



**IPCC Synthesis Report
Fourth Assessment Report**

Comments on the Final Government Draft

GOVERNMENT and ORGANIZATION COMMENTS

– TOPIC 1 (all batches to 7 November 2007) –

November 7, 2007



WMO

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



UNEP

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Topic - Batch - Comment	Page	Line	To Page	To Line	Comment
1-A-1	0	0			Topic 1 reads better now compared to the earlier version. However, some relevant material with regard to rising carbon dioxide concentrations that can have direct effects has also been omitted. Given the growing relevance of the acidification of oceans it is strongly recommended to continue to include the text from the version 15 May 2007. (Government of Austria)
1-A-2	0	0	0		This topic 1 is rather vague. The text in general needs to be more precise both in the conclusions reached with observations and in the geographical distribution of the detected changes. Furthermore due to the lack, sparsity, or poor quality of data the report appears to be focused primarily on the Northern Hemisphere. This has been a problem throughout this AR4 process. If there is a region without the needed data state so clearly, without losing brevity. This is perfectly possible. Also, wherever possible suggest and insist on the need for improved observations in the relevant fields. Again this will not unduly lengthen the section and provide much needed information on present and future changes. Observations are crucial and this point must, insist, must be thoroughly made. Note also that Topic 6 in pages 2 and 3 states this as a future requirement, which indeed it is, and if not mentioned here it would also make Topic 1 inconsistent with the rest of the report. Remember that this report will be read by policy-makers from all over the world, not just the Northern Hemisphere, where observations are comparatively abundant. Otherwise there is a very real risk that the needed observations will never become available, and future reports will lose credibility. (Government of Argentina)
1-A-3	0	0			By and large a clear and succinct summary of this topic. (Government of Canada)
1-A-4	1	5	1	5	Modify the section heading to "Observed changes in climate". (World Meteorological Organization)
1-A-5	1	5			CO ₂ eq box: please clarify, regarding CO ₂ equivalent concentration, whether all (anthropogenic) forcing agents are included, rather than only long lived GHGs, presuming that usage is consistent throughout this SYR (please check) (Government of Belgium)
1-A-6	1	15			Delete "the mean and/or the variability of"; because any change in any aspect (property) of the distribution function implies 'change'. Note that (at least in the statistics community), there has been interest in assessing 'changes in the distribution functions' in general, e.g. via assessment of changes in their 'quantiles'. Of special interest are changes in 'extreme quantiles'. In this report, main focus seems to be changes in mean and extreme events, which one could spell out. The usual trend functions used in typical trend analyses assess changes in the expected value or the mean. (Government of Switzerland)
1-A-7	1	25	1	25	The reference to WGI Report concerning sea level is more appropriate for Section 5.5 rather than 5.2. (World Meteorological Organization)
1-A-8	1	25	1	25	Curly brackets used in the main text differ from those in the SPM. Need a footnote - perhaps on page 1 - to explain ES etc as was done on first page of the SPM (International Energy Agency)

