



**IPCC Synthesis Report
Fourth Assessment Report**

Comments on the Final Government Draft

GOVERNMENT and ORGANIZATION COMMENTS

– TOPIC 5 (all batches to 7 November 2007) –

November 7, 2007



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--------------------------------|-------------|-------------|----------------|----------------|--|
| 5-A-1 | 0 | 0 | | | Well-written in general. (Government of Argentina) |
| 5-A-2 | 1 | 1 | 1 | 3 | We wish to again suggest that the title of this topic is too long to be useful. It will inevitably be shortened in use and we suggest it is better for the authors to choose a suitable short title than to have one chosen by readers. We suggest " Adaptation and mitigation from a long term perspective". The scope and structure of the topic can be set out briefly in introductory text (as in Topic 2) - effectively a 'long title', before section 5.1, e.g.: "This topic considers scientific and socio-economic aspects relevant to adaptation and mitigation from a long-term perspective, consistent with the objectives and provisions of the Convention and in the context of sustainable development." (Government of New Zealand) |
| 5-A-3 | 1 | 1 | 11 | 4 | Topic 5 does not follow the plenary approved outline. Sections 5.1, 5.2, 5.4, and 5.6 are not called for in the outline and should be removed, especially given space limitations. Further, discussions of an iterative risk management process and key vulnerabilities, impacts, and risks were not a significant component of the WG2 SPM. (Government of United States of America) |
| 5-A-4 | 1 | 11 | 1 | 11 | Exchange "sustainability" for "sustainable development" (Government of Sweden) |
| 5-A-5 | 1 | 17 | 1 | 18 | Risk is defined here as the product of likelihood and consequence' replace by 'Risk is defined here by the combination of likelihood and consequence'. Why this proposed change in words? Because 'product' suggests to most readers the multiplication of two numbers ending in a third number [i.e. all on the numerical axis]. Risk analysis works in the space Likelihood (numbers, if not stated qualitatively) and Consequences (many times not just numbers or numbers where the unit is very relevant, e.g. number of lost lives). (Government of Belgium) |
| 5-A-6 | 1 | 17 | 1 | 18 | Is this a mathematically established relationship or is risk simply known to be a function of likelihood and consequence? (Government of United States of America) |
| 5-A-7 | 1 | 17 | 1 | 18 | For clarity, change to "Risk is generally understood as the product of the likelihood of an event and its consequences." (Government of European Community) |
| 5-A-8 | 1 | 18 | 1 | 20 | This last sentence is too vague. Delete it. (Government of United States of America) |
| 5-A-9 | 1 | 22 | 1 | 45 | The treatment of key vulnerabilities is problematic. Rigorous application of a set of criteria to determine key vulnerabilities can be an important contribution to future reports; however, this topic as presented in the WG2 4AR is not mature enough to be referenced at length in this synthesis without proper qualifiers. – This is the first time the term “key vulnerability” has entered the formal lexicon of the IPCC. However, despite improvements throughout the drafting of the report, the authors still failed in clearly defining what is meant by the term. Authors stated that the term may refer to a vulnerable system (low-lying island), an impact to a system (flooding), or the mechanism causing this impact (disintegration of ice sheet). |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|-------------------------------|------|------|---------|---------|--|
| | | | | | <p>– In WG2 Chapter 19, the authors failed to elaborate for the reader how ‘key vulnerabilities’ should be distinguished from other vulnerabilities. The authors identify seven criteria to use as a guide in determining what vulnerabilities rise to the level of “key” but give no indication of how these should be methodologically applied. In fact, it appears the criteria were not even applied in determining ‘key vulnerabilities’ in the systems and sectors chapters. As a result, the determination of ‘key’ seems a subjective and normative judgment. Must a vulnerability meet three of the criteria to be deemed ‘key’? Just one? Just one everywhere on the planet or is it dependent on other circumstances?</p> <p>– The WG2 SPM says determination of key vulnerabilities is “dependent on circumstances” but the discussion here leaves out that important caveat. It also leaves out import words like ‘potential’ and ‘illustrative’ that are contained in the WG2 report (see Tech Summary) and serve to alert the reader that the examination of key vulnerabilities is not as certain as the SYR text implies.</p> <p>– There was not much literature on key vulnerabilities to assess. Much of the discussion on key vulnerabilities was clearly the authors fitting vulnerability and impacts research from the literature into their new construct. Also, there is no clear, scientific connection between illustrative key vulnerabilities and dangerous anthropogenic interference. Until the topic is more mature, it should not have such a prominence in the SYR.</p> <p>– The argument that the treatment of key vulnerabilities is based on subjective and normative judgment and perhaps not scientifically mature is supported by many references from Chapter 19. In crafting a table of potential key vulnerabilities, the authors “provide an indicative, rather than exhaustive list of key vulnerabilities, representing the author’s collective judgments, based on the criteria...from a vast array of possible candidates in the literature.” They claim that “the assessment of key vulnerabilities and review of the particular assemblage of literature needed to do so is unique to the mission of Chapter 19”; therefore, the authors “have made value judgments with regard to likelihood and confidence where in some cases other chapters in this report and in the report of WG1 did not.” Does this constitute an approach that should be highlighted with a box and lengthy description in this report?</p> <p>(Government of United States of America)</p> |
| 5-A-10 | 1 | 22 | 1 | 45 | <p>If this box is to be retained, suggest entitling it “Article 2 of the UNFCCC” and providing a description of the objective of the Convention. It could then be condensed to one paragraph, ending with the text on line 36.</p> <p>(Government of United States of America)</p> |
| 5-A-11 | 1 | 39 | 1 | 39 | <p>Include important information from old draft on page 13 line 48 to page 14 line 5: "In this assessment, several criteria were identified in the literature to help policy makers determine what might make a risk, impact or vulnerability "key" and thus, what some might consider to be "dangerous": magnitude of impacts, timing of impacts, persistence, and reversibility of impacts, potential for adaptation, distributional aspects of impacts and vulnerabilities, likelihood (estimates of uncertainty) of impacts and vulnerabilities and confidence in those estimates and "importance" of the systems at risk. Some of the key vulnerabilities identified using these criteria have been described in Section 3."</p> <p>(Government of Germany)</p> |
| 5-A-12 | 1 | 40 | 1 | 40 | <p>“More specific information is now available” is a broad generality. Explain in what way the information is more specific.</p> <p>(Government of United States of America)</p> |
| 5-A-13 | 1 | 41 | 1 | 44 | <p>This concept is not representative of WG2 findings. The chapter did not ‘assess key vulnerabilities’ across regions. Also, “the nature of future impacts” referred to in the previous sentence is not equivalent to “this assessment of key vulnerabilities” in the second sentence. Finally, the language or concept in the third sentence cannot be found in the referenced underlying text. For these reasons, delete the paragraph.</p> <p>(Government of United States of America)</p> |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--------------------------------|-------------|-------------|----------------|----------------|---|
