				Handles themes that are already handled (or should be handled) in other chapters such urbanisation. Interesting as such but shows a lack of coordination.	Urbanization was a specific bullet to be tackled in our chapter. We now coordinate more closely with the other chapters where overlaps exist.
18671	14	0				The chapter is all over the place – a clear need to sort out what is or should be handled in other chapters and what is the overall theme for this chapter. My understanding is that the idea is to go through regional cooperation form a policy/mitigation perspective but not implemented in that way.	Regional cooperation is a central theme, now in 14.3, but regional heterogeneity is also a central theme, now in section 14.2
18673	14	0				EU ETS (in reality wider, a climate and energy package) WCI EU ETS is also described in chapter 13 (more structured but also more limited in scope)	We have a clear division of labor with chapter 13 on what to include in our chapter (the main assessment of the EU ETS) while they focus on the linkage to global deals.
3182	14	0				The purpose of this chapter is elusive. It seems to cover the same territory as the sectoral chapter. There's a lot of discussion of CDM and REDD (both topics discussed to death in earlier chapters) and also on decentralized agreements (discussed in chapters 2 and 13 among other places). What is the center of gravity of this chapter and its main goal?	In streamlining the chapter, we have now focused on the importantce of regional heterogeneity for mitigation oppounities and capacities and the (largely negatve) assessment of existing regional cooperation mechanisms.
3690	14	1				Here I would like to suggest some very important references	Thanks for the reference. We will look them up and cite them if they fit well.

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3693	14	1				Bhandari, Medani P. (2012) Environmental Performance and Vulnerability to Climate Change: A Case Study of India, Nepal, Bangladesh, and Pakistan, (in press) "Climate Change and Disaster Risk Management" Series: Climate Change Management, Springer, New York / Heidelberg, ISBN 978-3-642-31109-3	Thanks for the reference. We will look them up and cite them if they fit well.
3694	14	1				Brechin, Steven R. and Bhandari, Medani P. (2011) Perceptions of climate change worldwide, WIREs Climate Change 2011, Volume 2:871–885.	Thanks for the reference. We will look them up and cite them if they fit well.
3695	14	1				Brechin SR. Chapter 10: Public opinion: a cross-national view. In: Lever-Tracy C, ed. Routledge Handbook of Climate Change and Society. London & New York: Routledge Press; 2010.	Thanks for the reference. We will look them up and cite them if they fit well.
3696	14	1				Bord RJ, Fisher A, O'Connor RE. Public perceptions of global warming: United States and international perspectives. Clim Res 1998, 11:75–84.	Thanks for the reference. We will look them up and cite them if they fit well.
3697	14	1				Dunlap R. Lay perceptions of global risk: public views of global warming in cross-national context. Int Sociol 1998, 13:473–498.	Thanks for the reference. We will look them up and cite them if they fit well.
3698	14	1				Brechin SR. Comparative public opinion and knowledge on global climatic change and the Kyoto Protocol: the U.S. versus the world? Int J Sociol Soc Policy 2003, 23:106–134.	Thanks for the reference. We will look them up and cite them if they fit well.
3699	14	1				Bell A. Climate of opinion: public and media discourse on the global environment. Discourse Soc 1994, 5:33 – 64.	Thanks for the reference. We will look them up and cite them if they fit well.
3700	14	1				Bostrom A, Morgan MG, Fischhoff B, Read D. Does concern about global warming equal a willingness to sacrifice? Risk Anal 1994, 14:959 – 970.	Thanks for the reference. We will look them up and cite them if they fit well.
3701	14	1				Kempton W. Lay perspectives on climate change. Glob Environ Change 1991, 1:321 – 324.	Thanks for the reference. We will look them up and cite them if they fit well.
3702	14	1				Kempton K, Boster JS, Hartley JA. Environmental Values and in American Culture, Cambridge, MA: MIT Press; 1995.	Thanks for the reference. We will look them up and cite them if they fit well.
3703	14	1				Loftstedt RE. Climate change perceptions and energy- use decisions in Northern Sweden. Glob Environ Change 1991, 1:321 – 324.	Thanks for the reference. We will look them up and cite them if they fit well.
3704	14	1				Loftstedt RE. Lay perspectives concerning global climate change in Sweden. Energy Environ 1992, 3:171 – 175.	Thanks for the reference. We will look them up and cite them if they fit well.
3705	14	1				Loftstedt RE. Lay perspectives concerning global climate change in Vienna, Austria. Energy Environ 1993, 4:140 – 154.	Thanks for the reference. We will look them up and cite them if they fit well.
3706	14	1				Read D, Bostrom A, Morgan MG, Fischoff B, Smuts T. What do people know about global climate change: survey studies of educated laypeople? Risk Anal 1994, 15:971 – 982.	Thanks for the reference. We will look them up and cite them if they fit well.
3707	14	1				Dunlap R, Gallup GH Jr, Gallup AM. The Health of the Planet Survey: A George H. Gallup Memorial Survey. Princeton, NJ: Gallup International Institute; 1993.	Thanks for the reference. We will look them up and cite them if they fit well.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3708	14	1				Kempton W, Craig PP. European perspectives on cli- mate change. Environment 1993, 35:16 –20, 45.	Thanks for the reference. We will look them up and cite them if they fit well.
3709	14	1				Brechin SR, Freeman D. Public support for both the environment and an anti-environmental President: pos- sible explanations for the George W. Bush anomaly, The Forum, (1) online. 2004. Available at: http://www. bepress.com/forum.	Thanks for the reference. We will look them up and cite them if they fit well.
3710	14	1				McCright AM, Dunlap RE. Defeating Kyoto: the conservative movement's impact on U.S. climate-change policy. Soc Probl 2003, 50:348 – 373.	Thanks for the reference. We will look them up and cite them if they fit well.
3711	14	1				Dunlap R, McCright A. Climate change denial: sources, actors and strategies. In: Lever-Tracy C, ed. Handbook on Climate Change and Society. Routledge Press; 2010.	Thanks for the reference. We will look them up and cite them if they fit well.
3712	14	1				Oreskes N. The scientific consensus on climate change. Science 2004, 306:1686.	Thanks for the reference. We will look them up and cite them if they fit well.
3713	14	1				Lever-Tracy C. Routledge Handbook on Climate Change and Society. London & New York: Routledge Press; 2010.	Thanks for the reference. We will look them up and cite them if they fit well.
3714	14	1				Brody SD, Zahran S, Bedlitz A, Grover H. Examining the relationship between physical vulnerability and public perception of global climate change in the United States. Environ Behav 2008, 40:75–95.	Thanks for the reference. We will look them up and cite them if they fit well.
3715	14	1				Guber DL. The Grassroots of a Green Revolution: Polling America on the Environment. Cambridge, MA: MIT Press; 2003.	Thanks for the reference. We will look them up and cite them if they fit well.
3716	14	1				Hoggan J, Littlemore R. Climate Cover-up: The Crusade to Deny Global Warming. Vancouver, BC, Canada: Greystone; 2009.	Thanks for the reference. We will look them up and cite them if they fit well.
3717	14	1				Jacques PJ, Dunlap RE, Freeman M. The organization of denial: conservative think tanks and environmental skepticism. Env Polit 2008, 17:349–385.	Thanks for the reference. We will look them up and cite them if they fit well.
3718	14	1				McCright AM, Dunlap RE. Challenging global warming as a social problem: an analysis of the conservative movement's counter-claims. Soc Probl 2000, 47:499–522.	Thanks for the reference. We will look them up and cite them if they fit well.
3719	14	1				Oreskes N, Conway EM. Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming. New York: Bloomsbury Press; 2010.	Thanks for the reference. We will look them up and cite them if they fit well.
3720	14	1				Leiserowitz A. Knowledge of Climate Change Across Global Warming's Six Americas, Yale Project on Climate Change Communication, Yale University, New Haven, CT; 2010. Available at: http://environment.yale.edu/uploads/SixAmericasJan2010.pdf . (Accessed	Thanks for the reference. We will look them up and cite them if they fit well.
3721	14	1				June 25, 2010).	Thanks for the reference. We will look them up and cite them if they fit well.
3722	14	1				Gupta J. A history of international climate change policy. WIRES: Clim Change 2010, 1:636–653.	Thanks for the reference. We will look them up and cite them if they fit well.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
3723	14	1				Leiserowitz A. International public opinion, perception, and understanding of global climate change. Human Development Report 2007/2008. Human Development Office Occasional Paper, UNDP; 2007.	Thanks for the reference. We will look them up and cite them if they fit well.
3724	14	1				Lorenzoni I, Pidgeon NF. Public views on climate change: European and USA perspectives. Clim Change 2006, 77:73–95.	Thanks for the reference. We will look them up and cite them if they fit well.
3725	14	1				Moser SC. Communicating climate change: History, challenges, process and future directions. WIRES: Clim Change 2010, 1:31–53.	Thanks for the reference. We will look them up and cite them if they fit well.
3726	14	1				Wolf J, Moser SC. Individual understandings, perceptions, and engagement with climate change: Insights from in-depth studies across the world. WIRES: Clim Change 2011, 2:547–569.	Thanks for the reference. We will look them up and cite them if they fit well.
5877	14	1	1	116	28	The text could be shortened considerably if you made sure information was given EITHER in the text OR in a figure OR in a table, not - as it is quite often the case - in at least two of the three ways possible.	Accounted for. Figures were deleted, leaving those with more relevant information in the text. Discussion was included to substitute for most of the figures. The text is currently 2 pages long.
13623	14	1+				At the risk of providing some shameless self promotion I just wanted to flag research I did for my PhD dissertation which may be of interest -- I examined the uptake of trade policy on renewables (where it was found that 1) a less open trade regime afforded Brazil more opportunities to build up their indigenous expertise and hence had knock on effects for use 2) previous experiences had an impact on adoption (in a positive way in Brazil due to the experience of the apagao and negatively in Mexico where previous bad experiences with Solar Water Heaters painted all SWHs with the same negative brush) and 3) that local technology cooperation dynamics (in this case cities and relationships between and among actors) were also important in helping to explain adoption (as in Sao Paulo actors were more mobilized, coherent and institutionalized - this was also traced to trade policies where more infighting occurred between firms depending on their origins (foreign / domestic / joint)) Mallett (2009) Technology adoption, cooperation and trade and competitiveness policies: Re-examining the uptake of Renewable Energy Technologies (RETs) in urban Latin America using systemic approaches	Thanks for the reference. We will look it up and cite it if it fits well.
14924	14	10	1	10	2	Does the reference to “disparities” in this sentence refer to country-to-country disparities within a region or to disparities among groups within the region (e.g. men vs. women), as suggested in the next sentence?	Accepted. Clarification made in text.
14925	14	10	7			Figure 14.3 depicts a situation with greater intra-regional disparity than disparity among regions. How does this fit with the overall narrative about regions?	Rejected. There is also a great intraregional disparity as seen from the graph. Correction made on title of the graph as well
10218	14	11				"income share" and "adjusted net savings" graphs lack unit on the x-axis	Accepted and corrected.
5882	14	11				Please explain what is meant by "poverty gap" (not explained in the text and not included in the glossary). The same holds true for "dependency ratio".	Accepted. Dependency ratio is no longer in the text. Poverty gap is explained in the glossary. It was decided to relegate explanations of concepts such as those to the glossary.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14927	14	11	12			The adjusted net savings graph does not show much variation (at least in the median of the distribution) among the four categories depicted. What point does it make?	Taken into account The median does show variation across regions and what we want is to explicit regions showing negative net savings.
14926	14	11	2			Subdivide figure with letters (14.4a); not all figures here are referenced in text. Some of these beg further explanation (e.g., dependency ratio). Here too, variation within regions is sometimes greater than across regions (e.g., adjusted net savings).	Accepted. Changes made in text.
15070	14	111	1	111	3	Alternative source for Rowlands (2011) is: Reference Type: Journal Article Author: Rowlands, Ian Primary Title: Ancillary impacts of energy-related climate change mitigation options in Africa's least developed countries Journal Name: Mitigation and Adaptation Strategies for Global Change Cover Date: 2011-10-01 Publisher: Springer Netherlands Issn: 1381-2386 Subject: Earth and Environmental Science Start Page: 749 End Page: 773 Volume: 16 Issue: 7 Url: http://dx.doi.org/10.1007/s11027-011-9292-z Doi: 10.1007/s11027-011-9292-z	Taken into account. Thank you for pointing this out. Rowlands (2011) has been removed from the list of references
15284	14	12	18	12	18	"0,8%" to be "0.8%"	Accepted. OK
13601	14	12	6		8	east Asia is lumped together - I would suggest noting the rapidly changing landscape and differences within these groups of countries e.g. Georgia institute of technology has done work suggesting that China is quickly moving from being the world's factor to the world's R&D lab; Economic intelligence Unit's report on China and high value goods (heavy duty) (world market share) page 4 graphic is particularly arresting http://www.eiu.com/Handlers/WhitepaperHandler.ashx?fi=Heavy_duty_Chinas_next_wave_of_exports.pdf&mode=wp&campaignid=heavyduty_Aug11	We note the eterogeneity within regions and the changing patterns of development there.
