

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



IPCC WGII Fourth Assessment Report Climate Change Impacts, Adaptation and Vulnerability

Government and Expert Review of Second Order Draft

Specific Comments

EXPERT REVIEW COMMENTS

Chapter 16

August 2006

Organization of the review comments file

Comments are organized as follows:

- (a) First are the comments from the Co-Chairs and TSU. These:
 - (i) track the development of the ZOD and FOD, and your responses to review comments on each of these drafts, and then
 - (ii) present comments on the Second-Order Draft
- (b) Second are the comments from the Expert Reviewers, organized in the same format as your FOD comments file.

Government and Expert Review of Second Order Draft Confidential, Do Not Cite or Quote

Discussion of expert review comments and record keeping

IT IS RECOMMENDED THAT:

- AUTHORS BEGIN WORK ON THE COMMENTS IMMEDIATELY. SUBSTANTIVE COMMENTS NEED TO BE SEPARATED FROM NON-SUBSTANTIVE, AND THE TWO SHOULD BE TREATED DIFFERENTLY
- CONTACT IS MADE BETWEEN AUTHORS AND THEIR REVIEW EDITORS IN AUGUST

Substantive comments

- The chapter writing team should discuss <u>all</u> substantive expert review comments, by email and/or at Cape Town.
- Substantive comments require full and proper consideration. The *Principles Governing IPCC Work* state that:
 - o genuine controversies should be reflected adequately in the text of the Report and
 - it is the role of the Review Editors to advise the lead authors on how to handle contentious/controversial issues
- You must record the outcome of these discussions in this document, under the column 'Notes of the Writing Team'.

Non-substantive comments

- For non-substantive comments, a very brief entry should be made in the column 'Notes of the Writing Team'. The following terms are acceptable:
 - o Addressed
 - Not applicable
 - Text removed
 - A tick to denote a comment has been addressed (somewhere on the document this should be stated)

General

- The record should be kept in this document, ideally electronically.
- The document becomes part of the traceable account of the Working Group II Fourth
 Assessment. When completed to the satisfaction of the Review Editors, a copy should be
 returned to the TSU by the 8th December 2006.

Chapter 16: Small Islands

Comments from the Co-Chairs/TSU are laid out as follows: first we comment on whether the SOD addresses the comments we made on the FOD; second we comment on whether the SOD addresses the comments we made on the FOD; our concluding comments on the Second-Order Draft are at the end

	Chapter 16 ZOD comments by Co-Chairs and TSU	Has this been addressed in the SOD?	Author response
16.Z1	The ZOD is quite extensive, yet incomplete. It misses small islands in middle and high latitudes and also the Indian Ocean.	SOD still largely ignores middle and high latitude islands. Indian Ocean covered in SOD.	We included more information on middle and high latitude islands.
16.Z2	The Chapter is general and erratic. It needs to focus down to specifics, give many more SI examples, and be quantitative where possible. For example, although figures 16.4 and 16.5 may be applied to the chapter, they are not specific to SI. They should be omitted. Furthermore, subsection 16.6.1 is only very loosely related to SI - it is just a general description of risk with a very brief mention of SI at the very end	Figs 16.4 and 5 have been removed Addressed in 16.6 of SOD – this is more SI specific with examples given although more could be included	Figures are revised.
16.Z3	Section 16.2 is under-referenced and has limited post-TAR resonance. It misses SI from the Indian Ocean and the Mediterranean Sea. When completed 16.2 could use a summary table presentation 'by SI region'.	16.2 still needs work. High latitude islands not covered. There's overlap between the temperature and precip sections, there's no mention of extra-tropical cyclones. No references for Tropical Cyclones (TCs) in the first paragraph of p8 and only one reference for the whole section on TCs.	We revised 16.2 to meet these comments.
16.Z4	We suggest that Section 16.2 be reduced from 12 to about 6 pages	16.2 is now about 4 pages	We kept it short.
16.Z5	Much of Section 16.3 may be covered in Chapter 2 and liaison is needed with Chapter 2 authors	See 16.Z6 – much of straight climate change material has been removed.	We responded to this.
16.Z6	The Chapter takes far too long to get to the heart of the matter. It does not reach Section 16.4 until page 22. Earlier, there is far too much WGI-Type material which could effectively shortened and condensed into tables. In fact, there are 8 pages on climate trends which we consider to be far too much	16.4 now begins at page 13 The climate trends section has been reduced from 8 to 2 pages in the SOD.	We responded to this.
16.Z7	The key section in each regional chapter should be Section 4. At present your Section 16.4 is very incomplete. It is the core of the assessment and yet most is missing from the ZOD. It should account for perhaps half of the Chapter - when added in, the overall length of the chapter will be an issue	Now takes up about 10 pages – roughly one-third of the chapter, should take up more.	We responded to this.
16.Z8	Section 16.5 (Adaptation) has a high proportion of material which seems not to be new (post-TAR). It is important to	Several new post-TAR references have been included in 16.5	We responded to this.

	concentrate very heavily of post-TAR sources.		
16.Z9	The allocated number of printed pages is 25 (equivalent to about 45 A4 typed pages). As noted above, the ZOD text is incomplete and some sub-sections are missing (i.e.: 16.2.3.2 and 16.2.4; 16.4.2 and 16.4.3. Regarding 16.7 (wrongly written 16.6). Subsections 16.7.2 and 16.7.3 are also to be drafted	All sections are included in the SOD. Just slightly under length (see 16.S1)	We increased the amount of chapter.
16.Z10	The above means that significant text reduction is needed. You have to find space to develop the Chapter fully - particularly Section 16.4	See 16.S1	We responded to this.
16.Z11	Since 'hurricane' is the designation for tropical cyclones in the Caribbean and similar weather events received different names in different regions, the appropriate name should be given in each case. The general designation would be "tropical cyclone"		We responded to this.
16.Z12	Appropriate reference to island community economic-social situations (for example, percentage of poor inhabitants, income level, key sectors,) should be made, particularly when evaluating potential climate change, sea level rise and extreme events impacts and population vulnerability.	Some mention of socio-economic impacts but not much	We responded to this.
16.Z13	We noted some inaccuracies in referencing (e.g. on page 21, line 40, Brazil <i>et al</i> should be changed to read Brazdil <i>et al</i>)	This has been addressed. There remain some missing references which are cited in the text and also some included in the reference list which are not cited. These are specified in the excel spreadsheet	We responded to this.
	Chapter 16 FOD comments by Co-Chairs and TSU	Has this been addressed in the SOD?	Author response
16.F1	Length: This chapter is underlength. Authors could usefully use this space by addressing impacts and vulnerabilities of high-latitude small islands.	SOD is 1 page under target length	We increased the amount of chapter.
16.F2	There is really no recognition in this chapter that it should move beyond Small Island States to look at all Small Islands. It may well be that, for small islands in high latitudes, there are benefits associated with climate change, especially in the early years. The chapter talks a lot about salinization and reduction in fresh water lenses, but water supply may not be the primary concern of high-latitude islands. Any increase in polar front storms would be an issue with respect to transport and property damage. Small islands which are not autonomous states are presumably less vulnerable to climate change, since they are supported by their national governments - is this true or not?	Still no major inclusion/discussion of high latitude islands. No assessment of extratropical cyclone activity. This is still lacking in the chapter	We responded to this.
16.F3	Contributing Authors: there are only 3, which is far too few. This is the perfect opportunity for the chapter to build its	This has increased by one to four CAs	We now have seven CAs.

	expertise on high-latitude and non-autonomous small islands.		
16.F4	There are something like two figures and two tables. The best way to convey information to the IPCC readership (ie., non-specialist) is through figures and tables. Under my comment about the SPM and Technical Summary (16.F5), there are some suggestions.	An additional figure has been included in the SOD. Now 2 tables and 3 figures	We responded to this.
16.F5	This chapter provided very little material which is suitable for use in the SPM/Technical Summary, which is a pity since Small Islands are such an important issue. We seek more quantitative statements with respect to impacts at certain dates, and for certain temperature increases. Good examples are Ch 4 Table 4.5 (impacts for increments of global temperature change) and Ch 11 Table 11.11 (Impacts at future timeslices under different SRES scenarios). If Chapter 16 could do something like this, it would be great material for the SPM/TS. For examples of the kind of figures we are looking for, I would refer you to Chapter 4 Fig. 4.9 (map of global impacts for three different temperature changes) and 4.10. Fig 4.10 is a sectoral burning embers diagram, but could be easily adapted for the regional case.	This method of summarising impacts has not been included in the SOD.	We responded to this.
	Chapter 16 SOD comments by Co-Chairs and TSU		Author response
16.S1	LENGTH:	Just over 30 pages so slightly short but within ±5% range (target 31 pages)	We increased the amount of chapter.
16.S2	ARE PAO HEADINGS PRESENT?	Yes, apart from Case Studies.	We responded to this.
16.S3	HAVE MOST GENERAL COMMENTS OF ERS FROM ZOD AND FOD BEEN COVERED? [square brackets and highlighted text gives indication of SOD response to ZOD and FOD reviews]	 ZOD: Not enough new material since TAR [could still be improved] Uncertainty [this is mentioned in section 16.7] Lack of references against many statements [this is still the case in the SOD – many paragraphs with no references] Too much emphasis on Pacific Islands [still the case, although some attempt has been made to redress the balance] Not enough on extremes [still the case] 	We responded to these.

		case but primarily due to lack of literature] • Fig 16.2 needs improving [now clearer]	
		 Suggested additional references [on the whole haven't been included] Health is weak [no change in section 	
		16.4.5]Provide better balance between the regions [still not balanced]	
16.S4	ARE REFERENCES BROADLY COMPLETE?	Yes, with a few exceptions which are specified in the excel spreadsheet	We responded to this.
16.S5	IS THERE LINE-OF-SIGHT TEXT → ES AND TEXT+ES → TS+SPM?	Yes	Yes
16.S6	Would benefit greatly from English language editing, particula	rly in the first few sections	Done
16.S7	The observed trends section (16.2.2.2) needs to be rewritten. included in the precipitation section. Observed trends in preci	Sentences too long/too short; temperature	Done
16.S8	16.2.2.2 Very short on references on tropical cyclones (obser also	ved). Should include extra-tropical cyclones	We responded to this.
16.S9	Very short on references with several paragraphs without any in the TAR. P20 paragraph 1 – the first sentence states that the economic activity at the coast is well-documented but there a	ne concentration of population and	We responded to this.
16.S10	Still very thin on high- and mid-latitude islands, in fact nothing brief mentions). Description of climate completely ignores the http://www.britishirishcouncil.org/climatechange/index.asp wh the islands around Britain continuing on from the UKCIP02 ar Council-DEFRA report is available from this site.	on high latitude islands (apart from three se islands. A quick web search found ich provides climate change scenarios for	We responded to this.
16.S11	Some repetition/overlap in the Executive Summary bullets. Has spreadsheet where statements could be combined	ave made suggestions in the excel	We responded to this.
16.S12	Could benefit from some more illustrative examples		We responded to this.
16.S13	Summary of TAR (introduction) is very long (1.5 pages). Mucl	n longer than other chapters	We responded to this.
16.S14	Authors haven't really addressed reviewers' comments, especial latitude and non-autonomous Small Islands.		We responded to this.
16.S15	 Need to include discussion of high latitude islands Authors need to (1) include a discussion of high latitude of S16.2.2.1 and 16.2.2.2, (2) combine various sections of the 12 and 48-50; and p3 13-16 and p4 1-4, (3) balance out Structure on every cyclones – need also to look at extremes of precipitation and cyclones, and (4) make sure that material within a section Include assessment of literature on impacts under SRES Include assessment of literature on impacts under stabilis References: There are sections with no references e.g. particular experiences need to be carefully checked. 	limates and extratropical cyclones in the ES which are repetitive e.g., p3 lines 10-616.3.3.3 which focuses only on tropical and temperature and extra-tropical refers to the section title.	We responded to these.