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1-A-9	1	27	1	28	The sentence "Eleven of the last twelve years (1995-2006) rank among the twelve warmest years in the instrumental record....." does not make sense. At best the second "twelve" is redundant. Either twelve years are among the twelve warmest, or eleven of the last twelve rank among the warmest. This has been a problem through previous versions and the English needs sorting out. (International Chamber of Commerce)
1-A-10	1	27	1	31	Please, add the sentence "larger than the corresponding trend for 1901-2000 given in the TAR of 0.6°C". It was in the previous draft. As we have mentioned this comparison with the TAR is specially relevant for the policy makers. (Government of Spain)
1-A-11	1	27	1	31	Please add the following important text, which was contained in the previous draft (p. 1, ll. 31-32) at the end of the second sentence: "larger than the corresponding trend for 1901-2000 given in the TAR of 0.6 [0.4-0.8]°C". Also the full range of warming since the mid-of the 19th Century (0.76°C) should be added - WG I SPM ("The total temperature increase from 1850–1899 to 2001–2005 is 0.76°C [0.57°C to 0.95°C].") (Government of European Community)
1-A-12	1	28	1	30	Replace "linear trend" by "linear approximation", 2 x (Government of Belgium)
1-A-13	1	29	1	31	Present the results in the same unit. I would suggest: degree per decade (Government of Switzerland)
1-A-14	1	32	1	32	The finding about the unprecedented nature of current warming from paleoclimatic evidences, noted on page 4 (lines 21-23) is more appropriately placed immediately following the conclusions from instrumental record. (World Meteorological Organization)
1-A-15	1	32	1	32	For comparability with other information, and as the reference to changes relative to pre-industrial levels is often relevant for policy-makers, please insert following sentences: "This 100 year linear trend is higher than the one given in the TAR for (time frame) of 0,6°C. The total temperature increase from 1850-1899 to 2001-2005 is 0.76 [0.57 to 0.95] °C." (Government of Germany)
1-A-16	1	33	1	34	This reference to Figure 1.2 is new since the last draft of Topic 1. Unfortunately, Figure 1.2 does not particularly support the statement in this sentence about warming being greater at higher northern latitudes although it does show clearly that warming has been widespread over the world. Suggest deleting text about warming being greater at high latitudes (next sentence covers this in any case) and replace with sentence (as in SPM) about warming being greater over land than water. Also, make clear that ref to Fig is only valid for 1974-2000 time period. (Government of Canada)
1-A-17	1	35	1	35	"Land regions....oceans."; Add this text to the sentence: with the trends over global land being nearly double over global oceans during 1979-2005." (World Meteorological Organization)
1-A-18	1	36	1	37	Replace 'past two decades' with '1979-2005' to express clearly.

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					(Government of Japan)
1-A-19	1	36	1	37	"Surface air temperatures ... Northern Hemisphere."; Delete this sentence - this is unnecessary and incomplete detail (see WGI 3.2.2.1). (World Meteorological Organization)
1-A-20	1	40	1	42	Please add the following important text, which was contained in the previous draft (p. 1, l. 43) at the end of this sentence: "largely reconciling a discrepancy noted in previous assessments". (Government of European Community)
1-A-21	1	42	1	42	I suggest one sentence on the stratosphere: "The stratosphere (about 10–30 km) has cooled markedly since 1979." (Government of Switzerland)
1-A-22	1	42	1	42	Delete '5.5' in the reference list because this paragraph doesn't refer to sea level. (Government of Japan)
1-A-23	1	46	1	47	This sentence is rather vague. More precise information is needed about the geographical aspects of current glacier decay/disappearance, given the importance glaciers have as a regular source of water, in many parts of the world, as for example the tropical and subtropical Andes. (Government of Argentina)
1-A-24	2	3	2	3	Delete '5.5' in the reference list because this paragraph doesn't refer to sea level. (Government of Japan)
1-A-25	2	33	2	33	what does it mean "the incidence of extreme high sea level"? Unclear. (Government of Switzerland)
1-A-26	3	1			Please add "surface" before "temperature" to make it consistent with the context. (Government of China)
1-A-27	3	1			Figure 1.1 comment: The label on the vertical axis ("Difference from 1961-1990") is poor. Please use "Change since 1961-1990" . (It otherwise implies that the time period 1961-1990 is somehow being compared to the temperature and other variables plotted.) (Government of New Zealand)
1-A-28	3	11	3	12	Replace 'numerous change' by 'numerous long-term change' to clarify long-term characteristic of the change. (Government of Japan)
1-A-29	4	1	4	2	...and in some parts of Latin America (e.g. south Chile, south-west Argentina, south Peru and western Central America) as mentioned in WGII 13. (Government of Argentina)
1-A-30	4	5	4	13	The points highlighted predominantly deal with frequency of extremes. Intensity of extremes may not have been covered adequately. (World Meteorological Organization)