14928	14	12	9	12	20	This paragraph seems to be expressing an important point, but is difficult to understand. Suggest rewriting it for clarity.	Accepted. Considered by the author.
3301	14	12	1	12	25	This section is ok, including useful Fig. 14.6. Don't shorten here.	Noted.
14929	14	13	15	13	24	Consider putting this paragraph under a separate "summary" subhead.	Accepted. Considered by the author.
12494	14	14	35			The many abbreviations need explanation	Accepted. The abbrevistions will be replaced by full names.
5883	14	15				Please user larger font in the figure. Especially the labels at the x-axis are too small.	Accepted. A larger font will be used.
12495	14	15	2			The figure need more explanation in the caption. It would also be beneficial if the two time ranges were the same Now it is 10 and eight years.	Accepted. The abbrevistions will be replaced by full names. The two time ranges will be merged into one single range for a simpler presentation.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14930	14	15	2			Figure 14.8 is not clear. A legend should explain the yellow dots (which are presumably the net emissions. Do these data reflect changes against a baseline? This should be explained. Why does 2000 appear in both intervals? It would also be useful to distinguish 1990-2000 from 2000-2008 in a visual way (perhaps with a different color scheme or cross-hatching). Also is there data more recent than 2008? This will be somewhat outdated by the time the report is published.	Accepted. The date will be updated as EDGAR DB is updated and more explanation will be made on legends.
5884	14	15	22	15	25	Please make sure you don't attribute all AFOLU-emissions to forestry. De-forestation, what is responsible for a large part of emissions, is land-use change, not forestry.	Accepted. EDGAR DB, which is used here, includes AFOLU emissions in forestry fire partly. The exact relationship between AFOLU, LULUCF and foresty fire in EDGAR will be defined later in the cross-chapter data task group and will be reflected.
13602	14	15				while increase in per capita income along with population growth are important in terms of GHG emissions, also think one needs to flag the changing landscape and how supply chains are global now and what the implications are of this. E.g. Watson and Wang (2007) did a study entitled Who Owns China's Emissions, which suggest that a fair chunk of its emissions can be traced to goods for those outside of its borders. www.tyndall.ac.uk/content/who-owns-chinas-carbon-emissions Glen Peters has also done work http://www.sciencedirect.com/science/article/pii/S0301421508002905	Taken into account. The consumption-based emissions are dealt with in Section 14.2.3.
5885	14	16				Please user larger font in the figure. Labels at the x-axis are too small.	Accepted. A larger font will be used.
14931	14	16	3			Does the CO2 data include AFOLU other than forest fires?	Accepted. A clear indication on the exclusion of AFOLU will be made.
14932	14	16	3			Does the CO2 data include AFOLU other than forest fires? It would seem important to include this.	Accepted. EDGAR DB, which is used here, includes AFOLU emissions in forestry fire partly. The exact relationship between AFOLU, LULUCF and foresty fire in EDGAR will be defined later in the cross-chapter data task group and will be reflected.
5886	14	16	8	16	18	Text can be shortened considerably, is redundant to figure 14.10.	Accepted. The text will be shortend.
14933	14	17	10			This is an important figure. Some version of it should be made salient in the chapter and considered for inclusion in the technical summary.	Noted.
8938	14	17	12	18	2	This is a far too short representation of the lively and elaborate scientific debate on the EKC. The existence of the EKC for air pollutants is already debated, but for CO2 there is a huge body of literature, that mostly does not find an EKC.	Rejected. More discussion on EKC does not seem to be appropriate here considering that there is little empirical evidence available and that it is hard to derive any policy implication from them.
5887	14	17	16	18	2	Text can be shortened, if you have no indication of EKCs you do not need to mention them.	Accepted. The text will be shortend.
14934	14	17	18	18	2	The meaning of this sentence is unclear. Does it mean to say that Figure 14.12 provides evidence of an Environmental Kuznets Curve with respect to CO2? Or does it mean to say that 14.12 suggests a hockey-stick trend. Figure 14.12 doesn't seem to clearly support either hypothesis, though it is seems more consistent with an EKC.	Taken into account. It is not possible to derive any general conclusions on EKC. This section shows regional heterogeniety w.r.t greenhouse gases and development.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
16956	14	18				I find this format of data fantastically rich and important. Unfortunately, quite a lot of this richness is lost in the level of aggregation, and also the text which seems to be hunting for one specific thing (evidence of a Kuznets curve peak) and fails to find it. This blinds the authors to far more interesting observations. However, a number of these would only be possible at a more disaggregated level, not least to avoid the big gap between US$10 and US$20,000/capita income which seems to be where the really interesting questions arise. Grubb, Hourcade and Neuhoff present a version of the chart which is more disaggregated, in terms particularly of Annex I but also containing a number of other specific countries. It seems easiest to offer the thoughts that the Chapter offers from this: There is a clear pattern of emissions rising in the early to mid stages of economic development – up to around $10,000 per capita – though even here there is huge divergence between Brazil and some other mid-income countries, which emit more than twice as much for the same levels of wealth (never mind Russia, which is much higher still). Economic recovery in eastern Europe and Russia was not accompanied by corresponding emission increases. Economic growth has not uniformly increased emissions, once countries have reached a basic stage of industrialisation. Above incomes of about $10,000-$20,000 per capita, there is little sign of consistent relationship and indeed emissions per person seem to have roughly stabilised in many industrialised countries for the past 20 years, and more recently for some of the most advanced "developing" countries of Asia and Latin America. However there is clear divergence between North American and Australia on the one hand, and the major industrialised economies of Europe and Asia on the other: … [the section goes on to explore in more detail and concludes ..] "This makes future trends and possibilities all the more interesting. Most of the world's populations reside in the emerging and developing economies. The apparent stabilisation and "open jaw" of different per-capita emission levels at incomes above $10-20,000 per capita is then hugely significant . Given the weight of billions of poor people, the global average income level is around $10,000. Across Asia overall and much of Latin America, it averages at around $6,000 but is rising rapidly. It makes a massive difference whether their future trajectories emulate those typical in the US and Australia in moving towards 20tCO2 per capita; the 10 tCO2 typical in Europe and Japan; or closer to the 5-6 tCO2/cap of France…. [Or] emulating the current energy sector emission levels of Brazil … " The tone of the current IPCC text appears to be that Annex I countries have failed to cut emissions– a focus of message which seems a combination of blame and hopelessness; if this were uniformly true through the peak of climate change concerns and efforts (broadly the mid 1990s to mid 2000s), it would be an extremely depressing conclusion and would inexorably lead us to conclude that the world has no real hope of tackling climate change. The actual message from the data, across Annex I and elsewhere, seems far more subtle and intriguing. The more detailed analysis of policies in the book (notably Chapters 5 - 7) suggest that this is due to a combination of Pillar 1 (regulation and engagement) and Pillar 2 (prices and markets) policies. Reference: Grubb, Hourcade and Neuhoff, Planetary Economics: the Three Domains of Sustainable Energy Development, Taylor & Francis forthcoming (Chapters 1 – 5 submitted, others in draft available on request). □	Taken into account. Due to the lack of evidence about environmental Kuznets curve, the explanations on the graph will be shortend and will describe just regional differences.
10914	14	18				A relevant figure may be Steinberger, J.K., Timmons Roberts, J., Peters, G.P., Baiocchi, G., 2012. Pathways of human development and carbon emissions embodied in trade. Nature Clim. Change 2, 81-85.	Rejected. The figure here aims to show regional differences, not national ones. Country-by-country discussions are better fit in other chapters, such as 15 on national or 13 on international issues.
12496	14	18	4			This figure is the same as figure 5.4.2 in chapter 5. In order to cut text, coordinate which information that needs to be included in this chapter, and what is already included in chapter 5.	Accepted. I will try to coordinate with Chapter 5 authors.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
13604	14	19				suggest highlighting discrepancies within regions - not only urban rural but also in examining Asia - see Urmee (2009) and Singapore, China and Thailand have electricity rates close to 100% while 5% in Myanmar / Burma and around 50% in India, Nepal, Bangladesh Urmee, T., Harries, D. and Schläpfer, A. (2009) Issues related to rural electrification using renewable energy in developing countries of Asia and Pacific. Renewable Energy, 34 (2). pp. 354-357.	Accepted. Reference is relevant, a detailed assessment of energy aceess by region and across region will be presented. Variation of energy access by country, is beyond the scope of Chap 14, hence rejected.
5888	14	19				Table can be deleted, content is already given in the text.	Accpeted. The content from the table are discussed in text.
5889	14	19				Table can be deleted, content is already given in the text.	Accpeted. One table is presented
14935	14	19	1			It would be useful to show this information also in percentage terms if data is available.	Accepted. A new table has been created and the information will be presented in %
14936	14	19	1			Note that this table and Table 14.2 below also depart from the 10-Regions framework described earlier in the chapter.	Accepted. The regional difference as per Wellington Accord did not fit when compiling data on energy access. Hence, regional grouping as available in literature are presented. Common understanding by Chap 14 Authors.
14937	14	19	3			This table is redundant with Table 1; suggest using one of these tables only.	Accepted. One table is kept.
15131	14	19	6	19	6	It seems to me that is neccessary to explain as weel that in a lot of developing countries, in rural areas, the highest percentage of expenditure on energy respect to the level of income, is observed in the population that has the lowest income and expenditure on energy	Accepted. A detailed assessment of available literature on energy expenditure and level of income is being presented.
5890	14	20				Figure shows "n.a." approximately in the region of Kashmir. Is this a printing error or are data for this region really not available?	(a question to Section on Energy and Development)
5891	14	20	13	20	32	This text can be shortened considerably if you change the point of view. Instead of describung what was found in the regions, write what was found / has happened and list the respective regions, e. g. "some regions had high levels of urbanization (Europe, EIT, NAM, the Caribbean and Korea), others ...".	Taken into account. The text has been shortened. Part of the description of urbanization trend has been moved to Chapter 12.
10915	14	20				I thought this was an interesting and well written section. What is the relationship with this section and the urbanisation chapter, and chapters 4 which discuss urbanisation	Noted. The section of urbanization in this chapter focuses on regional variations in the patterns and forms of urbanization and their impacts on mitigation. All other aspects of urbanization (esp. Also the discussion on the linkages between urbanization and emissions and possible mitigation options are in the human settlements chapter)

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14941	14	20	6			Urbanization and development -- This is an important discussion and should be tightened up a bit and revised for clarity. What is implication? Is urbanization bad for CO2? It is worth thinking about what this means and what to say about it.	Take into account: the text has been rewritten, and indicates the challenges and opportunities for climate change mitigation in regions with different patterns and forms of urbanization at various stages of urbanization.
13605	14	21				Dodman, D. (2009). "Blaming cities for climate change? An analysis of urban greenhouse gas emissions inventories." Environment and Urbanization 21: 185-201.	Noted.
13606	14	21				not sure why Dodman reference is like this but just to point out that while initially it is stated that per capita emissions are more in cities, later on (page 22) the differences emerge -- e.g. SSA and Latin America they tend to be less Dodman 2009 (above0 also notes this - so I don't know that it's fair to say that cities tend to have higher GHG emissions per capita as a whole	Noted.
10219	14	21		22		not all lines in the graph are explained in the figure legend	Taken into account: fixed (figure removed)
10220	14	21		22		not all lines in the graph are explained in the figure legend	Taken into account: fixed (figure removed)
12497	14	21	2			Part of the ledgend is missing	Take into account. fixed (figure removed)
14939	14	21	2			legend is incomplete, missing several regions	Taken into account. fixed (figure removed)
5892	14	21	28	21	30	What does this mean? Poor people emit more if relocated in an urban area, middle income groups less than when dwelling in small towns and high income groups emit the same wherever they live? If this is the case, what do you want to point out here? Please either elaborate a little further why you give the information here or delete text.	Taken into account: The text has been rewritten.
