



**IPCC WGII  
Fourth Assessment Report  
Climate Change Impacts, Adaptation and Vulnerability  
*Government and Expert Review of Second Order Draft***

**Specific Comments**

**GOVERNMENT REVIEW COMMENTS**

**Chapter 8**

**August 2006**

**including late comments at end**

## Discussion of Government 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 all substantive Govt review comments, by email and/or at Cape Town.
- Substantive comments require full and proper consideration. The *Principles Governing IPCC Work* state that:
  - 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:
  - 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 **8<sup>th</sup> December 2006**.

**IPCC WGII AR4 SOD \*GOVERNMENT\* Review Comments**

Chapter-Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
G-8-1	A	0				The Introduction chapter for the WG2 AR4 states that 'the report was to be more focussed and shorter than before' and that 'its emphasis is on new knowledge acquired since the IPCC Third Assessment (2001)' (see section B). Indeed, the instruction to the contributors of Chapter 8 was to assess research since 2000. It therefore seems odd that there are so many pre 2000/1 references cited. Of course, if parts of the chapter were to assess areas not assessed in previous IPCC assessments, then inclusion of pre 2000/1 references might be justified, but on the whole this does not appear to have been the case. For example, on page 10, line 14 in the section on heat waves, why is the Bai et al. 1995 citation included when there are no less than four other citations on the topic of heat waves and health in East Asian populations? Ironically, the beginning of that sentence actually refers to 'research ... since the TAR'. All instances of citation of pre 2000/1 references should be reconsidered and such citations deleted if they can not be justified in terms of the aim of the report. (Government of Australia)	Addressed, additional research papers pre 2001, are in because they were not in the TAR
G-8-2	A	0				The chapter is good, and clearly identifies the third world as the areas where most impacts are likely to occur, perhaps it neglects somewhat the potential impacts in the developed regions. (Government of Ireland)	thanks
G-8-3	A	0				The chapter includes a lot of information and there is a need to shorten the text to make it attractive to the reader. But no suggestion on how it could be shortened is given here. (Government of Sweden)	thanks
G-8-4	A	0				The chapter can be shortened. Particularly the end part, that is sections 8.4 and 8.5, could be more focused and condensed. (Government of Sweden)	Addressed
G-8-5	A	0				The authors should make it clear that simply transcribing what is clear on an international scale may not necessarily translate meaningfully into a regional or local level. (Government of Australia)	Addressed
G-8-6	A	0				The authors should confirm the finding in the report that the spectre of vector borne disease has reduced in importance and the authors now have focus more on the issues of simultaneous exposures to extreme weather events and atmospheric pollution, amongst others. (Government of Australia)	Addressed
G-8-7	A	0				The authors should confirm that the use of "will" (100% probability) is intended and that standard IPCC likelihood readings (such as "virtually certain", or "very	Addressed

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						likely") are not more appropriate. (Government of Australia)	
G-8-8	A	0				Some terms and acronyms used in the chapter will be impenetrable to non-specialists, and should be explained or defined. (Government of Canada)	Addressed
G-8-9	A	0				Older people are known to be more susceptible to extremes of weather, and if there are increased heat waves then there is a risk of increased morbidity and mortality. This point can be expanded as an issue in most developed countries, with aging population profiles (Government of Ireland)	Addressed
G-8-10	A	0				In Table 8.2, it is very hard to understand because gender and Area wrote at the same row. I think it needs another break line between gender and area. And draw line at the bottom. (Republic of Korea)	Deleted table 8.2
G-8-11	A	0				In general, the chapter discusses health as an aspect of climate change science, thus overemphasizing the relative importance of climatic determinants of health. While other determinants of health status are briefly discussed, the chapter's overall tone should still better contextualize the issue as one in which climate change plays a role, not the central role. (Government of Canada)	Addressed, see Firgue 8.1
G-8-12	A	0				In developed countries with the observed increase in obesity and diabetes, the pool of susceptible individuals is likely to rise, this may push up the estimate for heat related morbidity and mortality. Extreme Temperatures and Mortality: Assessing Effect Modification by Personal Characteristics and Specific Cause of Death in a Multi-City Case-Only Analysis. Mercedes Medina-Ramón, Antonella Zanobetti, David Paul Cavanagh and Joel Schwartz, doi:10.1289/ehp.9074 (available at <a href="http://dx.doi.org/">http://dx.doi.org/</a> ) Online 6 July 2006. Schwartz, J. Who is sensitive to extremes of temperature?: A case-only analysis. Epidemiology. 2005 Jan;16(1):67-72. (Government of Ireland)	Addressed
G-8-13	A	0				I reviewed human health in Chapter 8, it is very well represent the relation between climatic change and disease burden. (Republic of Korea)	Thanks
G-8-14	A	0				Generally, the chapter on human health is not very assuring. It is very wordy, repeating same phrases, but should contain more facts. The relevant literature has not been well enough searched and understood. E.g. in the specific chapter on Latin America, these aspects are dealt with better.	Addressed

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						(Government of Finland)	
G-8-15	A	0				For some health effects, like malaria, there are in-depth discussions with several main studies mentioned and addressed in detail. For other areas, like tick-borne diseases (which are the most important vector-borne diseases of the northern temperate zones with huge long-term economic effects in Europe and North America) the discussions are sparser even though quite a lot of new research now exist in these areas. It seems that particularly studies from North America have been overlooked, as well as many recent modelling results on diseases other than malaria and dengue. (Government of Sweden)	Addressed, see extended Table 8.4
G-8-16	A	0				Climatic change affect different methods and strength to each disease. So I think if you make a table with disease and its confidence, it is very helpful to understand the climatic change and its health effects at one time. (Republic of Korea)	Addressed
G-8-17	A	0				All cross referencing in the chapter (i.e. to other sections in this and other chapters) should be carefully checked. There are numerous errors, just two examples being in Table 8.3: Air quality and respiratory disorders should refer to 8.2.6, not 8.2.5; and Allergic disorders and asthma should refer to 8.2.7, not 8.2.6. Another example is on page 15 line 47: this section does not actually exist! (Government of Australia)	Addressed; but to be revised with the new chapters
G-8-18	A	0				After reviewed these articles, I can not find any special fault to revise. It is very well express how human health was affected by the climatic change (Republic of Korea)	Thanks
G-8-19	A	3	3	3	14	By saying that "health outcomes...that are sensitive to climatic conditions make up a substantial fraction of the worldwide burden of disease", the authors raise the question of whether those health impacts are sensitive ONLY to climate change. The two examples given (malaria and under-nourishment) are sensitive to climate but also to numerous other factors. It is definitely worth adding a sentence to this paragraph contextualizing the relative importance of climatic determinants to many of the health outcomes discussed in the chapter. (Government of Canada)	Addressed; ES has changed
G-8-20	A	3	16		16	The Arctic health issues are well documented in this chapter and should be included as a separate bullet in the Executive Summary. (Government of USA)	Not addressed; addressed in the Arctic chapter
G-8-21	A	3	18	3	18	The meaning of the term "resource-dependent populations" isn't really clear. What population isn't dependent on resources of some sort? (Government of Canada)	Addressed

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G-8-22	A	3	18			To clarify: please rewrite "resource-dependent populations". Change for example to "populations dependent on local resources" (Government of Sweden)	Addressed
G-8-23	A	3	24	3	24	550 ppm is an atmospheric concentration, not an emissions value. (Government of Canada)	Addressed
G-8-24	A	3	28		29	These lines are not consistent with Chapter 5 findings. In the second sentence, suggest deleting everything before "expert assessments". Also consider making into 2 bullets – one dealing with nutritional quality and the other with food productivity (agriculture and fisheries). (Government of USA)	Addressed
G-8-25	A	3	30			To clarify: please change "populations most dependent on natural resources" to, for example ""populations most dependent on local natural resources" (Government of Sweden)	Addressed
G-8-26	A	3	33			The confidence interval should be changed to "(medium-high confidence)" here, as this refers to climate -vector and not climate-disease relationships. The linkages between climate and the distribution and density of several arthropod species (like ixodid ticks, sandflies, several mosquito species) that transmit diseases are wellknown from both laboratory and field studies. In addition, several recent studies show statistically significant correlations between variability in climate and changes in vector species distribution and occurrence. Similar linkages have been observed for non-disease transmitting insect species. Check for example 8 line 12-16 for summary of published evidence. (Government of Sweden)	Addressed
G-8-27	A	3	35			Misleading sentence: Please change "..depends on many factors other than climate" to "..depends on many other factors in addition to climate". Climate is one of the factors that influence disease transmission as climate may influence the occurrence of vectors, the number of host animals that are carriers of pathogens in a risk area as well as their infectious rates. (Government of Sweden)	Addressed
G-8-28	A	3	45	3	47	Please delete or rephrase the sentence that starts "Further, given...". Can it really be stated that the 2003 heat wave casualties may include the FIRST deaths attributed to climate change? It seems most likely that there have been deaths already previous to 2003 from climate change-related events like floodings or infectious disease outbreaks (e.g. ENSO related). (Government of Sweden)	Addressed
G-8-29	A	3	45	3	47	Delete this sentence. The stated links of the 2003 heat wave in Europe and the associated deaths to climate change is a very strong statement and needs a	Addressed

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						compelling argument to justify inclusion in a scientific assessment of this type. It is doubtful that such a compelling argument can be made since the authors assess the confidence in the link at "low to moderate". Further, there have been numerous deaths that occurred prior to 2003 related to insect born diseases, droughts, and floods (to name a few) that could make as strong a claim to being related to climate change. Hence, the claim stands out as an attempt to make headlines rather than to assess state of the science. (Government of USA)	
G-8-30	A	4	17			To be more adequate please add "may" in the following sentence: "..and may increase water-borne disease" (Government of Sweden)	Addressed
G-8-31	A	4	17			section 8.2.7 does not refer to water, the reference should probably be 8.2.5 or 8.2.8? (Government of Switzerland)	Addressed
G-8-32	A	4	19	4	21	The impacts of climate change on aeroallergens should be explicitly mentioned in this point. (Government of Australia)	Addressed
G-8-33	A	4	19			Considering the high prevalence and costs of allergic diseases, I suggest to modify the end of ES 13: "...ground-level ozone (high confidence), other pollutants and aeroallergens (medium confidence). [8.2.5; 8.2.7; 8.4.1] (Government of Switzerland)	Addressed
G-8-34	A	4	25	4	26	In addition to heat stress, numerous other climate-change related health outcomes are likely to reduce economic productivity. Perhaps say that this is just one example, or else add others (like absenteeism due to air pollution, or malaria)? (Government of Canada)	Addressed
G-8-35	A	4	25	4	39	Can Canadian examples be included here? Toronto heat alert system, green roof study? (Government of Canada)	Not Addressed
G-8-36	A	5	12	6	1	In Addition, for tropical countries where insecurity and politico-military conflicts are permanent, the health systems are profoundly disorganized and not able to respond to the effects on climate change on the populations they have in charge. (Government of France)	Addressed
G-8-37	A	5	15	5	15	While the previous page discusses adaptation measures, there is no formal definition of "adaptive capacity" prior to its use in this sentence. As this is a term with a specific meaning in the climate change impacts and adaptation literature, it should be defined for non-specialist readers of the chapter. (Government of Canada)	See glossary