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1-A-31	4	5			Please delete "weather". Reason: "extreme high sea level" is not "weather" events. (Government of China)
1-A-32	4	5	4	22	It would be worth defining what the respective confidence limits actually mean for those policy makers unfamiliar with statistics. (Government of United Kingdom)
1-A-33	4	5	4	5	Change to: frequency "and/or" intensity. (World Meteorological Organization)
1-A-34	4	15	4	19	Merge this paragraph in the bulleted items above as another bullet, to make it an integral part of changes in extremes. (World Meteorological Organization)
1-A-35	4	15			Insert '-e.g. longer lifetimes and greater storm intensities-' after 'activity' to keep the language coherent with the text proposed for SPM page 1, lines 36-38. (Government of Argentina)
1-A-36	4	21	4	23	This paragraph does not belong 'under extreme weather events'. It should be relocated to around p1 line 42 where temperature increases are discussed. (Government of Australia)
1-A-37	4	21	4	23	There are a number of sentences that were part of this paragraph about paleoclimate in the last draft that have been deleted in this draft. Canada did not ask for this deletion and the sentences added important information about the vulnerability to SLR from observations of past periods on Earth when temperatures were higher by amounts well within those projected under SRES scenarios. We would like to see these sentences reinstated. The sentences were: "Paleoclimate evidence indicates that global average sea level in that last interglacial period (about 125,000 years ago) was likely 4 to 6 m higher than during the 20th century, mainly due to the retreat of polar ice. Ice core data indicate that average polar temperatures at that time were 3 to 5°C higher than present, because of differences in the Earth's orbit. The Greenland ice sheet and other Arctic ice fields likely contributed no more than 4 m of the inferred sea level rise (implying that) there may also have been a contribution from Antarctica.(WGI 6.4, 6.6, SPM)." (Government of Canada)
1-A-38	4	21	4	23	Shift these lines to Page 1, immediately following Line 31. (World Meteorological Organization)
1-A-39	4	25	6		It seems that there are many repetitions and duplications in the different topics, e.g. in 1.1, 1.2 and 1.3 of Topic 1. It is suggested to rewrite this part. For example, snow and ice melting are treated as one of the evidences to show global warming in section 1.1, but meanwhile, the melting or reduction of snow and ice are also treated as the impact of climate change. It is doubtful whether it is possible to distinguish the observations of climate change with the observed effects of climate change. It is believed that it is easy and reasonable to separate them in the two separate Reports of WGI and WGII, but it is not proper to separate them in a single report. We believe this part should be improved, otherwise it will be misleading for readers. (Government of China)

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1-A-40	4	30	4	31	The mention to the lack of geographic balance in data and literature on observed changes, with marked scarcity in developing countries, that comes directly from the SPM WGII is of the major importance, and should be kept. (Government of Argentina)
1-A-41	5	4	5	4	Food web has been changed from food chain in earlier drafts of the Synthesis Report and in WGII SPM. Suggest food chain is kept as it is more appropriate for the SPM audience. (Government of Australia)
1-A-42	5	11	5	17	This paragraph misses an important finding. The following sentence from WG 2 TS.B could be added: "Changes in abundance of certain species, including limited evidence of a few local disappearances, and changes in community composition over the last few decades have been attributed to climate change." (Government of European Community)
1-A-43	5	24	5	26	Correct the cross-reference to the WG2 report. This statement does not appear in the WG2 SPM. The statement does appear in the Executive Summary of Chapter 1 (page 4, lines 8-10). (Government of United States of America)
1-A-44	5	28	5	31	Reference to the increasing acidification of the oceans is important, as new findings of AR4. The inclusion of Topic 1 p.5, 28-30 (Increasing atmospheric carbon dioxide (CO ₂) concentrations lead to increasing acidification of the oceans. The average pH of near-surface seawater has fallen by 0.1 units since pre-industrial times,) in the SPM is suggested. (Government of Japan)
1-A-45	5	31	5	32	The lack of research here is ominous. Saying "undocumented" makes it look like they have been looked for but not found, rather than the reality which is that we didn't even know to look. This is an important subtlety because it points to the massive need for research and planning in this area. (WWF International)
1-A-46	5	34	5	34	the term "human environment" is not clear, no clear definition could be found, nature is part of the human environment too, maybe infrastructure is meant, the term is used only once in the whole Topic 1, please give proper definition what is meant. (Government of Germany)
1-A-47	5	43	5	46	It should be added also in South America (e.g.dengue) (Government of Argentina)
1-A-48	5	44			Comment (Add more details): "in vector-borne infectious diseases (may alter the distribution of vector species, and may influence infective agent within the vector or change in the survival rate the vector organism, thereby influencing disease transmission)". (Government of Egypt)
1-A-49	5	46			Comment (Add): "therefore increases the allergic health problems". (Government of Egypt)

