

Chapter	From Page	From Line	To Page	To Line	Comments	
9	19				<p>on behalf of the GCOS Steering Committee Chairman, Adrian Simmons, and in my capacity as GCOS Director, I would like to notify you immediately and with great urgency that there is still a fundamental problem with the HLT report regarding "observations".</p> <p>The problem in particular comes to light in Chapter 9 which quotes far too low costs for the implementation of the GCOS (Chapter 9, p. 19, Fig 9.5. "Restore missing GCOS observations").</p> <p>In addition, the only observations the HLT identifies as needing expenditure are on two atmospheric observing systems. There is no mentioning on coastal or terrestrial observations for impact. We in GCOS are cooperating closely with the wider Earth observation community which we do not see taken into account here.</p> <p>We assume that this stems still from the gross misunderstanding that GCOS is only GSN (which actually stands for GCOS Surface Network - and not synoptic) and GUAN (GCOS Upper-Air Network) - which are only small parts of the "system of systems for climate observations"; network owner being the NMHSs and not GCOS (we do not own a single network).</p> <p>We have an Implementation Plan for GCOS that we will present to SBSTA at COP 16 which identifies an order of magnitude more expenditure as needed in developing countries alone. This Implementation Plan is an official UNFCCC document which already had been made public on the UNFCCC website. The figures in our plan are actually based on a thorough finding and review process by a huge expert community and cannot and will not be changed.</p> <p>The renovation and improvement of the radiosonde and surface stations corresponds to just two out of 138 actions in our Implementation Plan, and with both costed in the 10M-30M USD range (confirmed by the separate estimates in the HLT report) this amounts to at most 10% of what we</p>	<p>Dr Carolin Richter  Director, GCOS Secretariat  c/o WMO  7 bis, Avenue de la Paix  p.O. Box 2300  CH-1211 Geneva 2, Switzerland</p> <p>Tel.: +41 22 730 82 75  Fax.: +41 22 730 80 52  e-mail: crichter@wmo.int</p> <p>Skype name: director.gcos</p>

				<p>estimate in the Implementation Plan needs to be spent additionally in developing countries, and is about only 2% of what needs to be spent additionally overall on the global observing system for climate.</p> <p>The urgency of this email is based on the fact, that the message of our SBSTA statement and side event will send out a very bad message if the GFCS will come up with a much lower requirement and continues to ignore the mandate and overall objectives of GCOS and its partner observation systems.</p> <p>The HLT report should at least acknowledge the higher expenditure in the GCOS Implementation Plan as the required figure, even if it wishes to recommend a lower figure on grounds of affordability.</p> <p>We will provide you even with more comments on the HLT report latest at 22nd November 2010.</p>	
9				<p>In my view the best way to resolve this issue given the time involved would be to:</p> <p>(i) assert somewhere in the report that a basic level of climate services can be supported by the global observing system in its present status;</p> <p>(ii) remove the cost estimate for improving the GSN and GUAN (i.e. for "restoring missing GCOS observations") in section 9.6, which is in any case entitled "Resources for managing the Framework" and thus should not include the costs of improving observations;</p> <p>(iii) have a further section of text referencing the GCOS Implementation Plan, noting that it contains many broadly-costed actions for improving the observing system for climate, that carrying out each of these actions would bring benefits, and the benefits would not be only to the provision of the climate services - the atmospheric ones would mostly also improve weather and/or air-quality forecasts, for example.</p>	<p>Adrian Simmons &lt;adrian.simmons@ecmwf.int&gt;</p>

				Assessing priorities and benefits for each, and assigning a share of the costs to the GFCS purpose as opposed to the UNFCCC purpose, the GEO purpose, the weather-forecasting purpose, ... is not a reasonable thing for the HLT to be expected to do, so the HLT may simply recommend that this needs be addressed as part of the subsequent preparations for actual implementation of the GFCS. If the HLT wishes to mention costs, these could range from anything up to the 2.5bn USD of carrying out all 138 actions, but it could be pointed out that many useful and cost-effective observing-system improvements could be achieved by fulfilling a number of the lower-cost actions. A few "for examples" covering atmospheric, oceanic and terrestrial variables could be given if they wish to present some hard numbers.	
9	0			<p>There is an inexplicable reluctance throughout these two Chapters 9 and 10 to identify GCOS where it would be appropriate to do so. In certain places, GCOS is specifically identified. Moreover, GCOS was specifically identified in the outcome of the Expert Segment of WCC-3 as the observing component of the GFCS. Thus, it seems odd that in the section on observing component (p. 6) GCOS is not explicitly mentioned as the already existing component of the GFCS.</p> <p>"9.3" elaborates that there exist five components(main elements) in GFCS. To my understanding, there are four components in GFCS, and "Capacity Building" is more like the most important issue to be urgently solved than a component.</p>	<p>Dr Carolin Richter  Director, GCOS Secretariat  c/o WMO  7 bis, Avenue de la Paix  p.O. Box 2300  CH-1211 Geneva 2, Switzerland  Tel.: +41 22 730 82 75  Fax.: +41 22 730 80 52  e-mail: crichter@wmo.int  Skype name: director.gcos</p>
9	16			The proposal of fast track project to improve the reliability of observing systems is good.	GCOS
9	18			The GCOS Secretariat confirms that the GCOS Trust Fund needs strengthening and more support from the donor community a part of the overall network.	GCOS
9	19			Figure 9.5: Our suggestion is: remove the cost estimate for GSN and GUAN (i.e. for "restoring missing GCOS observations".) Rationale for this suggestion: The estimates given for observing systems needs to address only the needs to restore the GSN and GUAN networks. All other networks that comprise the GCOS are completely ignored. Clearly, if the costs to improve these newtorks are taken into account, the total costs to address	GCOS