The future impacts section (16.4) is about a third of the chapter – it needs to be expanded
Section 16.4.5 on health is weak as is 16.2.2.2 on observed climate

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16-1	A	0	0	0	0	The Chapter is very large yet, but the quality is good. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	
E-16-2	A	0				Tourism is substantially dealt with in CH 1,4,6,7,91112,13,14,16 . This is a significant change compared to TAR. Overall this is done in a satisfactory manner, in particular since the regional chapters do focus on regional issues without losing space on general aspects. What is missing though, is a critical assessment of the literature quoted (even though this literature is peer reviewed), not an individual assessment of papers but a critical overview of the mainstreams of methods that have been used these last years (though it must be recognised that these works have shed some light on what is a very important issue). This concerns both qualitative and speculative approaches and quantitative research. As regards the former, these confront current tourism behaviour and requirements regarding climate to the futures envisaged by scenarios. What is the degree of reliability of this kind of work knowing that the expectations of tourists regarding climates can evolve significantly, as they already have done in the past? There is at least a need for research to explore the range of possible evolutions in behaviours and introduce that into the analyses. Also, to what extent are econometric analyses concerning modifications in tourist flows (the more seducing as they yield figures) robust and reliable? Is it, for example, acceptable to use a unique climate for the US as it is done in a paper quoted in several chapters? If it is, the coarseness of the results should be mentioned. In short, I believe that there should be in some place in the report, a caveat on the difficulties research on this topic encounters (uncertainties on future behaviours, shortcomings regarding statistics etc.) and their consequences on the results. (Jean-Paul Ceron, CRIDEAU (Université de Limoges-CNRS-INRA))	This is a generic comment made to several chapters. This chapter on small islands is not the appropriate place for a critical overview of the tourism literature as suggested in the fourth sentence.
E-16-3	A	0				This chapter does a very good job of highlighting the key issues for small islands. (Donald L. Forbes, Bedford Institute of Oceanography)	
E-16-4	A	0				There is a noticeable improvement in this version of the chapter over the one provided for the FOD. In particular, the multidimensional character of 'vulnerability' in small islands is more clearly articulated, the counterbalancing characteristics of 'resilience' are noted, and there is a clear line of argument that increasing exposure to climate and other risks presents a credible threat in relation to the extant capabilities of island ecosystems and societies to adapt. Throughout the chapter, there does seem to be some inter-mixing of the notions of 'exposure' and 'coping' (adaptive capacity), where the discussion refers to vulnerability. See, for example, lines 45-49 on p 8, which are as much about the	The reviewer's comments are accepted and we have attempted to address them in the FGD.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						ability of island societies to cope with stresses as about their exposure to them. It might be worth including, at appropriate points, some acknowledgement that 'vulnerability' is made up of 'exposure, sensitivity and coping', and observing at those points what it is that the processes and variables relate to primarily. (Chris Cocklin, Monash University)	
E-16-5	A	0				there is a lack of supporting graphs and tables compared with several other chapters. These would strengthen it greatly. (Charles Sheppard, Warwick University)	Agreed but we have modified some of the boxes but not added any graphs or tables. We are not aware of recent summary data.
E-16-6	A	0				The effort to integrate issues for small islands forming part of larger continental nations and small islands at higher latitudes is less successful. I feel some responsibility for this, having been asked to contribute, but one of the difficulties I found in thinking about small islands in the Arctic is that most of the issues described in the chapter for small islands at lower latitudes apply equally to island communities in the Canadian Arctic Archipelago and the many isolated communities along the mainland coast. This is a point that could be made. In addition, there is material that could be cited on change and impacts in Arctic communities, including the application of traditional ecological knowledge, e.g. Berkes, F., and D. Jolly (2002) Adapting to climate change: social-ecological resilience in a Canadian Western Arctic community. Conservation Ecology, 5 (2), 514-532; Fox, S. (2003) When the weather is uggianaqtuq: Inuit observations of environmental change. Cooperative Institute for Research in Environmental Sciences. University of Colorado, Boulder, USA. CD-ROM. (Donald L. Forbes, Bedford Institute of Oceanography)	In the FGD we have included the references cited as well as some other examples from high ;atitudes, though we still have not adequately resolved the issues regarding autonomus versus non-autonomous islands.
E-16-7	A	0				The chapter contains surprisingly little attention for disaster management as part of adaptation. A starting point could be, e.g., World Bank (2006) (already in the references). More in general, this requires more attention - an important part of adaptation. (Maarten van Aalst, Red Cross/Red Crescent Centre on Climate Change and Disaster Preparedness)	Whether the experience of adaptation to short term extreme events (disasters) is useful as an analogy to longer term climate change is an issue that is discussed in 16.5.1 of the FGD.
E-16-8	A	0				No mention of extra-tropical cyclones (Clair Hanson, IPCC TSU)	Now included in 16.2.2.
E-16-9	A	0				Limited coverage of high latitude islands. Material available from http://www.britishirishcouncil.org/climatechange/index.asp focussing on British islands (Clair Hanson, IPCC TSU)	More examples are now included
E-16- 10	A	0				I'm surprised that this chapter makes no reference to the long-term impacts of sea- level rise over several centuries. I would have thought that the complete	We do not have specific figures on the projected response of islands to the long term

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						disappearance of some countries under some long-term scenarios would be worth highlighting, perhaps with some specific figures (which could draw on projections of long-term sea-level rise provided by WG1)? (Andy Reisinger, IPCC SYR TSU)	impacts of sea level-rise though the issue is reviewed in Sectiomn 16.4.2 Moreover, there is little evidence that small islands have been concerned with the longer term prospects given the more immediate potential impacts.
E-16- 11	A	0				General: A very good chapter (James Bruce, Soil and Water Conservation Society)	
E-16- 12	A	0				General comments. On the SOD WGI analyzed the possible process of deglaciation of the West Antarctic and Greenland Ice Sheets and WGII included as key vulnerabilities on Chapter 19. In both cases the projected sea level rise would be in the order of a meter or several ones, great uncertainty exist on the triggering global temperature that initiate the process, when, the rate and time scale of these processes occurrence. I considered these two non-linear biophysical processes should be mention in the chapter text because the impact on the SIS should be catastrophic for all island systems, and including in many cases the complete immersion of islands and keys. (Avelino G. Suarez Rodriguez, Ecology and Systematic- Cuban Environmental Agency)	We have not considered such surprises and have been guided by the more modest sea level scenarios in the WG1 chapter on sea level.
E-16- 13	A	0				General Comment: The chapter is too weighted to tropical and developing small islands and does not really discuss developed high latitude small Islands. I accept that SIDS and tropical developed islands have a unique and often pressing set of problems associated with climate change (and these are reasonably well covered in this chapter) but other small islands have issues as well. I think this bias is somewhat bourne up by the origin up of the authors. The British Isles Council work documents these issues well. General Comment: Tourism is a vitally important sector to all small islands. Tourism is repeatedly mentioned in most sectors of the report, yet the authors have failed to address much of the (albeit relatively sparse) literature on this issue. Other papers that can be included are: Agnew M. and Viner D. 2001 Potential impacts of climate change on international tourism. Int. J. Tourism and Hospitality Res. Vol 3. 37-61. Viner D. and Nicholls S. 2006 Climate Change and its Implications for International Tourism. In Tourism Management Dynamics, Elsevier. Mather S. and Viner D. 2005 Climate and Policy Changes: Their Implications for International Tourism Flows. In: Tourism, Recreation and Climate Change, Eds Hall M. and Higham J. Publ. Channel View Publications 309pp. Also some more recent publications have been published that could be of use for	Reference to high latitude islands have been added in different parts of the chapter. We have also added the reference to Viner D. 2006 Tourism and its Interactions with Climate Change. Journal of Sustainable Tourism Vol 14 Nos. 4

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						supporting the statements made in this chapter: Viner D. 2006 Tourism and its Interactions with Climate Change. Journal of Sustainable Tourism Vol 14 Nos. 4 General Comment: Work on tourism and climate change in Fiji (Becken, 2005) is cited throughout the chapter, whilst this is a valuable contribution to the chapter to much emphasis has been placed upon this study. The work, however, only surveyed a very small percentage of the overall population of tour operators in Fiji. Tourism and small islands in the Mediterranean: Conclusions can be drawn on the impacts of climate change on small islands in the Mediterranean through: Amelung B. and Viner D. 2006 The sustainability of tourism in the Mediterranean: Exploring the future with the Tourism Comfort Index Journal of Sustainable Tourism Vol 14 Nos. 4 (David Viner, University of East Anglia)	
E-16- 14	A	0				From the executive summary, small islands face a bleak future with medium confidence given to adaptation measures. What seems to be missing are the prospects for "island systems management" (page 5, lines 42-45) which can contribute substantively to the well-being of some islands. Some encouraging and new initiatives in this type of island management should be explored in the chapter. (Poh Poh Wong, National University of Singapore)	Island systems management is implicit in several other places and is commented on in Section 16.5.1.
E-16- 15	A	1	0		32	Early on some stab at defining small islands is needed. Cyprus is included at the end, but isnt really small. (Charles Sheppard, Warwick University)	We understand the reviewer's point, but the IPCC has not given a definition of small islands for AR4. In TAR the equivalent chapter dealt with Small Island States which were easier to define.
E-16- 16	A	1	1	41	26	This version is much improved compared to the previous, although my concern is still the value added information to the TAR. However, the following are editorial changes that I would suggest. (Bhawan Singh, University of Montreal)	This concern is shared by the authors who feel that there has been little advance in the literature since the TAR (See 16.1)
E-16- 17	A	3	0	4		Think there needs to be a bullet point or two on observations and research gaps (based on 16.7), but focussing on key things that coud be done. This should be based on the bits that I think need to be added into 16.7 (see below). (Jon Barnett, University of Melbourne)	We are constrained by the guidelines for the ES and the limited number of key points that can be made. The issue raised here is dealt with in the last section of the chapterr
E-16- 18	A	3	5	3	5	Maybe use 'highly' instread of 'especially': especially is a relational observation - and requires identifying who SI are more vulnerable than, and why, which is a tricky discussion that can be avoided by saying 'highly', or 'very'. (Jon Barnett, University of Melbourne)	Accepted, but no longer an issue in re-written ES.
E-16-	Α	3	7	3	8	"extreme events" not included?. Also P.6 .r.29, (16.2.1)	Extreme events now included in headline