| 5-A-14 | 1 | 43 | 1 | 43 | Delete "and/or political." (Government of United States of America) |
| 5-A-15 | 2 | 1 | 3 | 28 | The material presented here is redundant. No additional information or synthesis is presented here. As the information is duplicative, why this categorization? How many frameworks are needed to present the same information? How does this information differ from the table of impacts? The WG2 SPM refers directly to the table of impacts and does not list out in detail the reasons for concern. As the SYR is a distillation of information from the three WGs, why expand upon this topic at the level of the SYR SPM? The material here is redundant with other information in the SYR that is more rigorously presented; the discussions of key vulnerabilities and reasons for concern were not a significant component of the WG2 SPM, and Section 5.2 is not called for in the Plenary Approved Outline. For all the above reasons, this section should be deleted. (Government of United States of America) |
| 5-A-16 | 2 | 1 | | | Section 5.2: This section provides a very important discussion of the progress in assessing major risks from climate change since the TAR. In the TAR, the discussion of these "reasons for concern" was accompanied with a figure, generally dubbed the "burning embers diagram" (see TAR SYR Fig. SPM-3 and Fig. 6-3). It would improve the value for policy makers significantly to have an update of this widely cited figure being included in the AR4 SYR as well, based on the text in SYR Section 5.2 and WG 2 Section 19.3.7 (Government of European Community) |
| 5-A-17 | 2 | 1 | | | Section 5.2. Very important section on key vulnerabilities and reasons for concern, however, this highly relevant information on how the assessment of the reasons for concern has developed since the TAR would be much more useful for policymakers if the relevant graph from the Synthesis Report of the TAR would be updated. Please include an update of figure included in SPM 3 of the Synthesis Report of the TAR., using the "burning-ember" framework to show how the reasons for concern increase with temperature, should be included with high priority, as this figure from TAR SYR is one of the most widely used, and an update of it in the AR4 is therefore necessary. This should include the figure from TAR and updated next to it, for better comparison. (Government of Germany) |
| 5-A-18 | 2 | 1 | 2 | 10 | Revise this statement to correspond to information summarized by the WG SPMs. (Government of United States of America) |
| 5-A-19 | 2 | 3 | 2 | 10 | This sentence about "Reasons for concern" (RFC) is very important for policy-makers, and the justification contained below (section 5.2) is most welcome, even if it could be more precise in some areas. However, we believe there would be significant added value to the SYR if the points made about the "stronger" reasons for concerns could be illustrated graphically by an update to the RFC diagram contained in the TAR. Such an update was actually proposed by the WGII Chapter 19 authors at the WGII Plenary in Brussels, but the time did not allow a full discussion of this inclusion then, and several delegations suggested that it should be part of the Synthesis Report. To facilitate the discussion, we include here the figure proposed by the WGII Chapter 19 author team in Brussels. This diagram does not contain information that has not been assessed in AR4, it is only an illustration of the material contained in section 5.2. The plot is contained in the following comment, followed by the proposed caption. We believe the added value of this RFC diagram is very high in terms of outreach to policy-makers and the public. [TSU Note: Refer to additional material; "3. Reasons for Concern Diagram"] (Government of Belgium) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|-------------------------|------|------|---------|---------|--|
| 5-A-20 | 2 | 3 | 2 | 10 | The corresponding statement in the previous draft was much clearer, in particular for "(3)". Suggest to reconstitute the text from the previous draft (p. 1, ll. 25-33). (Government of European Community) |
| 5-A-21 | 2 | 3 | | | Initial phrase does not clearly communicate that the AR4 assesses the risks of even small increases in temperature as being greater than what was assessed in the TAR. Possible alternative - "The "reasons for concern" identified in the TAR still provide a strong basis for assessing key vulnerabilities. This assessment report concludes that the risks associated with even small increases in global temperature are greater than were assessed in the TAR due to: ..." (Government of Canada) |
| 5-A-22 | 2 | 5 | | | See comment # 5 above (Government of United Kingdom) |
| 5-A-23 | 2 | 7 | | | replace the word 'risk' by 'likelihood' (or probability); argument is that risk is a combination between the likelihood and the following "very large impacts" (Government of Belgium) |
| 5-A-24 | 2 | 12 | 2 | 15 | We question the practical usefulness of this statement to a policymaker or other reader, and suggest it be removed. It deals simply with technical issues. Reference to the TAR is justifies its inclusion if the findings have changed sine the TAR, but not if they have stayed the same. (Government of New Zealand) |
| 5-A-25 | 2 | 12 | | | This statement is incorrect and contradicts the AR4 glossary entry for vulnerability. Vulnerability is a function of exposure, sensitivity, and adaptive capacity. Adaptive capacity MUST be noted in this sentence (Government of Canada) |
| 5-A-26 | 2 | 12 | 2 | 14 | For clarity, insert "to climate change" after "vulnerability", and replace "influence" by "reduce" (two times). (Government of European Community) |
| 5-A-27 | 2 | 13 | 2 | 14 | Insert "exposure to climate change, including" between "influence" and "the"; strike "and hence exposure." (Government of United States of America) |
| 5-A-28 | 2 | 18 | 2 | 18 | The examples of impacts in Figure 3.5 are not key vulnerabilities. They do not include consideration of adaptation, which is an essential component of determining vulnerability. This sentence states they are relevant but does not elaborate, implying these illustrative impacts are key vulnerabilities. Delete the sentence. (Government of United States of America) |
| 5-A-29 | 2 | 18 | 2 | 20 | Delete this sentence as it is confusing. The concept of vulnerability is presented in the previous paragraph (vulnerability is a function of exposure and sensitivity, to which adaptive capacity needs to be added). Now this paragraph states that "key" vulnerabilities are determined by the rate and magnitude of climate change (exposure) and development status. Is this implying that development status encompasses both sensitivity and adaptive capacity?? Certainly there are tremendous differences in sensitivity and adaptive capacity within developed countries, but we would say that there are |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|--|
| | | | | | differences in development status. The present text is not helpful. (Government of Canada) |
| 5-A-30 | 2 | 18 | 2 | 20 | Any discussion of key vulnerabilities that remains in Topic 5 should reflect the discussion of key vulnerabilities contained in the WG2 SPM, which stated that assessment of key vulnerabilities depended upon circumstances, etc. (Government of United States of America) |
| 5-A-31 | 2 | 20 | 2 | 22 | This sentence can be misunderstood because key vulnerabilities are not necessarily associated with thresholds. Suggest to delete either the part after the comma. (Government of European Community) |