					observation issues would increase many-fold. Addition of several more paragraphs addressing the needs of, and estimating the costs to fix other networks is highly recommended. The renovation and improvement of radio sondes and surface stations corresponds to just two out of 138 actions discussed in the GCOS Impelmentation Plan, and with both costed in the 10M-30M USD range this amounts to at most 10% of what we estimate in the Implementation Plan needs to be spent additionally in developing countries, and is about only 2% of what needs to be spent additionally overall on the global observing systems for climate. The HLT report should at least acknowledge the higher expenditure in the GCOS Implementation Plan as the required figure.	
9	6	18	6	24	GCOS should explicitly be mentioned as the already existing component of the GFCS, as it is the component which is already "defining th egaps" and "promoting and coordinating efforts to fill them".	GCOS
9	8	26	8	32	GCOS should be mentioned as an already well established mechanism for climate observations.	GCOS
9	9	9	9	11	The 4th bullet point notes that one objective of the GFCS should be to establish working methods, particularly for deciding on implementation priorities, inlcuding for observations. GCOS is already doing is and this should be noted.	GCOS
9	6				In strengthening GCOS to address the needs of the GFCS, it may be useful to consider adding new sponsors, not only FAO but possibly also UNDP. A reference of the desirbaility of additional sponsors might be made (withouh necessarily identifying specific ones).	GCOS
9	11	3			We are concerned about the establishment of "leadership team" which will oversee the techniacl direction of the committeess, including one for Observations and Monitoring. This would add an additional layer of hierarchy to the GCOS governance, which is not necessarily opportune.	GCOS
9	16	18			GSN stands for GCOS Surface Network and NOT for the Global Synoptic Nework.	GCOS
9	16	21			GSN = GCOS Surface Network and GUAN = GCOS Upper-Air Network and NOT Global Upper-Air Network	GCOS
9	18				Section 9.6: There should be a sentence in that there is a GCOS Implementation Plan in support of the UNFCCC which includes costing of the much more extensive set of observations required to support the full range	GCOS

					of research, assessment and other needs for climate observations which extend well beyond the specific set of climate services proposed for priority implementation proposed under the GFCS:	
9	5	20	5	20	focus could replace locus	Andre Kamga Foamouhoue African Centre for Meteorological Applications for Development P.O.Box 13184 85, Avenue des Ministeres Tel: +227 20 73 49 92 / + 227 90 29 52 92 Fax: + 227 20 72 36 27
9	5	32	5	32	add "interdisciplinary working groups"	Andre Kamg, ACMAD
9	6	2	6	2	The system needed to collect, "process" and distribute climate data and information	Andre Kamg, ACMAD
9	6	4	6	4	internationally-agreed system for "processing" and exchange of meteorological data.	Andre Kamg, ACMAD
9	6	6	6	6	network of computers ", software" and communication channels that "process" and exchange data	Andre Kamg, ACMAD
9	7	16	7	16	...climate professionals "transfer methods, tools and best practices ", share knowledge....	Andre Kamg, ACMAD
9	9	3	9	3	Establishing mechanisms to strengthen the global cooperative system for collecting, "processing" and exchanging observations ...	Andre Kamg, ACMAD
9	23	5	23	5	Development assistance is available at national " and regional" levels to respond.....	Andre Kamg, ACMAD
9	23	15	23	15	" global" may replace international	Andre Kamg, ACMAD
9	22	25	22	25	aid " and development " agencies would include organizations running climate related development programmes.	Andre Kamg., ACMAD
9	0				I agree that the Global Framework of Climate Services (GFCS) will ensure availability of Climate Services to a large group of decision-makers and users of climate information  The components of GFCS (which include Capacity building, research and development, observation, information system and User interface) are within the per view of the National Meteorological and Hydrological Services (NMHSs). Hence, the NMHS should be at the centre, as focal points, of the	JOSEPH MUKABANA DIRECTOR KENYA METEOROLOGICAL DEPARTMENT NGONG ROAD NAIROBI 00 1 00 KENYA 254 20 3867880

					<p>GFCS implementation at the national level.</p> <p>It must be realized that the NMHSs deal with: observational collection of meteorological data under the new WMO Integrated Global Observing System (WIGOS) concept which includes climatological data; Data processing; Product generation; and Service delivery. These are the same components that the GFCS will deal with.</p>	<p>254 720 875 030 254 20 3876955 mukabana@meteo.go.ke</p>
9	2	7	2	11	<p>I agree with the principal of implementing the GFCS listed in 9.2 especially addressing climate services and information at international, regional and national levels and particularly to the performance monitoring systems and targets to ensure service quality.</p>	<p>Joseph Mukabana Kenya</p>
9	3	28	3	30	<p>Principle 5: The last sentence, line 28 to 30, states, “We also note that a rich basis of freely-available information, including research results, is a key stimulant to the development of market-based climate services and that in some countries the private sector plays a key role in transforming public information into usable products and services.</p> <p>It must be realized that under the WMO Convention (1947, reviewed 2007) the NMHSs are the authoritative voices and source, of early warning information on weather and climate information. Hence, this role of NMHSs needs to be emphasized to safe-guard the purpose and mission of NMHS in safety of life, protection of property and in conservation of the natural environment. The private sector plays a complementary and auxiliary role in this regard.</p>	<p>Joseph Mukabana Kenya</p>
9	3	31	4	9	<p>Principle 6: It is noted, under this principle, that WMO Resolutions 40 (Congress XII) and 25 (Congress XIII) deal with free and open exchange of weather and hydrological data, respectively, between NMHSs.</p> <p>The High Level Task (HLT) Force can request Congress XVI (May 2011) to come up with a resolution on exchange of Climatological data including environmental data from the Global Atmosphere Watch (GAW) stations and other observatories that are under the aegis of the NMHSs.</p>	<p>Joseph Mukabana Kenya</p>
9	4	10	4	20	<p>Principle 7: The second sentence (line 12 to 14) recognizes many private institutions with capacity to provide climate data and climate services. However, from the WMO Convention (1947, reviewed 2007) one of the</p>	<p>Joseph Mukabana Kenya</p>