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1-A-50	6	2	6	5	This paragraph is new since the last draft and introduces the material from the WGII SPM about effects for which trends are not yet established. Only 1 of 3 bullets from that material in the SPM has been brought in here - why that particular bullet? Please provide a rationale for inclusion or exclusion of bullets taken directly from underlying reports. (Government of Canada)
1-A-51	6	3	6	5	Delete the second sentence: "However, based on the published literature, the impacts have not yet become established trends." (Government of United States of America)
1-A-52	6	7	6	7	Revise the section heading to "1.3 Observed impacts consistent with warming" or similar. As written, the heading suggests that changes in physical systems are consistent with those in biological systems. (Government of United States of America)
1-A-53	6	15	6	18	The term 'consistent' is used here (Table 1.1). Is this the same as 'agreement' with literature*? See p. 3 of Introduction. (Government of Switzerland)
1-A-54	6	15	7	5	I find it confusing for readers if the statistical figures as given in Fig SPM.1 (WG II) are not given here again. The global figures (GLO) are 94% of physical systems and 90% of biological systems were found of having significant changes consistent with warming. Here in the SYR we find "more than 89% are consistent with the ...". How come that these figures (89<->90!) differ? Here seems to be some inconsistency present between the SYR text, the SYR Table 1.1 and the agreed SPM. Moreover, it appears that those two numbers (94% of physical, 90% of biological systems) from the SPM/SYR Table 1.1 ought to be shown in Figure 1.2 as well as mentioned in the caption of Figure 1.2. Currently neither figure text nor caption of Figure 1.2 make a reference to SYR table 1.1. This appears to make little sense. (Government of Switzerland)
1-A-55	6	20	6	21	Without the tables providing regional summaries (WG2 Figure SPM-1), the statements beginning "Polar regions include ..." and "Marine and freshwater includes ..." have no context and should be deleted. Note: If the regional boxes are included in the final figure, disregard this comment. (Government of United States of America)
1-A-56	6	20	6	20	Use other colors for the symbols for observations of "Physical Systems" and "Biological Systems". Colors should be distinct from temperature colour scale (at first sight the reader might think that all observations suggest a slight cooling or not change). (Government of Switzerland)
1-A-57	6	20	6	21	Insert "Documented" as the first word of the title for Figure 1.2. Use of the term helps explain the clustering of observations seen in the map. (Government of United States of America)
1-A-58	6	20	6		Figure SPM-2: Many good changes have been made to enhance this graphic. However, it is not possible to discern the relative size of the dots in the Figure. We suggest collapsing the categories so there is not more than 3 dot sizes. (We suggest that the dot sizes represent 1-100 data series, 100-1200 data series and greater than 1200 series). Also, in the box that comprises the lower part of Figure SPM.2: DELETE the lines that start with "polar regions include ..." and "Marine and freshwater includes ...". Both of these are relics from the WGII figure and refer to data boxes that do not