14938	14	21	8	21	10	syntax is unclear; delete “than”?	Editorial. corrected
12498	14	22	2			Part of the ledgend is missing	Taken into account: fixed (figure removed)
14940	14	22	2			legend is incomplete, missing several regions	Taken into account: fixed (figure removed)
14942	14	22	20	22	24	Is this phenomenon evidence of a “leapfrogging” of sorts?	Editorial: text removed
14944	14	24	13	24	14	Perhaps surprisingly, the per-capita energy consumption of developing country cities does not appear much lower than that of developed country cities in Figure 14.16, in contrast to the statement here.	Noted and included
14943	14	24	7	24	10	The reference to “Asian” would appear to encompass East Asian, yet East Asian cities have higher than average per capita energy use according to Figure 14.16.	Noted
11665	14	24				The content of the text in 14.2.4 nearly overlaps with those of 5.5.3 (Consumption trends) and 5.5.4 (Embedded carbon in trade). While the related research results shown in 5.5.3 and 5.5.4 are reviewed in a balanced manner the text in 14.2.4 tends to be biased toward presenting particular research results.	Overlaps are acknowledged and will be removed. Cross-references will be used to guide the reader to the relevant sections. Efforts will be made to mitigate any residual bias in the text.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11666	14	24				The uncertainties of the consumption-based CO2/GHG emissions are not stated in the text. This is an important issue, and many studies pointed out these uncertainties. It has been acknowledged in the related literature that the consumption-based emissions highly depend on the data used, data coverage (geographical/sector/gas (energy-related CO2 only, or energy-related CO2+non-energy-related CO2 from industrial process etc, or GHG emissions including non-CO2) and aggregation and the methodologies. (e.g. Lenzen (2001), (Lenzen et al. (2004), Lenzen et al. (2010)). Reference: Lenzen, M. (2001) Errors in Conventional and Input-Output–Based Life-Cycle Inventories, Journal of Industrial Ecology, 4(4), pp. 127-148., Lenzen, M., Pade, L. and Munksgaard, J. (2004) CO2 Multipliers in Multi-region Input-Output Models, Economic Systems Research, 16(4), pp. 391-412., Lenzen, M., Wood, R. and Wiedmann, T. (2010) Uncertainty Analysis for Multi-Region Input-Output Models: A Case Study of the UK's Carbon Footprint, Economic Systems Research, 22(1), pp. 43-63.	Agreed - uncertainty of the consumption approach is a very important issue. This will be briefly acknowledged, however, detailed discussion (with references to the literature) may be better located in ch 5. where consumption approaches are first introduced.
10916	14	24				I thought this was an interesting and well written section. It has a nice graphical presentation of the results, showing many relevant aspects. What is the relationship with this section, and the similar sections in Chapters 4 and 5?	The close relationship with this section and 5.5 and 4.4 is acknowledged. Cross-referencing will be used to avoid duplication. The relationship between the different sections will be clarified.
10921	14	24				One regional aspect that was not captured in this section, but is worth including, is the trade in fossil fuels: Davis, S.J., Peters, G.P., Caldeira, K., 2011. The supply chain of CO2 emissions. Proceedings of the National Academy of Sciences 108, 18554-18559.	Accepted. This aspect will be included in the SOD.
11667	14	24	32	24	34	As for the purpose of the UNFCCC national inventory, the quotation of Glen P. Peters (2008) is not appropriate. The UNFCCC states the purpose of the inventory in its own website at http://unfccc.int/national_reports/items/1408.php.	Accepted.
11668	14	24	34	24	35	The text states that there are three emission accounting methods. However, the terriorial approach is almost the same as the production approach. Therefore, there are two emission accounting methods.	Although territorial and production approaches are similar, there are important differences highlighted in the literature. However, changes to the text required to avoid duplication with 5.5 and 4.4 will see the removal of this sentence
12499	14	24	31			Take out what is already in chapter 5 with cross references to this chapter.	Accepted. The close relationship with this section and 5.5 and 4.4 is acknowledged. Cross-referencing will be used to avoid duplication. The relationship between the different sections will be clarified.
7329	14	25	11	25	11	Many reference lacked even though you cited in texts, e.g. Manfred Lenzen et al. 2007	Efforts will be made to comprehensively cite relevant studies in the SOD.
7328	14	25	13	25	15	Peters et al. (2011) on Nature Climate Change updated these numbers up to 2010. doi:10.1038/nclimate1332	Accepted
11670	14	25	13	25	15	The quotation of Glen P. Peters, Jan C. Minx, et al. (2011) is not necessary as the sentence "Global CO2 emissions (CDIAC data, which includes fossil-fuel, cement and gas-flaring sources) grew…" only explains the statistic data of CDIAC.	Accepted. Associated paragraph will be removed in SOD.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11669	14	25	13	25	30	It should be mentioned clearly whether the emissions stated in this paragraph are production-based or consumption-based.	Accepted. Emissions stated are production-based. Associated paragraph will be removed in SOD.
11671	14	25	22	25	23	The quotation of Dabo Guan et al. 2008; Dabo Guan et al. 2009; Gregg et al. 2008 is not necessary as the sentence "East Asia has seen its production emission increase…the United States." only explains the statistic data of CDIAC.	Accepted. Associated paragraph will be removed in SOD.
10917	14	26	11			"largely drives this growth". Disentangling what drives the growth may be difficult. While trade has grown, the question is really what drives the growth in trade. It is perhaps worth mentioning that studies generally do not analyse what is driving the growth in trade (otherwise it might look like you are indirectly saying trade is the problem).	Accepted.
10918	14	26	23			A good reference here is Chakravarty, S., Chikkatur, A., Coninck, H.d., Pacala, S., Socolow, R., Tavoni, M., 2009. Sharing global CO2 emission reductions among one billion high emitters. Proceedings of the National Academy of Sciences 106, 11884-11888.	Accepted.
11672	14	26	20	26	29	The definition of "carbon footprint" is not clealy described. Also, it is not clear the relationship between the carbon footprint and the consumption-based emissions.	Definition of 'carbon footprint' will be provided with cross-reference to 4.4 or glossary cross-cut.
11678	14	26	30	26	37	Evaluation periods should be mentioned.	Accepted
11673	14	26	38	28	29	It seems that the text presents only the results using GTAP and CDIAC statistics. In terms of global estimations, other studies such as Nakano et al. (2009) using OECD and IEA statistics should be referred as well in a balanced way, because according to Sato (2012) and Homma et al. (forthcoming), large uncertainties on estimations of net emissions transfers are observed in many studies. Even if the same MRIO estimation method is used, it is widely recognized that there are large difference in results, as shown in Sato (2012). Furthermore, the uncertainties in GTAP data used in Peters et al. (2011) should be mentioned. Reference: Peters G.P., J.C. Minx, C.L. Weber, and O. Edenhofer (2011). Growth in emission transfers via international trade from 1990 to 2008. PNAS. M.Sato (2012), Embodied carbon in trade: a survey of the empirical literature, Centre for Climate Change Economics and Policy Working Paper No. 89. Homma et al. (forthcoming). Quantitative evaluation of time-series GHG emissions by sector and region using consumption-based accounting, Energy Policy	This is an important issue and will be addressed accordingly. We are still discussing the best description and format to present the uncertainty of consumption based accounting with Chapter 5. This will be covered in SOD (either in our chapter or chapter 5).
11674	14	26	38	28	29	Data source should be mentioned.	Mentioned in Figure caption, but will also be given in main-body text.
9128	14	27				As for abbreviation for Japan, the word "JAP" is used in the figure 14.18 and in the sentences in page 19 to 30. I would like to recommend using the abbreviation JPN or JAPAN instead.	Accepted.
9159	14	27				good figure	Noted.
9160	14	27				good figure	Noted.
14946	14	27	12	27	12	-“is” should be “was”, given that this is discussing 2004.	Accepted.
14945	14	27	5	29	27	may be able to save space here by cutting back on examples.	Accepted.
11676	14	27		29		It should be mentioned whether the evaluated CO2 emissions are energy-related CO2 emissions only or sum of energy-related CO2 and non-energy-related CO2 (from industrial process etc.).	Accepted.
11675	14	27	12	27	15	In the text, it says that North America is the largest net emission importer in 2004. As far as I see from Figure 14.18, Western Europe is the largest net emission importer (1072 Mt).	Accepted. Figure was revised without necessary changes being made in the text.
14948	14	28	21	28	23	This is a sentence fragment.	Accepted. Sentence will be revised.
14947	14	28	4	28	4	This sentence attributes 1366 MT CO2 to East Asia, whereas Figure 14.19 attributes 1266 MT CO2.	Accepted.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
9127	14	28	4			The growth of traded CO2 emissions of East Asia is 1266 MtCO2, while in the sentence which appears in page 28, the number is 1366 MtCO2.	Accepted.
9129	14	29				The changes from 1990 to 2008 include the effects of the collapse of the Soviet Union. The world trade increase accelerated in the 2000s. Therefore referring the growth from 2000 to 2008(?) is better than the period starts from 1990. The following paper mentions at this point. Hoshino, Y., Sugiyama, T., Ueno, T. 2010. International Comparison of trade embodied CO2 emissions, Journal of Japan Society of Energy and Resources 31 (4), 8-14 (in Japanese), http://www.jser.gr.jp/journal/journal_pdf/2010/journal201007_2.pdf , English Abstract can be downloaded from the following URL.. http://www.gispri.or.jp/english/symposiums/images110706/Dr_Sugiyama-2.pdf	This is an important issue. 1990 has been used as it is the base-year for the Kyoto Protocol. Reference will be given to the acceleration in world trade from 2000
8309	14	29	11			Correction: delete reference to intra-region traded CO2 emissions, "e.g. between US and Canada" between 1990 to 2008 as trade between those countries will only begin after 2013	Throughout this section, 'trade in CO2' refers to virtual transfers of CO2 associated with physical trade in products rather than monetary trades made within an emissions trading scheme. Some clarification may be required.
12500	14	29	2			Figure 1.7.b in Chapter 1 summarises this point. Consider to refer to this figure in order to save space.	Overlap between two figures acknowledged. Cross-reference will be given. Value-added by fig 14.19 will be considered.
12501	14	29	2			Figure 1.7.b in Chapter 1 summarises this point. Consider to refer to this figure in order to save space.	Fig. 14.20 and associated text to be revised in SOD
14949	14	29	28	31	8	This is the beginning of an interesting discussion. But is it relevant to include here, given that only two regions are represented in Figure 14.20? It would be better to treat topic this more comprehensively, including emissions intensity in addition to absolute emissions. This section could then be linked up with a discussion on trade.	Fig. 14.20 and associated text to be revised in SOD
10919	14	30				This is a nice figure. Is it possible to split the sectors into Primary, Secondary Energy Intensive, Secondary non-Energy Intensive, Tertiary and plot them as different colours? It would be interesting to see how the different types of sectors vary by region.	Fig. 14.20 and associated text to be revised in SOD. Consideration will be given to the visual categorisation of sectors.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14950	14	31	19			This figure needs further explication. For example, which time period does it cover? The caption and the figure should provide more information about the RCP pathways, etc. It would also be valuable to include information on AFOLU emissions in one of these figures.	Accounted for. The explanation is provided in a paragraph that was inserted previously to the figure, as follow: "Global estimates of changes during the period 1850-2005 in ecosystem carbon associated with land use and land cover change show that 65 GT have been released into the atmosphere (Lawrence et al., 2012; Pongratz, et al., 2009). These ecosystem carbon losses have been larger in South East Asia, East Asia, Sub Saharan Africa, and Latin America (Lawrence et al., 2012; Houghton, 2003; Hurtt et al., 2011; Pan et al., 2011; Pongratz et al., 2009), and were heavily influenced by the combined impact of land use changes, deforestation, and different agricultural patterns (Foley et al. 2011; G. Hurtt et al. 2011; P. J. Lawrence et al. 2012; Ramankutty & Foley 1999)."

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
5893	14	31	21	32	6	Please correct text and figure subscript. Wood harvest does not constitute a Land-use change. Wood removed during land clearing for other land uses than forestry is usually not considered "harvested". And cumulating harvests in a naturally re-growing system and terming the result "land use flux" without considering the regrowth is just false. Please check the sources and, if in doubt, consult a forester.	Rejected. The fraction of the carbon accounted as wood harvest from land clearing is variable and dependent on the coincident activities of land transformation and forestry. In many cases, especially in the historical period, the wood carbon harvested is zero. Following the pathway of carbon in CMIP5 Earth System Models only the fraction of carbon harvested for wood products is then transferred to product pools that have various decay times to release to the atmosphere. The remaining above ground carbon is either lost to the atmosphere through fire or remains in the ecosystem as litter and coarse woody debris. From a common sense point of view counting the harvest of regrowth carbon to landuse seems inconsistent, however the convention within earth system models is to keep the fluxes of land use separate from those of regrowth so that there is no double accounting for the regrowth flux. Hence a landuse flux from regrowth will appear as both a flux for the terrestrial ecosystem sink and a landuse flux giving a net residual flux of zero. The term where this apparent zero flux is resolved is in the total ecosystem carbon. There is continuing discussion within the community on what the landuse flux actually means as well as this issue of potential sinks that are lost from landuse activity. To keep the report consistent with the earth system conventions we therefore suggest continuing to include
10920	14	31				To include the trade in biomass carbon (C in wood products, C in crops, etc), then see Peters, G.P., Davis, S.J., Andrew, R., 2012. A synthesis of carbon in international trade. Biogeosciences 9, 3247-3276.	Rejected for the Agriculture section. This would be more suitable for the regional carbon trade section and is covered there.