					<p>mandates of the NHMSs is observation of climate data including related environmental data and provision of climate services. Hence, strengthening the existing capacities at the NMHSs to provide climate data and enhance climate services is the way to go in support of the GFCS, since most NMHSs are government entities, and the GFCS seeks a strong link to government institutions. Private sector institutions, including universities/academia can collaborate with NMHS in this effort.</p> <p>Therefore, the second last sentence (line 17 to 19) starting with “We particularly note the potential for national meteorological services to develop or expand their climate-related capacities and contributions, especially in data collection and product generation.” needs to be highlighted and given a stronger bearing in this principle.</p>	
9	6	13	6	16	<p>Climate Services Information System</p> <p>Noting the second last sentence starting with, “A particular concern is a .....” and the last sentence starting with “Some countries have stressed.....” the HLT Force can request the WMO Congress XVI (May 2011) to enact a resolution on the type of Climate Information that could be exchanged on a free and open access basis.</p> <p>Recommendation: The new WMO Information System (WIS) of an improved Global Telecommunication System (GTS), Radio Internet (RANET), Mobile Telephony, Satellite-based VSAT Communication System need to be mentioned as some of the Climate Services Information Systems available.</p>	Joseph Mukabana Kenya
9	6	27	6	28	<p>Research, Modelling and Prediction</p> <p>Second sentence: “In some cases research institutes also produce and disseminate advanced prediction products”. Since, under the WMO Convention (1947, reviewed 2007) the mandate of the NMHSs is to generate and dissemination climate services, it should be emphasized here that the research institutes have the mandate to improve models (science and technology development) and need strengthening to work and increase accuracy in the models’ predictive capabilities and, hence, enhance more accurate and timely forecasting by NMHS in support GFCS at the national level.</p>	Joseph Mukabana Kenya
9	7	20	7	23	<p>Capacity Building</p> <p>Last sentence (line 20 to 23) starting with “The Framework should address</p>	Joseph Mukabana Kenya

					users' capacity building needs....." I suggest replacement of the words "rather than" with the word "including" to provide all possible options under the User Interface Platform. The sentence should, therefore, read: "The Framework should address users' capacity building needs through the User Interface Platform element, for example, through the regional climate outlook forums, major demonstration projects as well as through the programmes of national authorities including directly with individual users or user groups".	
9	4	28	10	23	Under sections 9.3 and 9.4, one gets the notion that the HLT Force is alluding to specific international centres (e.g Global Climate Centres, GCCs), regional centres (e.g Regional Climate Centres, RCC) and national centres (e.g National Meteorological Services). Nevertheless, this is not mentioned for reasons best known to the HLT Force. However, it would help the reader to indicate which specific institutions are responsible for tasks of the various elements mentioned.	Joseph Mukabana Kenya
9	7	25	10	23	9.4 Delivering the Framework Internationally, Regionally and nationally This section is well explained with specific tasks of the GFCS at global, regional and national levels.	Joseph Mukabana Kenya
9	8	19	8	32	Under "Flows of Data and Data Products", I strongly support the first sentence of the second paragraph which begins with, "Since there are well established systems for ....." However, there is need for the HLT Force to define the "non-meteorological data" mentioned in the last sentence starting with, "At the same time we also....." How are these non-meteorological data related to generation and provision of climate services?	Joseph Mukabana Kenya
9	9	18	9	20	"The need for technical expertise" Second sentence starting with, "An important element ....will be creation of a range of technical committees ....." It is not clear what is meant by a "a range of technical committees". The HLT Force is not saying how many technical committees to form. This needs to be clarified.	Joseph Mukabana Kenya
9	9	23	9	31	"Coordination capability of the United Nation". We agree with anchoring the GFCS within the United Nations system and establishment of the GFCS Secretariat especially within the WMO Secretariat in Geneva, Switzerland.	Joseph Mukabana Kenya

9	10	1	10	23	<p>“Communication and Advocacy”, “Resource Planning”, existing Government Commitments” indicates the need for a well thought-through strategy for communicating with users; the plan to identify benefits according to cost; adding value to governments’ efforts to maintain and develop climate services through complementary funding of NMHSs. Since most governments address the above issues through funding of NMHS, it therefore means that strengthening of the NMHSs by the GFCS would support more availability of climate services at national level.</p>	Joseph Mukabana Kenya
9	11	3	11	14	<p>As stated in the 1st sentence (lines 3 to 4), we agree that “Implementation of the Framework will require the establishment of a leadership team that has government ownership and support, as well as support from the UN system” to oversee the implementation of the five components of the framework through support by a small UN-based secretariat.</p> <p>Recommendation: It is noted that most of the NMHSs (whether semi-autonomous) are government institutions with UN System support through WMO. The leadership team should, therefore, include the NMHS as focal points, at the national level.</p>	Joseph Mukabana Kenya
9	11	9	11	10	<p>“Building a sustainable leadership and management capacity”</p> <p>The 1st sentence (lines 9 to 10) starts with, “For each component of the Framework, there is currently in place functioning elements at national and regional level that could make a valuable contribution to its future work”. It is not clear from the sentence where these “functioning elements” are domiciled or located within the national and regional framework. The HLT Force need to clarify and list these functioning elements.</p>	Joseph Mukabana Kenya
9	12	21	13	12	<p>Fast Track properties to upgrade baseline national capabilities.</p> <p>Under this section, 70 countries do not have basic capabilities to access climate services. The wording here is generic, but it can be understood, from lines 1 to 12 on page 13, that there is need to enhance the capacities of NMHSs, by developing personnel and service delivery capabilities.</p> <p>Recommendation: Development of personnel and service delivery capacities can be accomplished through improving curriculum and facilities at the designated WMO Regional Training Centres (RTCs) and at institutions like Universities where the science of meteorology is offered. The RTCs</p>	Joseph Mukabana Kenya