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
19						(Juan Llanes-Reguerio, University of Havana)	statement in ES.
E-16- 20	A	3	11	3		I suggest add:demonstrated by hurricanes, tsunamis, earthquakes, volcanoes (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	We have changed the wording, but do not include the whole range of geophysical events.
E-16- 21	A	3	11	3	11	I ssuggest change the word shocks by disasters (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	. We still use the words 'external shocks' in the first dot point of the ES to refer to socio- economic 'shocks' such as dramatic changes in sugar price, external political strive and impacts on tourism.
E-16- 22	A	3	12	3	12	I suggest change the phrase war on tourism because hasn't nothing to see with natural and man induced shocks how it is written in the bullet. For me is better to mention mistakes provoked by bad planning and construction in developing of tourism, that has induced severe dmages to the ecosystems (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	We agree, and amendment made.
E-16- 23	A	3	19	3	19	I suggest add that has begun changes over raining periods in the year, that is more rain in the dry season and rain decreases in raining period (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Cannot include such details in ES. Comment no longer relevant, given re-written ES.
E-16- 24	A	3	23	3	25	This example may no longer be as relevant to illustrate the point, as subsequent sub-regional modeling (SIMCLIM) revealed that Kiribati is likely to have an increase (and not a decline) in rainfall. T (Sofia Bettencourt, World Bank)	In the absence of a firm reference we have continued to use this example both in the new ES (Paragraph 3) and in Section 16.4.1
E-16- 25	A	3	25	3	26	I suggest add: Reduced rainfall coupled with sea-level rise would compound this threat, but too may to introduce droughts periods (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	We do not believe that the recommedation enhances the text.
E-16- 26	A	3	28	3	28	I suggest add:including desalination, more extensive tradicional methods of "water harvest", and reuse of treated wastewaters, to offset current (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	'We use the word 'include' to give just one example in the new ES and not a comprehensive list of adaptation strategies.
E-16- 27	A	3	37	3	37	Will' be colonised by seems overly strong, maybe use 'very likely to be' (Jon Barnett, University of Melbourne)	We now use the term "virtually certain' to be colonized" in the text, to reflect the level of confidence we have in the statement.
E-16- 28	A	3	38	3	39	Delete: "In a few instances warming has already led to extinction of a few local species." Section 16.4.4 provides no information to support this claim. (Lenny Bernstein, L.S. Bernstein & Associate, L.L.C.)	Accepted and corrective action taken.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 29	A	3	40	3	43	Tourism is also likely to be adversely affected in small islands where precipitation is expected to increase (such as those located in the central equatorial Pacific). (Sofia Bettencourt, World Bank)	The comment is no longer relevant in light of the re-drafted ES.
E-16- 30	A	3	45	3	47	Bad sentence this and the latter half is not a finding that is appropriate for an executive summary. Suggest delete 'Although', and the remainder of the sentence from 'few studies' onwards. (Jon Barnett, University of Melbourne)	Corrective action taken in re-drafted text.
E-16- 31	A	3	48		50	Some repetition with lines 10-12. Could combine the two statements (Clair Hanson, IPCC TSU)	We do not include this statement in the new ES.
E-16- 32	A	3	49	3	49	I suggest add:is limited, taking into account financial shortages, and id being further (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	We disagree with the recommendation. However, the issue no longer arises in light of the redrafted text.
E-16- 33	A	3	50	3	50	suggest use 'demographic change' rather than 'internal population pressures' (Jon Barnett, University of Melbourne)	Fair comment but no longer relevant, given the re-written ES.
E-16- 34	A	4	1		4	overlap with p3 lines 13-16. Could combine the two (Clair Hanson, IPCC TSU)	See comment above
E-16- 35	A	4	2	4	4	I propose delete from "It is notto in many islands "because the idea that you want to show isn't clear and may to introduce missunderstandings. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Comment no longer relevant, given re-written text.
E-16- 36	A	4	2	4	4	bad sentence here, suggest delet the first half 'It is not clear Since" and rteplace with 'Yet'. (Jon Barnett, University of Melbourne)	Same as above.
E-16- 37	A	4	11	4	11	I suggest add:management[Medium confidence][16.4.7]; and the resistance of international insurence companies to accept policies related with natural disasters, taking into account their increasing during last years. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	In the new ES we have not included any comment on insurance, but it remains in the substantive section of the chapter.
E-16- 38	A	4	12	4	18	Suggestion to summarize (June Marie Mow, Fundación Providence)	No action required in light of re-drafted text. The ES is itself a summary.
E-16- 39	A	4	13	4	13	I suggest add: as all economics, environmental and social sectors (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Comment no longer relevant in light of restructured ES.
E-16- 40	A	4	17	4	17	suggest insert the words 'on broader development agendas' in between the words 'measures' and 'and uncertainties' (Jon Barnett, University of Melbourne)	See comment above.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 41	A	5	4	5	5	I suggest add:(e.g physical size, fragile ecosystems, proneness to natural disasters and climate extremes, (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Not accepted. The intention is merely to provide a subset of similarities, not to provide an exhaustive list.
E-16- 42	A	5	18	5	19	The point may be to link adaptive management and strategies to reduce poverty (June Marie Mow, Fundación Providence)	We agree and have shown at various points in the Chapter that some co-benefits can be achieved from implementation of certain adaptation stratgies. However, it is still a fact that resources are still being re-directed from immediate priority needs to an area (i.e. climate change adaptation), which will not, in every case, provide a co-benefit, such as poverty alleviation.
E-16- 43	A	5	21	5	22	Source of the 5mm/year figure? A reference is needed. (Jon Barnett, University of Melbourne)	This is a summary of the findings reported in the TAR. The figure reflects the projections of WGI at the time. The first couple of sentences have been reworded to clear any ambiguity
E-16- 44	A	5	22	5	22	Check sea-level rise projections against latest results from WG1 AR4. (Donald L. Forbes, Bedford Institute of Oceanography)	This section is simply a review of TAR and does not seek to provide post-TAR projections (which are dealt with later in the chapter at Section 16.3). The first couple of sentences have been reworded to clear any ambiguity
E-16- 45	A	5	30	5	30	I suggest add:low water availability and possible salinization of sources, will threaten the sustainability (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	We have modified text to reflect this factor.
E-16- 46	A	5	30	5	30	I guess the point is food security (June Marie Mow, Fundación Providence)	We agree and have modified the text.
E-16- 47	A	5	47	5	47	replace 'should' with 'could' (Jon Barnett, University of Melbourne)	Accept
E-16- 48	A	5		6		The introduction is long. Summary of TAR covers 1.5pages. Much longer than other chapters (Clair Hanson, IPCC TSU)	Noted. We have adjusted the length to the extent that we think is appropriate for setting the context for a post-TAR assessment.
E-16- 49	A	6	8	6	13	i suggest add the following publications: Pacific: Environment outlook, 2005 - Special edition for the Mauritius International Meeting, UNEP 2005; Atlantic and Indian Oceans: Environment outlook, 2005 -Special edition for the Mauritius International Meeting, UNEP 2005; Caribbean: Environment Outlook, 2005 -	It was not intended that this would be an exhaustive list, as we are aware of a much longer list of grey literature. We have opted to bring attention only to a few prominent post-

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						Special edition for the Mauritius International Meeting, UNEP 2005 (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	TAR synthesis-type reports.
E-16- 50	A	6	13	6	13	Please correct this reference here and in the References (page 34) as follows: Bettencourt, S., Richard Croad, P. Freeman, J. Hay, R. Jones, P. King, P. Lal, A. Mearns, J. Miller, I. Psawaryi-Riddhough, A. Simpson, N. Teuatabo, U. Trotz, M. van Aalst (2006) "Not If but When: Adapting to Natural Hazards in the Pacific Island region: A Policy Note", The World Bank East Asia and Pacific Region, Pacific Islands Country Management Unit. Washington, D. C. (Sofia Bettencourt, World Bank)	Noted and corrective action taken.
E-16- 51	A	6	27	6	36	Special Characteristics. What should be understood under "small islands"?, where are they mainly located, mainly grouped on archipelagos or also isolated. I suggest the concept should be a little more explained. You later mention Caribbean, North and South Pacific, Mediterranean and Indian Ocean islands, also "higher latitude islands" (P.6 and 11 and 14). See page 21 (16.4.6) r. for references on special economic characteristics. Also P. 19, r. 10-11, 16.4.4 "oceanic islands unique biodiversity trough high endemism caused by isolation". (Juan Llanes-Reguerio, University of Havana)	This is a fair comment, but we have not defined small islands. Nor has the IPCC given guidance except that includes autonomous small islands, including SIDS, as well as non-autonmous small islands.
E-16- 52	A	6	29	6	29	Suggest "Many [or most] small islands are highly vulnerable" I think it would be possible to point to some, particularly those without human populations, that are not overly vulnerable. (Donald L. Forbes, Bedford Institute of Oceanography)	Accepted and added in FGD.
E-16- 53	A	6	29	6	36	Provide information on population densities and poverty assessment reports (June Marie Mow, Fundación Providence)	We do not include such details on these or other characteristics
E-16- 54	A	6	29	6	36	Island people are dependent on a combination of marine and land-based resources, this is part of their cultural resilience to climate change that should be recovered and replicated (June Marie Mow, Fundación Providence)	No action taken on this comment
E-16- 55	A	6	29	6	29	"extreme events" not included?. Also P.6 .r.29, (16.2.1) (Juan Llanes-Reguerio, University of Havana)	We say instead 'prone to natural disasters'
E-16- 56	A	6	30	6	30	How small is small? (Thomas Spencer, University of Cambridge)	There is no definition of 'small', though the IPCC has given us a list of what they call 'autonomous small islands' (essentially SIDS)
E-16- 57	A	6	32	6	32	I suggesto add:growth rates and densities, and fragile ecosystems. Most small islands (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the	We have not included 'fragile ecosystems'.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						Environment)	
E-16- 58	A	6	33	6	34	phrase 'and many smallneeds' could be deleted as this is not in itself obviously a cause of vulnerability unless it is explained here that marine resources are sensitive to climate change (Jon Barnett, University of Melbourne)	We have not changed the original statement which we believe is correct.
E-16- 59	A	6	34	6	36	It is not clear to me why 'migration flows' are identified as an 'external force'. Amongst island societies, there are as many internal drivers of migration (push factors) as there are external (pull factors). (Chris Cocklin, Monash University)	The reviewer's comment is correct, but we have not modified the original statement.
E-16- 60	A	6	45	6	46	P. 6. r. 45-46 and to terrestrial and aquatic ecosystems. For instance consequences of Hurricane "Ivan" (2004) that inflicted severe damage to ecosystems and protected areas in western Cuba, Yucatan peninsula and other Caribbean islands. (Juan Llanes-Reguerio, University of Havana)	We deal with Hurricane Ivan later, and with specific reference to Grenada in Box 16.3
E-16- 61	A	6	46	6	46	replace 'the most' with 'considerable' (Jon Barnett, University of Melbourne)	Accepted and changed
E-16- 62	A	6		7		Nothing on high latitude island climates - extra-tropical cyclones etc (Clair Hanson, IPCC TSU)	Added in FGD
E-16- 63	A	7	9	7	10	please check statement about "largest increase" by regions I have the felling that in 2005 the Caribbean region was hit with an unexpected quantity of hurricanes with high incidence. (Juan Llanes-Reguerio, University of Havana)	Comment refers to page 8 line 9 not page 7. This wording does appear in the FGD, though the section has been considerably modified from the SOD.
E-16- 64	A	7	22	7	25	There is a question of the Meditteranean v. other areas that have small isands under a Mediterranean climate (e.g. California, Western Australia). Also there is considerable difference between the climate of the western Mediterranean Sea and the eastern Mediterranean. This all introduces more variability than the text suggests here. (Thomas Spencer, University of Cambridge)	The comment is correct though the wording has not been changed in the FGD.
E-16- 65	A	7	32			Sentence beginning 'Recent studies' needs rewording. The sentence is too long (Clair Hanson, IPCC TSU)	Accepted and sentence reworded
E-16- 66	A	7	35	7	35	whereas (Bhawan Singh, University of Montreal)	Accepted
E-16- 67	A	7	39	7	39	,analyses show (Bhawan Singh, University of Montreal)	Not changed in FGD
E-16- 68	A	7	39		40	One sentence paragraph! (Clair Hanson, IPCC TSU)	Another sentence added on high latitude temperatures
E-16- 69	A	7	40	-		I do not think that this is in Chapter 3, WGII, AR4 (James Bruce, Soil and Water Conservation Society)	Refers to WG1 not WG2 in FGD