5894	14	31				Why do you give the RCPs' land-use emissions here? This should be placed in chapters 5 or 11, delete here.	Rejected. Neither chapters 5 or 11 refer to regional patterns, which is the focus of this Chapter. Projections seek to portrait how RCP´s relate to regional mitigation opportunities and barriers.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14951	14	31	9			This discussion requires further context about the RCPs. Presumably this will be elsewhere in the volume. The text on p. 32 is written in some places as though it refers to a historical event rather than modeled pathways. The discussion seems very much in the details: is it possible to pull back a bit and distill some larger lessons and observations from the results of the modeling?	Accounted for. The figure on RCP´s was remade to make it clearer. A part of the section deals with historical data. Projections are contrasted against them. An explanation was included as to how RCP´s relate to regional mitigation opportunities and barriers.
7500	14	32	21	33	6	"Historical cumulative global wood harvest is estimated to be around 65Gt C (excluding slash) between 1850 and 2005 (Hurtt et al., 2006, 2011; Lawrence et al., 2012). Regionally the largest historical wood harvest amounts were in South East Asia, Sub Saharan Africa and North America (Figure 14.21). As a result of the historical increases in agricultural land and wood harvest, the cumulative global land use flux to the atmosphere between 1850 and 2005 is estimated to have been between 115Gt C (Pongratz et al., 2009; Lawrence et al., 2012) to over 150Gt C (Houghton, 2003; Canadell et al., 2007). Regionally, the largest historical land use fluxes were in South East Asia, Latin America, Sub Saharan Africa, and North America (Figure 14.21)". I don't know if the figure of 65 Gt C includes woodfuel and poles. The yearly average of 0.42 Gt C seems low. The estimated harvest in 2009 is 3.5 Gt C. It is difficult to believe some of the cumulative land use fluxes in figure 14.21.	Rejected. This is what the peer-reviewed literature shows.
15042	14	33	1	33	1	Although there is an item on sectoral issues for "low carbon development at the regional level", transport sector was not considered. Knowing that transport sector consumes most of fossil fuel in the world, it is recommended to be considered.	This is true but not something we can change easily at this stage (also given the tight page budget), also since there was no bullet for transport (but other sectoral issues). It is also not as clear as with the other 'sectoral' issues that the issues arising in the transport sector can usefully be discussed at the regional level. We will include a reference to this point and then point to the relevant sectoral chapter.
15043	14	33	8	33	9	"… there are, in principle. Different pathways available…"	Thanks
13607	14	33		47		I was rather surprised at how quantitatively heavy this section is. While on the one hand, the focus here is on 'regions', there is an appetite for the richness and details and insights afforded by case studies (to do with regions, countries or subnational geographic settings pertaining to certain regions). All this to say I would suggest more of a balance between these quantitative / econometric studies and some insights from case studies (which tend to come from 'real world' examples of attempts at implementing, encouraging, etc. GHG emissions reductions -- there are some rich, insightful qualitative studies which I think are important -- see references throughout (U of Sussex work; various chapters in Ockwell and Mallett (eds) 2012; Haselip et al. 2011; etc.). (some are noted on page 50-51 but suggest more 'real estate' be allotted to these other types of studies / approaches and especially their insights)	The chapter has cut down on the quantitative section and includes, where relevant, regional case studies (but there are not that many that can be drawn on in the peer-reviewed literature). Peer-reviewed work by Ockwell refers to national-level low carbon technology transfer, which is useful but does not relate particularly to Agriculture.
14952	14	33	3			– It would be useful to expand this opening subsection by one or two paragraphs to provide some further framing for the discussion that follows.	Now restructured and includes a discussion.
6791	14	33	1	85	7	It may be helpful to shorten and merge contents under sections 14.3 and 14.4. This move may be helpful to reduce the number of pages and yet retain the flow. The revised section 14.3 may be further renamed to appropriately reflect the revised contents.	We have merged the contents of 14.3 and 14.4 as suggested.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12502	14	33	19			Make sure that this secion in line with the findings in the IPCC SRREN report, or point out why there are differences. New information, disagreements, etc.	Will consider in the SOD
15950	14	34				This is now rather old data, and much has changed in the cost of both wind and pv, and no doubt gas as well; and rather misleading; as it doesn't take into account project timelines, water footprint, subsidies, etc.	Will look for more updated information.
17387	14	34	19	34		"Table 14.3: Costs of electricity generation" does not seem to be very clear or complete, though cited from the source of the IEA report. As already indicated in the previous page (33 of 166), " Local costs are country-specific and may vary widely. They depend on two main features of a country or region." , however this table does not give any information related to such mentions, that is, one is unable to understand if the numbers are world averages for a certain period or specific to a particular region for a given time ? In addition, if the data represent an average across the world, then they are not so much meaningful enough. Anyway this table is a bit confusing and dissociated from the texts or arguments there in the narrative. Still more, the numbers in the first row look a little strange or unusual, one would wonder if they refer to the unit capacity of that kind of technology, if so, then they are not typical or understandable enough. For the 7th row, the unit "year" should not have been omitted in that case.	Table will be dropped.
14954	14	34	27	35	34	– This discussion could be streamlined with references to chapter 7, focusing only on the regional elements.	Yes, will do so.
14953	14	34	8	34	26	This discussion is useful context, but seems likely to be duplicative with chapter 7 and could be eliminated to save space.	Thanks, will consider cutting it.
6764	14	34	9		18	Renewable energy, such as solar PV and wind power generation, has an unstable output and their energy density is low. Therefore, according to the regional peculiarity, the power grid expense accompanying extensive introduction is required. DeCarolis and Keith (2006) [1] published a peer-reviewed detailed article on the economics of large-scale wind power which included the costs of long-distance electricity transmission, storage, and gas turbines to supplement the variable wind power output in order to meet a realistic time-varying load. [1] J.F. DeCarolis and D.W. Keith (2006) The economics of large-scale wind power in a carbon constrained world, Energy Policy 34, p. 395, column 2, lines 9-20.	Thanks for the reference.
6765	14	34	9		18	The evidence of "carbon cost at $30 per tonne CO2" is not clear. The reference must be described .	Now provided.
5895	14	34	9	34	18	Neglecting the costs of building a power grid puts energy generating options that work in small, "de-centralized" units at a disadvantage. By omitting grid construction costs coal, nuclear and gas are favored, wind and solar hindered. The same holds true for all other infrastructure - how do you get gas and coal to the e.g. CHPP?	A point that we will mention.
15951	14	34	9		18	This statement a) uses very old data; and b) makes its analysis on very incomplete information about the real issues facing investors in the power sector - among others, fuel price volatility, water consumption, total quantity of the capital required, existing subsidies which will be triggered at cost to the utility, etc. Suggest it be caveated or deleted.	Will clarify point in revision.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6766	14	35	10		14	Renewable energy, such as solar PV and wind power generation, has an unstable output and their energy density is low. Therefore, according to the regional peculiarity, the power grid expense accompanying extensive introduction is required. DeCarolis and Keith (2006) [1] published a peer-reviewed detailed article on the economics of large-scale wind power which included the costs of long-distance electricity transmission, storage, and gas turbines to supplement the variable wind power output in order to meet a realistic time-varying load. [1] J.F. DeCarolis and D.W. Keith (2006) The economics of large-scale wind power in a carbon constrained world, Energy Policy 34, p. 395, column 2, lines 9-20.	Thanks for this.
14955	14	35	35	38	32	– The urbanization discussion is important but presumably belongs in Chapter 12 and could be deleted here to save space. Discussion of the regional elements of urbanization may be appropriate here.	Taken into account: The text has been shortened. Part of the description of urbanization trend has been moved to Chapter 12.
15044	14	35	42	35	45	The connection is missed between "… dioxide emission." and "Because traditional…".	Noted
10922	14	38	34	38	50	This paper gives similar numbers, but for GHG which may be quite relevant Hertwich, E.G., Peters, G.P., 2009. Carbon Footprint of Nations: A Global, Trade-Linked Analysis. Environmental Science and Technology 43, 6414-6420.	Noted
14956	14	38	33			Consumption. This section should be elevated in the subchapter hierarchy; consumption is not a sector per se. Also, some of this discussion seems generic, rather than regionally-focused. Should it perhaps be relocated to another chapter of the report (e.g., chapter 11)?	Take into account: Text shortened. You are not answering the first part of the comment
10923	14	39	9	39	35	This focus on food means you miss about 80% of household impacts, Hertwich, E.G., Peters, G.P., 2009. Carbon Footprint of Nations: A Global, Trade-Linked Analysis. Environmental Science and Technology 43, 6414-6420.	Taken into account: text removed
10924	14	39	9	39	35	The allocation between meat and non-meat depends on the metric used. You have used GWP100, but others are equally defendable. See Ch8 WGI	Taken into account: text removed
12487	14	4	1	4	5	Please rewirte this paragraph in a clearer language to bring through the essens. Suggestion: It is important to define regions based on socioeconomic issues for two distinct reasons:	Thanks, will implement.
2269	14	4	1	87	31	Once more, this Chapter is useless because there is no evidence that increases in greenhouse gases have a harmful effect on the climate. Again it is strange that the emphasis is on emissions, when the supposed effects are due to atmospheric concentrations	The link between emissions and concentrations is taken up in other chapters (and other working groups). For us, the focus of policy influence in terms of mitigation is on affecting emissions of various forms.
12488	14	4	22	4	37	This part can be shortened considerably. Please focus the excecutive summary on results rather than text book text.	Now shortened.
14913	14	4	23	4	37	this is one of the richer paragraphs in the Executive Summary (and the chapter), but the point made here is not easily found in the underlying text within the chapter.	Now the link between ES and chapter is made more clearly.
14914	14	4	24	4	24	Should this say "low income countries in Sub-Saharan Africa" or is MNA also included? As written, it seems to deviate from the regional framework that is set out in the chapter.	Yes, it should say low-income country in Sub-Saharan Africa.
8077	14	4	35	4	37	it is unclear whether the statement related to domestic finance only relates to developing countries or to all countries	We now have very little discussion of finance where we mostly refer to chapter 16 (esp. When it comes to concrete numbers).
14915	14	4	37	4	37	The identification of the degree of agreement and evidence in the conclusions presented in the Executive Summary seems useful.	Thanks

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
12489	14	4	38	4	46	This part can be shortened considerably. We suggest that you spend most of the excecutive summary on results rather than text book text.	Now done. Thanks for pointing this out.
14916	14	4	43	4	46	This sentence is important and should be more salient in the Exec Summary.	Will address this in the SOD.
14909	14	4	1			The Executive Summary should be revised to bring forth more strongly a narrative thread for this chapter. The existing text provides some good material for that, although it could be rewritten in a somewhat tighter and more direct style. For example, the opening sentence is particularly dense and somewhat unwieldy, and should be revised.	We have tightened the ES.
14910	14	4	1			What is the overarching goal of the chapter?Why do regions matter? Is this just a clever way of discussing countries without naming them?	Now clarified. Regions matter as they are different (in this sense it is an easier way to talk about them than about individual countries) and regional cooperation can matter. This is now clarified.
14911	14	4	1			The overall frame of regional heterogeneity vs regional cooperation seems useful.	Thanks.
14912	14	4	1			Need to distinguish what belongs here from what belongs in Chapter 4. To what extent are these issues of development vs. purely regional issues? Another way to think about this is to consider the question: is there something about an OECD country in East Asia that is characteristic of East Asia rather than characteristic of OECD countries? Or is there something characteristic of a European country with a relatively low income per capita that stems from its location in Europe rather than its place on the per capita income distribution?	This is an interesting point. We will cover it in the sense that in some (geographic) regions the scope for regional cooperation appears to be much larger than in others. Being close to an area of deep regional integration (such as Europe) helps to foster cooperation even among countries that are economically not so similar.
14958	14	40	15	40	27	The opening paragraph should be replaced with a reference to chapter 11.	Accounted for. It begins with a reference to Chapter 11.
5896	14	40	15	40	17	Again: please don't confuse agriculture and forestry with land-use change.	Noted. Precision is made within the text
10925	14	40				The allocation between CO2, CH4, and N2O depends on the metric used. You have used GWP100, but others are equally defendable. See Ch8 WGI	Accounted for. This paragraph was deleted.
10926	14	40				This whole section seems to depend on one reference, Smith?	Accounted for. The section was much reduced and relience is made on Ch. 11. Therefore the reference to Smith is no longer as important.