					founded within the aegis of NMHSs are equally full government entities linked to the UN System through WMO.	
9	13	16	15	23	<p>Fast Track Projects to Strengthen regional Climate capacities.</p> <p>We support the statement in the 2nd sentence (lines 18 to 19) stating, “The Taskforce recommends that a fully effective network of regional centres be established by the end of 2021”.</p> <p>Note: In Regional Association I (RAI, Africa) Session, Marrakech, morocco, 1 – 8 November 2010, recommendation was given for establishment of a network of Regional Climate Centres (RCC) along the existing regional economic groupings {e.g IGAD – RCC (ICPAC); ECOWAS – RCC (AGRIHYMET); CEMAC – RCC; SADC – RCC (SADC – CSC); and MAGREB – RCC for Northern Africa Countries}.</p> <p>Recommendation: It would be better if the HLT Force would explicitly mention what they alluded to in order to remove confusion by being general in the above quoted sentence; since sub-title in 9.5 “Roles and activities of regional climate centres” actually defines the mandates of WMO RCCs</p>	Joseph Mukabana Kenya
9	16	5	18	12	<p>A Fast track project to improve the reliability of observing stations: The problem of silent stations; Recovery and rejuvenation; cost implications; and proposal for contingent capability looks at the strategy to strengthen observational systems and networks, GSN, GUAN, running costs, strengthening GCOS Secretariat and establishing long-term Trust Fund.</p> <p>Recommendations: The HLT Force should be explicit and state that the strengthening of observational systems and networks at the NMHSs of WMO Members would contribute to the GFCS. As stated on page 19, line 15, observation collection, data processing, product generation and service delivery for climate, which form components within the GFCS implementation strategy, are elements within the mandate of NMHSs at the national level.</p>	Joseph Mukabana Kenya
9	19	22	20	2	<p>Timeframes, planning and resourcing</p> <p>The sentence reads, “To enable the preparation of this plan, the World Meteorological Organisation would need to give secretariat support to an ad hoc group of experts provided by Governments and United Nations agencies for this purpose”.</p>	Joseph Mukabana Kenya

					Recommendations: Delete the words “an ad hoc” and replace them with the word “a”. Why would a group be ad hoc? Why can’t it be specific?	
9	21	10	21	11	<p>Risk assessment</p> <p>Organisational complexity. “The Framework at the national level will require the involvement of many government agencies .....” Which are these “government agencies”</p> <p>Recommendations: The HLT Force should be sufficiently candid to mention these many government agencies and institutions at national, regional and global levels.</p>	Joseph Mukabana Kenya
9	23	20	23	21	<p>Recommendations</p> <p>We agree with the given recommendations. However, on Recommendation 2: Principle 6: “The Framework will promote the free and open exchange of climate-relevant observational data while respecting national and international data policies.”</p> <p>Recommendations: The HTL Force is urged to request the WMO Congress XVI (May 2011) to enact a resolution on the exchange and access of climate data and information.</p>	Joseph Mukabana Kenya
9	23	6	23	6	The terms 'more productive agriculture' should be altered to reflect the need for environmental sustainable agriculture. This would be more consistent with the messages from other Chapters, e.g. Sections 2.5 and 3.4	Kevin Smith a/SRCE Senior Climatologist National Climate Centre Bureau of Meteorology Ph: +61 3 96694079 PO Box 1289 Melbourne, Fax:+61 3 96694760 Victoria 3001. Mobile: 0421022316 Australia. <a href="http://www.bom.gov.au">http://www.bom.gov.au</a> k.c.smith@bom.gov.au GCOS_Lead_Centre_RAV@bom.gov.au
9	0				We see the principles of implementation of Chapter 9 as actually being the first steps in defining the Framework rather than implementing it. Suggest	David Grimes Assistant Deputy Minister

					that there be greater distinction between the description of the Framework and the implementation of the Framework.	Meteorological Service of Canada Environment Canada 141 Laurier Avenue West Ottawa K1P 5J3 Canada 613-943-5585 david.grimes@ec.gc.ca
9	3	1	3	10	Principle 3 - The role of the Framework with respect to defining climate services at the national level is potentially overstated since a Global Framework will primarily be composed by the actions of its nation members. In addition to international, regional and national levels, this principle may also wish to identify the important role of climate services at sub-national scales.	David Grimes Canada
9	3	11	3	11	Principle 4 - The underlying premise of a Service is that it is operational. This principle is tautological. Suggest making the intent of this principle more precise.	David Grimes Canada
9	4		6		It is suggested that Section 9.3 better identify that the elements of the Framework (e.g., observations, research) are not the full domain of the GFCS and that there are existing coordinating bodies for much of these components. This section should increase emphasis on role of the GFCS in complementing and building on these components and on translating and bringing information to the users.	David Grimes Canada
9	5	16	5	16	The description of the User Interface Platform, the most innovative component of the GFCS, remains quite vague. Further elaboration of what it consists of and how it will be developed and used is encouraged.	David Grimes Canada
9	23	2	23	2	In Recommendation 1, the suggested \$50M investment is not sufficiently broken down to understand how these funds would be directed toward major components of the GFCS. The text above provides estimates for implementing activities under the GFCS, but the figures don't clearly relate to the \$50M estimate. Please provide further explanation.	David Grimes Canada
9	24	2	24	10	It is agreed that national products, data management and, perhaps, some service delivery will need to be supported at the Regional or sub-regional level. We support Recommendation 4's suggestion that attention be given to strengthening regional capabilities, such as through Regional Climate	David Grimes Canada