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 70	A	7	42	7	52	There is as much about temperature in this section as there is about precipitation - there needs to be some sorting out of this discussion in relation to the section above (on 'temperature'). (Chris Cocklin, Monash University)	This section should have been re-written but has been inadvertently left as in SOD
E-16- 71	A	7	42		52	Precipitation section contains a lot of material on temperature (Clair Hanson, IPCC TSU)	See above comment
E-16- 72	A	7	43	7	47	Rewrite sentence: too long and cumbersome. (Bhawan Singh, University of Montreal)	See above comment
E-16- 73	A	7	49	7	52	It isn't very clear if paragraph that begin in line 49 and finish in line 52 is related with the Caribbean or it is general. If it is in the Caribbean this situation isn't general in all sub-region, for example, it isn't the situation of Cuba, with a prolongate period of severe drought, mainly in Eastern part of the island; heavy rainfall events only occurs during hurricanes or extreme climate situation. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	See above comment. The ambiguity remains.
E-16- 74	A	7	52			Should note drying of Mediterranean basin in 20th century (Dai, et al., 2004) (James Bruce, Soil and Water Conservation Society)	See above comment. Reference to Dai et al., 2004 not included in FGD
E-16- 75	A	8	2		10	No references provided for 1st paragraph and only one for whole section on TCs (Clair Hanson, IPCC TSU)	Several references added in expanded text.
E-16- 76	A	8	4	8	4	I suggest add:ENSO and decadal variability and other factors, for example, sea and ocean temperatures without influences of ENSO, that create favourable conditions for hurricanes developing. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	The suggested addition has not been included in the FGD, though ENSO does imply other factoirs other than just the SO index.
E-16- 77	A	8	8	8	10	This exact trend is also apparent in the Pacific Island region (see page 5 of reference above) (Sofia Bettencourt, World Bank)	Referred to in the next sentence as the South-West Pacific.
E-16- 78	A	8	8	8	10	A reference is needed here - is this Emmanuel 2005? (Jon Barnett, University of Melbourne)	Reference to Levinson, 2005 and Webster et al., 2005 has been included in FGD.
E-16- 79	A	8	8	8	8	have increased (Bhawan Singh, University of Montreal)	Accepted
E-16- 80	A	8	10	8	10	I suggest add:, Indian and South - West Pacific Oceans, and AtlanticOcean in the five years. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Atlantic Ocean not added
E-16- 81	A	8	13			ENSO and decadal variability - repetition from first paragraph lines 3-6 (Clair Hanson, IPCC TSU)	Agreed and deleted

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 82	A	8	17	8	18	Delete "very recently during". What about 2000-2005? (Donald L. Forbes, Bedford Institute of Oceanography)	Paragraph has been restructured
E-16- 83	A	8	17	8	18	Change 2000 to 2005, and cite Emmanuel 2005 and Webster, P.J., et al., 2005. Changes in tropical cyclone numbers, duration and intensity in a warming environment (since 1970). Science 309:1844-46 (James Bruce, Soil and Water Conservation Society)	See above
E-16- 84	A	8	20			How about a title such as "Sea level and temperature" and then cite some of the papers which show that sea temperatures down to >100m are increasing in all ocean basins due to greenhouse forcing. E.g. Barnett, et al., Science 13 April, 2001 and most recently Pierce, et al., Bull. Amer. Met. Soc. 87:562-564 and then mention (perhaps later) the implications - overall sea level rise (satellite measurements), more severe tropical cyclones, stress on coral reefs, movement of fish populations. (James Bruce, Soil and Water Conservation Society)	We have not included sea temperatures in the observed trends section, though the comment is fair.
E-16- 85	A	8	21		32	useful to show a short list of SL rise data, say a dozen locations, with rises per year over the last century, last 25 years and last decade. E.g. Bermuda between 1930 - 2000=2 mm/yr, last 30 yrs=2.7 mm/yr, last decade=5.3 mm/yr (from Proudman data). (Charles Sheppard, Warwick University)	We have not included this detail which is in the WG1 assessment.
E-16- 86	A	8	23		24	relative to what? (Clair Hanson, IPCC TSU)	Relative to the land is implicit
E-16- 87	A	8	24	8	25	The Caribbean regioncentury. Provide source of this information. (Bhawan Singh, University of Montreal)	We have not provided a reference in the FGD
E-16- 88	A	8	30	8	32	Please review this sentence. The reference to a more stable Maldives, even though the rate of sea level rise in higher than in the other small island examples given, may seem contradictory to the reader. (Sofia Bettencourt, World Bank)	This has been changed in the FGD (16.2.2) mainly as a result of Church et al., 2006 who do not believe the Maldives is stable.
E-16- 89	A	8	31	8	32	It would be a good idea to specify the dates for which the Khan et al. rates were computed. (Donald L. Forbes, Bedford Institute of Oceanography)	Has not been done
E-16- 90	A	8	37	9	18	This is doubtless true but what has it to do with climate or climate change? The doc surely is not for complaining about social vulnerability in island societies caused by local political factors etc. This should be reduced to about 3 lines, to simply draw attention to these factors. (Charles Sheppard, Warwick University)	As the opening sentence suggests there are other contributors to island vulnerability that exacerbate the overall vulnerbaility of small islands
E-16- 91	A	8	38	8	40	Suggest rewrite as "In the pacific vulnerability is also a function of external and internal political and economic processes that affect forms of social and economic organisation that differ from those practiced traditionally. Attempts"	Accepted and changed

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						(Jon Barnett, University of Melbourne)	
E-16- 92	A	8	43	8	43	suggest add:"In the last three years islands located in Indian Oceanhas suffered the effects of tsunamis, earthquakes and volcanoes in a very short cycle. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Now include tsunami in second sentence
E-16- 93	A	8	45	8	49	This paragraph is not well written and could be better expressed. (Jon Barnett, University of Melbourne)	Has been rewritten
E-16- 94	A	8	50	8	50	I suggest to add: Emigration of a large part of professionals and scientists, difficult the adoption of effective adaptation measures (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Not included. List is sufficiently long as is.
E-16- 95	A	9	2	9	2	I suggest include the idea of inadequate planning and infrastructure development (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Included elsewehere in adaptation section
E-16- 96	A	9	4	9	9	Any evidence/references to support these claims? (Chris Cocklin, Monash University)	References have now been added eg Connell (1999) Adger et al., Pelling and Uitto
E-16- 97	A	9	7	9	7	,and make people (Bhawan Singh, University of Montreal)	Not changed
E-16- 98	A	9	29	9	35	This paragraph seems to need some more connecting sentences. We go from impacts on coral reefs of climate change to other causes of reef degradation, with nothing explicitly linking the two sets of points. It juist needs a connecting sentence. (Chris Cocklin, Monash University)	Have modified paragraph to include links
E-16- 99	A	9	35			suggest add marine diseases to this short list. This is the main one in many areas. (Charles Sheppard, Warwick University)	Added
E-16- 100	A	9	38		46	rewrite to one sentence. This is no different to the situation in poor continental countries, and is not particular to islands. When rewritten, say why this is important to SMALL ISLANDS. If you cant, suggest omit the para. comment could usefully be made of Bermuda, USVI, Caymans and many other equally small islands which are far from desperately poor but which would be equally affected (more so in dollar terms) by climate related damage. (Charles Sheppard, Warwick University)	Have left as is recognising that these factors are important to small islands, though not unique to them.
E-16- 101	A	9	40	9	40	I suggest add:population growth and weak infrastructure, attempts (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Weak infrastructure added
E-16- 102	A	9	41	9	41	such as forests (Bhawan Singh, University of Montreal)	Accept

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 103	A	10	1	10	10	Any evidence/references to support these claims? (Chris Cocklin, Monash University)	The reference is Nurse and Moore (2005)
E-16- 104	A	10	1			incalculatable> incalculable (Clair Hanson, IPCC TSU)	Changed
E-16- 105	A	10	6	10	10	It may be worth it to reiterate here that the impact of extreme events is disproportionally high: in the Pacific, for example, the 15 largest disasters from 1950-2004 caused 79% of the economic damages reported, even though they accounted for only 23% of the total number of disasters (see Bettencourt et al. 2006 above, page 2). (Sofia Bettencourt, World Bank)	Agreed and have added a general sentence
E-16- 106	A	10	6	10	6	In the future, climate change (Bhawan Singh, University of Montreal)	Accepted
E-16- 107	A	10	9	10	9	output declines (Bhawan Singh, University of Montreal)	Accepted
E-16- 108	A	10	10	10	10	i suggest add:canot be fixed in time, housing infrastructure is affected and destroyed (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	End of sentence rewritten
E-16- 109	A	10	13	10	28	This section is very short. I'm not sure what its purpose is. The name implies it should outline adaptations already underway, and also then should it not explain the adaptive strategies that exist in key sectors such as disaster management, urban planning, and agriculture that help prepare for, cope with and respond to extremes such as droughts, floods, and cyclones? These kinds of observations are scattered throughout later sections of the chapter, but should they be here? Or should this be deleted? Or? (Jon Barnett, University of Melbourne)	Section is included in template for chapter outline
E-16- 110	A	10	19			IPCC (2001) shouldn't this refer to a chapter from WG2 not WG1? (Clair Hanson, IPCC TSU)	Reference changed to Nurse et al., 2001
E-16- 111	A	10	22	10	22	I suggest add: shared by the islands of metropolitan countries. Severe droughts, with significative reduction of historical accumulativerainfall, indicates the necessity of vulnerability studies and adaptation measures in the economic, environmental and social aspects. More recentstudies since the TAR (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	We have changed the words 'normally shared' to 'not always shared'. Need reference for additional comment.
E-16- 112	A	10	28			UNDP 2005a and 2005b missing from ref list (Clair Hanson, IPCC TSU)	Included UNDP, 2005 in reference list of FGD
E-16-	A	10	28			"UNDP, 2005a, 2005b are missing in the reference list."	See above