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G-8-38	A	5	26	5	27	The sentence "For other reasons, male mortality increased by 40% in Russia in the early 1990s (Marmot 2005)" is problematic. First, reference to unspecified other reasons is unhelpful; second, the Marmot 2005 paper from which the figure is taken does not appear to contain the statistic. There is simply a comment that Russia's life expectancy is low, accompanied by a graph showing mortality trends among men in St. Petersburg, divided by education level. It is possible that the study from which Marmot took this graph (Plavinski et al., 2003) supports the statement - perhaps this should be looked into? (Government of Canada)	Addressed
G-8-39	A	7	9		9	Edit bullet to include temporally and spatially compatible data. (Government of USA)	Addressed
G-8-40	A	7	12		12	Add to end of bullet, "...and specifically, assessing the impacts of public health infrastructure and intervention." (Government of USA)	Not addressed.
G-8-41	A	7	20		20	Insert new bullet. "Clarifying links between climate change, plant biology, and public health including pesticide use range of narcotic species, and pharmacology." (Government of USA)	Not addressed
G-8-42	A	7	21			Performing a health Impact Assessment on the consequences of climate change within nations a first step towards preparing the nations for adapting for climate change. The next step for the nations and regions should be to assess how they can prepare for and make action plans in the case of event. They should plan for minimizing the consequences in society of climate change. This can be achieved by the planning process in each region by performing research games on different climate-related scenarios. The Swedish National Institute of Public health is about to publish a report on this (ISBN 91-7257-449-6). (Government of Sweden)	Good point. Reemphasised in 8.8, now
G-8-43	A	7	28	7	39	Table 8.1 is useful, however, the reference to a "likely increase in environmental refugees from Pacific Islands" does not accord with the discussions of environmental migration in Chapter 7's Box 7.3. This should be amended to ensure consistency throughout the report. (Government of Australia)	Addressed
G-8-44	A	7				Table 8.1: In the Bhutan row of the table, I think that GLOF should be defined for non-specialists. As it probably refers to glacial lake flooding, it's not a specifically health-based impact. It wouldn't hurt to define NAPA as well (National Adaptation Plan of Action?). (Government of Canada)	Addressed
G-8-45	A	7				Table 8.1: In Germany's "Key vulnerabilities", "tick-borne encephalitis" should	Addressed



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						probably be substituted for "TBE", for the benefit of non-specialists. (Government of Canada)	
G-8-46	A	7				Table 8.1: Canada's "Adaptation recommendations" should probably include "measures for reducing the urban heat island effect", not "the health island effect". (Government of Canada)	Addressed
G-8-47	A	8	12	8	18	Should aeroallergens be explicitly mentioned here? There is certainly substantial published evidence that climate change may already be affecting aeroallergens such as pollens. Therefore there seems little justification to exclude aeroallergens when 'health-relevant insect species (vectors)' are included in the first point. (Government of Australia)	Addressed
G-8-48	A	8	12	8	18	Air pollution impacts of climate change could be added to this list. (Government of Canada)	Not addressed
G-8-49	A	8	13		13	Change 'climate change' to "climate change and variability". (Government of USA)	Addressed
G-8-50	A	9	23	9	23	It would be useful for the authors to explain which WHO regions fit into which regional columns on Table 8.2. (Government of Australia)	Table deleted
G-8-51	A	10	3			This comment applies Section 8.2.1 and relevant statements in the summaries. The material on heat waves and heat impacts on humans fails at any point to mention humidity, only temperature. However, humidity increase (about 7% per degree C with very high confidence) will have a greater impact on heat stress than temperature increase. Heat index is very humidity-sensitive at warm temperatures due to the high latent heat of water vapor; equivalent potential temperature governs the efficiency of any evaporative cooling mechanism such as that employed by warm-blooded mammals. For example, Delworth et al 1999 (Climatic Change) predict that mean July heat index values in much of the southern US will increase from preindustrial values of around 86F to about 98F, with global mean warming of only about 3.7C (and this is only an average, the amplification will be worse during synoptic periods of tropical air advection). The way the chapter and summary are now written totally misses this. Many of the cited studies that assess impacts statistically may also be erring by using historical fluctuations in temperature rather than equivalent potential temperature in evaluating impacts. Warmer-than-average summers (and locations, e.g. deserts) tend also to be drier than average, which helps to offset the impact on human comfort/health---but a warming climate will be more humid, not less. This should be noted. Finally, the text notes evidence of acclimitization to observed warming, but says	Section has been substantially shortened. Not addressed

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						nothing about the nature of this acclimitization, leaving the naive reader to assume that it is physiological (and therefore free, effortless and universally available). The text should indicate whether this is thought to be the case, or whether (as I suspect) it is due primarily to increased adoption of air conditioning. The distinction is very important because of the practical and economic limits of air conditioning as an adaptation strategy (will we air condition 5 billion people living in the Tropics? With what energy source?) This would help support the generic warnings already given elsewhere in the report that adaptation measures may be expensive. (Government of USA)	
G-8-52	A	10	3			Section 8.2.1 comment: As the latent heat flux determined by moisture and wind velocity mainly affect the heat loss from human bodies the whole section may need to be revised in a kind that the wording "temperature-related mortality" will be avoided. Not temperature alone but heat load (including air moisture) is considered as a complex indicator for the thermal environment. We propose to use the wording "heat-reated" or "thermal stress related" mortality, respectively. If studies only use air temperature as leading variable for thermal stress IPCC should consider this fallacy in its assessment as these studies ignore fundamental pysiological knowledge in heat exchange between human body and environment. (Government of Germany)	Not addressed
G-8-53	A	10	19	10	21	See also the national report from AFFSA in France (AFFSA, Rapport sur l'évolution des risques d'apparition et de développement des maladies animales compte tenu du réchauffement climatique. 2005, Paris, 78 pages. (Government of France)	Not addressed
G-8-54	A	10	19		22	Delete these two sentences. The case for attributing the deaths associated with the 2003 European heat wave is the author's extension of the opinion of two climatologists. This falls way short of the bar set on page 7, lines 25 and 26. (Government of USA)	Addressed
G-8-55	A	10	20	10	20	The statement that some climatologists consider it "very likely" that human influence doubled the chance of the 2003 European heatwave occurring is confusing as it uses IPCC likelihood terminology for literature that has not been IPCC assessed. A formal likelihood and confidence assessment of this report should be included or the sentence should be deleted. (Government of Australia)	Addressed, see also WG1
G-8-56	A	10	22	10	22	Statement about "the first" is too speculative! (Government of Canada)	Addressed
G-8-57	A	10				Table 8.3, line 4 on this page "Diarrhoeal diseases" : section 8.2.7 does not refer to water, the reference should probably be 8.2.5 or 8.2.8?	Addressed

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						(Government of Switzerland)	
G-8-58	A	11	9	11	11	To clarify, change the sentence to read: The proportion of deaths due to short-term mortality displacement depends on the pre-existing health status of the population affected. (Government of Canada)	Not addressed, but clear referral to the existing literature
G-8-59	A	11	9		9	Define “short-term mortality displacement”. (Government of USA)	Addressed
G-8-60	A	11	13			If we assume that climate change is occurring, and that the earth is heating up, the report predicts that there will be less cold related deaths in temperate climates, but this might only be true if the cold temperatures rise as well, but it is possible that more extremes might be experienced, with heat waves and cold waves. This scenario might warrant some consideration (Government of Ireland)	Addressed
G-8-61	A	11	18		18	What does EMDAT stand for? (Government of USA)	Addressed in Acronyms
G-8-62	A	11	20	11	21	Is it possible to find out whether the mortality figures in question actually due refer only to reported deaths, or is it only possible to say that this is likely? (Government of Canada)	Addressed, only reported deaths
G-8-63	A	12	32	12	33	The authors should include a citation of the disaster databases studied and should include information on how easily it is to extract information from these databases that relate directly to climate-related events. (Government of Australia)	Not addressed, these databases are incomplete to carry out climate change impact studies
G-8-64	A	13	14	13	8	Add new sentence: "Many polluted sites, such as industrial areas and landfills are situated on fine sediments near riverbanks and shorelines. In regions where the climate change results in increase in precipitation (e.g. N Europe) the stability of the riverbanks will decrease and severe contamination of waters may occur from erosion and landslides in contaminated areas". (Government of Sweden)	Not addressed; should go to European chapter
G-8-65	A	13	46	13	48	Insert “often” between disasters and affect. (Government of USA)	Not addressed
G-8-66	A	13	46	13	48	An extreme weather event example would be much better here. If such an event cannot be found, then it could be argued that the statement being made only applies to disasters on the scale of the Tsunami. (Government of Australia)	Addressed; box adjusted
G-8-67	A	14	25			section 8.2.7 does not refer to water, the reference should probably be 8.2.5 or 8.2.8? (Government of Switzerland)	Addressed

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G-8-68	A	14	25			Reference to section 8.2.7 is incorrect. It should refer to section 8.2.5 (Government of Ireland)	Addressed
G-8-69	A	14	25			Incorrect reference to section 8.2.7, should be 8.2.5 (Government of Ireland)	Addressed
G-8-70	A	14	29		29	At the end of the sentence that begins with 'Micronutrient deficiencies' add <i>to the degree that drought-related impacts diminish dietary diversity and reduce overall food consumption.</i> (Government of USA)	Addressed
G-8-71	A	15	2		2	This discussion should include mention of the lack of resources to recover agricultural productivity. (Government of USA)	Not addressed, because of space
G-8-72	A	15	23			Section 8.2.3.1 refers to drought and disease but does not specifically mention water washed diseases such as scabies, and conjunctivitis which may increase if access to water is limited, as can more serious diseases such as salmonella. There have also been associations between metering of water in the UK and a rise in the incidence of infectious disease (Middleton, 1994, EEA WHO, 2002), although there are confounding issues with such an association (Fewtrell et al, 1994). (Government of Ireland)	Addressed, partly because of space
G-8-73	A	15	33		35	Editorial: Too many occurrences of "change" in one sentence. Suggest replacing "have changed in West" with "have shifted in West" and "regional climate change" with "regional climate conditions". (Government of USA)	Addressed
G-8-74	A	15	38	15	38	drought has been reported to result in increase of malaria in Sari Lanka( van DER HOEK, W et al 1997 Correlation between rainfall and malaria in the dry zone of Sri Lanka. Annal of Tropical Medicine % Parasitology 91(8):945-949. (Government of India)	Not addressed, was in TAR
G-8-75	A	15	41	15	41	In some countries like Sri Lanka, drought result in epidemics of malaria ( van Der Hoek et al 1997). (Government of India)	Not addressed, was in TAR
G-8-76	A	16	9	16	13	This paragraph should contain an assessment of the potential relative importance or likelihood of health impacts due to increased fly activity and the resulting increase in food/pest contact. If this isn't possible due to lack of evidence, perhaps the paragraph could reflect this fact? (Government of Canada)	Not addressed; paucity of references.
G-8-77	A	16	21			In section 8.2.5, water borne diseases are referred to, and the section specifically mentions the vulnerability of 'open finished water reservoirs' to faecal contamination. However, ground water may also be vulnerable because of the	Addressed