					Centres and expect there will be a flow-through of capacity from the regional to the national level. It is further suggested that there could be requirements for specialization in regional centres, for example by developing a regional centre that focuses on the Arctic or Antarctic.	
9					I like the statements of principles. The recommendations also are good although the funding will need some more strategic thinking.	G.A. McBean, CM, Ph.D., FRSC Professor and Director, Policy Studies Institute for Catastrophic Loss Reduction Departments of Geography and Political Science The University of Western Ontario London, ON, Canada Phone: 519-661-4274 email: gmcbean@uwo.ca
9	2	21	2	30	Principle 2 needs to recognize that users can only be served if service organizations have access to the raw material from which information is derived. Users (including the developing world) have an obligation to be part of the climate services solution.	Francis Zwiers Director, President and CEO Pacific Climate Impacts Consortium University of Victoria 3800 Finnerty Road Victoria V8P 1A1 Canada 1-250-721-7223 1-250-721-7217 fwzwiers@uvic.ca
9	2				Capacity needs to grow everywhere. The efforts in developing countries will only be as strong as the capacity of those who lead the development of climate sciences and services globally. The emphasis on developing nations may serve to discount the need for capacity growth worldwide.	Francis Zwiers Canada
9	3	9	3	10	The three levels identified (global, regional and national) may not be sufficient to provide valuable interaction with user communities, especially in vast countries such as Canada or the United States. I suggest the addition of a sentence that recommends that the priorities of national governments be extended to support climate services at the localized and community level to accomplish meaningful engagement with users. This concern also applies to principle 8.	Francis Zwiers Canada

9	5	16			The notion of a 'platform' needs to be conceptual only, with allowance for flexibility of implementation.	Francis Zwiers Canada
9	5	19			The notion of 'service-to-service providers' could be drawn out and better explained.	Francis Zwiers Canada
9	8	10			The focus on national priorities needs to extend to regions within that nation. Including, the provision of capacity to localized climate service centres to foster useful engagement with user communities. In large countries the national role would include the provision of service to the service providers.	Francis Zwiers Canada
9	0				"9.3" elaborates that there exist five components(main elements) in GFCS. To my understanding, there are four components in GFCS, and "Capacity Building" is more like the most important issue to be urgently solved than a component.	Fumin Ren Climate Monitoring and Diagnostics China Meteorological Administration National Climate Center No. 46 Zhongguancun Nandajie Beijing 100081 China fmren@163.com
9	2	27			The term of climate information is unclear : it should include data from observations but also model projections and climate products. Add after data : "data from observations and models"	Sylvie Joussaume Researcher at CNRS Paris Consortium "climate-environment- society" and ENES LSCE, Orme des merisiers Batiment 712, CE Saclay Gif sur Yvette 91191 France 33169085674 sylvie.joussaume@lsce.ipsl.fr
9	6	25	7	2	There is indeed a need to promote climate services in research agenda. But there are also needs to "define the gaps and promote coordinated efforts" or model data as for observations. This will be important to promote model data standards, interoperability as well as ensure that projections on regional scale will be accessible, including associated uncertainties.	Sylvie Joussaume France
9	0				The commitments of users and intermediaries are unclear. This raises the question of the scope of climate uses versus the scope of the framework, i.e. its role in organising the dialogue between providers of climate services and	Marc Gillet Director International affairs

					intermediaries or users.	Météo-France 1 quai Branly Paris Cedex P7 75700 France 33145567050 33145567040 marc.gillet@meteo.fr
9	2	7	4	26	These principles should be completed by two remarks. Many requests are addressed to the National Meteorological Services and other institutions, such as data access, education,...but the expectations towards the users should be made clear as well.	Marc Gillet France
9	2	23	2	26	Principle 2: "climate information" needs to be defined. There should be a discussion on the issue of use of data and information for commercial purposes, i.e. the market-neutrality of the User Interface Platform.	Marc Gillet France
9	2	30			In this area of communication, it could be added that the most efficient ways of convincing users is to develop pilot projects demonstrating the benefits (this could alternatively be mentioned under principle 8 on partnership) and promoting "success stories"	Marc Gillet France
9	3	11	3	18	Principle 4 is unclear about the actual role of the Framework, i.e. facilitate and coordinate (as expressed elsewhere), facilitate and strengthen (see principle 7) or putting in place "operational components" (concept to be clarified). The reference to "downstream service providers and users" raises again the question of the scope and boundaries of the framework and of the climate services themselves (socio economic data, vulnerability, included ?), with respect to intermediaries, etc. Clarifying what is the output of climate services (as opposed to those of the framework) would be welcome. This relates also to the text under principle 8: "the framework will put in place a responsive end-to-end operational system that makes a range of new climate services available"	Marc Gillet France
9	3	12			The need for a continuing basis is not only for global climate data, it exists at all scales. Suggestion: "a range of relevant and globally consistent climate data..."	Marc Gillet France
9	3	14			Climate services may not need to function every day of the week: there is a need for clarification on what the "functioning" of the operational components of the framework means.	Marc Gillet France

9	3	16			We fully agree with the necessity of formal agreements, this point could be elaborated	Marc Gillet France
9	3	19	3	30	Principle 5 points again at the question of the scope of "climate information" (not defined) . The fact that it should be an international public good implies that the definition is somewhat restricted (confidentiality of vulnerability, policy, business information, etc..) Climate information appears to be funded by public resources: this could be one element of the definition, but this would probably not be universal from a functional point of view, given the variety of existing models. At the same time term "market-based" climate services appears. It should probably be avoided, and replaced by a "market neutrality" principle, to be defined. The other, public, facet of the question is about "climate data protection" (see page 6, line 15)	Marc Gillet France
9	4	21	4	27	Principle 8: the novel concept of User Interface Platform will need to be developed further to define its role in the stimulation of partnerships and integrated projects. The role of the private sector will need to be addressed, e.g. are they stakeholders and if so how.	Marc Gillet France
9	5	16	7	24	A more natural order for the components could be 3), 4), 2), 1), 5)	Marc Gillet France
9	5	22			This paragraph could stress the required interactivity of the interface/dialogue with users and the expectation from the service providers: having information on users is not sufficient, it is also necessary to get enough information on their business processes, etc. In other words, it will also be necessary to have sufficient information on the mechanisms which drive the vulnerability of users and their capacity to benefit from climate information.	Marc Gillet France
9	6	13			"Climate information" needs to be defined. If this means only information on climate, it should be clear that other types of data, e.g. including vulnerability, geographic setting, etc. need to be brought by the user for sharing service priorities, if they are not part of the service.	Marc Gillet France
9	7	2			We suggest to refer to the need to inform the public, users and policymakers on the results of research on climate and climate impacts, through publications and conferences. Alternatively this could be addressed under the User Interface Platform element, in particular if this element is introduced after 3), 4) and 2).	Marc Gillet France