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
113						(Hiroya Yamano, National Institute for Environmental Studies)	
E-16- 114	A	10	51	11	12	Again temperature and precipitation are mixed together here with no logical order. Lines 3-4 should come in at line 8 after 'frequency of extreme temperatures'. (Clair Hanson, IPCC TSU)	Accepted. Preciptiation now in separate paragraph.
E-16- 115	A	11	1	11	40	Special Characteristics. What should be understood under "small islands"?, where are they mainly located, mainly grouped on archipelagos or also isolated. I suggest the concept should be a little more explained. You later mention Caribbean, North and South Pacific, Mediterranean and Indian Ocean islands, also "higher latitude islands" (P.6 and 11 and 14). See page 21 (16.4.6) r. for references on special economic characteristics. Also P. 19, r. 10-11, 16.4.4 "oceanic islands unique biodiversity trough high endemism caused by isolation". (Juan Llanes-Reguerio, University of Havana)	Covers all small islands, but focus on the autonomous SIS appeared in TAR.
E-16- 116	A	11	2			both seasons? Which ones? (Clair Hanson, IPCC TSU)	Summer and winter appear immediately later.
E-16- 117	A	11	7	11	7	with a rise (Bhawan Singh, University of Montreal)	Accepted
E-16- 118	A	11	14	11	30	Provide source of Tables 16.1 and 16.2. (Bhawan Singh, University of Montreal)	Already shown in the text. Ruosteenoja et al., 2003
E-16- 119	A	11	17	11	26	This sea level rise projections section surely needs to be expanded to include the range of projections and effects of increase storn surges etc. (William Hare, Potsdam Institute for Climate Impact Research (PIK))	Accepted. New text is added but not storm surges.
E-16- 120	A	11	20			high islands? Elevation? Latitude? Please clarify (Clair Hanson, IPCC TSU)	High islands is a common term used to distinguish from low islands and atolls
E-16- 121	A	11	21	11	21	Reference for the 1-7mm/year figure needed. (Jon Barnett, University of Melbourne)	This sentence is deleted.
E-16- 122	A	11	21	11	21	I suggest add:the coastal zone and many of groundwater resources are located in this zone. Estimates (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Not accepted. Showed these as major examples.
E-16- 123	A	11	23	11	26	The discussion on the Morner paper should be removed from here and moved to Section 16.2.2. as this paper deals with the observed SLR trends eg they argue that "The present trend lack signs of a sea level rise. On the contrary, there is firm morphological evidence of a significant sea level fall in the last 30 years." This is at odds with the trends reported in 16.2.2. (William Hare, Potsdam Institute for Climate Impact Research (PIK))	Not accepted. This section is referring to future trends, not to the past which is in the previous section.
E-16- 124	A	11	34			after "increased convective activity", suggest add "and more atmospheric precipitable water". Ref. Ross, R.J. & W.P. Elliott, 2001. Radiosonde based	Not accepted

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						Northern Hemisphere tropospheric water vapour trends, J. of Climate 14.7:1602-	
						1623.	
E-16-	Α	11	35	11	35	(James Bruce, Soil and Water Conservation Society) Choice of words: use localized instead of individual.	Accepted
125	A	11	33	11	33	(Bhawan Singh, University of Montreal)	Accepied
E-16-	Α	11	35			AND p13 ln 22 - which section in the TAR is being referred to here?	WG1
126	Λ	11	33			(Clair Hanson, IPCC TSU)	WGI
E-16-	Α	11				Table 16.2 should be in section 16.3.3.1	Accepted and moved.
127						(Clair Hanson, IPCC TSU)	
E-16- 128	A	11				Table 16.1 and 2 - can these be extended to include GB islands (see comment above with URL) (Clair Hanson, IPCC TSU)	Not accepted.
E-16- 129	A	11				16.3.3.3 - all on tropical cyclones? What about extremes of rainfall and temperature? Can nothing more than a shift in the mean will result in a change in the frequency of extremes (p11 7-8) be added? Same goes for rainfall. Can more specific/detailed information be included? (Clair Hanson, IPCC TSU)	The suggestion is included in 16.3.3.1.
E-16- 130	A	11				16.3.3.2: Can you give more detailed projections of SLR for S.I.s? possible third table similar to T16.1 and 2? (Clair Hanson, IPCC TSU)	Not accepted. No information to such detailed level.
E-16- 131	A	12	29			Please clarify 'warm-climate experiment' (Clair Hanson, IPCC TSU)	The sentence is deleted.
E-16- 132	A	12	41	13	8	Certainly true, but again, there is little convincing evidence here that (a) islands are so unique in the sense that eg coastal mainland settlements are not, or that such factors affect islands more than, say Lebanon or Myanmar (social disruption from war) or Tanzania, Congo (suffering from trade imbalances). Each of these too is 'unique'. Keep to climate change and small islands! Stuff on 'dignity' and 'confidence' is misplaced. (Charles Sheppard, Warwick University)	Not accepted. Here only the characteristics of islands are discussed.
E-16- 133	A	12	43	12	43	The level of community organization is a strength towards climate change adaptation (June Marie Mow, Fundación Providence)	Yes.
E-16- 134	A	12	51	12	52	I suggest to revise the affirmation: "Fiji, jamaica and Mauritius are expected to experience significant contractions in GDP as a result of declining sugar prices paid by the EU(Milner et al., 2004)", because the World prices in this moment are high, and the projection of by - products necessities, and mainly the alcohol(etanol) as energetic source not sustain either the affirmation.	Accepted.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						(Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	
E-16- 135	A	13	5	13	8	Could this trend be rather an opportunity to recover "best social practices" from traditional communities and by doing so increase resilience (June Marie Mow, Fundación Providence)	Yes.
E-16- 136	A	13	19	13	52	In the case of point 16.4.1 Water resources, is necessary to introduce the bad situation of sanitation in small islands, accomplished by low % of wastewater treatments and consequently the water pollution. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	While we agree and have anecdotal evidence, we do not have a solid recent refernce to cite
E-16- 137	A	13	21	13	21	I suggest add:Owing to factors of limited size, availability, and geology and topography, water resources (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Accepted and included
E-16- 138	A	13	26	13	26	I suggest add:economis development in small islands and the maintenance of main ecosystems (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Not accepted. The point being made and the following sentence is dealing with socio-economic matters, not ecosystems.
E-16- 139	A	13	29	13	31	Prescriptive? (Chris Cocklin, Monash University)	No not prescriptive from our point of view. Is a paraphrase from Burns (2002).
E-16- 140	A	13	45			than> that (Clair Hanson, IPCC TSU)	Accept
E-16- 141	A	13	47	13	47	I suggest add:prolongated drought impacts and the necessary adoption of mitigation and adaptation measures in the economic, social and environmental aspectas. Recent modeling (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Not accepted. This addition would make the sentence too cumbersome and add another concept that is dealt with elsewhere (16.5)
E-16- 142	A	14	1	14	50	Special Characteristics. What should be understood under "small islands"?, where are they mainly located, mainly grouped on archipelagos or also isolated. I suggest the concept should be a little more explained. You later mention Caribbean, North and South Pacific, Mediterranean and Indian Ocean islands, also "higher latitude islands" (P.6 and 11 and 14). See page 21 (16.4.6) r. for references on special economic characteristics. Also P. 19, r. 10-11, 16.4.4 "oceanic islands unique biodiversity trough high endemism caused by isolation". (Juan Llanes-Reguerio, University of Havana)	This is a fair comment and we have attempted to address the definition of small islands in 16.2.1. For earlier assessments the equivalent chapter dealt with Small Island States. For AR4 the IPCC has decided on small islands but has not defined what is meant by the term.
E-16- 143	A	14	1	14	1	Box 16.1. Note typo in first column, item 5, "flywatchers" should be "flycatchers". (Donald L. Forbes, Bedford Institute of Oceanography)	Noted and corrected

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 144	A	14	1			Comment. Is the reference from Lal et al, 2002 (IS92a) applicable to the Caribbean region?. On reference 10 of the text in the Box 16.1 said "for all Small Island States", but in the World map, in the Caribbean region the reference was not place. (Avelino G. Suarez Rodriguez, Ecology and Systematic- Cuban Environmental Agency)	In our final version of Box 16.1 this reference is not included because we want to be more site specific
E-16- 145	A	14		14		I suggest add in Box 16.1 one point: Islands in Indian Ocean in Region and System at Risk, in Description of vulnerability Tsunamis and earthquakes; and in Impacts: Lost of natural ecosystems, mainly coastal zones and beaches, and tourism, lost of infrastructure and economic, social, and environmental damages, lost of thousands of human life and woundeds, and spread of pests and diseases dangerous for human health, animals and plants. And the same effects with volcanoes in the Caribbean and Indian Ocean(Indonesia). (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	The emphasis in this Assessment is on climate change processes and impacts rather than on those not directly related to climate. Have added 'to Climate Change' in the Box title to make this clear.
E-16- 146	A	14				Box 16.1 is a good summary figure (Clair Hanson, IPCC TSU)	The contents of Box 16.1 has been modified but the basic idea remains.
E-16- 147	A	14				Box 16.1 - In the first verticle column in the Table, physical as well as biological impacts should be noted. E.g. Box 1 insert "loss of beach area" before "Sea turtle, etc.". Similarly for boxes 3, 5, 6. (James Bruce, Soil and Water Conservation Society)	The emphasis given in each of these examples follows the key message and/or exposure unit identified in each of the references
E-16- 148	A	15	25	15	25	P.15 r.25 What is an "augmentation" strategy?. (Juan Llanes-Reguerio, University of Havana)	We have deleted the word, though it crudely referes to 'additional' or 'supplementary'.
E-16- 149	A	15	25		27	Include Singapore in this list. (Poh Poh Wong, National University of Singapore)	Have now included Singapore
E-16- 150	A	15	32			SECTION 16.4.2 COMMENT This section would benefit from the kind of table included in the SAR WGII on the projected land loss for small islands from sea level rise. This information is missing from the chapter and it would improve it significantly if this were included (William Hare, Potsdam Institute for Climate Impact Research (PIK))	Agreed but we do not have equivalent recent data.
E-16- 151	A	15	34	15	35	I suggest to add:in these islands(Parakoti ans Scott, 2002), in othersislands as Cuba were developed early warning systems for drought, tropospheric ozone in agriculture and others, and automatized systems in order to monitoring the weather and movement of cyclones and hurricanes(Goverment of Cuba, 2006 - Tercer Informe Nacional a la Convención sobre Desertificación y Sequía) (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment) can you provide some examples from Gibbons and Nicholls (2006)?	Would like to include but need full reference. There is just one example as indicated in the

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
152						(Clair Hanson, IPCC TSU)	revised text.
E-16- 153	A	16	12	16	13	This suggests that atoll islands are likely to survive projected SLR given the theory of Kench et al. I think this is an unsafe projection for the following reasons and that the latter part of the sentence after the comma be replaced with text that reads something like "however the persistence of atoll islands under projected rates of climate change exceeds those know in the past to have been accomodated by these systems" The theory that atoll or reef islands may be stable to rapid sea level rise has been advanced by Kench et al. (2005). "New model of reef-island evolution: Maldives, Indian Ocean." Geology 33(2): 145-148. based on the estimate history of the Maldives, where sea level either was of the order of 1.0-2.5 m above reef height in the mid Holocene, or reefs kept up with an SLR of this order. It is proposed that the mechanism of island formation is likely to stabilize the atoll islands in the face of projected sea level rise of the order of 0.48 m over the 21st century, and hence "are expected to persist under current scenarios of future climate change and sea sevel rise". Two issues arise in relation to this theory. First is that the rate of SLR projected over the 21st century appears to be higher than during the period of island formation in the past. If it is assumed that about 2.5 m of SLR occurred in the period 4000-5500 BC (which is at the high end of SLR estimates for this period, the rate of sea level rise was in the range of 1-2mm/year, probably less. The projected rate over the 21st century is in the range 3-9mm/yr with a mid range of about 5mm/yr. Hence it is clear that the rate of SLR is likely to 3-5 times higher than in the middle Holocene. Secondly, the increasing CO2 in sea water appears likely to reduce the calcification capacities of coral reefs, and this would appear to have adverse effects on reef building to keep pace with sea level rise (REF). Whilst the means of formation of the Maldives is not well understood and the mechanisms proposed by Kench et al. (2005). "New model of r	It is not appropriate to include the suggested text at this point, as the two sentences deal specifically with unihabited islands in the Maldives. We have however accepted the sense of the reviewers comments and placed a caveat at the end of the paragraph.
E-16-	A	16	47			At end of line "mainly with other human activities", on the assumption that most of	Accepted and included
154						current climate changes have anthropogenic causes.	
F 16		1.7	1	1.7		(James Bruce, Soil and Water Conservation Society)	Fig. 1611 1 2 3
E-16-	A	17	1	17	6	Fig. 16.1. Other data could be added to this from additional sources, e.g. mining-	Figure 16.1 has been replaced by a box, Box