| 5-A-32 | 2 | 28 | 2 | 28 | New Figure to add, as proposed by the WGII Chapter 19 author team at the Brussels Plenary: PLEASE INSERT HERE THE CONTENT OF FILE "UPDATED RFC" IN ANNEX, as the macros presumably prevent us from doing it; We will also post it on www.climate.be/RFC. (Government of Belgium) |
| 5-A-33 | 2 | 28 | 2 | 28 | Caption for new proposed Figure (Updated Reasons for concern): "The consequences from climate change are expressed by reasons for concern (RFC) (Burning embres diagram TAR & AR4). Climate change consequences are plotted against increases in global mean temperature (°C) after circa 1990. Impacts caused by warming up to 1990 are also considered. Each column corresponds to a specific RFC, and represents additional outcomes associated with increasing global mean temperature. The color scheme represents progressively increasing levels of risk, and should not be interpreted as representing "dangerous anthropogenic interference." It should be noted that this figure addresses only how risks change as global mean temperature increases, not how risks might change at different rates of warming. Furthermore, it does not address when impacts might be realized, nor does it account for the effects of different development pathways on vulnerability. Figure 1A displays the Reasons for Concern from the IPCC TAR (Smith et al., 2001). Figure 1B presents the update of the Reasons for Concern." (Government of Belgium) |
| 5-A-34 | 2 | 29 | 2 | 37 | The current text is missing important information that was given in the previous draft. Please reconstitute key findings contained in the previous draft (and taking into account WG II Figure SPM.2) as follows: Add "which has increased confidence in projected impacts. Furthermore" after the first sentence. Replace the text after the comma in the last sentence by "with increased coral bleaching being observed at current temperatures, regular bleaching of most corals at 1-1.5°C warming, widespread coral mortality at 2.5°C warming, and extinction of 40-70% of known plant and animal species globally for warming over 3.5-4°C". (Government of European Community) |
| 5-A-35 | 2 | 31 | 2 | 31 | It would be useful to include uncertainty terminology here to demonstrate how much confidence has increased since the TAR. Eg. High confidence in AR4 but medium confidence in the TAR? (Government of Australia) |
| 5-A-36 | 2 | 33 | 2 | 33 | What is meant by "significant" risks? (Government of Australia) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|--|
| 5-A-37 | 2 | 35 | 2 | 35 | What is meant by "significant" extinctions? What %? (Government of Australia) |
| 5-A-38 | 2 | 40 | 2 | 44 | The current draft misses important information from the previous draft. Please reconstitute key information from the previous draft by replacing "changes in" by "increases in", and by adding "heavy rainfall" after "drought". (Government of European Community) |
| 5-A-39 | 3 | 2 | 3 | 9 | The current draft misses most of the very important information from the previous draft. Please reconstitute key information from the previous draft by replacing the text starting with "For example" by the text on p. 3, ll. 13-35 in the previous draft. (Government of European Community) |
| 5-A-40 | 3 | 2 | 3 | 3 | Strike "Substantial improvements have occurred in the prediction of regional..." and insert in its place "There is greater confidence in the projected regional..." (Government of United States of America) |
| 5-A-41 | 3 | 2 | 3 | 11 | Lost since the previous draft of this report is the text regarding the vulnerability of communities at risk from loss of water resources from retreating glaciers. We would suggest reinserting some text to include this message. (Government of Canada) |
| 5-A-42 | 3 | 13 | 3 | 18 | We are disappointed at the removal of the first sentence of this paragraph from the previous draft, "Aggregate estimates of impacts mask enormous inequity in the distribution of net impacts ..." as the point is an important one, and we urge the authors to re-consider their decision. It may be that a change in language (e.g. using 'great' instead of 'enormous') would make re-insertion simpler. (Government of New Zealand) |
| 5-A-43 | 3 | 13 | 3 | 18 | Throughout this paragraph authors refer to "increased likelihood" and "increased exposure" these reference should have relative % attached to them. Also the statement: eg climate change over the next century "could" adversely affect hundreds of millions of people... what does "could" mean - should be confidence statement instead eg: CC over the next century is "likely (???)" to (Government of Australia) |
| 5-A-44 | 3 | 13 | 3 | 18 | The current draft misses important information from the previous draft, and it no longer provides a balanced summary of the underlying report. Please reconstitute key information from the previous draft by: adding "in some regions" after "from climate change"; adding "therefore" before "sooner"; deleting "exposure to" before "health impacts", and adding the following text from the previous draft (p. 4, ll. 3-5) after the first sentence: "It is also likely that there will be higher damages for larger magnitudes of global mean temperature increases than estimated in the TAR." (Government of European Community) |
| 5-A-45 | 3 | 13 | 5 | 18 | Lost since the previous draft of this report is the sentence "It is likely that there will be higher damages for larger magnitudes of global temperature increase than estimated in the TAR." We would like this sentence reinserted since it strengthens the paragraph considerably. (Government of Canada) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|---|
| 5-A-46 | 3 | 13 | 3 | 13 | It would be helpful here to include uncertainty terminology eg. Is it high agreement much evidence or medium agreement medium evidence etc. (Government of Australia) |
| 5-A-47 | 3 | 20 | 3 | 20 | The term 'singularities' is a very technical term. Its use here does not add anything to the specification of the issue that is being discussed, nor to the understanding of the lay reader. We suggest the term is dropped and the text in bold read simply: "Risks of large scale abrupt or irreversible changes". The corresponding three-line footnote can then also be removed. (Government of New Zealand) |
| 5-A-48 | 3 | 20 | | | Footnote 20: Poor language. Change first sentence to "Singularities are defined in the AR4 as the abrupt and/or discontinuous response of a system to smoothly changing driving forces." (Government of European Community) |
| 5-A-49 | 3 | 21 | | | MOC: not the abbreviation but the full words. (Government of Belgium) |
| 5-A-50 | 3 | 21 | 3 | 28 | In text that addresses the Reasons for Concern, please be consistent between the Synthesis Report and the SPM about where the issue of species extinction gets treated. (Government of Canada) |
| 5-A-51 | 3 | 26 | 3 | 27 | Complete deglaciation would raise the sea level over centuries or even decades, not millennia, if the deglaciation occurred over centuries or decades. We suggest simply "Complete deglaciation of the Greenland ice sheet would raise sea level by 7 m and could be irreversible." Note there is no need to include 'over millennia' here as this time scale is already noted above. (Government of New Zealand) |
| 5-A-52 | 3 | 27 | 3 | 27 | Delete "over millennia and could be irreversible" as this information is already provided above. (Government of European Community) |