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					appear in this figure. Also DELETE the text in brackets following "Physical systems" and "Biological systems" as it is redundant with text in the figure caption. (Government of Canada)
1-A-59	6	20	6	21	Figure 1.2: There are some apparent differences in the patterns of surface temperature trends shown in this figure with those shown in Figure 1 under FAQ 3.1 of WGI, possibly due to the slightly different data periods used (1970-2004 vs. 1979-2005). Notable differences exist over North Pacific and Scandinavia, which may need to be reconciled. (World Meteorological Organization)
1-A-60	6	20			Figure 1.2 comment: We would like the authors to consider whether including a number of different sizes of circles as data points really adds to the information content of the figure. The small size of the figure as printed means that the only place circles larger than the 1-30 size can be seen is in Europe and that they are so densely packed and overprinted here that the information cannot be seen properly. The notes beneath the map already say "Circles in Europe represent 1 to 7,500 data series". Use of different sized circles, and the consequent need to have a scale for the sizes of the circles beneath the map, appears to add to the complexity of the figure without adding new or even useable information. (Government of New Zealand)
1-A-61	6	20	6	21	Concerning Figure 1.2: The legend in the lower part of the figure should be modified, as it carries information that is specific for the more complete figure given in WGII. I.e., the specifiers starting "Polar regions...", "Marine and freshwater..." and "Circles in Europe..." should be removed. Even the latter is given by the explanations of the circles to the right. These could, on the other hand, be amended by "Number of data series". (Government of Sweden)
1-A-62	6	21			Comment (figure 1.2): "Egypt is preparing the second national communication (SNC)". (Government of Egypt)
1-A-63	6	22	6	22	Replace "statistically significant" with "identified". (First, this is consistent with P. 1, L. 14. Second, "statistically significant" in this caption refers to what individual authors address as significant, using very different methods). (Government of Switzerland)
1-A-64	6	22	6	22	Presumably it is the physical systems which have changed, not the process of observation. Or at least it is the former which is being commented on. To avoid confusion we suggest "Locations of statistically significant changes in observations of physical systems ..." should read "Locations of observations of statistically significant changes in physical systems..." or "Locations of statistically significant changes in observed physical systems ..." (Government of New Zealand)
1-A-65	6	22	6	22	Figure 1.2 add: "...significant changes, compatible with the observed temperature trend..." (Government of Belgium)
1-A-66	6	25	6	25	GHCN-ERSTT dataset needs more of an explanation. (International Energy Agency)

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1-A-67	7	4	7	5	Revise the last sentence in the caption to: "In regions without circular symbols, the assessment did not identify time series that meet all criteria for inclusion in this analysis; physical and biological systems within these regions may or may not be changing." (Government of United States of America)
1-A-68	7	8	7	8	The listing of the number of significant data series is problematic; all series should be reproducible. 28'000 series from very nearby places do not necessarily tell us more than 1 well-located series. The information on the number of series is already in Figure 1.2 in a sufficient form. The remaining information in Table 1.1. is in the text. Table 1.1 should be removed. (Government of Switzerland)
1-A-69	7	8	7	10	Table 1.1. The single physical data series for Marine and fresh water, yielding 100% consistency with warming, is not very convincing next to the huge numbers of data series in the other boxes. I would suggest to put "insufficient data" in this box. (Government of Belgium)
1-A-70	7	8	7		Canada supports the presentation of the information in this table separately from Figure 1.2. This is an improvement from having the information embedded within the Figure. (Government of Canada)
1-A-71	7	13			The bigger issues may be: 1) data inadequacies and 2) buffers in some aspects of our climate system. This bullet makes it sound like there is contrary data countering the global process afoot. This is not the case. (WWF International)
1-A-72	7	13	7	22	Give the last year of data that was used for the statements. - Newest observations do not seem to have been included. (Government of Germany)
1-A-73	7	15	7	22	This paragraph is an example of the above. This paragraph refers rather vaguely the lack of certitude in many atmospheric processes. This clearly refers too to the observations issue which is not even mentioned in the paragraph. While it is true that the observations do not show a well-defined behaviour in Antarctica, the actual data available for studies is not enough to be more conclusive, and, what is worse, a fairly large number of Antarctic stations and monitoring sites are at risk of shutting down due to lack of funding. Satellites cannot replace ground-based observations. Furthermore this comment is made at the end of Topic 1 after a number of general assertions about sea-ice, etc., are made in previous pages, which really only apply to th Arctic and high northern latitudes. The reference to Antartica should be within the corresponding section, otherwise the difference between the northern and southern hemisphere high latitudes will be lost to the reader. Please remember the policy-makers want things stated as clearly, as simply and as concisely as possible and will not wish to connect bits of information scattered around the document. (Government of Argentina)
1-A-74	7	16			Please change "are changing" to "have changed". (Government of China)