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
155						reclamation impacts in Kiribati. My comment is more specifically that none of the sources shown at the bottom of the figure is in the list of references. I know this is taken from Payet (2003), but either the sources should be omitted (referring the reader to Payet), or they should be in the list of references. Note also that the column headings should be oriented so that they can be read by turning the head left.	16.2 which is very different from the original. It opens with a general statement, includes a map from Bryant et al, 1998 and then cites some specific examples from islands with the relevant references.
E-16- 156	A	17	1			(Donald L. Forbes, Bedford Institute of Oceanography) "Figure 16.1. References in Data estracted from: are missing in the reference list." (Hiroya Yamano, National Institute for Environmental Studies)	See above. References cited in the new box are included in the reference list
E-16- 157	A	17	6	17	6	I suggest add:with climate change - induced processes. In the different Regions aren't included all countries, only these with data. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	See above
E-16- 158	A	17		17		I suggest add and change in Figure 16.1 - Bahamas ad black colour in Extreme storm events; Cuba - add light colour in Tourism impacts, black in Extreme storm events, change by light colour coral diseases and mass bleaching; Dominican Republic - place dark colour in pollution and extreme storm events; Grenada and Haiti dark colour in Extreme storm events and for Haiti dark colour in pollution; Saint Kitts and Nevis dark colour in Extreme storm events; Comoros, Maldives, Seychelles and Mauritius dark colour in Extreme storm eventos. In genral I think that all small islands have dark colour in pollution because the most don't have adequate wastewater treatment systems. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	See above
E-16- 159	A	17				Wilkinson 1998, 2000 2002 missing from ref list (Clair Hanson, IPCC TSU)	See above
E-16- 160	A	17				UNESCO 1994 missing (Clair Hanson, IPCC TSU)	See above
E-16- 161	A	17				Linden et al 2002 missing (Clair Hanson, IPCC TSU)	See above
E-16- 162	A	17				Fig.16-1 - Suggest delete "Non-climate" from title: moss bleaching, extreme storms, etc. are all climatic. (James Bruce, Soil and Water Conservation Society)	We have included 'non-climate change' to be consistent with the diagram in the coral reef box in chapter 4, and it is commonly used in the coral reef literature.
E-16- 163	A	17				Bryant et al 1998 missing (Clair Hanson, IPCC TSU)	See earlier comment in 155 and 156.
E-16-	Α	18	15	18	18	I am not clear on what is meant by "countries' interdependence with regard to plant	Done. Simplified to 'countries' dependence'

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
164						genetic resources". Interdependence implies 'between countries', in which case I don't understand the individual statistics by country. Should this just read "countries' dependence"? Or am I missing something? (Donald L. Forbes, Bedford Institute of Oceanography)	
E-16- 165	A	18	18	18	18	and 37 percent for Vanuatu (Bhawan Singh, University of Montreal)	Done.
E-16- 166	A	18	21	18	21	I suggest add:loss of soil fertility and degradation (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Done.
E-16- 167	A	18	23	18	23	Delete reference to World Bank (2002). This is the same reference as World Bank (2000): Cities, Seas and Storms: Volume IV - Adapting to Climate Change. (Sofia Bettencourt, World Bank)	Done.
E-16- 168	A	18	29	18	33	Could also refer to crop and infrastructure damage in Nuie from extreme events, such as the cyclones of 1990 and 2004. Ofa in 1990 turned Niue from a food-exporting country to one dependent on imports for two years following, and Heta in 2004 had an even greater impact on agricultural production in Niue (Wade, 2005). Reference: Wade, H. (2005) Pacific Regional Energy Assessment 2004: Niue National Report. Pacific Islands Renewable Energy Project, Technical Report 8. SPREP, Apia, Samoa, 38 p. [pdf version available]. (Donald L. Forbes, Bedford Institute of Oceanography)	Noted but space constraints preclude inclusion.
E-16- 169	A	18	29		38	These two paragraphs should be included in the previous section (current vulnerabilities etc) as they don't discuss the future (Clair Hanson, IPCC TSU)	Paragraphs have been modified to discuss the future.
E-16- 170	A	18	41			add to end of sentence ' though probably not as important as current trends of overfishing.' (Charles Sheppard, Warwick University)	Done.
E-16- 171	A	18	48			ditto (Clair Hanson, IPCC TSU)	Noted.
E-16- 172	A	18	50	18	52	The migration of tuna stocks westwards would have significant adverse impacts on countries such as Kiribati, which depend on tuna license fees for a large proportion of their budget. (Sofia Bettencourt, World Bank)	Agreed but a reference is needed. Reference to Lehody et al., (2003) and Aaheim and Sygna (2000) is made in the following paragraph.
E-16- 173	A	19	5			This can be supported by Graham et al 2006 Dynamic fragility of ocean coral reef ecosystems PNAS 103:8425-8429. which focusses on reef fishes. (Charles Sheppard, Warwick University)	Done.
E-16- 174	A	19	8	19	48	I suggest to add: The lost of mangrove plantations in coastal zones, mainly produced by human actions, produce several degradation risks in the ecosystems	This isssue is commented upon in Serction 16.5.3 on adaptation in degraded manrove