| 5-A-53 | 3 | 30 | | | Section 5.3: The previous draft contained a very helpful and informative Figure 5.1 on the time characteristics of mitigation and adaptation. This important figure, and the accompanying text, is missing from the current draft. Figure 5.1, and the text from p. 4, l. 33 to p. 5, l. 17 should be reconstituted, with the following changes: In the caption of Figure 5.1, delete "the risk of " before "residual impacts", and change "might be unavoidable" to "are unavoidable". Replace the sentence starting with "Due to inertia..." with "Due to inertia in the climate system, the climatic benefits of mitigation measures take several decades to fully manifest, but non-climatic benefits (e.g., reductions in air pollution) would manifest immediately. Some adaptations can be effective in the short term (e.g., changes in planting dates of crops) whereas others take several decades (e.g., changes in urban and regional planning)." (Government of European Community) |
| 5-A-54 | 3 | 32 | 3 | 37 | While the previous draft contained balanced statements on the necessity of mitigation and adaptation, the statement on mitigation is missing from the current draft. This imbalance is very worrying. It is essential that the following statement from the previous draft (p. 4, ll. 28-30) is inserted again |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|-------------------------|------|------|---------|---------|---|
| | | | | | after the second sentence: "Mitigation is necessary because reliance on adaptation alone could eventually lead to a magnitude of climate change to which effective adaptation, if it is possible at all, will be available only at very high social, environmental and economic costs." (now summarized in the text on p. 4, line 6-8) (Government of European Community) |
| 5-A-55 | 3 | 32 | 4 | 8 | This section requires some reworking as the subsequent paragraphs deals largely with limits to adaptation (a very small bit on barriers and costs. The initial sentence "There is high confidence that neither adaptation or mitigation alone can avoid significant climate change impacts" is not discussed at all. That message could be strengthened by using the phrase found in the previous draft of section 4.4 - "There is no single optimal mix. Climate change policy is not about making a choice between adapting to and mitigating climate change." (Government of Canada) |
| 5-A-56 | 3 | 32 | 3 | 33 | Replace first sentence in bolded statement with "Both adaptation and mitigation efforts are required to avoid significant climate change impacts." There is no language in the WG2 SPM to support the statement in its current formulation. (Government of United States of America) |
| 5-A-57 | 3 | 38 | 3 | 39 | The previous draft contained an important sentence (in bold face) on barriers to adaptation, which is missing in the current draft. Suggest to add "There are significant barriers, limits and costs to adaptation." (Government of European Community) |
| 5-A-58 | 3 | 39 | 3 | 39 | the term "ineffective" does not prescribe the situation correct, ineffective means "useless" here. Therefore it is recommended to use instead of "ineffective" the term "impossible". For clarification delete "such as for" and insert "such measures like measures for maintenance of". (Government of Germany) |
| 5-A-59 | 3 | 39 | 3 | 42 | The last two examples of adaptation in this list (adaptation to the disappearance of mountain glaciers and to sea level rise of several metres) need to move in the list so that they do not appear to be examples of ecosystems following the 'e.g.'. Thus: "Adaptation will be ineffective in some cases (such as adaptation to the disappearance of mountain glaciers that play vital roles in water storage and supply, or to sea level rise of several metres, and for biodiversity and natural ecosystems e.g. loss of Arctic sea ice and polar bear ecosystem viability) and less feasible ...". The other, less acceptable, option is to put 'brackets within brackets' with brackets around 'e.g. loss viability'. (Government of New Zealand) |
| 5-A-60 | 3 | 39 | 3 | 43 | Reformulate this sentence for improved clarity, and replace "ineffective" by "impossible". (Government of European Community) |
| 5-A-61 | 3 | 39 | 4 | 4 | In this topic adaptation often seems to combine autonomous and planned (to use TAR terminology), when at times it would be useful to be clear which is talking about as on page 4 Lines 2 and 3 (Government of United Kingdom) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|--|
| 5-A-62 | 3 | 39 | 3 | 40 | Delete "...such as". This will improve English construction and will avoid inference that adaptation will be ineffective in all biodiversity/natural ecosystem cases. It then reads: "...ineffective in some cases for biodiversity..." (Government of Australia) |
| 5-A-63 | 3 | 40 | 3 | 40 | Reformulate "...and polar bear ecosystem viability," to "...and the viability of ice dependent species such as polar bears (Box 4.3)," (Government of Switzerland) |
| 5-A-64 | 3 | 40 | | | "polar bear ecosystem" is unclear. Suggest using "marine ecosystem viability" which would capture marine mammals including polar bears. (Government of Canada) |
| 5-A-65 | 3 | 43 | 4 | 3 | What does the combination of "high confidence" and "likely" mean? This combination of two uncertainty statements in a single sentence is not meaningful and not foreseen by the IPCC uncertainty guidance paper. It should therefore be avoided. (Government of European Community) |
| 5-A-66 | 3 | 43 | 4 | 2 | Revise sentence to mirror the statement in the WGII SPM that " The resilience of many ecosystems is likely to be exceeded this century by an unprecedented combination of climate change, associated disturbances (e.g., flooding, drought, wildfire, insects, ocean acidification), and other global change drivers (e.g., landuse change, pollution, over-exploitation of resources). It is not acceptable to use the term "adaptive capacity" here in reference to natural systems because the AR4 glossary's definition of adaptive capacity does not apply to ecosystems. However, the glossary defines resilience as "The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change". Clearly this term applies to natural ecosystems and encompasses the concept that is trying to be communicated here. It is not an issue that ecosystems will not be able to adapt - that would be a subjective human judgement value as to whether they have adapted or not. Rather it is a matter of recognizing that there will be changes in the structure and functioning of ecosystems. (Government of Canada) |
| 5-A-67 | 4 | 2 | 4 | 4 | Discussion of barriers would be strengthened by adding a reference to "technological, financial, cognitive and behavioural, and social and cultural constraints". (Government of Canada) |
| 5-A-68 | 4 | 5 | 4 | 5 | Re-include figure 5.1 of old draft showing the relationship between mitigation, adaptation needs and residual impacts. This was the only new graph in the previous draft of the SYR, and was seen as being very useful. (Government of Germany) |
| 5-A-69 | 4 | 10 | 4 | 30 | Why is this included under "5.3 Adaptation and mitigation"? It refers only to mitigation and would fit better in Section 4.3. (Government of Germany) |
| 5-A-70 | 4 | 10 | 4 | 30 | This bolded header refers to inertia in socio-economic systems and yet there is no text in the supporting paragraphs that speaks to this point. We suggest adding something brief, perhaps to the paragraph on lines 24-30. (Government of Canada) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|-------------------------|------|------|---------|---------|---|