9	7	19			add "national": with national or multilateral funds and programmes	Marc Gillet France
9	9	9	9	11	The link between this section/item and section 9.5 is unclear (e.g; objectives and implementation priorities)	Marc Gillet France
9	11	10			at national, regional and global levels (add "global": the Commission of Climatology of WMO is operating at global level).	Marc Gillet France
9	12	20			Operating costs should probably be treated separately from capacity building, within a specific category if they are addressed in the GFCS. Indeed a perfect capacity building would in principle give to the country the necessary governance in order to operate the necessary functions in a sustainable way, covering personnel, maintenance, renewal and expandable costs at the adequate level. However experience shows that this is rarely the case. For this reason we suggest that there is some deeper discussion on how to cover those three types of costs in a sustainable manner.	Marc Gillet France
9	13	2			It is suggested to delete "prediction": climate services cover also past and present climates, which are often very insufficiently documented. The most urgent need for the populations is generally information on the present climate.	Marc Gillet France
9	13	12	13	14	We suggest that the coverage of filling smaller scale gaps in data coverage (regional and national needs) be not excluded from the GFCS, as other initiatives have had very limited success up to now.	Marc Gillet France
9	13	19			replace "The" at the end of this line by "This"	Marc Gillet France
9	13	28			"Centre" missing after "Climate"	Marc Gillet France
9	14	1			Rephrase: the WMO system of regional climate centres and lead centres (RCC are key)	Marc Gillet France
9	15	10	15	13	The estimation of personnel seems correct. Synergies with and support of the existing weather and environmental services should also be encouraged, for the sake of economy of scale and appropriation.	Marc Gillet France
9	17	21			please add at the end of this sentence: "It should be noted that this would address only the global need for observations, not the regional, national and local needs, which would require a much larger number of observations".	Marc Gillet France
9	19	10	19	22	Paragraph 9.7 suggests that voluntary contributions may be asked to Members of WMO starting in 2011 to support the ad-hoc group of experts	Marc Gillet France

					preparing the implementation plan; the necessary amounts should be evaluated and presented in Figure 9.5	
9	23	18			See comment above on principle 5. The inclusion of climate information in "international public goods" raises a number of theoretical and practical questions which are not addressed in the report, and those terms should be used with clear and agreed definitions.	Marc Gillet France
9	49				Figure 9.2, Line 1, Row 2: Global Centres are not expected to perform observations; please delete the bullet "observations" Figure 9.2, Line 2, Row 4: add "or agreements" after "organisations"	Marc Gillet France
9	0				With reference to these two chapters, we'd appreciate to see clearly a leading role of WMO among those UN agencies or UN system entities which are involved or interested in the GFCS, and which are proposed to play a role in the governance structure for the GFCS. Furthermore and according to experience from activities similar to the GFCS (e.g. WMO/GCOS - see its revised implementation plan), we would recommend to review the budgetary numbers in chapter 9.	Dirk Engelbart Deputy Head, Division on Meteorology, Climate Monitoring, Earth Observation, and DWD Aviation and Aerospace German Federal Ministry of Transport Robert-Schuman-Platz 1 BONN 53175 GERMANY Dirk.Engelbart@bmvbs.bund.de
9	23	15			Principle 3: From our perspective, it seems better and even more consistent within figure 9.2 to replace the term "international" by "global".	Dirk Engelbart Germany
						Dirk Engelbart Germany
9	23	17			Principle 4: From our point of view, it is not clear whether the WMO has a major role in the GFCS. However, this is important and should be clarified. The operational character of the GFCS requires the support of an organisation having experience with operational programs.	Dirk Engelbart Germany
9	23	9			Estimation of cost: From our perspective an investment of USD 50 M per year does not seem to be appropriate to maintain the GFCS. In particular, the estimated staff for the national	Dirk Engelbart Germany

					<p>climate services seems to be too small.  For the support of the different sectors such as energy, health, and agriculture different skills are required.  Therefore additional staff is necessary. An investment of up to USD 100 M per year seems more reasonable.</p>	
9	0	0			<p>The establishment of four new regional centres (in Chapter 9) is recommended as priority projects to support the development and implementation of the GFCS. This appears closely related to discussions under the AWG-LCA of the UNFCCC on institutional arrangements for enhanced action on adaptation. Linkages such as this to the relevant aspects of AWG-LCA discussions on adaptation could be highlighted.</p> <p>Throughout the chapter references are made to 'implementation strategy' (e.g. page 9, line 21), 'implementation plan' (page 9, line 30), work plan (page 10, line 10; pg 11, line 12). While the implementation plan is being explained in the course of the chapter it is not entirely clear how these different elements relate to each other as part of the overall implementation.</p>	<p>Rocio Lichte  Programme Officer  Adaptation, Technology and Science  Programme  UNFCCC secretariat  Martin-Luther-King Strasse 8  Bonn  Germany  rlichte@unfccc.int</p>
9	20	29		30	<p>The number of UN agencies/programmes engaged in GFCS activities mentioned here appears rather arbitrary and does not seem to be a compelling target to work towards. The same applies to the amount (in \$ terms) of climate-related development projects, considering the scale of climate-sensitive</p>	<p>Rocio Lichte  Germany</p>
						<p>Rocio Lichte  Germany</p>
9	8	31		31	<p>Reference to non-meteorological data: not clear whether this would also include or exclude climate data</p>	<p>Rocio Lichte  Germany</p>
9	23				<p>The Like Minded Group recalls that among the key terms of reference for the HLT in outlining a plan for implementation of the GFCS is that of "ensuring the central role of national governments." In Annex 2 of the Report of the Intergovernmental Meeting of 11-12 January 2010, many developing countries stressed that among the general principles that the HLT was requested to take into account are that "National governments shall play a central role in all aspects relating to the GFCS including its development, operation, governance and usage". The Like Minded Group</p>	<p>The Like Minded Group, India</p>