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						located there, because disappear the first line in the coastal defense, and the natural habitats for fish and other species, among other negative effects. This aspect is of main importance in the possible effects of climate changes, especially sea - level rise and extreme events, and the adaptation measures. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	systems.
E-16- 175	A	19	8			Section 16.4.4. Statements on biodiversity have to recognise island type and island location. Near sea-level atolls have a very restricted range of plant species whereas high volcanic islands may support very high terrestrial biodiversity. Raised limestone islands may have a particular flora and fauna. However, marine biodiversity is likely to be very different, although in the tropics and sub-tropics there are general patterns of shallow marine biodiversity which emphasise a) Atlantic v. Indo-Pacific centres of biodiversity, with strong gardients of declining biodiversity away from a SE Asian core region in the latter. A reference to these patterns (e.g. JEN Veron for example) would be helpful here. (Thomas Spencer, University of Cambridge)	Space limitations do not allow for general statements on biodiversity patterns.
E-16- 176	A	19	8			Section 16.4.4 Biodiversity. Comment. The lost of biodiversity on coral reef are not mention in this section. Coral reef ecosystems harbour one of the largest species diversity in the world. On box 16.1 reference 2 Donner et al, 2005 analyzed the coral reef impacts and on Figure 16.1 Payret, 2003 show the non-climate change and the induced processes related climate change threats to coral reef. (Avelino G. Suarez Rodriguez, Ecology and Systematic- Cuban Environmental Agency)	Coral reef biodiversity is dealt with in section 16.4.2
E-16- 177	A	19	10	19	11	Special Characteristics. What should be understood under "small islands"?, where are they mainly located, mainly grouped on archipelagos or also isolated. I suggest the concept should be a little more explained. You later mention Caribbean, North and South Pacific, Mediterranean and Indian Ocean islands, also "higher latitude islands" (P.6 and 11 and 14). See page 21 (16.4.6) r. for references on special economic characteristics. Also P. 19, r. 10-11, 16.4.4 "oceanic islands unique biodiversity trough high endemism caused by isolation". (Juan Llanes-Reguerio, University of Havana)	The biodiversity section is not the place to define "small islands".
E-16- 178	A	19	29			with Donner suggest add Sheppard 2003, Predicted recurrences of mass coral mortality in the Indian Ocean Nature 425:294-297, where prediction for this is even sooner for some island groups. (Charles Sheppard, Warwick University)	Done.
E-16- 179	A	19	32			UNEP (2002) missing from ref list (Clair Hanson, IPCC TSU)	No mention of this reference at this page location.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 180	A	20	2			Title 16.4.5 "Human Settlements and Health" would better reflect the contract. (James Bruce, Soil and Water Conservation Society)	Not accepted. Although there is some focus on health, we believe that the combination of issues raised have implications broader than health alone.
E-16- 181	A	20	4	20	4	Squatting is probably an increasing problem on many small islands in the Caribbean (June Marie Mow, Fundación Providence)	Noted, but not immediately relevant to the discussion.
E-16- 182	A	20	4		5	There are many paragraphs throughout the chapter with no references. This is especially apparent on p20 para. 1 where in the first line it states that the location of population and economic activity at the coast is well documented, yet there are no references in this paragraph (Clair Hanson, IPCC TSU)	Noted and corrective action taken.
E-16- 183	A	20	11	20	12	Population according to ages and gender should be addressed in order to put the right dimension upon trends and impacts; how young are the populations? (June Marie Mow, Fundación Providence)	We do not consider this to be critical in the present context, particularly given the strict limitations of space.
E-16- 184	A	20	13		17	SL change and storm events will have serious consequences such as? Please provide examples. Perhaps follow the structure of p22 lines 24-30 (Clair Hanson, IPCC TSU)	Noted .
E-16- 185	A	20	30	20	30	Reference needed for this 'second more detailied' study. (Jon Barnett, University of Melbourne)	Paragraph summarised in FGD.
E-16- 186	A	20	30	20	30	I suggest add: between water availability and water quality and diarrhoea. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Although this may seem logical to infer, water quality was not specifically identified as a factor in the particular study reviewed. We therefore reject the recommendation.
E-16- 187	A	20	35	20	35	Climate change exacerbated by overcrowding (June Marie Mow, Fundación Providence)	Noted, but completely new language is provided in FGD.
E-16- 188	A	20	36	20	36	Delete "and malaria." No information is presented in the subsequent paragraph to support this claim. Chapter 8 on human health contains a full discussion of malaria indicating that the relationship between climate and malaria transmission is complex. Chapter 9 on Africa indicates that climate change will decrease the risk of malaria transmission in some parts of Africa and increase it in others. A claim that climate change will increase malaria in small islands is not justified without specific analysis showing that the necessary conditions will exist. (Lenny Bernstein, L.S. Bernstein & Associate, L.L.C.)	Noted. Corrective action taken in new FGD text.
E-16- 189	A	20	48	20	48	I suggest add:contamination of fresh water suplies by human activities and during floods and storms, just as lack of safe sanitation facilities, appear to lead to an increased	Comment no longer relevant in light of rewritten FGD text.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						(Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	
E-16- 190	A	20	49			Is ciguatera a form of food poisoing through eating fish? The way the text is written, it sounds as though it is the fish that suffer from the poisoning (Clair Hanson, IPCC TSU)	Ambiguity has been removed in rewritten FGD text.
E-16- 191	A	21	1	22	19	Two additional points on climate change impacts on island tourism. (1) Apart from its negative impacts on the tourism resources of islands, climate change shifts tourism flows to the higher altitudes and latitudes (non tropical islands); (2) Climate change impacts are more important than sea-level rise. See Bigano, A., J.M. Hamilton, and R.S.J. Tol 2005, The impact of climate change on domestic and international tourism: a simulation study. Working paper FNU-58. Hamburg: Hamburg University and Centre for Marine and Atmospheric Science. Available at http://www.uni-hamburg.de/Wiss/FS/15/Sustainability/Working_Papers.htm. (Poh Poh Wong, National University of Singapore)	The reference to Bigano et al., 2005 was added
E-16- 192	A	21	1	22	19	Special Characteristics. What should be understood under "small islands"?, where are they mainly located, mainly grouped on archipelagos or also isolated. I suggest the concept should be a little more explained. You later mention Caribbean, North and South Pacific, Mediterranean and Indian Ocean islands, also "higher latitude islands" (P.6 and 11 and 14). See page 21 (16.4.6) r. for references on special economic characteristics. Also P. 19, r. 10-11, 16.4.4 "oceanic islands unique biodiversity trough high endemism caused by isolation". (Juan Llanes-Reguerio, University of Havana)	See response to this comment at E-16-51.
E-16- 193	A	21	1	22	19	In principle this is a "mitigation" issue. The problem is that we are not sure such issues will be taken up by group 3 (absent from their FOD). Nevertheless adaptation to increases in energy costs is a legitimate issue for group 2; it is mentioned in particular in CH7, but it is of particular importance for long distance destinations which can only be reached by plane (Jean-Paul Ceron, CRIDEAU (Université de Limoges-CNRS-INRA))	This comment was not found to be useful and was not utilised. Energy is dealt with in 16.4.7
E-16- 194	A	21	14	21	14	I suggest add: has been set back at least one decade or more, by this single event (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	At least implies "or more".
E-16- 195	A	21	16	21	16	I suggest add:Other negative examples are shown in other islands of Caribbean as Grenada, Monserrat, Jamaica, La Hispaniola, Cuba, Saint Vincent and Grenadines, Women Islands in México, among others. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	We accept that there are many other examples but have preferred to highlight grenada as a case study.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 196	A	21	46	21	46	I suggest add:are projected to accelerate beach erosion(in a process joint with the lost of coastal line defenses - mangroves and other plants- by the construction of tourism facilities), cause degradation (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	This addition was inserted in the text as follows "cause degradation of natural coastal defences such as mangroves and coral reefs'
E-16- 197	A	21	51	22	2	The last part of this sentence seems highly speculative. The attraction of such destinations possibly relies on exoticism as much as on climate. The impact of increased energy costs (increased oil prices or effects of taxes on aviation in relation to mitigation policies) might be much greater (Jean-Paul Ceron, CRIDEAU (Université de Limoges-CNRS-INRA))	There is some evidence that the comment is a substantive one as demonstrated in the last paragraph in 16.4.6
E-16- 198	A	21	51			Include Phuket which is a premier tourism island. Also to diversify the references, see Raksakuthal, V. 2003. Climate Change Impacts and Adaptation for Tourism in Phuket, Thailand. Asian Diasaster Preparedness Center. (Poh Poh Wong, National University of Singapore)	Reference is made to Phuket in Section 16.4.7. and to Raksakulthal (sic) there, Raksakulthal in the reference list which is the correct spelling
E-16- 199	A	21				Box 16.2: please convert millions to billions to be consistent within the box. Also please chaeck that the % of GDP is correct. If 2.2 bn = 2xGDP then GDP = 1.1bn. If this is the case 1,381 million = 127% GDP and 288 million = 8%?? (Clair Hanson, IPCC TSU)	This has been done
E-16- 200	A	22	1	22	1	Socio-cultural aspects were not addressed; or political internal conflicts related to ethnicity (June Marie Mow, Fundación Providence)	This is a different issue than the one addressed in the sentence.
E-16- 201	A	22	11	22	19	See above comment (Sofia Bettencourt, World Bank)	Unclear what the 'above comment' is
E-16- 202	A	22	17	22	18	Resources to protect key tourist assets provided by public and private sectors? (June Marie Mow, Fundación Providence)	.We do not identify either public or private sectors. Would depend on particular context.
E-16- 203	A	22	22	22	22	Is this aspect related only to coastal protection infrastructure? Should sewage systems be considered at this point? On many islands if this infrastructure breaks down, the whole island will collapse. (June Marie Mow, Fundación Providence)	This observation appears to ignore the fact that a wide range of infrastructure is dealt with. The reality is that it is necessary to emphasize that much of the critical infrastructure on small islands is coastal. In any event, there is no focus at all on "coastal protection infrastructure".
E-16- 204	A	22	32	22	42	This paragraph is treating energy supply and mitigation issues that should be covered primarily in WG3 (review still pending). I suggest deleting to save space and retain focus, but some of this text could be saved if necessary to support discussion of integrated adaptation and mitigation efforts.	Energy is seen as part of infrastructure in this case.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						(Donald L. Forbes, Bedford Institute of Oceanography)	
E-16- 205	A	22	32		42	please provide examples of renewable energy sources (Clair Hanson, IPCC TSU)	Not specified
E-16- 206	A	22	39	22	42	Do you have some information on investment costs for desalination? The fact that desalination remains capital intensive is one of the reasons why many small islands have not made the technological reconversion as yet (June Marie Mow, Fundación Providence)	We do not see the relevance, as no mention of desalination is made here.
E-16- 207	A	22	44	22	51	You may want to qualify this example, by mentioning that many atoll islands in the Pacific (e.g. Tarawa) experience variations in sea level rise related to ENSO that are higher in magnitude than the average sea level rise expected due to climate change. (Sofia Bettencourt, World Bank)	Specific countires not mentioned here nor sea level variability
E-16- 208	A	22	51			For sea-level rise impacts on Singapore and costs, see Ng, W.S. & R. Mendelsohn, 2003. The impact of sea level rise on Singapore. Environment and Development Economics, 10: 201-215. (Poh Poh Wong, National University of Singapore)	Reference noted and relevant information cited in text.
E-16- 209	A	23	7			following Line 7 - Storm surges in The Bahamas could be cited (as I recall up to 9m.) (James Bruce, Soil and Water Conservation Society)	We cannot include as we have been unable to locate published corroboration of the reviewer's recollection.
E-16- 210	A	23	10	30	9	Adaptation sections pays too little attention to ongoing initiatives supported by development agencies. See, e.g. World Bank (2006) Project Appraisal Document. Kiribati Adaptation Program Phase II - Pilot Implementation Phase (KAP-II), World Bank, Washington DC, available on the WB website. This project includes interesting models for linking local/community and government-led adaptation. It also highlights the need to involve central ministries, such as finance and planning (this issue is also raised in World Bank (2006, already in the reference). Also reflect lessons learned in several WB projects in the Caribbean region. (Maarten van Aalst, Red Cross/Red Crescent Centre on Climate Change and Disaster Preparedness)	We have attempted to draw most of our examples from internationally refereed journals rather than World Bank and other agency reports. We will however include some examples of initiatives in 16.5
E-16- 211	A	23	25	23	47	I'm not sure that this figure works very well. There isn't a clear connection between the top and the bottom parts of it. Additionally, its not entirely clear what the advantage is in having the two vertical axes. The upper part of the figure oversimplifies some quite important relationships and its not really evident what the take-home message from this is. My inclination would be to delete the upper part of the figure. (Chris Cocklin, Monash University)	The figure has been changed and redrawn to accommodate this and other comments about it. Note that the upper part of the figure has been made clearer.
E-16-	Α	23	25	23	52	Box 16.3 - I don't know if this Box is extracted from literature. In this case I don't	Reference is given to the original source in the

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
212						have nothing to say, it is good. In the case that it is created by lead authors I propose change the elements, for the three components of sustainable development: environmental, economic and social, in the context of Global Change and Local Change, in this form the Box will be more complete. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	new Box.
E-16- 213	A	23	27	23		Box 16.3. This isn't very clear to me! I'm not sure it adds clarity to the discussion. (Jon Barnett, University of Melbourne)	See responses to two previous comments
E-16- 214	A	23	48	23	52	Drivers for both are external forces; suggestion make clear difference between external and internal forces. Many of the businesses on the islands are not locally owned (June Marie Mow, Fundación Providence)	Yes we have attempted to clearly distinguish between external and internal forces.
E-16- 215	A	24	20	24	22	Cuba is a good example. Planning for natural disasters is integral to the political and economic life of Cuba, nationally and locally Mas Bermejo P. (2006) Preparation and response in case of natural disasters: Cuban programs and experience. J Public Health Policy. 27:13-21. (Andrew Githeko, Kenya Medical Research Institute)	We have consulted this reference but have found the details do not quite fit this section of the text.
E-16- 216	A	24	38			Section 16.5.1. This is interesting material but I do feel that it should come right at the beginning of this chapter to set the contect for the range in island types encompassed in this chapter. (Thomas Spencer, University of Cambridge)	Points taken. We have expanded this section on natural adaptation, but have not included it as the opener to 16.5.
E-16- 217	A	24	52	25	1	Delete the following text at the end of the sentence: ", providing vertical accommodation space is available". The rise in sea level creates the accommodation space that needs to be filled by upward coral growth. I think more significant constraints will be pollution, SST, and other factors affecting coral health and growth potential. (Donald L. Forbes, Bedford Institute of Oceanography)	We have left the text pretty much as is. In many parts of the Pacific where reef flats are emergent (formed at higher sea level in the Holocene) accommodation space will not be immediately available with a few cm of sealevel rise.
E-16- 218	A	25	6	25	12	Page 25 lines 6 to 12. Specific comment. On the paragraph there is a critic to the Island States that have been focussed the attention on the protection of the natural ecosystems that are projected to suffer as a consequence of climate change and sea level rise, and on rehabilitating degraded or destroyed ecosystems that that been resulted from socioeconomic developments instead of considering the natural adaptation of these ecosystems. I agree with the authors to highlight the importance of ecosystems natural adaptation but considered the ecosystems need not to have been subjected to significant degradation and destruction as result of human	We have reworded this paragraph, but believe the essence of it should remain, as implied in the reviewers comments

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						activities to be able to natural adapt to climate change (see text page 24 lines 48-49) also they need to be free from intense human intervention i.e. not constrained by the presence of infrastructure and buildings for mangrove forest inland migration. The states have to protect, rehabilitate the ecosystems or eliminate the intense human intervention if you want to preserve the services they bring to the population. The paragraph perception I have is that the authors based on Barnett (2001) citation highlight the importance of development, if the wealth it confers is equitable and leas to the enrichment of the estates, even it undermine ecosystem resilience. I agree that the equitable distribution of the wealth is very good, but unfortunately is very infrequently, also undermine of the ecosystems resilience do not leads to the enrichment of the states (particularly for the developing countries). I would be better for SIS to develop in a sustainable way and use and preserves the goods and services the ecosystem brings (Avelino G. Suarez Rodriguez, Ecology and Systematic- Cuban Environmental Agency)	
E-16- 219	A	25	9	25	12	The question is how often does this increase and equitable wealth occurs? Do we have one good example? (June Marie Mow, Fundación Providence)	No we do not have examples.
E-16- 220	A	25	15	25	52	16.5.2 Adaptations options, priorities Caribbean states are coordinating their adaptation activities with support from the Global Environmental Facility, and have recently established a Caribbean Community Climate Change Centre in Belize. On Vulnerability Evaluation and National Strategies for Adaptation to Climate Change, Cuba developed a national study completed in 2000 that have being improved and implemented. Trough recent years. This analysis comprises strategic sectors: water resources, costal environment, marine resources, land use, human settlement, agriculture, forestry, human health and biodiversity. The study is based on future climate scenarios developed for this task, available data and information, expert assessments and judgments. A national adaptation strategy has being launched for each one of the evaluated sectors. Efforts are now undertaken to strength the scientific capacities, research base and observation systems, to expand experiences into other sectors, to developed studies concerning the economic and social response and to foster international collaboration and public awareness and education. (INSMET, UNEP 2006). Pacific Islands developed PICCAP, Pacific Island CC Assistance Programme to deal with vulnerability and adaptation. (See National Communications to UNFCCC). (Juan Llanes-Reguerio, University of Havana)	Clearly we could not cite all of the adaptation strategies in national communications from islands, nor from other sources. We have however identified a range of responses in 16. 5.2. and the Box 16.5.
E-16-	A	25	27			Vanuatu (1999) should be Vanuata (Government of Vanuatu, 1999)	Left as Vanuatu, which is the correct name.