| 5-A-71 | 4 | 14 | 4 | 16 | The sentence "After GHG concentrations are stabilised, the rate at which the global average temperature increases is expected to slow within a few decades, assuming the absence of substantial carbon cycle and methane feedbacks" needs to be revised saying either that "After GHG emissions are substantially reduced, the rate at which the global temperature increases is expected to slow within a few years to decades relative to a scenario with ongoing high emission levels" or "If GHG concentrations were stabilized at current levels, the rate at which the global average temperature increases is expected to slow within a few years to decades". The latter version does reflect the findings of the 'year 2000 constant concentration' experiment. The current text is problematic as stabilization can be achieved "from below" and "from above". Especially for the lower stabilization levels, an initial peaking and decline towards the ultimate stabilization level would lead to temperatures being flat or even decreasing for some time. The current phrasing does disregard these policy-relevant cases. (Government of Germany) |
| 5-A-72 | 4 | 19 | 4 | 21 | There are many repeats of this statement in the SYR. Are they all necessary? Could some editing be warranted? (Government of Australia) |
| 5-A-73 | 4 | 31 | 4 | 31 | Re-include important information from previous draft - see there page 5 lines 17 to line 23: "In the more stringent mitigation scenarios described in the literature, concentrations peak and then drop to reach the ultimate target stabilisation level. The climate system consequences, impacts and effects of such peaking or overshooting scenarios, including for risk assessment, are beginning to be examined. In scenarios where concentrations peak and drop, the realised surface warming and especially the sea level increase will never approach the equilibrium warming level associated with the peak concentration. (Government of Germany) |
| 5-A-74 | 4 | 34 | 4 | 36 | This statement is phrased in a rather abstract and not precise way. Suggest more clarity by adding: "In order to reduce future high risks and costs of climate change, emissions need to peak within the coming decades for all stabilisation levels assessed here." (Government of European Community) |
| 5-A-75 | 4 | 34 | 4 | 35 | Please insert an explanation in brackets: "...must peak (i.e. must not exceed a certain value) and then decline...". Reason: The wording "must peak" is misleading for non-native speakers and non-experts. They might think that emissions must reach a threshold, but actually emissions must stay below a certain value, and then decline. (Government of Germany) |
| 5-A-76 | 4 | 35 | 4 | 35 | The sense intended is clearer if the word 'desired' is inserted before 'stabilisation', thus: "The lower the desired stabilisation level, the more quickly this peak and decline would need to occur (Figure 5.1). " (Government of New Zealand) |
| 5-A-77 | 4 | 35 | 4 | 35 | Include, for better balance of the bold text, the old statement: "Mitigation is necessary because reliance on adaptation alone could eventually lead to a magnitude of climate change to which effective adaptation, if it is possible, will be available only at very high social, environmental and economic costs. "Otherwise there is only a statement on why adaptation is necessary, but not on why mitigation is necessary. (Government of Germany) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|--|
| 5-A-78 | 4 | 38 | 10 | 41 | We would like to see a little more detail from the WGIII SPM included here on mitigation efforts and clarity on early action. Suggest adding at the beginning of the paragraph: "Choices about the scale and timing of GHG mitigation involve balancing the economic costs of more rapid emission reductions now against the corresponding medium- and long-term climate risks of delay." (From WGIII SPM, page 18, paragraph 21). Alternately, it could be added to the bold statement where it is complimentary. (Government of Canada) |
| 5-A-79 | 4 | 38 | 4 | 41 | This paragraph is unclear and should be revised thoroughly. (Government of Switzerland) |
| 5-A-80 | 4 | 42 | 4 | 42 | A footnote is needed reflecting the fact that all the estimates assume an idealized global climate policy (WG3 Box SPM-3). Or move footnote 25 here and refer to it again later. (Government of United States of America) |
| 5-A-81 | 4 | 43 | 4 | 47 | Replace current text with that of WG3 SPM page 19, lines 8-11: "Mitigation efforts and investments over the next two to three decades have a large impact on opportunities to achieve lower stabilization levels. These efforts determine to a large extent which long-term risks for vulnerable systems can be reduced, avoided, or delayed." After substituting that text, refine the language by inserting after "stabilization levels" the phrase "..., both through reduction of emissions via technology deployment and through development of new technologies to address the large CO2 mitigation levels required later in the century, as shown in Figure 5.1." (Government of United States of America) |
| 5-A-82 | 4 | 43 | 4 | 44 | Add the following text from the previous draft (p. 7, ll. 2-3) at the end: "and resulting long term equilibrium temperate changes". (Government of European Community) |
| 5-A-83 | 4 | 43 | 4 | 45 | Add at the end of this sentence: "Nevertheless, to achieve stabilization the majority of emissions reductions will have to come after 2050." (Government of United States of America) |
| 5-A-84 | 4 | 49 | 4 | 49 | Replace the word "uncertainty" with the words "climate sensitivity". (Government of Canada) |
| 5-A-85 | 5 | 2 | | | Footnote 22: The equilibrium temperature increase in the Table Table 5.1. could mislead policy makers, because it is not still clear that the equilibrium temperature increase will be reached only after a long period. For clarification, add the following sentence after the second sentence of Footnote 22: "Even under a stabilization concentration scenario, only about 70% of the equilibrium temperture increase would be realised at the time of stabilization and 80% of the equilibrium warming would be realized in 100 years." (ref.: section 10.7.2 of AR4/WG1). And we suggest moving the footnote into the corresponding part of the main text. (Government of Japan) |
| 5-A-86 | 5 | 2 | | | Footnote 22: Delete the last sentence "For the much lower ... be reached earlier.", because there is no basis for the statement. |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|---|
| | | | | | (Government of Japan) |
| 5-A-87 | 5 | 2 | 5 | 2 | Footnote 22 , second sentence, 'is approaching' should be replaced by 'approaches' (Government of New Zealand) |
| 5-A-88 | 5 | 4 | 5 | 6 | The wording of this sentence wrongly suggests a deterministic or causal relationship between climate sensitivity and the timing and level of mitigation. Suggest to change to "Given current uncertainties about climate sensitivity, carbon-cycle feedbacks, and other climate parameters, strategies for meeting a specific temperature level with high probability require earlier and more stringent mitigation than strategies aiming to meet the same temperature level with lower probability." (Government of European Community) |
| 5-A-89 | 5 | 8 | | | Table 5.1: The second (CO ₂ equivalent conc.) and fifth (temperature) column need an additional qualifier: The provided CO ₂ equivalent concentration levels are calculated from WG3 using a regression of 2100 CO ₂ concentrations to 2100 radiative forcing as shown in IPCC WG3 Figure 3.16. This regression relation is not valid for equilibrium and post-2100 conditions, in which the non-CO ₂ radiative forcing contributions can be expected (due to shorter than CO ₂ lifetimes) to decrease further for the lower stabilization cases. Thus, the stated equilibrium temperature levels are overstating actual equilibrium temperature levels. This limitation of the table needs to be clearly reflected either in the caption or in an additional footnote, such as: "Note that the CO ₂ equivalent concentrations were estimated for CO ₂ -only scenarios using CO ₂ -eq to CO ₂ ratios of multi-gas scenarios for the year 2100. This is an approximation to longer-term stabilization levels, although it is overestimating post-2100 CO ₂ equivalence concentrations in particular for the lower stabilization levels. Hence, the 2°C-2.4°C best estimate equilibrium temperatures overestimates the longer-term temperature under a 350ppm-400ppm CO ₂ stabilisation." (Government of Germany) |