					had also reiterated this principle in its Note Verbale to the HLT dated 22 September 2010. In this regard, the Like Minded Group suggests that the central role of governments be explicitly referred to and discussed as a principle in Chapter 9 of the draft Report, including being indicated as a principle in Chapter 9, p. 23.									
9	23	22		23	<p>Additionally, in line with the above, Principle 8, Recommendation 2, Chapter 9, p. 23, Lines 22-23, should be reworded as follows:</p> <p>Principle 8 – The Framework will be built through partnerships that include all stakeholders while ensuring the centrality of the role of national governments of sovereign States.</p>	LMG, India								
9	23				<p>Recommendation 3 in Chapter 9, p. 23, should be appropriate reworded. The sustainability of the GFCS is a crucial element for its success, and that sustainability, as pointed out in the draft Report, depends on the strong engagement and ownership of governments over the GFCS. The recommendation with respect to the mechanism to be developed should therefore enhance sustainability. The Like Minded Group has stressed above that an Option A structure, appropriately refined as suggested above, would be the most sustainable framework for the GFCS. This should therefore be the focus of Recommendation 3.</p>	LMG, India								
9	19				<p>The Like Minded Group notes the discussion with respect to the scale of financing suggested for implementing the GFCS over the period 2012-2021, including its capacity building components, as contained in Chapter 9 of the draft Report. Based on Figure 9.5 contained in Chapter 9, p. 19, it seems that the funding is foreseen to be allocated as follows:</p> <table border="1" data-bbox="645 1129 1442 1353"> <tr> <td>Capacity building in developing countries</td> <td>30 percent</td> </tr> <tr> <td>Development of new regional centers and strengthening of existing ones</td> <td>40 percent</td> </tr> <tr> <td>Restoration of missing GCOS stations</td> <td>22 percent</td> </tr> <tr> <td>Management and administration of the GFCS</td> <td>8 percent</td> </tr> </table> <ul style="list-style-type: none"> <li>Note: The percentages are rounded off, and are calculated on the basis of the amounts indicated in Figure 9.5 of Chapter 9, p. 19</li> </ul>	Capacity building in developing countries	30 percent	Development of new regional centers and strengthening of existing ones	40 percent	Restoration of missing GCOS stations	22 percent	Management and administration of the GFCS	8 percent	LMG, India
Capacity building in developing countries	30 percent													
Development of new regional centers and strengthening of existing ones	40 percent													
Restoration of missing GCOS stations	22 percent													
Management and administration of the GFCS	8 percent													

				<p>From the estimated aggregate costs above as contained in the draft Report, despite the high importance of capacity building in the provision of climate services in developing countries, less than one-third of the estimated costs is foreseen as going to capacity building. The establishment of regional centers is accorded a much higher priority, and therefore funding, with respect to the GFCS.</p>							
9	23			<p>The Like Minded Group therefore would suggest that the discussion in Chapter 9 with respect to the resources needed for the implementation of the GFCS be refined by shifting the focus of allocation of the resources required towards giving a higher and more dominant share of the resources to be generated towards capacity building.</p> <p>In this regard, the Like Minded Group proposes that in keeping with the thought in the draft Report as reflected in Chapter 4, p. 8, about many developing countries confronting significant difficulties in meeting their climate service needs, at least 50 percent of the GFCS resources should be provided for capacity building in developing countries to enhance their capacity to benefit from climate services under the GFCS, as follows:</p> <table border="1" data-bbox="645 874 1442 1098"> <tr> <td>Capacity building in developing countries</td> <td>50 percent</td> </tr> <tr> <td>Development of new regional centers and strengthening of existing ones</td> <td rowspan="3">50 percent combined</td> </tr> <tr> <td>Restoration of missing GCOS stations</td> </tr> <tr> <td>Management and administration of the GFCS</td> </tr> </table> <p>The Like Minded Group also suggests that the scale of financing being suggested in the draft Report might not be fully adequate to meet the scale of financing needed, especially with respect to capacity building for the provision of climate services in developing countries. More refinements and discussions should be reflected in Chapter 9 to more realistically assess the probable scale of financing required, especially by developing countries, in relation to the implementation of the GFCS.</p>	Capacity building in developing countries	50 percent	Development of new regional centers and strengthening of existing ones	50 percent combined	Restoration of missing GCOS stations	Management and administration of the GFCS	LMG, India
Capacity building in developing countries	50 percent										
Development of new regional centers and strengthening of existing ones	50 percent combined										
Restoration of missing GCOS stations											
Management and administration of the GFCS											

					Additionally, the Like Minded Group suggests that Recommendation 1 in Chapter 9, p. 23, of the draft Report be appropriately reworded taking into account the Group’s observations above. The reference to “the most vulnerable communities in the developing world” should be reworded to “developing countries, taking into account paragraph 1 of the Terms of Reference of the HLT.”	
9	23	17			Principles 2 and 4 of Recommendation 2, contained in Chapter 9, p. 23, Line 17, should also be reworded as follows:  Principle 2 – The primary focus of the Framework will be enhanced capability which leads to greater availability, access to, and use of climate services Principle 4 – Operational climate services will be the focus of the Framework, in particular through capacity building in developing countries for the enhancement of climate prediction capability	LMG, India
9	24				Recommendation 4 in Chapter 9, p. 24, should be reworded in order to highlight the priority that needs to be given to capacity building in developing countries. This implies, therefore, that the highest priority and focus of the GFCS should be on building the national capabilities of countries, especially developing countries, rather than regional capabilities.	LMG, India
9	23	18		20	The essential concepts in Principles 5 and 6, Recommendation 2, in Chapter 9, p. 23, Lines 18-20, are already embedded in Principles 2 and 4, including the amendments proposed in this document. To avoid duplication, Principles 5 and 6 may be deleted or could be reformulated to highlight ownership by national governments of the data collected and generated in relation to the GFCS. Its sharing and application should be intergovernmentally agreed upon. The principles should also highlight confidentiality issues including prohibition for use in other international instruments such as the UNFCCC as well as for commercial advantage by non-authorized recipients.	LMG, India
9	2	14		20	It is to be recalled that the UNFCCC recognizes explicitly that developing countries are particularly vulnerable to the adverse effects of climate change arising from their specific needs and concerns and special circumstances. In this context, the focus in Chapter 9, p. 2, Lines 14-20, should be sharpened and refined so as to link it more tightly to the climate	LMG, India