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						overlying geology, in particular if it is covered by relatively shallow subsoil over karst limestone; an outbreak of cryptosporidiosis occurred following heavy rain in Ireland, highlighting the vulnerability of groundwater under these conditions (Daly, 2003). Private group water supplies are very vulnerable also (EPA 2005). Daly, D. 2003 The Walkerton Pollution incident (2000) a summary The GSI Groundwater Newsletter No 42 2003. EEA WHO 2002 Water and Health in Europe WHO Regional Publications No 93. Fewtrell L, Kay D, Dunlop J, O'Neill G, Wyer M. Infectious diseases and water-supply disconnections. The Lancet 1994 May 28;343(8909):1370. Middleton J Water disconnection and disease The Lancet Vol 344 July 2 1994. EPA 2005 The Quality of Drinking Water in Ireland A report for the year 2004 (Government of Ireland)	
G-8-78	A	16	32	16	32	Change "extreme rainfall" to "precipitation extremes" (Government of Canada)	Addressed
G-8-79	A	17	10	17	11	Influence of rainy season on the enteric pathogens transmission : This is not always true. During the dry season, for instance in the Sahel aeras, Africa, humans beings concentrate around the rare persitent watering places increasing the risk of transmission of some enteric bacteria such Shigella or Vibrio cholerae. (Government of France)	Addressed
G-8-80	A	17	15	17	15	Question about the phrase 'stronger evidence'. Is that stronger evidence since the TAR? (Government of USA)	Addressed; yes
G-8-81	A	17	27		29	On line 29, delete or clarify phrase "this measure may be a proxy for other climate effects in the region". (Government of USA)	Addressed
G-8-82	A	18	5	18	5	Insert "smoke" before "inhalation" (Government of Canada)	Addressed
G-8-83	A	19	14		21	Need to expand the literature review. See for example works by Kellogg, Prospero, and Griffin. (Government of USA)	Addressed
G-8-84	A	19	24		39	There are a number of other potential interactions between plant biology, climate change and public health that are not mentioned in this section. These interactions include: Increased use of pesticides, particularly herbicides to control weeds with increasing CO2/temperatue (Table 2 in Ziska, L.H. 2003. Climate change, plant biology and public health. World Resource Review 15:271-288.); Increasing contact dermatitis due to CO2 induced increased in the growth and toxicity of poison ivy (Mohan, J.E., Ziska, L.H., Schlesinger, W.H., Thomas, R.B., Sicher,	Addressed

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Chapter-Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						R.C., George, K., Clark, J.S. 2006. Biomass and toxicity responses of poison ivy ( <i>Toxicodendron radicans</i> ) to elevated atmospheric CO <sub>2</sub> . Proceedings of the National Academy of Sciences. 103: 9086-9089); and changes in the concentration and productivity of plant based pharmaceuticals, (Ziska, L.H., Emche, S.D., Johnson, E.L., George, K., Reed, D.R., and R.C. Sicher 2005. Alterations in the production and concentration of selected alkaloids as a function of rising atmospheric carbon dioxide and air temperature: implications for ethnopharmacology. <i>Global Change Biology</i> 11:1798-1807.) (Government of USA)	
G-8-85	A	19	24			Several important references are lacking in this section. They were suggested to be found in related section 1.3.7.5, but are also lacking there. I strongly suggest these references being included, best in section 1.3.7.5 (see below) or in section 8.2.7. (Government of Switzerland)	Addressed
G-8-86	A	19	24			Section 8.2.7. This section currently does not mention an important potential impact of climate change on aeroallergens: increased allergenicity. The following text and accompanying references should be added (please ensure the species names and 'Amb a' are in italics and the 2 in CO <sub>2</sub> is subscript): Significant increases have been observed in ragweed pollen allergen ( <i>Amb a</i> 1) content at projected future atmospheric CO <sub>2</sub> concentration (Singer et al. 2005). Similarly, poison ivy grown at elevated atmospheric CO <sub>2</sub> concentration produces a more allergenic form of urushiol (the active compound responsible for dermatitis in many humans that come in contact with the plant). The full references are as follows: Mohan, J.E., L.H. Ziska, W.H. Schlesinger, R.B. Thomas, R.C. Sicher, K. George, and J.S. Clark, 2006: Biomass and toxicity responses of poison ivy ( <i>Toxicodendron radicans</i> ) to elevated atmospheric CO <sub>2</sub> . Proceedings of the National Academy of Sciences of the United States of America, 103(24), 9086-9. Singer, B.D., L.H. Ziska, D.A. Frenz, D.E. Gebhard, and J.G. Straka, 2005: Increasing <i>Amb a</i> 1 content in common ragweed ( <i>Ambrosia artemisiifolia</i> ) pollen as a function of rising atmospheric CO <sub>2</sub> concentration. <i>Functional Plant Biology</i> , 32(7), 667-70. (Government of Australia)	Addressed
G-8-87	A	19	24			section 8.2.7 refers to sections from chapter 1 (as many other do). Numbering of the chapters and sections should be kept as is or carefully adapted throughout the report. (Government of Switzerland)	Addressed
G-8-88	A	19	30	19	31	Should the word 'A' be inserted at the beginning of this sentence? Also, use of the word 'evolution' could be misleading in this context, so an alternative should be used.	

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						(Government of Australia)	
G-8-89	A	19	31	19	31	Reference to bacteria and the accompanying Harrison et al. 2005 citation do not belong in this section on Aeroallergens. It could be moved to the preceding section (perhaps 8.2.6.2) on air quality. (Government of Australia)	Addressed
G-8-90	A	19	39			Please add sentence: Therefore it is substantial to monitor the current as well as the spread of Ambrosia and to compare these data with the past. This knowledge is important for the implementation of reasonable precaution measures. (Government of Germany)	Not addressed, should be subject under adaptation, but mointroing needs to be included for many plant and animal species
G-8-91	A	20	16	20	25	This paragraph does not cite any literature. Does this paragraph really provide new information/knowledge? If it has all basically been said in previous Assessment Reports, then it could be deleted from this one. (Government of Australia)	Addressed
G-8-92	A	20	40	20	42	There is no clear evidence that malaria has been affected by climate change, either... : There is at least a major epidemic of Plasmodium falciparum occurring in an area of instable transmission in north-eastern Kenya, by 1998, which was clearly linked with an El Nino episode (Brown V et al. Epidemic of malaria in north-eastern Kenya. Lancet 1998; 352:1356-7). (Government of France)	Addressed
G-8-93	A	20	40	20	44	The paragraph seems to deal with malaria. Should it be moved to the malaria section on the following page (8.2.8.2)? (Government of Australia)	Addressed
G-8-94	A	20	40		44	This paragraph may be better placed under section 8.2.8.2. Furthermore, the paragraph appears to contradict statements made on page 21 lines 45-51, and 28 lines 10 and 11. For instance, highland areas of Africa (line 40-41, pg. 20) are a fringe area for malaria, which on line 20 is stated to not be affected by climate change but in line 45 page 21 climate is important to fringe areas. (Government of USA)	Addressed
G-8-95	A	20				Since mosquitoes rely on plant sources for energy, how will anticipated changes in CO2 and/or temperature alter the availability of those sources? (Government of USA)	We did not find references
G-8-96	A	20				Figure 8.2. This is a poor diagram. It is too simple, given previous versions. It includes the vector (mosquito population) yet it omits the pathogen/parasite. The different background colours are not explained. Instead of yet another malaria diagram, perhaps the authors of the chapter could include a diagram on one of the other important human health impacts of climate change. Figure 1 from Beggs	This figure was deleted

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						(2004) or Figure 4 from Beggs and Bambrick (2005) are just two possibilities. (Government of Australia)	
G-8-97	A	21	1	21	8	In India, relationship of leishmaniasis with temperature, RH, etc has been well documented and is responsible for restricted distribution to northeastern states endemicity is well documented ( Napier, L E 1926 An epidemiological consideration of transmission of Kala-azar in India. Indian Medical Research Memoirs 4 Reports of the Kala-azar Commission India Report No 1 ( 1924-1925) Thacker Spink & Co Calcutta. p 219). Increase in Temperature is likely to increase the transmission window of VL in India. (Government of India)	Not addressed, did not find the reference
G-8-98	A	22	1	22	3	The prospect of removing "underlying trends" in detecting a climate signal in malaria dynamics for predictive purposes may be possible, as indicated by this sentence. Given the very significant influence of these underlying trends (possibly many times more important than climate in determining malaria range and incidence), this begs the question of why anyone would want to remove them. That is, why control for most of the determinants of a disease in order to detect the impact of climate? This issue should at least be alluded to in this paragraph. (Government of Canada)	Addressed
G-8-99	A	22	1	22	1	Please add reference of Bhattacharya, S, Sharma, C, Dhiman, R C and Mitra A P 2006. Climate change and malaria in India. Current Science 90(3): 369- 375. (Government of India)	Addressed
G-8-100	A	22	51	23	2	The treatment of rodent borne diseases is totally inadequate and disappointing. The few cases of HPS in Panama are mentioned, but the whole field of hantaviruses and HPS in North America and South America, its relation to climate, especially El Nino, are not mentioned at all. Furthermore, the well-described climate related differences in hantavirus dynamics between northern and Central Europe are not mentioned (see e.g. Vapalahti et al. 2003, Lancet Inf. Dis 3:653-661). Arenaviruses are not mentioned: no Lassa in Africa nor those in South America. Cowpox is not mentioned. Among bacterial diseases, it is strange that plague is not mentioned though its dynamics and occurrence have clear climatic connections (N Marica, Vietnam etc.), and there are reports that change in the steppe vegetation due to climatic change is already affecting rodent community structure and plague dynamics in S Russia. Probably similar is happening in Africa. (Government of Finland)	Addressed
G-8-101	A	23	4			Section 8.2.8.4. While there is a lot of literature on the relationships between ENSO and human health (particularly infectious diseases), there are other important large-scale climate fluctuations which have yet to be fully explored in relation to	In Australian chapter