| 5-A-90 | 5 | 8 | | | Table 5.1: Note (b) states that "Ranges correspond to the 15th to 85th percentile of the post-TAR scenario distribution." The caption of Figure 5.1, in contrast, states that "Ranges of the stabilisation scenarios correspond to the 10th to 90th percentile of the full scenario distribution". Should the same percentiles of emissions scenarios not be used in Table 5.1 and Figure 5.1? (Government of European Community) |
| 5-A-91 | 5 | 8 | | | Table 5.1: Add a column on 21st century (transient) sea-level rise, like in Table 3.1. (Government of European Community) |
| 5-A-92 | 5 | 8 | | | Table 5.1 should contain projected ocean pH as well as SLR and global temperature against the different scenarios (Government of United Kingdom) |
| 5-A-93 | 5 | 9 | | | Table 5.1: see comment on table SPM.3 for transposition of the matrix. (Government of Belgium) |
| 5-A-94 | 5 | 9 | 5 | 10 | Another minor point but the figure "5.1" in last line of table does not relate exactly to Fig 5.1 right hand diagram as x axis stops at 1000ppm. Ideally |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|-------------------------|------|------|---------|---------|--|
| | | | | | this diagram should go out to 1130 ppm on x axis to fully show Category VI (International Energy Agency) |
| 5-A-95 | 5 | 11 | 5 | 11 | Table note (a) from WG3 Table SPM-5 is missing and should be included. (Government of United States of America) |
| 5-A-96 | 5 | 11 | | | same comment as for table SPM3 footnote a (Government of Belgium) |
| 5-A-97 | 5 | 12 | 5 | 13 | This sentence is unnecessarily confusing for the lay reader, who does not know what distinction is being drawn between all GHGs and all forcing agents. It is not a secret, so we suggest "The best estimate of total CO2-eq concentration in 2005 for all long-lived GHGs is about 455 ppm, while the corresponding value for the net effect of all anthropogenic forcing agents including aerosols is 375 ppm CO2-eq." (Government of New Zealand) |
| 5-A-98 | 5 | 17 | 5 | 17 | Refer here also to Fig 5.1 (International Energy Agency) |
| 5-A-99 | 5 | 24 | 5 | 25 | Is the "above present temperatures" a needed qualifier? (It's use suggests that the long-term response to the warming so far would be significantly different than the one mentioned here.) (Government of Sweden) |
| 5-A-100 | 5 | 28 | 5 | 29 | This sentence is not very clear. Please reformulate. (Government of European Community) |
| 5-A-101 | 5 | 31 | 6 | 2 | Add at the end of the sentence: "..., or ice caps, which leads to a fruther increase of sea level (additional about 7 m if the whole of Greenland ice sheet were to melt)." as stated in 3.2.3 of SYR (Government of Belgium) |
| 5-A-102 | 6 | 1 | 6 | 1 | Drop the word "could", which is not necessary here. (Government of European Community) |
| 5-A-103 | 6 | 7 | 6 | 8 | Y axis of left hand diagram should have legend "..... (GtCO2/yr)" (International Energy Agency) |
| 5-A-104 | 6 | 7 | 6 | 14 | Figure 5.1 This is also an improvement over what was presented in WG3, and is much more comprehensible. That said, there is a discrepancy between the 2000 starting point of these emission scenarios (at 30 Gt CO2e) and those of the SRES scenarios (which start at 40 Gt CO2e), and Figure SPM.3 (which shows 44 Gt CO2e). While SRES emisisions projections are not showni n the SPM, they are here in Topic 3. Should these be more aligned, and if not, why should it remain as so? Please clarify the difference (are the stabilisation scenarios being analyzed here looking solely at fossil carbon or global energy-related emissions? Why are the emissions at the outset so much lower than in the other sections of the SYR?) (Government of Canada) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|---|
| 5-A-105 | 6 | 7 | | | Figure 5.1 comment: The label on the vertical axis of the left-hand panel should indicate the units are 'GtCO ₂ /yr', not just 'GtCO ₂ ' (Government of New Zealand) |
| 5-A-106 | 6 | 7 | | | Fig.5.1. It is suggested to change the start of x axis from '280' to 300 and to be consistent with the figure in WGIII SPM in order to avoid confusing readers, because the 280 is only the CO ₂ concentration in pre-industry period while other concentration levels refer to CO ₂ -eq. (Government of China) |
| 5-A-107 | 6 | 27 | 6 | 31 | This sentence would be more meaningful if the source of the 'no-feedback' figures (2460 [2310 to 2600]) was identified here. (And the references given immediately after this sentence did not, in this case, appear to be much help.) (Government of New Zealand) |
| 5-A-108 | 6 | 27 | 6 | 31 | This sentence is not very clear. Suggest to replace the part after the last comma by "requires cumulative emissions over the 21st century to be less than 1800 [1370 to 2200] Gt CO ₂ , which is about 27% less than the 2460 [2310 to 2600] Gt CO ₂ determined without consideration of carbon cycle feedbacks". (Government of European Community) |
| 5-A-109 | 6 | 29 | 6 | 29 | Footnote 23: first line, reads better with a comma after 'reviewed'. It is also clearer if the word 'still' is inserted before 'involve', thus: "Based on the range of multigas scenarios reviewed, such a CO ₂ concentration scenario would still involve substantial emissions ... " (Government of New Zealand) |
| 5-A-110 | 6 | 31 | 6 | 31 | Include a footnote appended to the last sentence of the paragraph that states: "One gigaton equals the amount of carbon dioxide released by about 273 500-megawatt coal-fired power plants." Many policymakers have no idea how big a gigaton of CO ₂ is. (Government of United States of America) |
| 5-A-111 | 7 | 9 | 7 | 10 | This sentence is essentially repeated below (lines 17 to 19) and should be deleted. (Government of New Zealand) |
| 5-A-112 | 7 | 14 | | | Footnote 24: Reference to the change in government funding on energy research programmes is important. It is suggested that this footnote is maintained in the Final Report. (Government of Japan) |
| 5-A-113 | 7 | 17 | 7 | 17 | Replace "Stabilisation at low levels ..." with "Stabilisation at the lower of the assessed levels ..." (Government of Germany) |
| 5-A-114 | 7 | 20 | 7 | 20 | After "in the long term, (2000 – 2100)" add the following sentence: "For the case of 490-540 ppm CO ₂ -eq, 95% of the CO ₂ mitigation required this century occurs after 2030." This report does not clarify adequately the large long-term problem of mitigation, and focuses narrowly on the next 25 years. (Government of United States of America) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|-------------------------|------|------|---------|---------|---|
| 5-A-115 | 8 | 5 | 8 | 5 | Replace "... aiming at the stabilisation at low (490-540 ppm CO ₂ -eq) and intermediate levels (...)" with "... aiming at the stabilisation at the lower (490-540 ppm CO ₂ -eq) and intermediate of the assessed levels (...)" (Government of Germany) |
| 5-A-116 | 8 | 9 | 8 | 9 | Figure 5.2, Caption: Clarification necessary for non-experts after "...inclusion of these options in the baseline." Please insert: "For example, all models show a large share of renewable energies already in the baseline. Therefore, their additional mitigation potential shown here is smaller than their total contribution to emission reductions." (Government of Germany) |