2344	14	40		47		In the "Agriculture" section, authors have perfectly elaborated their arguments to prove how regional disparities causes GHG emission under food demands of growing world population. However, concerning the issue of over pages, they can choose some selected figure for supporting main argument.	Accounted for. The page was reduced to 2 pages
14957	14	40	14			This section should be consolidated with chapter 11. Much of the material in here could be replaced with references to chapter 11. The regional issues should be drawn out more strongly in what is retained here.	Accounted for. The section was rewritten
10221	14	41		42		it would be more comprehensive if the same regions used inthe rest of the chapter (including the same abbreviations/acronyms) were also used in this figure	Accounted for. Abbreviation/Acronyms have been harmonised along the Chapter, while in its introduction the rationale for region definition is included.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
7419	14	41	1	41	11	The cited (Smith et al, 2007) results on GHG emissions growth in the Middle East needs cross confirmation. The argument that the increase in emissions for this region is a result of growth in demand for livestock products is not plusible given that a lot of the livestock products consumption is met from imports and not domestic production.	Accounted for. The statement was deleted, as the text was much reduced and relies on Ch. 11
10452	14	41	12	41	27	This section of Agriculture does not contribute much to the chapter and can be removed	The subsection aims at presenting regional mitigation opportunities and barriers in a sector that importantly contributes to carbon emission and has an important place in adaptation/mitigation development alternatives. RCP projections are presented in order to draw those opportunities and barriers regions may face.
14773	14	42		45		The discussion on these four pages relies entirely on IIASA's study that is more than 10 years old. It is necessary to provide a balanced view of alternative assessments of this kind.	Accounted for. This paragraph and reference were deleted.
15045	14	42	19	42	21	To use corn to produce ethanol is really a bad practice and it leads to a land misuse.	Accepted. This sentence was deleted
14959	14	42	19	42	33	This paragraph could be replaced with a reference to chapter 11.	Accepted. The paragraph as shortened and reference made to Ch. 11
15046	14	42	23	42	26	It is not the case if the correct feedstock is used. It is not the case of corn.	Accepted. This sentence was deleted
15047	14	42	30	42	33	Why not sugar cane?	The paragrafh was deleted
14960	14	42	34	42	43	The regional implications could be drawn more strongly in this paragraph, or the paragraph eliminated.	This paragraph was deleted
10453	14	42	7	42	33	All lines from 7 - 33 can be removed and only regional comaprisions need to be included	Accounted for. The page was reduced to 2 pages to focus on
5899	14	43		45		Please consider combining both tables.	Accounted for. Tables were deleted
10222	14	44				category NS=not suitable, is not shown in the graph	Accounted for. Figure was deleted to avoid overlap with Ch. 11
10223	14	44				category NS=not suitable, is not shown in the graph	Accounted for. Figure was deleted to avoid overlap with Ch. 11
5898	14	44				Please amend figure subscript: what does "with IR" stand for?	Accounted for. Figure was deleted to avoid overlap with Ch. 11
10224	14	46				the symbol for South America should be dark grey since change in productivity negative (-5)	This is the original figure. Can we modify it? Editorial - edit to be completed prior to publication (Alba)
3302	14	47	29	48	11	This short section could be eliminated, but keep the longer section 14.3.3.1, which is more directly relevant to chapter's regional focus.	Accepted - text in this section has been revised
13608	14	48	24	48		suggest a definition for technological capabilities (e.g. a region, firm, organization's, etc. ability to contend with technological change) or an adaptation is innovation capabilities See Ockwell (2012) policy brief By “innovation capacities” we mean the technological capacities to adopt, operate, adapt and innovate around new technologies within specific local contexts. p. 2 http://steps-centre.org/wpsite/wp-content/uploads/Low-Carbon-Development-briefing.pdf	Taken into account -definitional issues such as this one are being coordinated across multiple chapters.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
13609	14	48	25		26	how are number of researchers being defined? 'hard / natural scientists and engineers'? Suggest noting the distinction between BERD and GERD as that would suggest that relevant policy levers will change depending on whether or not business or govt agencies are key avenues for R&D	Taken into account - will clarify definition according to original source.
14961	14	49	2			This is an interesting figure, and a key figure for the leapfrogging discussion, but its implications are not discussed in any detail in the chapter (though they are in the Executive Summary). It would be very useful if it could be discussed further. Also, there are a few issues with the figure including as it relates to the regional discussion in the chapter: (1) Australia and New Zealand appear in the figure but are not represented in the legend. (2) Japan is treated in the figure as part of East Asia rather than as part of JPAUNZ. (3) Latin America (LAM) and Sub-Saharan Africa (SSA) are each represented by only one country, raising questions about whether the figure can claim to represent those regions (4) Middle East and North Africa (MNA), South Asia (SAS), and Southeast Asia and Pacific (PAS) are not represented. Is there a way to broaden the representation of the figure, perhaps by using measures for which data would be more widely available?	Taken into account - figure has been revised to make sure legend is accurate and regional groupings are consistent with rest of chapter. Due to data limitations some regional data are not available. We now discuss this in more detail in the chapter.
14962	14	49	6	50	12	Should the subnational discussion be relocated to Chapter 15?	Accepted - the subnational discussion has been deleted and given to chapter 15 for consideration of inclusion.
3669	14	49	6	50	12	Delete or massively reduce to save space as overlapping with chapter 15.	Accepted - the subnational discussion has been deleted and given to chapter 15 for consideration of inclusion.
4796	14	5	15	5	18	Personnaly I am in favour of the ETS as an appropriate instrument to mitigate climate change. But for instance the EU ETS only incorporate some sectors (i.e. not all), and this scheme could be improved in order to reach the targets, even ambitious ones.	The problems of EU ETS are discussed in detail in the SOD
12490	14	5	20	5	22	Include one good example	Will look for one.
5878	14	5	26	5	28	Cooperation does not necessarily mean tranfer of sovereignity. Please re-phrase sentence or delete it.	Ok
12480	14	5	28	5	31	Please consider this finding again. Since the intended mitigation objective will be reached per definition in a cap-and trade system, as long as the cap is set, such as in ETS. The challenge might be related to other aspects of the policy measure, such as the carbon price.	Will reconsider this finding as suggested.
12491	14	5	28	5	31	Please consider this finding again. Since the intended mitigation objective will be reached per definition in a cap-and trade system, as long as the cap is set, such as in ETS. The challenge might be related to other aspects of the policy measure, such as the carbon price.	Will reconsider this finding as suggested.
6603	14	5	28	5	31	Important messege for policy makers. Should not be deleted.	Will retain in.
14917	14	5	29	5	30	It is not clear from the chapter text that “the EU ETS has so far not been as successful as anticipated in actually achieving the intended mitigation objective.” The chapter does not really discuss anticipation of what the EU ETS might achieve. The EU ETS was a pilot program in many respects, and therefore provided a natural -- and useful, under principles of adaptive management -- laboratory to learn about how to design a cap-and-trade program to address carbon dioxide emissions.	Yes, this is an advantage of the EU ETS, but it was not just meant to be an experiment but a tool to achieve actual mitigation. But we will emphasize these issues more in the revised version.
4797	14	5	38	5	43	It should be noted that European Union undertook a climate-energy package till 2020 with associated targets (20% energy efficiency, 20% renewables, aned at least 20% CO2 emission reduction)	This is discussed now.
12492	14	5	38	5	40	Please rewrite or delete , "are to date, "	Will consider.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
7418	14	5	5	5	13	Emphasize the mismatch in terms of scale between mitigation and adaptation. Modeling results related to mitigation are usually at high level of geographical and sectoral aggregations (chapter 6) whereas adaptation is essentially at local and sectoral levels. There is a real challenge for the IAM models to downscale to the sectoral and local levels and clear difficulties for the adaptation folks to aggregate to the IAM regional groupings.	Good point. Will mention in next version.
13610	14	50	1		9	See comment 22 which I think may also be of interest (Abdel Latif 2012)	Rejected - not clear what this comment refers to (comment 22 where?)
14963	14	51	3	51	16	Should the sources in this paragraph be integrated into other chapters (e.g., Chapter 7) rather than being presented here?	Taken into account - coordinating with other chapters dealing with simliar topics to avoid overlap.
14964	14	52	8	52	20	The text should elaborate on the investment need differential in Table 14.6. This seems like an important issue for the chapter to cover, yet it is not really discussed in any detail here.	Taken into account -will be included as data and available literature permits.
14965	14	52	21			This general discussion of climate finance should be integrated into chapter 13.	We cut the discussion and largely refer to chapter 16 for financy issues.
13611	14	55				the date says 2013	Noted
15048	14	57	7	57	8	If NAMAS for transport sector are the most frequent actions for mitigating GHG emissions, why the transport sector is not considered elsewhere?	Accepted. Sectoral distribution of NAMAs referred to Ch. 15
14966	14	57	7	57	14	This sectoral distribution of NAMAs probably belongs in a different chapter (15?)	Accepted. text shortened accordingly.
14967	14	58	23	58	25	The mention of CDM appears to be an editorial comment. What is meant by this? This should be explained further or deleted.	Accepted. Deleted as indeed not belonging into this section.
14968	14	59	29	59	47	Suggest breaking out the different categories mentioned here using bullets to improve readability.	Rejected. Section wille shortened substantially. Clarity is achieved without bullet points.
10928	14	59	33	59	34	Sure, the transport will have a climate impact, but perhaps the trade reduces impact? The idea of trade is to allocate production more efficiently. While the current allocation may not be optimal for climate, with policies in place it may become optimal. Just because trade has transport, does not mean trade is bad for the environment.	Taken into account. This is a demand for better clarification. What is meant is not that trade is harmful since it involves transport, but that transportation is an additioal component contributing to the environmental impact of trade.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10929	14	59	35	59	36	This paper disucsses using regional trade blocks for policy will reduce leakage Peters, G.P., Hertwich, E.G., 2008. CO2 Embodied in International Trade with Implications for Global Climate Policy. Environmental Science and Technology 42, 1401-1407.	Taken into account. The reference seems to be more related to page 61. However, the discussion of leakage will be shifted to Chapter 5. A remark: It is true that leakage is smaller if there are less countries in the rest of the world. Figure 3 in the paper does not depict leakage but only emissions embodied in trade. Leakage would be those emissions i the rest of the world that are due to climate policies of the EU. Leakage can occur even if the emissions embodied in imports are nil. If an exporter of carbon intensive goods, reduces its exports as a response to climate policies and if the importer then increases its emissions to replace imports by domestic production, this is leakage. Thus, the results of the paper cannot be used to support this argument.
15049	14	59	6	59	6	It was not clear how transport systems are mentioned if no emphasis in these systems is considered along the text (item 14.3).	Taken into account. Transport systems will not be mentioned here.
9095	14	59				it should review the barriers of Regional Cooperation and Mitigation and indentify key factors.	Taken into account. The review is the subjetc of the remainer of Section 14.2, but key factors can be mentioned here
4798	14	6	32	6	34	I am not sure of this statement. Could you please provide evidence of this sentence (in particular effect of ETS vs taxes)	Will discuss in more detail
14918	14	6	8	6	9	It is helpful that the introduction begins with comparison to AR4	Thanks
5879	14	6	38	7	17	Section can be deleted - in my opinion, talking about what you want to show instead of presenting this is a waste of space. Instead, provide readers with a concise summary.	Yes, now streamlined.
12481	14	60	14	60	15	It is not necessarily a problem that the ETS do not cover all GHG emissions, if the other emissions are covered by other policy instruments. In many cases it is more important to regulate emissions by other instruments. Examples are Phase-out schemes of CFC as in the Montreal Protocol. Direct regulation of methane emissins from landfills are in place in many countries. The ETS also covers in some cases other GHGs than CO2, e.g. some European countries have opted in N2O in the ETS.	Taken into account. Wording is adjusted.
12503	14	60	14	60	15	It is not necessarily a problem that the ETS do not cover all GHG emissions, if the other emissions are covered by other policy instruments. In many cases it is more important to regulate emissions by other instruments. Examples are Phase-out schemes of CFC as in the Montreal Protocol. Direct regulation of methane emissins from landfills are in place in many countries. The ETS also covers in some cases other GHGs than CO2, e.g. some European countries have opted in N2O in the ETS.	Taken into account. Wording is adjusted.
6767	14	60	14		22	I agree these probrems with existing trading systems.	Accepted.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10036	14	60	14	60	22	This part should be kept in SOD. Market-based mechanism such as emission trading has several problems. Volatility of emission permit prices affects volatility of product prices as evidenced by fluctuating price developments in the EU-ETS. Therefore, the market-based policy tools of cap-and-trade cannot provide credible incentives for the technological change, as described in (Montgomery, 2005, abstract) and (Baldursson, 2009, page29). These literatures are listed in the No62 line of this table. In addition, CO2 leakage caused by the implementation of the ETS happened actually through transfer of industry from one country to others. Market mechanisms at least under Kyoto-like international scheme, where the condition of all countries' meaningful participation is not met, does not work well, as shown in (Rosendahl, 2011, abstract), (Aichele, 2012, page336), and (Peters, 2011, page1). These literatures are listed in the No50 line of this table.	Accepted.