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						human health. This should be pointed out in the Chapter, and this section could mention the research by Done et al. (2002) which found a relationship between the Quasi-Biennial Oscillation (QBO) and Ross River virus incidence in Queensland, Australia. The full reference is as follows: Done, S.J., N.J. Holbrook, and P.J. Beggs, 2002: The Quasi-Biennial Oscillation and Ross River virus incidence in Queensland, Australia. International Journal of Biometeorology, 46(4), 202-7. (Government of Australia)	
G-8-102	A	23	44			This section could be expanded. The populations most likely to spend more time outdoors are those who are physiologically, and culturally less adapted to exposure to UV. (Government of Ireland)	Addressed
G-8-103	A	23	44			Section 8.2.10. The authors of the Chapter may wish to include in this section, work that has been published on the health impacts of stratospheric ozone depletion (such as the following text and accompanying references - the 2 after km should be superscript). Analysis of dermatologists' records of sunburns and photosensitivity disorders in Southern Chile, has revealed a significant increase associated with stratospheric ozone depletion and increased ground level UVB radiation (Abarca et al. 2002). Although the cause of a peak in sunburn admissions in New South Wales, Australia, in 1998-99 is unlikely to be simple, it is noteworthy that the area of the Southern Hemisphere stratospheric ozone hole (wherein total ozone amount is less than 220 Dobson units) was particularly large in the spring and summer of 1998, existing for longer (to 15 December) than in any other year recorded and almost reaching its maximum size (around 27 million km <sup>2</sup> ) (Beggs 2005). The full references are as follows: Abarca, J. F., C. C. Casiccia, F. D. Zamorano, 2002: Increase in sunburns and photosensitivity disorders at the edge of the Antarctic ozone hole, Southern Chile, 1986-2000. J Am Acad Dermatol, 46(2), 193-9. Beggs, P., 2005: Admission to hospital for sunburn and drug phototoxic and photoallergic responses: New South Wales, 1993-94 to 2000-01. NSW Public Health Bulletin, 16(9-10), 147-50. (Government of Australia)	Addressed, by including the new global findings
G-8-104	A	23	46			Section 8.2.10 on UV exposure is extremely short, and perhaps could be expanded upon. (Government of Ireland)	Addressed
G-8-105	A	24	49			This section has a very important message and points out the co-dependance of many factors in predicting future trends. A lot of factors are depending on each other's outcome and this must be considered when predicting future trends. (Government of Sweden)	Addressed

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G-8-106	A	25	7	25	27	This paragraph contains good background or scene setting material for the Chapter as a whole. Could it come earlier in the chapter? (Government of Australia)	Not addressed; outline given by TSU
G-8-107	A	25	13	25	19	It is very important to emphasize the aggravating role of the continuous increase of the world population and of its immediate consequence, the anarchic urbanization, on the future evolution of human infectious diseases. (Government of France)	Addressed
G-8-108	A	25	23	25	27	While the statements made in the final two sentences of this paragraph may be strictly true, they could be misinterpreted to mean that the consequences of climate change are negligible and it is changes in population that are important. This and other statements in the chapter must be careful not to overly diminish the possible/potential importance of climate change. (Government of Australia)	Addressed
G-8-109	A	26	28	26	32	This paragraph seems to suggest that climate change will have mainly beneficial effects. It should be rewritten. (Government of Australia)	Addressed
G-8-110	A	26	35			Section 8.4.1. The authors of the chapter may wish to include in this section, work that has been published on the impacts of climate and climate change on medications and human health. A series of papers has examined climate and medication storage (particularly vaccine storage and handling, and maintenance of the cold chain), medication-induced heat intolerance, climate and pharmacokinetics, and medication-induced photosensitivity (Beggs 2000, 2001, 2002). The full references are as follows: Beggs, P. J., 2002: Potential impacts of global warming on medications and human health. World Resource Review, 14(3), 369-84. Beggs, P. J., 2001: Vaccine storage and handling: Maintaining the cold chain under global warming. Environmental Health, 1(4), 67-75. Beggs, P. J., 2000: Impacts of climate and climate change on medications and human health. Australian and New Zealand Journal of Public Health, 24(6), 630-2. (Government of Australia)	Partly addressed.
G-8-111	A	26	35			Section 8.4.1. Order and title the subsections of this section as the subsections of section 8.2 have been ordered and titled. For example, change 'Heat- and cold-related mortality' to 'Heat waves, cold waves and temperature-related mortality', and put this ahead of the sections on air quality and vector-borne diseases. (Government of Australia)	Not addressed
G-8-112	A	27	1	27	4	The connection between GDP and health is important to highlight. (Government of Sweden)	Addressed
G-8-	A	27	11		11	The statement 'the year 2000, climate change is estimated....' could be revised to	Addressed

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113						read as the year 2000, climate-related impacts were estimated.... (Government of USA)	
G-8-114	A	27	12		12	Need to define what a "DALY" is. (Government of USA)	Addressed
G-8-115	A	28	10	28	11	How can there be both 'expansions and contractions'? Does the sentence mean that malaria will expand in some areas of Africa and contract in others? Does it mean that there will be expansions at some points in the future and contraction at other points in the future? Further explanation is required. (Government of Australia)	Addressed
G-8-116	A	28	30	28	30	PLEASE ADD: Further, the transmission window of malaria is likely to widen in northern and western states and shorten in the southern states ( Bhattacharya et al 2006). (Government of India)	Addressed
G-8-117	A	28	32	28	32	The citation of Lieshout et al 2004 should be van Lieshout et al (2004). (Government of India)	Addressed
G-8-118	A	28	36	28	44	The third sentence in this paragraph seems odd (see lines 38 to 40). How can an empirical model 'based on vapour pressure' (a measure of humidity), make projections based on increases in 'global temperature'? Perhaps the sentence is just poorly worded. The second last sentence in the paragraph is a poor statement. First, it is unsourced. Second, is IS92a an appropriate scenario for AR4, given that subsequent scenarios have been available for some time? Third, changes in what measure of humidity (it is odd to be so specific earlier in the paragraph (i.e. vapour pressure) and so general here)? Fourth, should a date/year by which the population at risk is projected to increase to 5 to 6 billion people will occur be given? In the final sentence of the paragraph, instead of saying that 'additional' models are needed, wouldn't it be better to say that 'better' models are needed? (Government of Australia)	Not addressed, this is what the model did!
G-8-119	A	28	36	28	44	The risk of expansion of dengue vectors is not limited to parts of Australia or New Zealand. In southern Europe i.e. Italy, France, albania, etc..., where the dengue vector Ae. albopictus is now firmly settled, there is an actual risk of dengue or Chikungunya disease outbreaks (Ward MA & Burgess NRH. Aedes albopictus-A new disease vector for Europe? J. R. Army Med. Corps 1993; 139: 109-11 ; Guillet P & Nathan M. Aedes albopictus, une menace pour la France? Med. Trop. 1999; 59: 49-52 ; Schaffner F & Karch S. Première observation d'Aedes albopictus (Skuse, 1894) en France métropolitaine. C. R. Acad. Sci. Paris, Sci; de la Vie 2000; 323: 373-5). In this respect, it is important to recall that a devastating epidemic of dengue occurred in Athens, Greece, in 1927-28, with a high mortality.	Not addressed, was described briefly in TAR, but the problem is that > albopictus is not a good vector

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						(Government of France)	
G-8-120	A	28	46	28	48	This paragraph lacks scientific discussion compared with the long sections in p.27-28 on malaria. Only one reference is referred to and the conclusions mentioned have been criticized. Please also add more references here, like the one mentioned in Chapter 14 (North America). "North American models have shown that the northern distribution range of ticks transmitting Lyme disease could shift considerably northwards (Ogden et al. 2006)." Full reference: "Ogden, N.H., A. Maarouf, I.K. Barker, M. Bigras-Poulin, L.R. Lindsay, M.G. Morshed, J. O'Callaghan, C. F.Ramay, D. Waltner-Toews, and D.F. Charron, 2006: Climate change and the potential for range expansion of the Lyme disease vector Ixodes scapularis in Canada. Int J Parasitol, 36, 63-70." Also, there have been some few modelling attempts done on other diseases such as climate and plague in the US. Full ref: "Ensore, R.E., Biggerstaff, B.J., Brown, T.L., Fulgham, R.E., Reynolds, P.J., Engelthaler, D.M., Levy, C.E., Parmenter, R.R., Monteneri, J.A., Cheek, J.E., Grinnell, R.K., Ettestad, P.J., Gage, K.L. Modeling relationships between climate and the frequency of human plague cases in the southwestern United States, 1960-1997. Am J Trop Med Hyg. 2002 Feb;66(2):186-96." (Government of Sweden)	Addressed, in table 8.4
G-8-121	A	28	46	28	48	Is this statement true? At least the range has been predicted to change, as emphasized in other chapters. (Government of Finland)	Addressed
G-8-122	A	29	7	29	9	Citations are required for the statement made in this sentence. If more than one citation can not be provided, then the statement should be deleted. Studies in Table 8.5 certainly do not support this statement. Only one of the studies in Table 8.5, for the UK, shows this. (Government of Australia)	Addressed
G-8-123	A	29	40	29	44	The three sentences starting 'A US study ...' and ending '... (Knowlton et al. 2004)' should be deleted. They simply repeat what is in Table 8.6 for the Knowlton et al. 2004 reference. Further, it is inconsistent to discuss this study and not the other study in Table 8.6 (and inconsistent with the previous two sections which did not duplicate in the text what was already in their tables). (Government of Australia)	Addressed
G-8-124	A	30	1	31	3	No mention of the heat alert system in Toronto and Urban heat island effect (other country examples are mentioned). Could this one be included? (Government of Canada)	Not Addressed, because there are now numerous heat health warning systems
G-8-125	A	30	Table	30	Table	findings about Malaria in India may also be included in the table based on published work ( Bhattacharya, S, Sharma, C, Dhiman, R C and Mitra A P 2006.	Addressed

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			8.4		8.4	Climate change and malaria in India. Current Science 90(3): 369- 375). (Government of India)	
G-8-126	A	30				Table 8.4: The table only covers malaria (plus 1 reference to dengue). Therefore the title should be changed - or more studies/references on other diseases should be included (Government of Sweden)	Addressed, much extended now
G-8-127	A	31				Table 8.5: please add: Area: SW Germany (Federal State of Baden-Wuerttemberg) Health Effect: Heat and cold related mortality Model: thermophysiological based model combined with conceptual model for adaptation Climate Scenario; time slices: regional statistical model based on ECHAM4-OPYC3; emission scenario (A1B- CO2); 2001-2055 compared to 1951-2001. Population projections and non-climate assumptions: population growth and population aging; short term adaptation and acclimitization Main results: Increase in heat related mortality (~20%), decrease in cold related mortality will probably not compensate increase in heat related mortality Reference: Koppe, C. (2005): Gesundheitsrelevante Bewertung von thermischer Belastung unter Berücksichtigung der kurzfristigen Anpassung der Bevölkerung and die lokalen Witterungsverhältnisse. Berichte des Deutschen Wetterdienstes No. 226, Offenbach am Main, 167pp. Stock, M. (ed) (2005): KLARA. Klimawandel-Auswirkungen, Risiken, Anpassung. PIK Report No. 99, Potsdam, 200pp. (Government of Germany)	Addressed
G-8-128	A	32	13			This section has a different structure than was expected. The vulnerable groups are identified by geographic location instead of individual abilities to cope. In some ways this make sence, but the individual perspective is somewhat lost in the section. It is important not to loose track of the fact that different individuals at the same location cope differently to effects of climate change. An identification based on individual abilities could have given the following structure: children, elderly, chronically ill, disabled, immigrants, socio-economic deprived persons and women. (Government of Sweden)	Not addressed
G-8-129	A	32	13			Section 8.4.2. It seems a bit odd to have both 'urban' and 'rural' populations as particularly vulnerable, given everyone is either urban or rural and that the entire global population might therefore be considered as particularly vulnerable. If	Not addressed, as previous reviewers asked for it.