| 5-A-117 | 8 | 10 | 8 | 10 | This definition of 'forest sinks' differs from that used by the UNFCCC and, given the audience for this Synthesis Report, that difference should best be acknowledged. We suggest writing: "In this context, forest sinks include ...". (Government of New Zealand) |
| 5-A-118 | 8 | 21 | 8 | 26 | Strike and insert in its place the following: "Assuming perfect implementation of mitigation measures, macro-economic models estimate that in 2050 global average costs for multi-gas mitigation towards stabilization between 710 and 445 ppm CO ₂ -eq are between a 1% gain to a 5.5% decrease of global GDP. Estimated GDP losses by 2030 are on average lower and show a smaller spread compared to 2050 (Table 5.2). For specific countries and sectors, costs may vary considerably from the global average. ²⁵ {WGIII 3.3, 13.3, SPM}" (Government of United States of America) |
| 5-A-119 | 8 | 21 | 8 | 23 | It may be useful to include the equivalent reduction of annual GDP growth rates (as per Table 5.2) in the text here i.e. <0.05 to <0.12. (Government of Australia) |
| 5-A-120 | 9 | 0 | | | More quantitative information should be available here, than in the equivalent part of the SPM. A plot of mitigation costs from different models as a function of CO ₂ , similar to Figure 3.25 from WG3 could be added. Figure WG3-3.25 also illustrates that the distribution of costs for the lowest category is in most cases much lower than indicated by the maximum costs given in the bottom row of the table 5.2 (or SPM4) (Government of Belgium) |
| 5-A-121 | 9 | 3 | 9 | 12 | In table 5.2 footnote b) is included in column 4 (Reduction of average annual GDP growth rates) but there are not 10th and 90th percentile ranges for these columns. (Government of Australia) |
| 5-A-122 | 9 | 11 | | | Table 5.2: Note d): Full stop after "The number of studies that report GDP figures is relatively small." Delete: "and they generally use low baselines. High emissions baselines generally lead to higher costs." Reason: In the underlying Chapter 3 of WGIII, Fig 3.20 shows that the baselines are NOT generally low, but similar to other studies. The scatter is too broad for such a statement. (Government of Germany) |
| 5-A-123 | 9 | 15 | 9 | 15 | The title of Section 5.7 is not clear. Suggest to change to "Global and regional benefits of mitigation". (Government of European Community) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|---|
| 5-A-124 | 9 | 17 | 5 | 19 | This text aims to make three different points in a single sentence, which makes it rather inaccessible. Suggest to change to "Impacts of climate change vary significantly across regions. Aggregated and discounted to the present, the costs of climate change very likely exceed the benefits, and net costs will increase over time." (Government of European Community) |
| 5-A-125 | 9 | 21 | 9 | 23 | This sentence is not clear. Suggest to replace the text after the comma by "positive as well as negative impacts are expected in different regions and sectors". (Government of European Community) |
| 5-A-126 | 9 | 23 | 9 | 24 | This sentence lacks any information about regional costs from climate change, even though all references refer to regional chapters of the WG II AR4. Suggest to change the text to "Global market losses from 4°C warming are estimated at 1-5% of GDP, but regional losses could be substantially higher. For instance, the cost of adaptation to sea-level rise alone is estimated to amount to at least 5-10% of GDP in many African countries {WGII 9.ES, 20.6, SPM}.". Alternatively, the second sentence could be added after p. 9, l. 36. (Government of European Community) |
| 5-A-127 | 9 | 23 | 9 | 24 | The GDP losses in this paragraph need to be clarified. Are these GDP costs total costs over a period of time or annual costs incurred every year after 4 degree C is reached? (Government of Australia) |
| 5-A-128 | 9 | 26 | 9 | 29 | The sentence beginning with "Peer-reviewed" and ending with "in a survey of 100 estimates" implies that all 100 estimates are peer-reviewed, but the peer-reviewed estimates are a subset of the survey of 100 estimates. For this reason, the WG2 SPM was more nuanced and kept the references to peer-reviewed studies and 100 surveyed studies in separate sentences. If not all 100 estimates are peer-reviewed the language needs to change to not give this false impression. (Government of United States of America) |
| 5-A-129 | 9 | 29 | 9 | 30 | This is an important statement and should be kept. The question is whether it can be clarified how much of the increase is due to on the one hand increasing CO2-eq. concentration, on the other hand dynamic effects of the climate change effects due to a given level of CO2-eq. concentration. This comment is a question for extension, not a remark on what is written. (Government of Belgium) |
| 5-A-130 | 9 | 29 | 9 | 30 | The text states: "They indicate that the net damages of climate change are likely to be significant and to increase over time. {WGII 20.6, SPM}". It is not clear to what "they" refers. Replace "They" with "The range of published evidence" which is the language from the WG2 SPM. Also, it is not clear what "likely" means in this context. Please clarify. (Government of United States of America) |
| 5-A-131 | 9 | 32 | 9 | 36 | The previous draft contained an important statement on regional differences in impacts (p. 11, ll. 30-31), which is missing from the current draft. Suggest to add the following text after the first sentence (which might be moved to the previous paragraph): "Climate impacts vary significantly across regions, depending on the regional changes in climate, the sensitivity to those changes, and adaptive capacity." (Government of European Community) |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|--|
| 5-A-132 | 9 | 36 | 9 | 36 | Strike “aggregate” and insert in its place “average”. (Government of United States of America) |
| 5-A-133 | 9 | 39 | 9 | 39 | This sentence understates the potential for mitigation. Suggest to change to "Most climate impacts beyond a few decades from now can be avoided, reduced or delayed by mitigation." (Government of European Community) |
| 5-A-134 | 9 | 41 | 9 | 44 | Delete "vulnerabilities and", because this expression is largely redundant. (Government of European Community) |
| 5-A-135 | 10 | 1 | 10 | 2 | Strike “determined by human choices defining alternate socio-economic futures” and insert in its place “influenced by human choices that alter social, political, and economic systems”. (Government of United States of America) |
| 5-A-136 | 10 | 4 | 10 | 6 | Change "Some of the ..." to "All" or simply "The" because if a certain level of climate change is avoided, the associated impacts are avoided as well. (Government of European Community) |
| 5-A-137 | 10 | 9 | 10 | 20 | The current text lacks a lot of important information from the previous draft. In addition, it significantly distorts some key messages. For example, "affecting a significant (>40%) number of ecosystems" is completely different from (and much weaker than) causing significant extinctions globally (40-70% of known plant and animal species). It is very important that the key findings of the underlying report are reported in an unbiased way. For that reason, please restore the text from p. 11, l. 33 to p.12, l. 12 of the previous draft with the following changes: (1) Based on WG II Chapter 5 Executive Summary and WG II Table SPM-1, change p. 11, l. 44 to: "limit productivity losses for major cereals in low latitudes". (2) Based on WG II Table SPM-1 and SYR Table SPM-2, add "increased morbidity and mortality from heat waves, floods and droughts" to the list of impacts no longer avoidable. (3) Change the unclear sentence on p. 12, ll. 5-8 to: "Most of the impacts above could occur during the 21st century, depending on the magnitude of warming. Additional impacts could occur over longer (multi-century to millennial) time scales, such as ..." (Government of European Community) |