7420	14	60	23	60	33	Please also reference the literature pointing to problems related to using border tax adjustment to fix the carbon leakage problem, particulary in relation to WTO and the UNFCCC principle of common but differentiated responsibilities.	Rejected. WTO issues are discussed in Chapter 13 and we refer to that in the chapter.
10932	14	60	23	60	24	Can you reference this? My reading of the literature would suggest that environmental legislation is a minor factor in location decisions.	Taken into acount. But it was not said that this effect is strong.
12482	14	60	44			This Box may be overstating the effect of carbon leakage, when stating in the first line that carbon leakage may fully offset regional climate policies. It is important to note that carbon leakage issues is not only related to the market prices . Some industries will prefer to stay in their original country due to other factors, such as competence, stable political situation etc. Please also consult other studies that have investigated this, an example might be : Vista Analyse Report, 2012-06.	Taken into account. Systematic treatment of leakage will be discussed in Chapter 5 in the SOD.
12504	14	60	44			This Box may be overstating the effect of carbon leakage, when stating in the first line that carbon leakage may fully offset regional climate policies. It is important to note that carbon leakage issues is not only related to the market prices . Some industries will prefer to stay in their original country due to other factors, such as competence, stable political situation etc. Please also consult other studies that have investigated this, an example might be : Vista Analyse Report, 2012-06.	Taken into account. Systematic treatment of leakage will be discussed in Chapter 5 in the SOD.
10933	14	60	44	62	8	There are different ways of defining leakage, and the choice taken here is a CGE approach (which is indirectly critiqued). For a more detailed discussion of ways of defining leakage, the following references are of use: Peters, G.P., 2010. Managing Carbon Leakage. Carbon Management 1, 35-37.; Peters, G.P., Hertwich, E.G., 2008. CO2 Embodied in International Trade with Implications for Global Climate Policy. Environmental Science and Technology 42, 1401-1407.; Peters, G.P., Minx, J.C., Weber, C.L., Edenhofer, O., 2011. Growth in emission transfers via international trade from 1990 to 2008. Proceedings of the National Academy of Sciences 108, 8903-8908.	Taken into account. Systematic treatment of leakage will be discussed in Chapter 5 in the SOD. We used the definition of leakage used by UNFCCC and by IPCC. Definition ssues are moved to Chapter 5.
10931	14	60	6	60	22	This paper is a good reference for parts of this paragraph Peters, G.P., Minx, J.C., Weber, C.L., Edenhofer, O., 2011. Growth in emission transfers via international trade from 1990 to 2008. Proceedings of the National Academy of Sciences 108, 8903-8908.	Taken into account where appropriate.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
10934	14	61	33			A better refernece for this is, Peters, G.P., Minx, J.C., Weber, C.L., Edenhofer, O., 2011. Growth in emission transfers via international trade from 1990 to 2008. Proceedings of the National Academy of Sciences 108, 8903-8908.	Rejected. Why is a simple input-output analysis better than a structural econometric model that uses instrumental variable techniques to correct of endogeneity bias? Since we are interested in the effects of climate policy, Peters et al., 2011, is not the appropriate reference. Systematic treatment of leakage will be discussed in Chapter 5 in the SOD.
14969	14	61	40	62	6	This paragraph should also acknowledge that leakage would be mitigated if the major economies (and preferably all or nearly all economies) were to place caps on emissions. Similarly, the implementation of NAMAs in a broad range of countries could help to reduce the risk of leakage, depending on the design of those NAMAs.	Taken into account. You suggest to rephrase line 7 and 8, which can be done. However, the discussion of leakage issues is moved to Chapter 5.
10935	14	61	47			A paper taking up the same issue from a quantitative viewpoint is Davis, S.J., Peters, G.P., Caldeira, K., 2011. The supply chain of CO2 emissions. Proceedings of the National Academy of Sciences 108, 18554-18559.	Taken into account. Systematic treatment of leakage will be moved to Chapter 5 in the SOD.
18672	14	62				Page 62: So far, regional policy initiatives have been rare.	Rejected. Comment unclear.
12164	14	62				My suggestion is to remove the Table 14.8, after all, this information or compilation of analyses, for many, will look like contradictory and inconsistent.	Rejected. The commentator does not make clear why the table is inconsistent; it should thus be retained.
14971	14	62	14	62	14	It is unclear why the WCI is included as a regional initiative, but the Regional Greenhouse Gas Initiative in the Northeastern U.S., is not. Is it because the WCI is transnational (including, as it does, Canadian provinces)? Query whether the WCI belongs in Chapter 15, as arguably the RGGI program does. (See note above on line 9.)	Rejected. WCI is clearly regional, as spanning Canada and the US, and thus in the scope of Ch. 14
8310	14	62	15			Re: WCI…included several states in the US and Canada, please add "provinces in" before Canada	Accepted.
14972	14	62	21	62	24	This discussion should refer to Table 14.9.	Editorial team to take into account
14973	14	62	25	65	24	Suggest using subheads for each regional initiative described. Also, does the APP really belong here? Why select the APP as distinct from one of the other regional initiatives described in Table 14.9? As noted on p. 65 (lines 25-30), the EU ETS is not truly comparable with the WCI and the APP.	Rejected. APP has been included because it is clearly a regional initiative. Its different (and much weaker) character is clearly described in the Table.
14974	14	62	27			See note above about WCI. Also, it seems strange to include the APP here, as it is a much different sort of partnership than the other two regulatory programs (EU ETS and WCI). As Table 14.9 notes, there are many other such partnerships.	Rejected. APP has been included because it is clearly a regional initiative. Its different (and much weaker) character is clearly described in the Table.
6126	14	62	27			Asia-Pacific Partnership on Clean Development and Climate (APP) has turned in July 2010 into Global Superior Energy Performance (GSEP). Paticipating countries now increased to 24 including Germany, France and the UK. Decision making is decentralized way (unchanged since APP (Okazaki et al. 2012)). For citation Okazaki, T., Yamaguchi, M., Watanabe, H. Ohata, A., Inoue, H. Amano, H. (2012), Technology Diffusion and Development. In: Climate Change Mitigation, A Balanced Approach to Climate Change. M. Yamaguchi, (ed.), Springer, London pp. 179-221.	Accepted. Text and reference added.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14970	14	62	9	62	10	– It seems worth reiterating the operating definition of “regional” here, as there are many levels of regional cooperation processes (from sub-national within a country to transnational sub-national efforts, to supra-national efforts).	Rejected. Given the previously clear definition and in order to save space, there is no need to reiterate the definition here.
12505	14	62	9			It is relevant to include cooperation such as the Convention on Long-range transboundary air pollution (LRTAP). Mitigating air pollution might in several cases lead also to mitigation of climate change.	Rejected. LRTAP has actually increased climate change, by reducing the aerosol load over Europe. Air pollution only contributes to reduction of climate change if it addresses blackcarbon and tropospheric ozone. As these are not yet addressed in cross-national cooperation, the issue should not be covered here.
6127	14	63	22	63	23	Reduction estimate figures are ambiguous, i.e.from when to when? In page 51 of Chapter 10, estimate is for the period of 2005-2008.	Accepted. Text clarified to refer to pilot phase 2005-2007.
6128	14	63	23	63	23	Add after "(Anderson and Di Maria, 2011)", though these figures are rather rough because of the impossibility of knowing counterfactual BAU emissions (Ellerman et al. 2010). For citation, Ellerman AD, Convery FJ, de Perthuis C (2010) Pricing carbon—The European Union emissions trading scheme. Cambridge University Press, Cambridge.	Accepted. Text adjusted accordingly
14975	14	63	32	63	35	This passage makes a key point. The discussion of the EU ETS should include the general point that price volatility and investor uncertainty tends to be increased by the EU ETS’s practice of setting relatively short (5-year) commitment periods. The economics and policy literature supports the principle that creating longer commitment periods can help to create more policy certainty and therefore greater investor certainty. These tendencies facilitate a lower and less volatile price regime. See, for example: -William Blyth, Richard Bradley, Derek Bunn, Charlie Clarke, Tom Wilson, Ming Yang, Investment risks under uncertain climate change policy, Energy Policy, Volume 35, Issue 11, November 2007, Pages 5766-5773, ISSN 0301-4215, 10.1016/j.enpol.2007.05.030. -Ming Yang, William Blyth, Richard Bradley, Derek Bunn, Charlie Clarke, Tom Wilson, Evaluating the power investment options with uncertainty in climate policy, Energy Economics, Volume 30, Issue 4, July 2008, Pages 1933-1950, ISSN 0140-9883, 10.1016/j.eneco.2007.06.004.	Taken into account. Relevant comment, but should refer to the generic discussion of trading schemes in Ch. 15, as it is not unique to the EU ETS.
6768	14	63	37		42	Although there is a description that higher shares of auctioning are not jeopardizing competitiveness, this concrete evidence is unknown and it should be deleted. And more, there is a reveiw that analyzed the effects of all-auction-approach in Australian ETS by Paul Simahuser [1], executive of Infrasture division at Babcok & Brown Limited. [1]Paul Simshauser On Emission Permit Auction vs. Allocation and the Structural Adjustment of Incumbent Power Generators in Australia Original Research Article The Electricity Journal, Volume 21, Issue 10, December 2008, Pages 30-41	Rejected. This comment relates to the generic design of trading schemes, and should thus be covered by Ch. 15. As the Australian auction has not yet been implemented, empirical eveidence for the assertion made by the commentator does not exist.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6129	14	64	17	64	19	The text desribes as "Most of this literature concludes that the EU ETS is not generating price signals high enough to mobilize renewable energy and energy efficiency investments and thus specific support policies are justified". However, there are two points worth for attention. First, especially for energy efficiency, this may not be based on solid evidence. As well known among experts, there are large rooms for energy efficiency improvement even at a negative cost. Main barriers for those potentials not being materialized are the lack of information, people's irrational behavior etc. Second, whether a permit price is not high enough to mobilize renewable energy has nothing to do with whether the policy (low permit price of EU ETS) is relevant or not. By reading through this paragraph, readers may have impression that low carbon price may not be appropriate. Suggest rewriting this sentence.	Rejected. The text coveys clearly what is written in the quoted literature. The commentator should be invited to suggest literature supporting his statement.
6769	14	64	21		37	Competitive implications of mandatory cap and trade schemes can be teoretically softened by border tax ad j ustments or benchmarks. It is only theoretical view to the last, and you should emphasize that these would have small effects in fact as described. As for border tax adjustments, Eichenberg[1] pointed out three of the primary complaints raised concerning BTAs for the costs of GHG regulations as follows; (1) that an efficient methodology would be almost impossible to achieve, resulting in reduced economic efficiency, unreasonable transaction costs, and the potential for widespread systemic fraud, (2) that BTAs for greenhouse gases would not be in conformity with various international trade regimes that favor free trade, primarily those of GATT and the WTO, and (3) that BTAs are politically destructive because of their association with protectionist trade policies and their potential to destroy delicate negotiations toward cooperation on GHG emissions reductions. [1]http://digitalcommons.law.ggu.edu/gguelj/vol3/iss2/3/	Taken into account. Discuss within writing team whether BTA discussion should be moved to Ch. 13 where trade issues are discussed in depth, or to Ch. 15, and take reference into account there.
10037	14	64	21	64	28	This part should explain whether BTA or benchmark method work well or not in the real economy. Even if they are theoretically effective, questions about the effectiveness are raised, as described in (Carolyn, 2012, page214) and (Wakabayashi, 2007, page36 and 40). <Reference> [1] Carolyn Fischer and Alan K. Fox (2012). Comparing Policies to Combat Emissions Leakage: Border Carbon Adjustments versus Rebates, Journal of Environmental Economics and Management Volume 64, Issue 2, Pages 199-216. Available at: http://www.sciencedirect.com/science/article/pii/S0095069612000186 [2] Wakabayashi et al. (2007). A Review on Effectiveness of Emissions Trading Schemes: Empirical Evidences of Their Implementation, No.Y06010	Taken into account. Discuss within writing team whether BTA discussion should be moved to Ch. 13 where trade issues are discussed in depth, or to Ch. 15, and take reference into account there.
14976	14	64	39	64	41	This sentence (“By 2008 [the WCI] looked like it was set to be the second largest trading system in the world, behind only the EU-ETS, due to a rise of the relevance of mitigation policy under the Obama administration.”) is factually incorrect as written; the Obama Administration did not commence until January 2009 and was not the reason for the momentum generated in 2008 (before it was evident President Obama would be elected). Suggest deleting this sentence.	Accepted. Reference to 2008 indeed flawed, now reads 2009.