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						nothing else, the authors should be more specific with these sections and their titles, e.g. Urban poor populations. (Government of Australia)	
G-8-130	A	32	26	32	33	Urban population and issues seem to be mentioned in various places in the chapter. This section could be combined with the material (which is somewhat similar) in section 8.3.2 (see latter part of second paragraph). (Government of Australia)	Not addressed
G-8-131	A	33	4		6	There is, in fact, a specific study already cited by the authors (Ziska et al. 2003 in JACI) showing greater prevalence of ragweed in urban conditions. (Government of USA)	Addressed
G-8-132	A	33	17	33	23	Wouldn't much of this apply to adjacent urban areas as well, e.g. if water and food are scarce in a rural area, then the urban area's) reliant on such a rural area for food may also be low on food. (Government of Australia)	Addressed
G-8-133	A	33	17	33	17	Change "affects" to "effects" (Government of Canada)	Addressed
G-8-134	A	34	9		11	This sentence has an awkward construction. Suggest rewording along the lines of, "There are indications that could take 35 years to achieve the World Food Summit 2002 goal of reducing world hunger by half rather than the target year of 2015." (Government of USA)	Addressed
G-8-135	A	35	23			Section 8.4.2.4. The usefulness of such a section is questionable. Paragraph one deals with water supply. Could it be merged with discussion in 8.2.3 and/or 8.2.4? Paragraph two starts by stating that little is known about climate change and health in mountain regions, so there seems little justification for a whole section on it. Such research could, however, be identified as a research need. Again, there is nothing in the rest of paragraph two that has not already been said (or could be discussed/moved to) elsewhere in the chapter. (Government of Australia)	Addressed, but not merged
G-8-136	A	36	2			Finnoskandinavia should be Fennoscandia (Government of Finland)	Addressed

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G-8-137	A	36	32	36	38	The discussion on the assessment of the economic value of loss of life due to climate change suggests that it is very difficult to accurately provide such an economic value and the range of USD 6 billion - 88 billion in such assessments supports this conclusion. The authors should more clearly state the inherent difficulties of providing such an economic assessment and should also provide their view on whether there is value in attempting to do such an assessment. This comment also applies to the discussion on the assessment of the value of human life (page 36, lines 42-49). (Government of Australia)	Addressed, by including it into research recommendations
G-8-138	A	36	32		32	Too strong. Replace “The global” with “Estimates of the” and replace “varies” with “range” (Government of USA)	Addressed
G-8-139	A	37	9			Section 8.6. This section should start by stating that the first line of defence against climate change human health impacts should be mitigation of climate change, but given climate change has already occurred to some extent and that we are already committed to further climate change, development and adoption of adaptation responses is also important. Besides the obvious reasons for this, is the potential for adaptation strategies themselves to have inadvertent negative health consequences (see section 8.6.4). (Government of Australia)	Not addressed, but addressed in 8.7
G-8-140	A	37	9			It is important to be prepared in the case of event. In relation to climate change it is important for regions to identify their weaknesses and to have action plans on how to react to climate change. This can be achieved by the planning process in each region by performing research games on different climate-related scenarios. The Swedish National Institute of Public health is about to publish a report on this (ISBN 91-7257-449-6). (Government of Sweden)	Addressed
G-8-141	A	37	17	37	23	By referring to the "degree to which programs and measures will need to be augmented to address the additional pressures due to climate change", the authors imply that existing programs and measures are adequate over the geographical scope of the assessment conducted in this chapter. While the sentence goes on to refer to the "effectiveness of current interventions", it should nevertheless be changed to reflect the fact that health programs and measures in many very large and populous parts of the world currently need to be augmented merely to address present-day resource deficiencies, let alone any future impacts due to climate change. (Government of Canada)	Addressed

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G-8-142	A	37	31	37	35	possibly include drivers which increase/decrease health, increasing/decreasing vulnerability and capacity (Government of Canada)	
G-8-143	A	37	45		48	Expand text to include reference to the use of new technologies and approaches to observations, monitoring and surveillance (e.g., remote sensing, biosensors, and molecular tools). See Maynard 2006, NRC Public Health Systems, NRC Monsoons to Microbes, NRC Under the Weather, and GEOSS). (Government of USA)	Addressed
G-8-144	A	40	5	40	5	Change "In heat wave in summer 2003 lead to" to " The heat wave in summer 2003 led to" (Government of Canada)	Addressed
G-8-145	A	40	23			Section 8.6.2. This and the following section (8.6.3) are poorly supported by the literature (there are only three citations for the two sections combined) and could be made more concise to better reflect the paucity of such literature. (Government of Australia)	Addressed
G-8-146	A	40	36	40	36	Is ""smart"" explained in earlier chapters? If not, explain here. (Government of Canada)	Addressed
G-8-147	A	41	20		21	Clarify what is meant by "economic development" in this sentence. (Government of USA)	Addressed
G-8-148	A	41	35		36	Delete the last sentence of this paragraph. It is only is only true under present conditions, it has a negative connotation, and it adds nothing to the point of the paragraph. (Government of USA)	Addressed
G-8-149	A	41	39		39	Sentence needs a qualifier. Change "Water quality..." to "In developed countries, water quality..." (Government of USA)	Addressed
G-8-150	A	41	49	42	23	As a general rule, the report did not sufficiently take into account the effects of climate change on the animal hosts (reservoirs, amplifiers) of zoonotic pathogens. For instance, in viral zoonosis, global warming may influence the rhythm of hibernation in hibernating mammals such as bats (rabies) or hedgehogs (tick-borne encephalitis). For arboviruses having migrating birds as natural hosts (West Nile, Japanese encephalitis, etc...), climate change may modify the timing of bird migration and breeding, leading thus to an earlier start of virus transmission (Chastel C. Incidence des changements climatiques planétaires sur les arboviroses transmises à l'homme par des moustiques ou des tiques. Bull. Acad. Natle Méd. 2002; 186: 89-101) or its failure in case of inadequacy with food phenology (Both C. et al. Climate change and population declines in a long-distance migratory bird.	Addressed, in a box under 8.8



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						Nature 2006; 441: 81-3). (Government of France)	
G-8-151	A	42	1	42	12	Aeroallergens should be mentioned explicitly somewhere here. (Government of Australia)	
G-8-152	A	42				Figure 8.3. Aeroallergens should be explicitly included in this figure. The middle level of confidence used in the figure (Medium High) seems a little odd. 'Medium High' is not defined in section D.1 of the Introduction Chapter. Should it be Medium to High? The title of the figure appearing above it simply duplicates the figure caption and could be deleted. (Government of Australia)	Nopt included because it looks in the future
G-8-153	A	42				Fig. 8.3: One arrow is missing. In the first section "Very High to High Confidence" the authors have marked a small positive impact on "Restricted distribution of VBD in some regions". However, more studies have shown increased ranges for many VBDs, such as leishmaniasis and Lyme disease. So please include "Increased distribution ranges of VBDs in marginal zones" with a negative arrow under very high to high confidence. (Government of Sweden)	Addressed
G-8-154	A	43	4		8	This paragraph needs work. First, the chapter has not made the case for an "urgent need" to "develop and implement" adaptation actions for climate change per se. Major economic impacts most likely several decades in the future. The case has been made for developing and implementing actions to help respond to major health disasters and to alleviate poverty. The case has also made that climate change will likely aggravate both these issues and so a promising approach to enhancing global adaptation to climate change is in conjunction with efforts to improve health and alleviate poverty. Make clear the connection of these statements to public health policy. (Government of USA)	Addressed
G-8-155	A	43	10	43	14	What is meant by 'the biosphere's natural systems'? Does the biosphere have any unnatural systems? Replace sentence with 'the biosphere's systems'. It could be argued that there is little if any uncertainty whether climate change will cause irreversible damage to life support systems. Indeed, the authors of Chapter 4 on Ecosystems may well argue that climate change HAS ALREADY caused irreversible damage to life support systems (e.g. loss of species and reduction in biodiversity). (Government of Australia)	Paragraph deleted
G-8-156	A	44	17	44	17	Insert "combating" before "the key diseases" and delete "be" before "improve". (Government of Canada)	Addressed

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<b>Chapter-Comment</b>	<b>Batch</b>	<b>From Page</b>	<b>From Line</b>	<b>To Page</b>	<b>To line</b>	<b>Comments</b>	<b>Notes of the writing team</b>
G-8-157	A	44	17	44	19	At present this sentence makes little sense and should be redrafted. (Government of Australia)	
G-8-158	A	44	17		18	This sentence has an awkward construction. Suggest replacing “the key diseases...” with “significant advances will occur in treating the key diseases...”, and delete, “will be improve”. (Government of USA)	Addressed
G-8-159	A	44	30	44	30	Add to sentence : ", and erosion and landslides in contaminated areas". (Government of Sweden)	Not addressed
G-8-160	A	45	1			References. This whole section needs careful checking. Each reference should be carefully checked against the actual papers, reports, etc. to ensure all details are correct. (Government of Australia)	Addressed
G-8-161	A	45	1			References. Some journal names have been abbreviated and others have not. Consistency is required. (Government of Australia)	Addressed
G-8-162	A	62	3	62	3	Delete "and Government of India". (Government of India)	Addressed
G-8-163	A	62	6	62	6	replace "S. K. Bhattacharya" with "S. Bhattacharya". (Government of India)	Addressed

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**This part contains LATE GOVT comments for chapter 8**

**CHAPTER 8**

Chapter-Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
8-1	LATE	0				<p>This SOD presents a number of improvements with respect to the FOD, but still shows some shortcomings and keeps long. However, the cancellation of repetitions, through a better internal coordination, and tight cross-references with the sectoral and regional chapters will permit some reductions in size.. In spite of the fact that this is one of the very few SOD chapters recognizing the need for more basic data and information, the corresponding request does not show as neat as it should. The suggestions made in the specific comments might serve to focus better some of the issues decision makers need to assume: the responsibilities inherent to the adoption of preventive measures, the provision of public health services and the use of existing public information and national warning/defense services to better disseminate health warnings and alerts.</p> <p>The chapter should improve cross-reference with chapters 4 and 5 regarding the impact of climate change direct and induced effects on the components of the trophic chain, as the basis for keeping food production at the necessary levels to reduce the malnutrition affecting the poor and indigenous communities. Logically, such coordination also applies to chapter 3, regarding freshwater availability and its quality. In relation to the water issue, reference on the recent studies about the DBPs- Disinfection by Products, utilized in water potability ´s treatments, bringing a number of health ´s hazards and risks, would be necessary.</p> <p>This chapter misses information on the combined effect of VBD ´s geographical extent due to both the spreading of vectors and the observed fact on the increasing activity of plasmodia, under higher temperatures. Also the impact on water acidification, due to increasing concentrations of CO2 in the atmosphere, also affecting the water quality for human consumption, as well as the effect of the byproducts of the Montreal Protocol substances to reduce the stratospheric ozone depletion, like the TFA (Trifluoric Acid) should be reported (ref. IPCC YEAP Special Report. Safeguarding the Ozone Layer and the Global Climate System, 2005).</p> <p>Better information on the interlinkages between natural ecosystems and human</p>	Addressed