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
221						(Clair Hanson, IPCC TSU)	
E-16- 222	A	25	44	25	44	I suggest add: "One aspect that need to be prioritized in small islands is related with population access to adequate sanitation taking into account their great importance for huaman and ecosystems health, but for creation of adequate infrastructure it is necessary financial resources, with an important part originated from international aid. The infrastructure will include wastewater treatment and their reuse, proportioning supplementary quantities of water for irrigation, industry and other uses, and water savings in the sources and drinking water utilized in these uses, that will be utilized for population, tourism and others, lightening the shortages of water under climate change effects. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	We would need a reference for this statement which is rather policy prescriptive, and would be a rather lengthy addition. Have not included.
E-16- 223	A	25	49	25	52	Add text and reference: "A similar community-based framework for assessing vulnerability of island and coastal communities was proposed by Dolan and Walker (2006 [originally 2003]) and is being applied in a study of adaptive capacity and options in the Queen Charlotte Islands (Haida Gwaii) off the west coast of Canada." Reference: Dolan, A.H. and I.J. Walker (2006) Understanding vulnerability of coastal communities to climate change related risks. Journal of Coastal Research, Special Issue 39, in press [accepted over 3 years ago but promised for fall 2006; accepted pdf available on request - Is this citable?]. (Donald L. Forbes, Bedford Institute of Oceanography)	Have included and have found formal reference (see reference list)
E-16- 224	A	26	10			Table. The column Adaptation response. Unclear if this a list of pleas for these to be done, or a list of what has been done? And who determined this? i.e. refs needed. (Charles Sheppard, Warwick University)	The reference is to the Maldives Ministry of Home Affairs, and was drawn up by the Government.
E-16- 225	A	26	18	26	19	To add and change:There are three areas where resources are insufficient. Financial, technological, and human. (Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	Accepted
E-16- 226	A	26	24	26	25	Since migration of skilled workers is still on-going, ways to retain and attract skilled islanders should be addressed (June Marie Mow, Fundación Providence)	Our statement on human resource development does not prelude this possibility
E-16- 227	A	28	1	30	9	Section 16.5.4. Of the many examples from the biophysical world for island adaptation to climate change, what are the prospects of using mangroves and also any examples of such successes. In some areas of Southeast Asia, mangroves protect beaches, including calcareous beaches. (Poh Poh Wong, National University of Singapore)	Yes we will include the role of mangroves either in 16.5.1 or 16.5.5

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 228	A	28	1			Section 16.5.4. Building resilience through adaptation. Comment. I considered this section is very good and useful. It offers to the Sis's reader new information and a quite new approach on the adaptation to climate change. Maybe here, it should be mention or discuss the unequal distribution of responsibilities for the Climatic Change, the SIS are only responsible of 1 % of the total anthropogenic GHG emission and will suffer the greatest impacts due to the CC. (Avelino G. Suarez Rodriguez, Ecology and Systematic- Cuban Environmental Agency)	We are not sure this is the right place for such a statement, which if included should be in the early part of the chapter.
E-16- 229	A	28	21			Please define EEZ (Clair Hanson, IPCC TSU)	Exclusive Economic Zone
E-16- 230	A	28	40		52	Box. All true enough, but most is a repeat of what the main text already says. Where it goes beyond that, then the main text SHOULD incorporate these points. If space is tight, cut this box (but keep that good citation to barnett and Adger). (Charles Sheppard, Warwick University)	We have kept this Box but have modified some of the wording in the text.
E-16- 231	A	29	15	29	15	roles have also (Bhawan Singh, University of Montreal)	Accept change made.
E-16- 232	A	29	15			"What about the consequence and merit of the changes in sea tenure? Please specify." (Hiroya Yamano, National Institute for Environmental Studies)	The reference cited gives details
E-16- 233	A	29	44	29	51	In Kiribati, however, population policy is an intrinsic part of the national adaptation strategy. The Government is investigating the potential and costs of relocating part of the population to the higher island of Kiritimati (Christmas Island). (Sofia Bettencourt, World Bank)	We have expanded the section on migration, which is an issue that gets a lot of media attention, but there are few substantive references to back up that attention.
E-16- 234	A	29	44			"There are two references in the reference list for Adger et al. (2003). Please specify." (Hiroya Yamano, National Institute for Environmental Studies)	Accept. Have done
E-16- 235	A	30	6			"There are two references in the reference list for Adger et al. (2003). Please specify." (Hiroya Yamano, National Institute for Environmental Studies)	See above
E-16- 236	A	30	29	30	29	I suggest providing a couple of other examples: "(e.g. Faroes, Niue, Malta)". This provides another opportunity to highlight the range of island types and regions considered in this chapter. (Donald L. Forbes, Bedford Institute of Oceanography)	Have changed sentence to say 'there is a large number of these' (islands that are not low-lying).
E-16- 237	A	31	18	31	18	, as alluded to (Bhawan Singh, University of Montreal)	Accepted
E-16- 238	A	31	18			"eluded" should be "alluded" (James Bruce, Soil and Water Conservation Society)	Accepted

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
E-16- 239	A	31	21	31	26	This surprises me a little because mangrove conservation efforts I am familiar with in Fiji are undertaken to enhance coastal protection and habitat in the vicinity of villages and can only happen with village acceptance of this as a desirable objective. The intertidal habitat is not suitable for agriculture and tourism operators also stand to benefit from greater coastal protection. The locations suitable for mangrove conservation on not typically suitable for tourism, although some destruction of mangrove has occurred to enable fill and resort construction. (Donald L. Forbes, Bedford Institute of Oceanography)	This example from Fiji is not included in the FGD.
E-16- 240	A	31	38	33		This is a disappointing discussion that focuses only on issues of assessment of various kinds, and of these it only focusses on technical modellling type issues. There are two issues then: 1) if this section is also making some recommendations for practical action on adaptation as suggested by the last 3 paragraphs then these recommendations are vastly inadequate. Maybe these recommendations should be in the previous section (16.6). Regardless of where they occur, they need to include far more detail (I mean explanation and an example or two) of the kind in box 16.4 (for example), including on: integrated management of catchments, coasts, and islands; mainstreaming adaptation; no regrets measures; value adding to resources to increase economic returns from the same level of resource extraction; removing barriers to sustainable sustainable developemnt (including things like sytrenghtheneing capacity in EIA, strengthening NRM, Improving access to markets for exports); expansion of small grant scehemes for comunity level adaptations such as the GEF SMall Grants Scheme; ect ect This discussion is really unimaginative and could use far more examples from existing developments in islands. 2) The discussion of ways to reduce uncertainties and filling gaps in knowledge also needs more work, it could include mention of: bottom-up processes such as CDDAMPICS and UNDP APF that provide grounded assessments of vulnerability, adaptive capacity, and adaptive actions that build on existing sustainable development policies and activities in countries, these reduce some uncertainties in that they produce robust information about the social and ecological forces that create vulnerability to climate change, and no regrets and locally grounded adaptation strategies to reduce this vulnerability; locally based monitoring programs to measure changes in resource abundance (i.e. fishing log books, records of agricultural production) and quality (i.e simple surveys ofcoarl abundance and diversity, and of keystone species). (Jon Ba	Accepted. Major points are taken to a new sentence.
E-16-	A	31	45	31	52	To add a bullet: Early warning systems in each Region as the implemented shot	Accepted.
241						time ago in Indian Ocean for tsunami warning.	

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						(Cristobal Felix Diaz Morejon, Ministry of Science, Technology and the Environment)	
E-16- 242	A	32	5	32	8	SIMCLIM - developed by Waikato University (under John Hay) also permits downscaling of climate change models to the island level. (Sofia Bettencourt, World Bank)	Not accepted, because any specific names of models are not indicated in this section.
E-16- 243	A	32	5	32	5	Naming the PRECIS model seems like partial marketing - wht this model and not others? There are any number of models and approaches that others might think are suitable So, suggest deleting reference to the name 'PRECIS'. (Jon Barnett, University of Melbourne)	PRECIS is deleted.
E-16- 244	A	32	17	32	17	Under this section "Impacts and Adaptation" you may want to mention also the need to develop guidelines to climate-proof key assets (such as roads and housing). (Sofia Bettencourt, World Bank)	This whole section has been revised.
E-16- 245	A	32	21	32	23	Not only should closed attention be payed to traditional approaches, these approaches should be better described and documented as case studies in ways that allow "transfer" and "replication" (June Marie Mow, Fundación Providence)	This is implied in the second paragraph of 16.7.
E-16- 246	A	32	22			that have' is repeated (Clair Hanson, IPCC TSU)	Deleted.
E-16- 247	A	32	32	32	35	But also to integrate climate change planning into integrated island planning and management (June Marie Mow, Fundación Providence)	Included in second paragraph of 16.7
E-16- 248	A	33	5	33	9	I wonder about the desirability of ending the chapter with a paragraph on mitigation. This is a WG3 topic and although the links between adaptation and mitigation are important, perhaps especially so on small islands, the adaptation messages may be forgotten when the text ends this way. Perhaps emphasize 'no regrets' adaptation and mainstreaming measures as the final message. (Donald L. Forbes, Bedford Institute of Oceanography)	Framework of the section is changed.
E-16- 249	A	33	7	33	8	CDM will always be more attractive for developing countries that can account for a higher reduction of emissions; the potential of linking renewable energy for desalination and CDM projects is very high (June Marie Mow, Fundación Providence)	Yes.
E-16- 250	A	34	6	34	9	"There are two references in the reference list for Adger et al. (2003). Please specify." (Hiroya Yamano, National Institute for Environmental Studies)	Now specified
E-16- 251	A	34				van Lieshout et al (2004) not cited in text but is in ref list (Clair Hanson, IPCC TSU)	Not included in FGD
E-16-	Α	34				There are two Adger et al (2003) references in the list - these need to be	Now specified

Chapter- Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
252						differentiated unless one of them should be Adger et al 2005 (which is missing	
						from the reference list) (Clair Hanson, IPCC TSU)	
E-16- 253	A	34				Saji and Yamagata (2003) not cited in text but is in ref list (Clair Hanson, IPCC TSU)	Not included in FGD
E-16- 254	A	41	17	41	20	These are the same; should be 2000 (Maarten van Aalst, Red Cross/Red Crescent Centre on Climate Change and Disaster Preparedness)	Have included both in FGD.
E-16- 255	A	41	19	41	20	Delete this reference, as it is the same as World Bank (2000). (Sofia Bettencourt, World Bank)	Have included both in FGD
E-16- 256	A	41	21	41	23	Correct this reference as mentioned on row 4 above. (Sofia Bettencourt, World Bank)	Corrected to Bettencourt, et al 2005