14977	14	64	44	64	45	The statement that “generally the WCI was to take the role as testing ground for a federal cap and trade system” is too strong. While proponents of the WCI may have had that intent, it was not clear in 2008 that the WCI would be implemented before a federal cap-and-trade system could be adopted. Suggested text: “It seemed possible that the WCI could play a role as a testing ground for a federal cap and trade system.”	Accepted. Wording suggested by commentator is appropriate and has been accepted.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14978	14	64	46	64	46	"Federal cap and trade had been defeated in . . . the US . . ." This statement is technically incorrect. Federal cap and trade legislation passed the U.S. House of Representatives and was not brought to a vote in the full Senate. Suggested replacement text: "Efforts to enact federal cap-and-trade legislation in the U.S. had failed."	Accepted. Wording suggested by commentator is appropriate and has been accepted.
9096	14	65				it will be better to examine the participation of major developing econony in Regional Climate Initiatives	Rejected. Comment unclear.
12034	14	65	1	65	24	It looks the statement puts too much emphasis on political ties between Asian countries and the US. APP can contribute to foster good international relations, however, economic merits come first as the initiative heavily relies on private partnership.	Rejected. The text as it stands reflects the peer-reviewed literature quoted and thus should not be changed.
6130	14	65	1	65	24	APP has turned successfully into GSEP (Global Superior Energy Performance with number of paticipating countries increased to 24 including Germany, France and the UK (Okazaki et al. 2012). For citation Okazaki, T., Yamaguchi, M., Watanabe, H. Ohata, A., Inoue, H. Amano, H. (2012), Technology Diffusion and Development. In: Climate Change Mitigation, A Balanced Approach to Climate Change. M. Yamaguchi, (ed.), Springer, London pp. 179-221. Therefore this information should be added.	Accepted. Text adjusted and reference added.
7790	14	65	10		24	The role of Asia-Pacific Partnership on Clean Development and Climate (APP) should be highly evaluated, especially in terms of information sharing, networking and improved access to existing technologies and know-how. Importance of APP's approaches in each task force including i) public-private partnership in a bottom-up manner, ii) project-based approach, iii) long-term commitments, and iv) horizontal nature of an international partnership should be duly considered. Above-mentioned points are comprehensively explained in "Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership" (Noriko Fujiwara, CEPS Policy Brief N0. 262 January 2012).	Rejected. The text as it stands reflects the peer-reviewed literature quoted and thus should not be changed. The reference quoted by the commentator is not peer-reviewed and thus should not be included.
6131	14	65	10	65	11	The text "explain the willingness of Asian countries to participate by the wish to maintain good diplomatic relations with the US, and to generate revenues through transfers" is not correct and suggest removing this citation. If you wish to keep this citation, please add the essense of the follwoing with the citation. Major incentive for Japanese industrial sectors, one of major players of APP, for participation is to promote technology diffusion, never just to maintain good diplomatic relations with the US nor to generate revenues through transfers. If Ch. 14 LAs learn more precisely of actual activities in Iron and Steel sector in APP, you will understand the argument above very clearly. For the actual activities in Iron and Steel sector in APP, refer to Okazaki T, Yamaguchi M (2011) Accelerating the transfer and diffusion of energy-saving technologies steel sector experience – lesson learned. Energy Policy 39:1296–1304	Taken into account. Reference is relevant and has been added. Other text reflects peer-reviewed literature and will not be changed.
6770	14	65	15		18	The description that APP activity has not led to direct emission reduction is unsuitable, because a technological improvement such as APP activity leads to great emission reduction as a result.	Rejected. Commentator statement not supported by peer-reviewed literature.
9161	14	65	25		30	delete ths paragraph - what matters is the impact on emissions, not the style of policy. EU ETS had limited impacts on emissions.	Rejected. Commentator statement not supported by peer-reviewed literature.
9162	14	65	25		30	EU is special since it is politically highly integrated from the outset, the characteristics is absent elsewhere in the world.	Noted. This is reflected in lines 25-28
14979	14	65	35			Should include the Energy and Climate Partnership of the Americas (ECPA) under Latin America (see http://www.ecpamericas.org/).	Accepted. Added

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
7520	14	65	1	65	24	More impartial and balanced description is required for APP. 1. The Charter of the APP clearly stated that the purposes of APP were consistent with the principle of the UNFCCC and were intended to complement but no replace the KP. 2. "The willingness of Asian countries to participate by the wish to maintain good deplomatic relations with the US and to generate revenues ." is vague and miss leading description. It requires an official report from these countries to agree with the authors view to wite the current description. Asian countries in the APP were China, India, Japan and Korea. As far as steel group concern, no goverment and private participants agreed with the description.	Rejected. The text as it stands reflects the peer-reviewed literature quoted. The commentator is invited to provide peer-reviewed literature to support his statements.
12645	14	65				There is an alliance called "East Asia Low Carbon Growth Partnership" under "East Asia Summit" http://www.mofa.go.jp/policy/environment/warm/cop/ealcgpd_1204/index.html http://www.kettha.gov.my/en/content/east-asia-low-carbon-growth-partnership-dialogue	Accepted. Added
12646	14	65	1	65	24	Following peer-reviewed thesis describes APP' s contribution for Technology Transfer. "Accelerating the transfer and diffusion of energy saving technologies steel sector experience—Lessons learned , Energy Policy, Accepted 1 December 2010"	Accepted. Reference to be included.
6598	14	65	10	65	12	Change "to maintain good (…) transfer" into "To increase energy efficiency." The Japan Iron and Steel Federation is one of Asian APP and GSEP members.	Rejected. The text as it stands reflects the peer-reviewed literature quoted and thus should not be changed.
6599	14	65	24	65	24	Add following sentences; Three of the eight sectoral APP task forces (on power generation and transmission, cement and steel) are to continue their activities under the Global Superior Energy Performance partnership (GSEP), with a stronger focus on energy efficiency and environmental performance, and participation expanded to the global scale. For citation: Noriko Fujiwara (2012). Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership. CEPS POLICY BRIEF No. 262. Available at: www.ceps.eu/ceps/download/6569	Taken into account. The reference quoted by the commentator is not peer-reviewed literature, and thus not appropriate. The information provided is now included in the text.
8007	14	65	24	65	24	I support this message that stresses an importance of technology guide book for promoting technology diffusion. An actual success story supporting this message should be wrote here with following sentences; Three of the eight sectoral APP task forces (on power generation and transmission, cement and steel) are to continue their activities under the Global Superior Energy Performance partnership (GSEP), with a stronger focus on energy efficiency and environmental performance, and participation expanded to the global scale. For citation: Noriko Fujiwara (2012). Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership. CEPS POLICY BRIEF No. 262. Available at: www.ceps.eu/ceps/download/6569	Taken into account. The reference quoted by the commentator is not peer-reviewed literature, and thus not appropriate. The information provided is now included in the text.
14980	14	68	19	71	14	Suggest giving a separate subhead – or possibly a separate section – to this lengthy discussion of trade and climate change. Can this be linked somehow to the discussion of trade flows (consumption and production) in 14.2.4?	Taken into account. This part was shortened drastically for the SOD. Link to 14.2.4 is difficult since 14.2.4 considers input-output accounting wheras this section look at effects of changes of policies.
6132	14	68	10	71	29	Please check heavy duplication with Chapter 13 (13.8.1 pages 36-39).	Taken into account. Section is drastically shortened.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
11271	14	69	20	69	22	Concerning these lines it is necessary to go a little further, particularly concerning the place and role of Mexico ("The effects of NAFTA on Mexico turn out to be small"). Two suggestions: The Future of North American Trade Policy: Lessons From NAFTA, Kevin P. Gallagher, Enrique Dussel Peters, and Timothy A. Wise (eds.), Pardee Center Task Force Report, Boston University, November 2009. URL: http://www.bu.edu/pardee/files/2009/11/PardeeReport-NAFTA.pdf NAFTA and Climate Change by Meera Fickling and. Jeffrey J. Schott September 2011, 212 pp. ISBN paper 978-0-88132-436-5	Rejected. For results like this we should stick to peer-reviewed literature.
12647	14	69	25			"Liberalizing trade in environmental goods and services" have been discussed in APEC as well. http://www.apec.org/Meeting-Papers/Leaders-Declarations/2011/2011_aelm/2011_aelm_annexC.aspx (Please update as concluded in this September at Vladivostok)	Taken into account. These are very general statements and neither our references nor yours are peer-reviewed. We would replace our references by peer-reviewed ones if there are any.
15037	14	7	13	7	13	"that there ARE serious"…	Thanks for poining this out.
14919	14	7	20	7	31	Note that subnational regions are actually discussed in the chapter, e.g., at pp. 49-50.	Yes, we now delete this discussion
5880	14	7	24	7	25	Please give the definition of LDCs in a footnote and / or include it in the glossary.	Will be included in glossary, with link to relevant web site for a list of countries
11270	14	7	26	7	28	This chapter considers North America as a region, but composed only by USA and Canada. Mexico is part also of this region, partially in geographical terms, but above all in economic terms, since NAFTA (1994). The interest of looking at this region, with the participation of Mexico, is that integration -both its benefits and disadvantages- could be examined as a process with the participation of two developed countries and one developing country. In this framework it is not possible to avoid the analysis of asymmetries, and it is necessary to be more cautious with some assessments as: 9: L: 1-3 This report will treat regions … as actors of cooperation and integration that could further promote mitigation In fact, this chapter mentions NAFTA recognizing this regional integration reality, but contradictions can emerge with the initial definition. p. 68: L 38-42 There are nine multilateral preferential trade agreements, among which the best known are (….) The North American Free Trade Agreement (NAFTA) P. 70: 1 – 6: In the case of NAFTA, the participating countries …	The question of how to deal with Mexico is indeed a tricky point. In order to keep our analysis consistent with other chapters, we had to ensure that our regions aggregate up to the 5 RCP regions (and Mexico and the US/Can are in two different regions then). But we do consider NAFTA as one of the most important forms of regional cooperation in the chapter. Note also that the regional definition matters only for section 14.2, while in 14.3 regional cooperation itself defines the region.
14920	14	7	26	7	31	The text should explain how the 10 proposed regions are used in the chapter when they are introduced here. They are not used universally as the existing text might suggest. Why does it make sense to consider these specific regions?	These are regions that are economically somewhat homogenous and aggregate up to RCP 5 regions. They can be used to illustrate the regional specificities of the mitigation challenge.
14921	14	7	42	8	8	The discussion here is really about level of economic development, not about geography. Regions are geographic constructs. Note that the regions selected are constructed in such a way as to emphasize common levels of economic development. Perhaps that should be explicit.	Yes, we make this more explicit now.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
2343	14	7		11		Under the section, “Why Regions Matter?” , authors have given very comprehensive description to prove their line of argumentation by using UNDP figures. Here, author can summarized or illustrate one or two figures and its rationality in the text for reducing total pages.	Now implemented.
7791	14	71				Add the following sentence “On the other hand, in 2012, APEC leaders committed to promote trade and investment in environmental goods and services and reaffirmed to reduce the applied tariff rate to 5% or less on the goods on the APEC list of Environmental Goods by the end of 2015. Although these political declarations’ legal status is “non-binding” these “soft law” can help to define the standards of corresponding what is nowadays to be expected from a “well-governed State. (M. Dupuy.”Soft law and the international law of the environment”, Michigan Journal of International Law, p.434,1991), also Abbot and Snidal said it is often more practical to negotiate a softer agreement, and this provides for flexibility in implementation.(Abbot and Snidal, “Hard and Soft Law”, International Organization, pp.444-445,2000)	Accepted. The sentence is added and supported by the suggested references.
11795	14	71	28	71	29	Delete this sentence. Fujiwara says that APP activities were successful. 1.Fujiwara: [Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership], http://aei.pitt.edu/33371/1/PB262_NF_on_Asia_Pacific_partnership_to_global_partnership.pdf	Accepted. The sentence is deleted and replaced by new ones.
10671	14	71	28	71	29	Delete this sentence. Fujiwara et al says that APP activities were successful. 1.Fujiwara: [Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership], http://aei.pitt.edu/33371/1/PB262_NF_on_Asia_Pacific_partnership_to_global_partnership.pdf	Accepted. See comment 11795.
14981	14	71	30	78	27	This discussion of Regional Cooperation on Energy should have a separate section identification so it can be easily found in the table of contents.	Accepted. A title regional cooperation on energy has been introduced. However, some of the examples have been moved to other sections.