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Chapter-Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						health will be appreciated. There are some few issues which should be referred to the attention of the users of this chapter regarding, for instance, the recent findings on the fact that the potability´s treatments, to make freshwater safer, would bring some ill-effects, due to the DBPs- Disinfection By Products, giving rise to a series of diseases. Over 500 DBPs have been identified. The epidemiological studies have found links between long-term consumption of chemically potable water with high levels of BDPs and the risk of aggressive forms of cancer, such as the bladder carcinoma. DBPs have also been linked to spontaneous abortions and birth defects (New Scientist, 3 December 2005, page 45), see also relevant section in this ER´s comments on Chapter 3 (Government of Argentina)	
8-2	LATE	0				The quality of the sectoral chapters (3 to 8) looks quite diverse. However, practically all of them show the same two shortcomings. 1.- the lack of strong appeal to decision makers regarding the assumption of their country´s responsibility to implement fully their commitments in respect to the performance of geophysical and biological observations and compile the necessary social, economic and related human health information to understand better the implications of climate change in their different trades. 2.- The necessity to improve cross referencing among them and with the regional chapters (Government of Argentina)	Addressed
8-3	LATE	3	28	3	28	Place "would" instead of "will" (Government of Argentina)	Addressed
8-4	LATE	3	33	3	37	Since recent studies show that some of the sporozoans, alternating between the blood system of vertebrates and the digestive system of some vector (i.e mosquitoes), are showing increasing reproduction rates with higher temperatures, and because climate change influences the distribution and development of insect species, it would be better to redraft this paragraph, so to include this information. Therefore, it could say: 6. Climate change influences the distribution and development rate of health-relevant insects as well as higher temperatures would increase the infectiousness of some parasites (plasmodia in mosquitoes species); therefore, leaving aside the other factors on which VBDs depend, the Earth´s warming would lead to an increase in potential for disease transmission. Consequently, projected changes etc. (Government of Argentina)	Partly Addressed
8-5	LATE	3	40	3	40	The lack of information from many areas of the world, as reported in the chapter´s	Addressed

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Chapter-Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
						text, would suggest that the argument arising from the term "is" should be replaced to read "might be" or "may be" (Government of Argentina)	
8-6	LATE	4	1	4	1	Taking into account that higher temperatures in winter time would have positive impact on health, particularly for aged persons, it would be better to insert "excessive" before heat. (Government of Argentina)	
8-7	LATE	4	4	4	4	May we say "will have" when there are still a number of ill-known factors about, let us say the effect of internal migrations caused by different crucial issues, such as reduction in food production or lack of freshwater resources, vis a vis of a still increasing global population?. Before these and other potential stresses, it would be better to say: "Climate change may bring some etc". (Government of Argentina)	Addressed
8-8	LATE	4	12	4	12	It is understood that the name "ciguatera" is applied in the Caribbean region. Therefore, since the IPCC reports shall serve users in the different regions of the world, it would be better to cancel the qualification here and, in the bulk of the chapter cross-refer the use of the word ciguatera with the corresponding information from that particular region (the Caribbean). Moreover, it is not only fish poisoning but also other "fruit de mer" poisoning and the algae blooming producing other negative effects on sea food (in Latin America there is forbidden to fish under "marea roja", i.e when the algae blooming adversely affects fishes and other sea species. (Government of Argentina)	Addressed
8-9	LATE	4	14	4	17	Should we be correct, the second sentence of this paragraph should also mention a similar impact from droughts. Therefore, it is suggested to bridge this issue by slightly modifying the second sentence to read: Increases in frequency and intensity of extreme events, namely floods and droughts, will test the capacities of hydrometeorological watching and alert systems and the integrity of water management regarding the control and alert of water-borne diseases. (Government of Argentina)	Addressed
8-10	LATE	4	23	4	26	Since increasing surface temperatures lead to increasing wildfire conditions in forest and rangelands, it is important to inform decision making on the increasing health problems stemming from wildfires, as well as provoked fires to expand the agriculture frontier. The emission of gases and particulates is critical as it is their transboundary dissemination. It is then suggested to add, after pollutants, particularly gases and particulate emissions from wildfires in forests, woods and rangelands. For further information see: "A review of factors affecting the human	Not Addressed, as it was subject of the TAR

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						health impacts of air pollutants from forest fires”, from Health Guidelines for Vegetation Fire events, Lima Peru, 6-9 October 1998=WHO, and the Summary on Scientific Studies on Health Effects of Woodsmoke and Particulate Matter Air Pollution= Bay Area Air Quality Management District, December 2004 (Government of Argentina)	
8-11	LATE	4	26	4	26	Since it is known that increased surface ozone concentration affects workers in physical or mental activities, this fact should be included. The end of the paragraph should then read: to heat stress and increased surface ozone concentrations. (Government of Argentina)	Not Addressed
8-12	LATE	4	29	4	29	Place "free" or "release" instead of "insulate" (Government of Argentina)	Not Addressed
8-13	LATE	4	39	4	40	Recent developments show that some National Meteorological Services are producing "health forecasts and advisories (Geddes N. "And now for today 's health forecast", New Scientist, 11 February 2006, page 44). Therefore, it would be opportune to reflect these developments in these lines, so to say: "...as well as predictions of infectious and other diseases, either seasonal or daily". (Government of Argentina)	It is true that some services provide this, but there is a lot to be said about effectiveness.
8-14	LATE	5	3	5	5	After climate change, in line3, it is suggested to read: "provides information on current and future possible health stresses and risks, and the strategies, policies and measures that have been recommended, and should be implemented, to reduce human vulnerability and the impacts of climate and environmental changes on human beings (Government of Argentina)	Addressed
8-15	LATE	5	6	5	6	Regarding the reference on research, the efforts to develop mathematical models and new theories are not only empirical but also theoretical. Therefore, it is suggested to read "theoretical and empirical research". (Government of Argentina)	Addressed
8-16	LATE	5	16	5	16	Replace " against" in the place of "with" (Government of Argentina)	Addressed
8-17	LATE	5	22	5	22	It will be more direct to read: "However, improvements are not evenly distributed into all regions and substantial inequalities in health care services persist, etc". (Government of Argentina)	Addressed
8-18	LATE	5	32	5	32	Place "transmittable" instead of "communicable" (Government of Argentina)	Not Addressed – it is communicable diseases in medicine – those that either transmit from person to person or through a vector.
8-19	LATE	5	36	5	36	Read “non-transmittable” instead of “non communicable” (Government of Argentina)	Not Addressed

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Chapter-Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
8-20	LATE	6	10	6	10	In this bullet, add “drought” within the brackets.. (Government of Argentina)	Addressed
8-21	LATE	6	34	6	34	The well known fact that in many countries, in particular in developing ones, data and allied socio-economic information are definitely scarce , suggest to amend this phrase. It would be more correct to say:" More studies that investigate the effects of climate and climate change, in the context of social, economic and environmental context of the disease risks are now available; however this is not the case in many developing countries” . The reference on the Izmerov et al paper should be passed to the previous sentence." (Government of Argentina)	
8-22	LATE	6	36	6	36	Place "progress" instead of "advancement" (Government of Argentina)	Addressed
8-23	LATE	6	40	6	41	The information give above, on the availability of health forecasts and warnings, should be used to close this paragraph 8.1.3 (Government of Argentina)	Not Addressed
8-24	LATE	7	9	7	9	After and, add "related socio-economic information". Further, it does not pertain to the population to collect and analyze this type of information, it is the government and private entities ´obligation. Therefore, it would be better to place “developing countries” instead of “low-income populations”. (Government of Argentina)	Not Addressed
8-25	LATE	7	17	7	17	Assuming that we agree with the WHO definition for health, it would be more appropriate to slightly modify this bullet to say "for people ´s health, well being and comfort, in different population settings" (Government of Argentina)	Not Addressed
8-26	LATE	8	9	8	10	please add a paragraph to illuminate differences between broken and real lines in Figure 8.1. (Government of China)	Addressed
8-27	LATE	8	13	8	14	As already mentioned, it is not only the vector ´s populations which are affected but also the infection agents (i.e. sporozoans=plasmodia).Therefore, this idea shall be added. (Government of Argentina)	Partly Addressed
8-28	LATE	8	15	8	15	Under a given climate system or setting, there would be few modifications in the temporal and spatial distribution of the mentioned diseases. However, “climate variations”, or better “climate change” plays that role. Therefore, this bullet should be redrafted to say so. (Government of Argentina)	Addressed

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Chapter-Comment	Batch	From Page	From Line	To Page	To line	Comments	Notes of the writing team
8-29	LATE	8	16	8	16	Place "food and water borne diseases" instead of "diarrhea diseases". (Government of Argentina)	Not Addressed
8-30	LATE	8	18	8	18	Replace "may be" instead of "are" and add, after long- lasting, "both physically and economically". Further, add droughts after flooding. Therefore, this bullet should read: * the health effects of flooding, drought and weather may be severe, both physically and economically" (Government of Argentina)	Addressed
8-31	LATE	9	26	9	30	Line 26 says that Table 8.3 includes information from the Regional chapters. Since in some cases these chapters have failed to include some important regional diseases, the Chapter 8 's authors should check this table. For instance, there is no reference to the Chagas disease (trypanosomiasis americana) with more than 20 million of persons infected. (Government of Argentina)	Addressed
8-32	LATE	10	18	10	22	Since "some climatologists consider "very likely", etc, then, in line 22, page 10, instead of saying "can", it would be better to say "may". (Government of Argentina)	Addressed
8-33	LATE	11	29	11	29	After heating system failures add "or highway ´s blockage by sudden and intense snow storms" (Government of Argentina)	Addressed
8-34	LATE	11	36	11	51	Having worked with thermodynamic chambers with capacity to modify temperature, air circulation and humidity, it can be stated that the absolute humidity is a critical factor in human well being. The combination of temperatures exceeding 30 °C with humidity above 65 % made people to faint with high heart pulse rates. Additional information is also available in the book Hot Climate, Man and his Heart, by Burch G.E and N.F. De Pasquale, which first edition is from 1962, by Charles C. Thomas-Publisher, Illinois). Chapter XI "The effect of thermal stress on normal and disease cardiovascular systems of man", includes interesting information on: cardiac output, work and powering subjects with normal and diseased hearts exposed to hot and humid environments (page 140). It is therefore suggested to include this important environmental variable – air humidity. (Government of Argentina)	Partly Addressed – because there are NO pr limited epidemiological time series studies available
8-35	LATE	12	17	12	17	Since the Earth ´s warming is expanding the tornado ´s area from low-middle latitudes to high-middle latitude regions, it suggested to associate the high wind not only to storms, squall-lines and cyclones but also with tornados. Therefore it is suggested to include the reference of the weather features leading to high wind conditions. In this regard, as well as in what concerns flood and inundation cases, cross reference to Regional Chapters is necessary.	Addressed