| 5-A-138 | 10 | 13 | 10 | 13 | Reformulate "...reduce the likelihood of affecting a significant (>40%) number of ecosystems and reduce the..." to "...reduce the likelihood of affecting a significant (>40%) portion of ecosystems and reduce the..." (Government of Switzerland) |
| 5-A-139 | 10 | 18 | 10 | 21 | The sentence “However, some impacts appear unavoidable...” is a strong claim considering it is basing this statement on Figure 3.5 (same as Fig SPM.6) and this figure explicitly does not consider the potential for adaptation to reduce risks.” (Government of United States of America) |
| 5-A-140 | 10 | 23 | 10 | 26 | We question the choice of words in the statement "do not as yet permit an unambiguous determination ... where benefits exceed costs." As is pointed out in the text immediately below, valuing the costs and benefits involves ethical judgements, and we cannot expect ever to get an 'unambiguous determination'. We suggest the authors seek a better statement of the studies they refer to. |

IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|--|
| | | | | | (Government of New Zealand) |
| 5-A-141 | 10 | 23 | 10 | 30 | The two § (lines 23-26 and lines 28-30) are very related to one another, or not? In the first § reference is made that costs and benefits are broadly comparable; in the second § it seems that benefits (avoided damages) are not measurable ... This puzzles the reader in what to belief most: the first or the second §. (Government of Belgium) |
| 5-A-142 | 10 | 23 | 10 | 26 | For clarity, change "costs and benefits" to "global market benefits and costs". The text after the comma could be deleted. (Government of European Community) |
| 5-A-143 | 10 | 23 | 10 | 26 | delete, as it is highly misleading without the necessary qualifiers, see e.g. page 9 line 32-37. Alternatively, move together with para on page 9 line 32-37 and definitely do not print it in bold, as this is a very weakly founded conclusion. (Government of Germany) |
| 5-A-144 | 10 | 23 | 10 | 26 | Delete paragraph "Limited and early analytical results ... where benefits exceed costs" as it is based on the dubious assumption that ultimately a cost-benefit analysis of the optimal mitigation level will be possible. Given the many value judgements necessary in order to weigh avoided impacts against mitigation efforts, it will never be possible for a merely scientific assessment to make the judgement where "benefits exceed costs". (Government of Germany) |
| 5-A-145 | 10 | 24 | 10 | 24 | Due to too high uncertainty, delete the words: "indicate that they are broadly comparable in magnitude, but" (Government of Germany) |
| 5-A-146 | 10 | 27 | 10 | 27 | To provide a more complete characterization of this discussion, add the following additional insight on this discussion from WG3 SPM page 18, paragraph 21, bullet 2: "Integrated assessment of the economic costs and benefits of different mitigation pathways shows that the economically optimal timing and level of mitigation depends upon the uncertain shape and character of the assumed climate change damage cost curve." (Government of United States of America) |
| 5-A-147 | 10 | 34 | 10 | 36 | The bold statement, "Unabated climate change, with very high confidence..." does not use "very likely", which was used in the WG2 SPM in the following statement: "...it is very likely that climate change can slow the pace of progress towards sustainable development, either directly through increased exposure to adverse impact or indirectly through erosion of the capacity to adapt." Authors should check if the appropriate term is being used. (Government of United States of America) |
| 5-A-148 | 10 | 35 | 10 | 35 | There are currently no mid-century Millennium Development Goals. They only extend to 2015. Suggest changing text, as per suggestions for SPM, to "could impede further progress on the Millennium Development Goals beyond 2015." (Government of Canada) |
| 5-A-149 | 10 | 47 | 10 | 48 | Change "vulnerability to climate change" to "risks from climate change" because mitigation reduces the hazard climate change, not vulnerability to that hazard. |

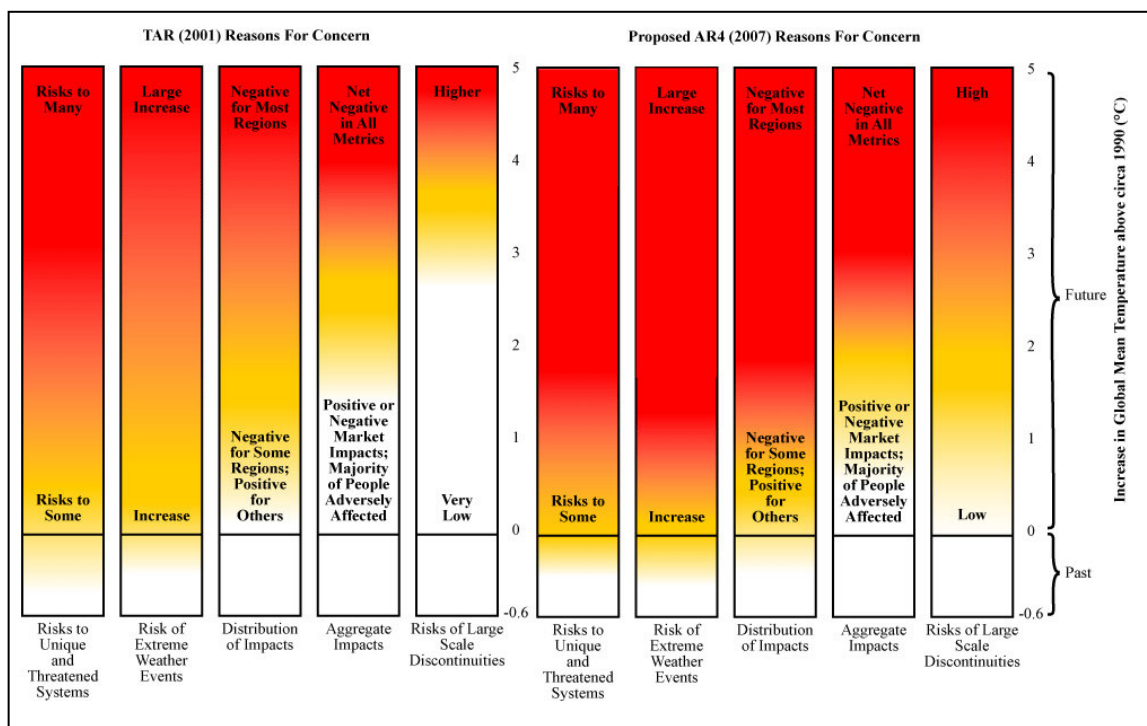
IPCC Synthesis Report - Fourth Assessment Report (Batch A and B – November 7, 2007)

| Topic - Batch - Comment | Page | Line | To Page | To Line | Comment |
|--|-------------|-------------|----------------|----------------|---|
| | | | | | (Government of European Community) |
| 5-A-150 | 10 | 49 | 10 | 49 | Replace "reduced emissions" with "mitigation". (Government of Australia) |
| 5-A-151 | 11 | 3 | 11 | 3 | We suggest the word 'may' in " ... may require resources ..." could with accuracy be replaced by the stronger 'will generally', thus: "Similarly, changing development paths can make a major contribution to mitigation but will generally require resources to overcome multiple barriers" (Government of New Zealand) |
| 5-A-152 | 18 | 14 | 18 | 15 | Not clear: "..with larger risks at lower temperature increases". (Government of Switzerland) |
| 5-A-153 | 18 | 18 | 18 | 19 | We think it is worth saying why we now have a better understanding of impacts and risks. Is it because we have more, reliable measured data; is it because models have improved; etc. Conversely, does our better understanding help inform us what gaps there are for future study? We should be laying the foundations for the 5th IPCC report in so far as we could, for the benefit of policy makers, given them an indication now what we think we should be studying on climate change impacts etc over the next 3-4 years. (Government of United Kingdom) |
| 5-A-154 | 18 | 18 | 18 | 32 | There are a number of qualitative qualifications of the word "evidence" in this section and throughout - sometimes in italics and sometimes note. Some readers will not notice: others will start to try and make comparative deductions. Thus, is "some" evidence more or less than "medium" evidence; when will "growing" evidence reach high evidence; and so on. The use of the word "evidence" needs to be further clarified and explained into context. For example, ice core derived atmospheric CO2 concentrations is probably regarded by most readers as "firm" evidence drawn from measured data. Evidence derived from model simulation experiments may be regarded by some as less "firm". (Government of United Kingdom) |
| 5-A-155 | 20 | 3 | 20 | 3 | Table SPM 3 Category IV. This category has the largest assessed scenarios by far - 118 compared with 21 for the next category. This needs some explanations. (Government of United Kingdom) |

Additional material referred to in Formal Government Review Comments

3. Reasons for Concern Diagram:

Proposal by the Government of Belgium (Refer to Comment 5-A-19)



Proposed Caption

The consequences from climate change are expressed by reasons for concern (RFC). Climate change consequences are plotted against increases in global mean temperature (°C) after circa 1990. Impacts caused by warming up to 1990 are also considered. Each column corresponds to a specific RFC, and represents additional outcomes associated with increasing global mean temperature. The color scheme represents progressively increasing levels of risk, and should not be interpreted as representing "dangerous anthropogenic interference." It should be noted that this figure addresses only how risks change as global mean temperature increases, not how risks might change at different rates of warming. Furthermore, it does not address when impacts might be realized, nor does it account for the effects of different development pathways on vulnerability. Figure 1A displays the Reasons for Concern from the IPCC TAR (Smith et al., 2001). Figure 1B presents our update of the Reasons for Concern.