7421	14	71	5	71	14	Note the risk of using PTA as a back door to climate change policies bypassing the UNFCCC provisions and distorting the international trading system.	Accepted. The risk is mentioned.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
7422	14	74	13	74	28	Is there any published literature assessing the cost-effectiveness of the EU directives from climate change perspectives? If so please provide citations.	Taken into account. Unfortunately, besides some general estimates provided by the European Commission, there has been no assessment of the cost-effectiveness of EU directives on Renewable Energy and Energy Efficiency from a climate perspective. Only now, the literature of the scientific community is starting to consider the issue, in the context of the interactions between these technology-oriented directives and the EU Emissions Trading System (EU ETS). Available literature (cited in this section) has only evaluated the cost-effectiveness of the support schemes of the EU member states in the deployment of renewables. Specifically, a comparison between the costs of technologies and the support provided by feed-in tariffs, feed-in premiums and quota schemes . Evidence has been found that there is room for optimization of the remuneration levels of the support scheme. In several cases, remuneration differs substantially from cost levels being either well above or below. In addition, a number of differences between the support levels given to a specific technology exist across EU member states. This points out towards the need for a closer coordination of support levels across EU member states.
14982	14	75	48	75	49	This sentence is incomplete.	Accepted. Sentence has been completed
5176	14	77	37	77	37	small hydropower - SRREN use small "scale" hydropower, where size is depending on national policies rather than physical or technical criteria - maybe a footnote? (SRREN 5.3.1 and 5.4.3.4)	Accepted. Text has been shortened and sentence was removed

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
14983	14	79	3	79	29	Box 14.5 (REDD+ in the Congo Basin) -- This box should be rewritten to acknowledge and grapple with the actual REDD+ programs that are being implemented in the Congo Basin, for example the Congo Basin Forest Partnership and the Congo Basin Forest Fund, the U.S. government's Central African Regional Program for the Environment and others. As currently drafted, it is principally focused on a series of issues that are generic to REDD+, and as such, are appropriately addressed in Chapter 11. For example, lines 12-19 should be deleted, and the content taken up in Chapter 11. For discussion of the CBFP, see http://pfbc-cbfp.org/home.html (the CBFP website) One example of an article that begins to address the success of REDD-type interventions is: Sayer, J.A., D. Endamana, M. Ruiz-Perez, A.K. Boedhihartono, Z. Nzooh, A. Eyebe, A. Awono, and L. Usongo, "Global financial crisis impacts forest conservation in Cameroon." International Forestry Review, Vol.14(1), 2012. This text box should provide a more comprehensive examination of the subject and draw on existing literature to do so. This may require going beyond the academic literature.	Accepted. Generic REDD issues were deleted. Now the subsection refers to regional cooperation schemes in which integration of adaptation and mitigation are necessary. However, there is not possible due to the page limitations to refer to specific cooperation on-going projects supported by different donors. New elements referred to the Congo Basin Forest Partnership were included in the text. The suggested article was included in the bibliography.
14984	14	79	30	80	2	– Box 14.6 – Forest Activities in Latin America -- Like Box 14.5, this text box should begin with a positive description of the regional scale activities taking place in Latin America before jumping into a normative discussion. Although it is a national-level project, given the scale of it, the Amazon Fund in Brazil deserves mention. A few surveys that may be useful are: -Larsen, Anne M. and Petkova, Elena, "An Introduction to Forest Governance, People and REDD+ in Latin America: Obstacles and Opportunities.' Forests 2011, 2(1), 86-111; doi:10.3390/f2010086 -Nasi R., Putz F.E., Pacheco P., Wunder S., Anta S. Sustainable Forest Management and Carbon in Tropical Latin America: The Case for REDD+. Forests. 2011; 2(1):200-217. -Pacheco P., Aguilar-Støen M., Börner J., Etter A., Putzel L., Diaz M.C.V. Landscape Transformation in Tropical Latin America: Assessing Trends and Policy Implications for REDD+. Forests. 2011; 2(1):1-29.	No relevant in this version. The box of forest activities in Latin America was deleted because the examples mentioned in this former box did not refer to any on-going cooperation schemes. This subsection is located under section 14.4 on regional cooperation. and therefore it should be consistent with it.
12648	14	79	31	80	2	The Governors' Climate Forum (GCF) also taking on forest activity (http://www.gcftaskforce.org/)	No relevant for the new version of the subesection that only refer to two on-ongoing cooperation schemes (Congo Basin Forests and the Great Green Wall of the Sahara and the Sahel initiative).
10912	14	8				Since this is report is for climate, then something climate related may be better than a carbon footprint, see Davis, S.J., Caldeira, K., 2010. Consumption-based Accounting of CO2 Emissions. Proceedings of the National Academy of Sciences 107, 5687-5692.	Noted. Footprint indicator no longer is used. I looked at that article and didn't find anything useful to use as a graphical display.
12493	14	8	17			The dots and diamonds needs to be explained.	Accepted. A footnote was introduced in the first box plot to explain boxes, lines and dots.
14922	14	8	17			Need to explain diagram (what do circles, lines represent). Perhaps this will be done elsewhere within the volume. This figure and the text above it (8/9-15) could be deleted to save space.	Accepted. A footnote was introduced in the first box plot to explain boxes, lines and dots.
3303	14	80	43	84	22	This is a very informative section which nicely complements chapter 13, International Cooperation.	Accepted- no action needed.
12649	14	82	29	82	31	The activities in APP were transferred to GSEP(Global Superior Efficiency Partnarship) under CEM.	Accepted-text will be revised to reflect this information based on references suggested in other comments.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6602	14	82	20	82	23	These sentences describe the essence of APP and should not be deleted. As supporting references: Noriko Fujiwara (2012). Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership. CEPS POLICY BRIEF No. 262. Available at: www.ceps.eu/ceps/download/6569 Okazaki T, Yamaguchi M (2011). Accelerating the transfer and diffusion of energy-saving technologies steel sector experience ? lesson learned. Energy Policy 39:1296-1304	Taken into account - suggested references will be reviewed for relevance to this section.
8008	14	82	20	82	23	APP and its successor GSEP are typical and globally applicable technology-oriented bottom-up approach supported by both public and private, so called public-private-partnership. This PPP is described in the following references. As supporting references: Noriko Fujiwara (2012). Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership. CEPS POLICY BRIEF No. 262. Available at: www.ceps.eu/ceps/download/6569 Okazaki T, Yamaguchi M (2011). Accelerating the transfer and diffusion of energy-saving technologies steel sector experience ? lesson learned. Energy Policy 39:1296-1304	Accepted - relevant information from these references will be incorporated into this section.
6600	14	82	27	82	27	Delete "and the development of a global carbon market." APP and GSEP do not aim to build a carbon market. The Japan Iron and Steel Federation is a member of APP and GSEP.	Taken into account -this will be reviewed for accuracy in line with the original goals of the APP based on its mandate documents.
7521	14	82	29	82	42	This part should be rewriten. The Power, Cement and Steel TF have been sucessfully inherited to GSEP which is official international collaboration scheme for energy efficiency improvement and consequential CO2 emission reduction. And GSEP is one of the WGs of CEM. More information is in the HP of CEM.	Taken into account - suggested references will be reviewed to incorporate information on the GSEP as relevant to the APP.
8009	14	82	29	82	31	Combined with the revision of No3 above, replace "though some projects have reportedly been continued under other governmental agreements" by "three of eight APP task forces (on power generation and transmission, cement and steel) are to continue their activities under the Global Superior Energy Performance partnership (GSEP)." For citation: Noriko Fujiwara (2012). Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership. CEPS POLICY BRIEF No. 262. Available at: www.ceps.eu/ceps/download/6569	Taken into account - suggested references will be reviewed to incorporate information on the GSEP as relevant to the APP.
6601	14	82	30	82	31	Replace "though some projects have reportedly been continued under other governmental agreements" by "three of eight APP task forces (on power generation and transmission, cement and steel) are to continue their activities under the Global Superior Energy Performance partnership (GSEP)." For citation: Noriko Fujiwara (2012). Sector-specific Activities as the Driving Force towards a Low-Carbon Economy From the Asia-Pacific Partnership to a Global Partnership. CEPS POLICY BRIEF No. 262. Available at: www.ceps.eu/ceps/download/6569	Taken into account - suggested references will be reviewed to incorporate information on the GSEP as relevant to the APP.

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
9097	14	83	21	84	22	it should review the implmentation result of Inter-Regional Technology-Focused Agreements	Taken into account -there is limited literature available reviewing the results of implementation of regional technology focused agreeements and the reviewer has not suggested any specific sources.
14986	14	85	13	85	36	The opening sentence appears to draw a conclusion about regions, but the passage that follows is focused on level of economic development rather than geographic region.	Regions are seen as a mix of geographical and economic considerations. This is now explained in more detail.
14987	14	85	13	85	36	This passage articulates the kind of high-level conclusion that could come from Chapter 14, but it does not seem to me that the basis for the conclusion has been clearly established within the chapter. That is not to say that the conclusion is invalid, but rather that if such conclusions are to be drawn the foundations must be carefully established in the preceding text.	We will now link chapter and conclusions more.
14985	14	85	8			It appears that this section is incomplete. It would be a useful place to draw out the key themes from the chapter.	Will be completed in the next round.
14988	14	86	25			See earlier comments about the definition of regions. These regions are not used consistently throughout the chapter.	We use them consistently when possible. When we follow the literature, we are forced to ue the regions as defined there.
14989	14	86	36			– The second reason articulated here seems more compelling than the first. While it is true that “mitigation challenges and mitigation/development trade-offs differ greatly by region,” the chapter draft has not clearly established that this is a function of geography. Rather it seems likely to be a function of the level of economic development of countries within each region, and hence the aggregate or average level of development of the region. The potential opportunity for regional integration and collaboration could still be a sufficient basis for doing a regional analysis, though. I suspect there may be greater regional commonality than has been explored in this chapter draft, however. For example, many regions share in common natural resources, and are thus exposed to characteristic risk factors connected with climate change impacts (such as the potential change in regional hydrology in South Asia associated with disruption of monsoons and changes in pattern and volume of Himalayan glacial melt; or the effects of the Amazon rainforest on regional weather patterns). Similarly, land use patterns and natural resource endowments differ by region, and that plays a role in determining the pattern of emissions and the relative cost-effectiveness of different mitigation strategies. (The discussion on pp. 43-46 and the associated figures and tables point to one example of this – climate and soil constraints and other associated factors that create regional differences with respect to agricultural potential and associated emissions and mitigation strategies, although the regions used in this part of the chapter don’t match up with the official AR5 regions.) Thus, the recommendations for the “best” mitigation strategies and for integration of mitigation and adaptation strategies could vary by region. (This is a reason why it would be useful to treat adaptation within WGIII; not doing so leaves little room for addressing integration of mitigation and adaptation strategies.) Finally, there are different cultural factors or social or institutional elements that operate in common within several of the selected regions that may cause certain mitigation strategies to be better received or more effective in some regions than others.	We believe that regional heterogeneity in the mitigation challenge is a function of geography and economic development (which is reflected in our regional definition);

Comment No	Chapter	From Page	From Line	To Page	To Line	Comment	Response
6950	14	86	25	86	35	Suggest to make this FAQ specific to the WGIII report or even to this Chapter as WGI (and WGII?) will not use the same regions. Thus the current title referring to "the AR5" in general is misleading.	Yes will do that.
14990	14	87	15	87	21	This discussion begs a few questions: Are there exceptions to this rule? If so, what characterizes them? And what can be done to address the barriers and obstacles that less advantaged countries and regions face, e.g., in order to enable leapfrogging? It would be very useful if the chapter could address these questions.	This is an issue we now discuss more clearly.
5881	14	9	1	9	5	Regional cooperation treaties - for example - may also be detrimental to mitigation and / or adaptation if measures one country wants to implement would violate - e.g. - free trade agreements or prohibit the use of certain technologies. Please be sure you do not overlook such possibilities.	Thanks for pointing this out. Will consider carefully.
14923	14	9	22			Is unemployment a development measure? Are these snapshots taken at one point in time or are they averages over several years? If this figure is retained, the individual figures should be given separate letters (e.g., 14.2a, 14.2b) for ease of reference.	Noted. It depends on the prism one uses. Accepted suggestion on the years and about the use of letters to distinguish them!
4008	14	all				I found this entire chapter to an exhaustive examination of forests and agriculture…I applaud the efforts of the authors. During revisions I suggest authors focus on what matters most to people: how much is AFOLU contributing currently to GHG? How much could forests/ag mitigate GHG emissions, how could this change under a scenario of rapid climate change ? What do we need to do as a society to ensure AFOLU mitigate instead of contirbute to GHG in the future?	We now focus much more the discussion of AFOLU in our chapter.
13603	14	overall				as I read through this, wondering if it's worthwhile to flag the difference between energy (getting something to do work -- be it fuel, animals, ourselves) and electricity	Where approrpiate, we now make this distinction.