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						(Government of Argentina)	
8-36	LATE	12	21	12	21	Diseases are "transmittable" not "communicable" (Government of Argentina)	
8-37	LATE	12	23	12	24	Suggest replace 15000 with 130 million (see National Climate Center, 2004: Climate Impact Assessment in China 2003. China Meteorological Press, Beijing, 20). (Government of China)	Addressed
8-38	LATE	12	39			add a paragraph " In China, it seems to have a relation that LaNina years caused more numbers of landing typhoons as well as more digestive system cases than El Nino years according to the data of six years in 1990s (Zhao et al. 2000) (Government of China)	Addressed
8-39	LATE	12	48	12	48	After the sad experience with the 2005 hurricanes in the USA, it would be better to replace "would be" instead of "is" (Government of Argentina)	Addressed
8-40	LATE	13	44	14	12	The Box 8.1 is interesting, the pity is that the "tsunami" is not a climate change or even climate event. It is a telluric one, a seism under the sea. Since it is a generalized confusion about these and the climate change events, it could be added that the increasing sea level rise, due to the Earth 's warming tends to exacerbate the inundation effects. This short addition would clarify the issue and give some climate change implication to these geological phenomena. (Government of Argentina)	Addressed
8-41	LATE	14	25	14	25	Droughts also affect the water quality, due to pathogenic and other pollutant concentration: therefore, it would be appropriate to mention that. One way would be: "Water scarcity and the associated pollution problems as well as the water-washed, etc". (Government of Argentina)	Addressed
8-42	LATE	15	25	15	47	As before, cross reference with the Regional Chapters may bring other regions information. Such is the case of the Venezuelan encephalitis and the Nile Fever, exacerbated by droughts. (Government of Argentina)	Addressed
8-43	LATE	16	13	16	13	As mentioned before, ciguatera is a local designation for the Antilles and Caribbean sea; similar poisoning effects are registered in other regions, probably under others designations. This should be clarified: As mentioned before, algae blooming producing what is called "marea roja"(red tide), in the South Atlantic Basin brings shellfish and fish poisoning. These situations bring the public health authorities to forbid fishing under such conditions. (Government of Argentina)	Addressed

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8-44	LATE	16	19	17	37	It is necessary introduce a reference to naturally poisoned water, like it happens with some metals, i.e. Arsenic and Fluoride. Climate change, either directly, by modifying the underground water replenishment conditions or, indirectly, through higher water requirements due to increasing temperatures. Fluorosis and Arseniosis affect more than 200 million people with serious diseases and loss of immunological defenses, in all regions of the world. Under this same section, the soil and plants washing down their agrochemicals 'accumulation, would call for a comment, like it is the serious contamination of water in the areas where coca and their derivate drugs are produced.. (Government of Argentina)	Not Addressed; we do not understand the climate change role?? Do you refer to increased water run-off?
8-45	LATE	16	24	16	24	The sentence starting on this line should include also ground water as affected by climate change, very particularly in shallow phreatic levels (Government of Argentina)	Not Addressed – water chapter
8-46	LATE	16	30	16	30	It would be more correct to read “The role of precipitation extremes - either intense rainfall or drought –“ (Government of Argentina)	Addressed
8-47	LATE	16	35	16	35	Add other important elements through the inclusion of an additional bullet saying *Side effects of flood and inundation, like dispersion of sewage materials and the formation of mold /mildew. as well as persistent high air and soil humidity, bringing ill health conditions, would be more critical in costal and riparian areas, due the Earth 's warming. (Government of Argentina)	Addressed
8-48	LATE	17	40	18	12	Under this section there is no reference on the hydrocarbon emissions by certain plants and trees. The acacia trees planted along the streets in many cities (i.e. Geneva, La Plata), are heavy producers of aromatic hydrocarbons and terpenes, alike the pine trees. These emissions are impacting with asthma and allergic-prone conditions. Also these plant hydrocarbons enhance the surface ozone production. (Government of Argentina)	Not Addressed
8-49	LATE	18	14	18	31	This sections would deserve one or two lines reference on preventive measures, monitoring and reporting of high surface ozone concentrations in heavily populated settlements (Government of Argentina)	Addressed
8-50	LATE	18	23	18	23	Here again, the lack of reference on the Regional Chapters may induce the idea that surface ozone is only increasing its concentration in some countries when, as a matter of facts, it is increasing everywhere. As shown in the WMO Special Environmental Reports, this type of pollution is well-known from the mid-1950. The modern trend of internal combustion vehicles has shown increasing	Addressed

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						concentrations along highways, urban areas with dense traffic (i.e. Mexico City, Santiago de Chile, Los Angeles,,etc). Therefore, cross references are necessary. (Government of Argentina)	
8-51	LATE	18	35	18	35	After air pollutants add "in general and, in particular of fine particulate matter, etc" (Government of Argentina)	
8-52	LATE	18	39	18	39	After "energy use" add "In urban areas, engine fuelled vehicles or internal combustion transportation emissions are the main surface ozone producing system. Increased traffic along highways affect people and vegetation in the neighborhood. (Government of Argentina)	Addressed
8-53	LATE	18	46	18	46	It is not the climate but the prevalent weather or meteorological conditions which, under specific solar radiation circumstances, mainly availability of appropriate UV radiation, which brings the photochemical reactions leading to surface ozone formation. (Government of Argentina)	
8-54	LATE	19	4	19	5	This phrase looks rather inconclusive. In fact, having not local pollution sources there would be no long-range, trans=boundary pollutant transportation.. It it the suggested to add, at least, the two main factors, i.e. industrial areas and forest fire sources. (Government of Argentina)	Addressed
8-55	LATE	19	14	19	14	Once again, regional cross-cutting is suggested, there are well known sand-storms in the coastal deserts in west South America, in the Patagonia. Dust devils are also very common in many countries in Latin America, with implications on human health (Government of Argentina)	Addressed
8-56	LATE	19	26	19	27	This phrase shall also reflect the allergenic importance of plants terpenes, as mentioned above. Therefore, the phrase should read "Several studies report evidence for climate change effects not only on the timing and duration of pollen and hydrocarbon emission ´s season, but also the pollen amount and hydrocarbon concentrations. (Government of Argentina)	Not addressed
8-57	LATE	20	40	20	44	Some authors have shown that malaria spreading / dissemination as well as the increased temperature effect on plasmodia reproduction is dependent from climate change. Therefore, it will be wise to check this question for the TOD, The issue remarked in the second phrase, in this paragraph, is very important. The reiterate pledge for data and allied socio-economic information shows that this is the main failure when interlinking climate change to human health issues. (Government of Argentina)	Not addressed

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8-58	LATE	20	45			add a paragraph " In China the incidence rate of malaria was at 0.025 per thousand, and mortality rate was at 0.019 per million because of the effective nets at different level in whole China for treatment of patients and preventive against malaria ( Tang. 1999) (Government of China)	Not addressed
8-59	LATE	21	30	21	30	Dengue is now common in mid-latitude areas, like the Great Buenos Aires region. It has been observed that the air humidity plays a role in the dengue dissemination. Therefore, this meteorological variable needs to be referred to. (Government of Argentina)	Addressed
8-60	LATE	21	39	22	40	Regarding malaria, it may be useful to mention the work by Martin P.H. and M.G. Lefevre " Malaria and Climate Sensitivity", published in Ambio, VOL 14, N <sup>a</sup> 4, 1995, informing on the modeled malaria potential annual transmission in the world, based on UKMO models. (Government of Argentina)	Not Addressed – was in SAR and TAR
8-61	LATE	22	44	22	45	This phrase omits reference on another important factor on rodent ´s dispersal. It is wood and rangeland ´s wildfires or provoked fires. The long-tailed mouse transmitting hantavirus diseases comes out from these habitats. (Government of Argentina)	Addressed
8-62	LATE	23	13	23	13	A reference on the ENSO effect to spread the snails populations would be useful (Government of Argentina)	Addressed
8-63	LATE	23	50	23	50	There are not health benefits from exposing to UVB (320-280 nanometres) radiation. It is the UVA radiation ( 320 -400 nanometers) bringing this benefit. Vitamin D fixation depends on UVA. Exposure to UVB, as known, brings carcinoma and melanoma ´s development. (Government of Argentina)	Addressed
8-64	LATE	24	4	24	13	Should here, in this chapter and within the WG II ´s responsibilities deal with the physics of climate change and total ozone (surface, troposphere and stratospheric) it would be opportune to cross refer to the IPCC Special Report on Safeguarding the Ozone Layer and the Climate change System, its Chapter 1 Ozone and Climate, A review of interconnections, covers all aspects of interest, needing no to be repeated in chapter 8. (Government of Argentina)	Addressed
8-65	LATE	25	42	25	45	This phrase on mistaken rapid economic growth is based on the null or very poor information available about the environmental consequences of exploiting, over-using natural resources, without accounting for the externalities. Nobody in the 19th and very few politicians of the late 20th century, have had thoughts about the critical implications of the environmental global changes. They started them	Addressed

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						<p>without thinking or even believing that there would be such disastrous effects as we know now. Therefore, coming back to the need to choose sustainable development paths, knowing that there is a flagrant lack of data and interconnected social and economic information in many regions of the world and recognizing that the human society would have to live with the remaining resources of this unique world, this quotation must be used to remark the urgency for data and information so to assess the potentialities of the existing ecosystems, the implications of their overuse on the human health of future population (i.e. malnutrition for million of human beings) and the loses in natural ecosystems and their genetic wealth . Let us hope that this opportunity will be taken.</p> <p>It is hoped that this comment may serve the purpose to include in the TOD a clear statement of such basic needs and not only claim for more research. Without substantive geophysical, biological, social, economic, and even cultural and anthropological information, no model will resolve the goals of the IPCC. (Government of Argentina)</p>	
8-66	LATE	28	42	28	42	<p>Just to say that it is good to remark that some authors have thought in the importance of humidity, a failure noted before. (Government of Argentina)</p>	Addressed
8-67	LATE	29	22	32	8	<p>This section on urban pollution should include reference on the adverse impact of surface ozone in trees and gardens, having an important effect of human wellbeing, hence in human health, and also, this is very important, information on the short life of surface ozone, making impossible this pollutant long range transport (Government of Argentina)</p>	Addressed
8-68	LATE	29	33	29	33	<p>At the end of the paragraph, replace "required" by "requisite" (Government of Argentina)</p>	Addressed
8-69	LATE	29	43	29	45	<p>It should be noted that the monitoring of surface ozone and other pollutants is being performed in some cities in Latin America. The severe pollution cases in Santiago (Chile ) and Mexico City are making part of urban pollution bibliography (Government of Argentina)</p>	Addressed
8-70	LATE	32	11	32	22	<p>The section 8.4.2 shall refer to the highly vulnerable populations in mountain regions with glaciers, where their rapid retreat and the formation of lakes in the melting glacier give rise to deadly GLOFs (Glacier lake outburst floods). Cross reference with chapter 3 may easily cover this question. (Government of Argentina)</p>	Addressed
8-71	LATE	32	24	33	13	<p>Climate change makes more vulnerable those poor , indigent population groups, living in slums and squatter settlements. So is correctly expressed in this sub-section 8.4.2.1. But, the neighborhoods to these precarious settlements are also</p>	Addressed

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						affected by the enhanced danger of diseases transmission, either directly (people to people) or due to the migration of insects, flies, mosquitoes, and the different rodents and other animals coming from these settlements to the city. The WHO Report Our Planet, Our Health reports on these issues. (Government of Argentina)	
8-72	LATE	33	20	33	20	After damage, between of and land add "cropping" and after floods add a coma and "droughts. The paragraph will then read "loss of cropping lands through floods, droughts and sea level rise." (Government of Argentina)	Addressed
8-73	LATE	35	25	35	27	Since all countries in South America, lying at the sides of the Andes Cordillera (these are 7 of the 13 countries in this sub-continent, it would be better say so and cross refer to the regional chapter., to obviate naming seven countries. Instead of the countries simply say "the Andes Cordillera" (Government of Argentina)	Addressed
8-74	LATE	35	33	35	39	For references about GLOFs and rapid retreat of glaciers in South America, cross-refer to Chapter 13.: (Government of Argentina)	Addressed
8-75	LATE	35	41	36	23	This paragraph is missing some reference to the South Pole. Although the Antarctic is an uninhabited continent, there are a number of scientific installations with a number of people. During the summer, some of them house familiars of scientists and there is tourism activity. Therefore some reference on the increasing UVB radiation reaching the surface, due to the stratospheric ozone layer s depletion, would be, though small, a reference for the health problem, within the South Polar Circle. (Government of Argentina)	Not Addressed
8-76	LATE	36	26	37	6	Reading this important section, it is noticed that there is no reference on the need to improve, very particularly in developing regions, the building of national / regional data banks with the effects of extreme weather events, the effects of climate change on health, DALYs information and even the effect of increasing surface ozone concentrations impairing mental and physical activities. Moreover, as mentioned before, the increasing water vapor content in the air masses, due to higher temperatures and humid air advection from the oceans and seas warmed by the increased greenhouse effect, should be reported.(Ref. Burch and de Pasquale, Tulane University USA) . (Government of Argentina)	Addressed
8-77	LATE	37	9	37	35	This paragraph may well be reduced in extension, the cancellation of some repeated messages will allow for that.	Addressed

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						Regarding the phrase starting on line 12, it is felt that it would be wiser to place “change” or “diversify”, instead of “increase”. This modification does not mean any burden reduction, on the contrary, changes or diversifications would bring additional problems in the treatment of illnesses, lost of comfort conditions, etc, simply because such changes/diversifications may well bring additional variables to take into account (i.e. floods and droughts modifying the thresholds for water-borne diseases; higher absolute air humidity bringing different problems, depending on the prevalent air temperature and the average age of the population, etc). (Government of Argentina)	
8-78	LATE	37	38	38	41	This sub-section 8.6.1., on approaches at different scales, should be complemented with information on actions already developed at a regional scale, as in the case with the forecasting of seasonal and inter-annual climate variability and its utilization in multipurpose applications, human health being one. In this regard, appropriate coordination of regional / sub-regional bodies regarding the monitoring of forests and rangelands wildfires as well as provoked fires, would permit a better control of trans-boundary transportation of gaseous pollutants and particulates and the opportune implementation of health warnings. Regarding actions at national levels, once again, decision makers should be informed on the need to improve information on health-weather-climate parametric components and variables to improve seasonal health ´s conditions watching and the formulation of early warning. Future actions should, as in the already mentioned case of health forecasts (UK) develop similar efforts in other countries. In this regard, decision makers shall be advised on the need to improve their information sources (geophysical, social, economic and even cultural). (Government of Argentina)	Addressed
8-79	LATE	39	21	39	28	Since Meteorological Services are currently providing data and forecasts on daily UVB radiation reaching the ground, individuals should be educated to take care of excessive exposures, particularly in summer time. (Government of Argentina)	Addressed
8-80	LATE	39	34	39	37	This phrase, referring the burden of climate-sensitive diseases and vectors/transmitters, should remember decision makers that the increasingly common location of national and international migrators in the outskirts of large cities (slums, favelas, villas miseria, shanty settlements) and more recently in open inner areas and empty buildings, squatters in some cities (as it happens in Buenos Aires and other LA cities), gives another dimension to preventive medicine which, as it was shown in the WHO Report of the Panel on Urbanization (WHO	Addressed

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						Commission on Health and Environment,1992), calls for additional adaptation to prevent ill-health outcomes. Climate change and extreme events already cause the exacerbation of this migratory displacements and the correlate effects on public health (Government of Argentina)	
8-81	LATE	40	31	40	32	This phrase may be improved adding other urban components which, in addition to enhancing the “urban heat island effect”, would help in reducing the surface ozone generation by transportation means. Therefore the phrase could say: “The design of efficient transportation systems, with traffic ruling reducing the idle operation of fuel engines, the improvement of urban energy distribution, the appropriate design of sewage systems, will reduce the effect of urban pollution, the generation of surface ozone, the formation of heat islands and the appropriate management of urban storm water hydrology. (Government of Argentina)	Addressed – partly no space – tranport alone does deserve a whol chapter
8-82	LATE	40	42	41	21	This interesting sub-section suggest that some small adjustments would give a better picture of the boundaries within which health services should search for adaptation to climate change. The first sentence, starting in line 44 should need an addition lo locate the health problem within the correct boundaries. This would be in the form of a preceding phrase saying: “In addition to the factors resulting from regional / local environmental conditions, the degree to which etc” (here continues the existing first line of this sentence. In line 47 and “s” is missing, it is “measures” and no “measure”. In line 48, it would be more direct to say “will on the part of those who distribute these resources to assign funds and means for adaptation measures” (Government of Argentina)	Addressed
8-83	LATE	41	1	41	2	The phrase starting with “Measures not in accordance, etc” should better read as follows: Also measures opposing the local laws, regulations and social customs and conventionalisms would fail to succeed. (Government of Argentina)	Addressed
8-84	LATE	41	4	41	4	The phrase staring “Increasing etc” could, aiming to a better decision making response, be improved saying “ Appropriate outreaching, leading to people ´s conscientiousness and increasing awareness of, etc” (Government of Argentina)	Addressed
8-85	LATE	41	11	41	11	Since the problem presented in this line ´s phrase is already standing, it would be better to read : “Therefore as it is now, over the medium=term, the poor, etc” (Government of Argentina)	Addressed
8-86	LATE	41	20	41	21	It is not only for poor communities but also for indigenou groups living under	Addressed



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						limited resources conditions, that adaptation would be delayed. Therefore, it would be better read “Unless effectively addressed, reduced capabilities, slow economic development and other socio-economic factors will continue to increasing human health vulnerability to climate change, in poor and indigenous communities” (Government of Argentina)	
8-87	LATE	41	35	41	36	This phrase means that such a solution, to reduce heat stress, is not feasible in many countries, due to lack of sufficient energy generation capacity, etc. Therefore, this last phrase may read better as follows: This solution is impracticable in countries where the energy generation capacities are low”. (Government of Argentina)	Addressed
8-88	LATE	41	38	41	38	Between “waste water and irrigation”, replace “for”, instead of “and” (Government of Argentina)	Addressed
8-89	LATE	42	3	42	3	Physically wise it shall read “ increases in high temperature events”, therefore, add events after temperature (in singular) (Government of Argentina)	Addressed
8-90	LATE	42	8	42	8	For the reasons mentioned above, after malaria add “ as well as the infection potential of plasmodia” (Government of Argentina)	Not Addressed
8-91	LATE	42	25	42	25	The title should read, after Impacts, “ due to climate change. This clarification is necessary when reading the table outside of context. It should be also noted that no reference is made of floods and droughts, having an important impact on human health. (Government of Argentina)	Addressed
8-92	LATE	43	13	43	13	After “water”, add “quantity”, so to read “water quantity and quality”. Regarding the word “security it applies to individuals, communities and the environment, therefore, we should say “human and environmental security. (Government of Argentina)	Addressed
8-93	LATE	43	23	43	24	The phrase relative to the reduction of methane emissions, in connection with ozone generation, should, in this particular case, focused on the atmospheric ozone altitudinal distribution affecting most human health. Such is the case of surface ozone. Therefore, since the reference to global concentrations of ozone embrace surface, troposphere and stratospheric ozone, and, in this case the text refers to direct effects on human health, the phrase should refer to surface ozone. (Government of Argentina)	Addressed
8-94	LATE	43	40	43	40	Instead of agricultural practices, it would be better to say “land use practices” since it involves agricultural activities and deforestation. Deforestation is the largest culprit in LA CO2 net emissions.	Addressed

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						(Government of Argentina)	
8-95	LATE	43	43	43	45	Chapters 8 and 9 of the WSG III-TAR provide an excellent reference on national costs and ancillary benefits of mitigation and their sectors' costs. Since AR4 should aim to provide the best possible information for decision making actions, this reference, plus the necessary clarification, could be useful. (Government of Argentina)	
8-96	LATE	43	48	44	38	This section is a very important one regarding the message to be sent to decision maker, both official and private. In this respect, the first phrase is too general and does not reflect the reality in many developing countries. There are endemic diseases, like the trypanosomiasis ( African and American), or spells of dengue and other illnesses which are not reported or are biased. Should decision makers from developing countries read the two first statements, then all the efforts undertaken by local professional (medical doctors, environmentalists, etc) will be lost. It is true that some national communications and the AIACC / GEF and other projects have included some studies on human health; however, the lack of reliable statistics, covering both the weather / climate information and the human health relevant consequent data, is the shortcoming to be solved. Should we look for references on this regrettable situation, a renewed action by the CGOS Secretariat, of the WMO, just re-initiate (June 2006) is "fighting" to get the developing countries authorities to activate the Regional Action Plans to implement the global climate network which, in the best of the cases will solely include some information on extreme events and their consequences. Generalization of developments mostly registered in developed countries would lead to enlarging the dichotomy between scientists and politicians, in developing regions. In line 38, after "fashion", add "with the national disasters prevention and alert bodies, profiting of their communication means and outreaching capacities. The MDGs offer a wide field of action to educate the national and regional communities, formally and informally about health hazards and risk circumstances". (Government of Argentina)	Addressed
8-97	LATE	44	7		9	The phrase in lines 7 to 9, in page 44, shows what has been mentioned above; however, a word should be said to decision levels. It is suggested to complement this phrase adding, at the end the following: "Urgent action by governments and private groups is necessary to solve these deficiencies." (Government of Argentina)	Addressed
8-98	LATE	44	36		38	After "monitoring", in line 36 "warning and alert" so to read : "integrated	Addressed

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						<p>monitoring, warning and alert systems”.</p> <p>In line 37, in view of the above mentioned comments, please replace the word “advances” by “state of development”</p> <p>In line 38, after “fashion”, add “with the national disasters prevention and alert bodies, profiting of their communication means and outreaching capacities. The MDGs offer a wide field of action to educate the national and regional communities, formally and informally about health hazards and risk circumstances”.</p> <p>(Government of Argentina)</p>	
8-99	LATE	68	24			<p>add " Tang, L. L., 1999: The achievements on preventive measure and treatment for malaria in China. Chinese Journal of Parasitology and Parasitic Diseases,17(5): 257-259 "</p> <p>(Government of China)</p>	Not Addressed
8-100	LATE	71	45			<p>add " Zhao, Z. C., Q.Q. Li, Z.Q. Zhao, et al 2000: Relationship between ENSO and climate change in China and predictions of ENSO. World Resource Review. 12(2): 276"</p> <p>(Government of China)</p>	Not Addressed