					change and development challenge (including meeting the Millennium Development Goals) facing developing countries as highlighted in Chapter 6.	
9	23	11		12	Additionally, the phrasing of Principle 1, Recommendation 2, in Chapter 9, p. 23, Lines 11-12, should be state that priority will be given to the needs of “developing countries, taking into paragraph 1 of the Terms of Reference of the HLT.”	LMG, India
9	23	15			principle 3 From our perspective, it seems better and even more consistent within figure 9.2 to replace the term “international” by “global”.	Italy
9	23	17			principle 4 From our point of view, it is not clear whether the WMO has a major role in the GFCS. However, this is important and should be clarified. The operational character of the GFCS requires the support of an organisation which has experience with operational programs.	Italy
9	23	9			Estimation of costs From our perspective an investment of USD 50 M per year does not seem to be appropriate to maintain a GFCS. In particular, the estimated staff for the national climate services seems to be to small. For the support of the different sectors such as energy, health and agriculture different skills are required. Therefore additional staff is necessary. An investment of up to USD 100 M per year seems more reasonable.	Italy
9	2	25			"Householders" may be changed to households	Peter Holmgren Director, Climate, Energy and Tenure Division (NRC) Natural Resources Management and Environment Department (NR) Food and Agriculture Organization of the United Nations (FAO) Viale delle Terme di Caracalla Rome 153 Italy 00-39-06-57052714 00-39-340-2523871 00-39-06-57053250 Peter.Holmgren@fao.org

9	2	7	4	27	One of the principle of the framework may be "need based" and "user oriented or customized based on the need". This aspect is seen as a major gap in most of the developing countries.	Peter Holmgren Italy
9	7	25	8	18	The framework should address the issues related to decentralized levels within a country; at least some guidelines may be useful. Because the mandate of the decentralized offices of the NHMS is mostly limited to data collection, but not participating with user interface	Peter Holmgren Italy
9	8	19	8	32	Flow of data should consider other sectoral support services (eg. agriculture extension; water resources department) as intermediaries so that they can interpret the data in a more meaningful manner	Peter Holmgren Italy
9	11	16	11	27	There should a mechanisms to coordinate with ongoing project activities when planning fast track projects	Peter Holmgren Italy
9	Fig. 9.3				How this estimate will consider several ongoing efforts by many agencies	Peter Holmgren Italy
9	13	26	14	29	This should consider the sub-national and decentralized climate services as well in close coordination with national met agencies How these centres can facilitate the research development linkages at the country level is yet another entry point	Peter Holmgren Italy
9 (9.2)	0				Regarding the explanation about the Principle 4 for implementing the GFCS, it should be added to the explanation that it is important to assess the usefulness of the climate information provided to users sufficiently, especially the predictions.	Naoyuki Hasegawa Head, Office of International Affairs Administration Department Japan Meteorological Agency 1-3-4 Otemachi, Chiyoda-ku Tokyo 100-8122 Japan +81-3-3211-4966 +81-3-3211-2032 iao-jma@met.kishou.go.jp
9 (9.3)	0				Regarding the User Interface Platform (UIP), it is needed to improve intermediaries, which have a function to make climate information tailored to the needs of users at each sector from basic climate information such as climate observation, analysis and predictions, and to give advice to the users about the usage of the tailored climate information. We recommend that these functions and their necessities of the intermediary should be specified in the explanation of the	Naoyuki Hasegawa Japan

				<p>UIP.</p> <p>It is expected that the Climate Services Information System (CSIS) provides operational climate services, which is based on climate information including not only the basic climate information such as climate observation, analysis and prediction, but also the tailored climate information created by the intermediaries for each sector. It is important that the provision of the operational climate services is carried out through experts of the climate information in order to enable users to utilize the climate information usefully. We recommend that expressions about the importance of a role of the intermediary to CSIS and provision of the operational climate services to users through the experts of the climate information should be added.</p>	
9 (9.4)	0			<p>We agree that the establishment of the flow of climate information and the data within the three geographical domains – international, regional and national.</p>	Naoyuki Hasegawa Japan
9 (9.5)	0			<p>There are descriptions of regional climate centres. We would like to confirm whether the users to which the regional climate centres provide climate information are primarily the National Meteorological and Hydrological Services (NMHSs). We think that these users for regional climate centres are NMHSs from not only the flow of climate information within the three geographical domains shown in Section 9.4 and Figure 9.2, but also the definitions of the World Meteorological Organization Regional Climate Centres.</p>	Naoyuki Hasegawa Japan
9 (9.8)	0			<p>The title of the Subsection 9.8 shows “Risk assessment”. However, the Section 9.8 seems to mention the things to keep in mind in implementing the GFCS, not the risk assessment. We recommend the modification of the subtitle to reflect the matter mentioned in this section.</p> <p>We agree a view that we should tackle a small number of key sectors to find best practices and thereafter knowledge extracted from best practices should be expanded to other sectors. This is because it is possible to apply procedures obtained from the establishment of best practices to the other sectors and areas. In</p>	Naoyuki Hasegawa Japan

					<p>addition, there are some examples in best practices, not only which could be expanded to other areas and seasons, but also which could be applied to the other sectors.</p> <p>We agree a view that regional institutions have a key role to play in capacity building.</p>	
9	0				<p>“Capacity Building” and “Capacity Development” are used in this report. We recommend that one expression should be used in the report in view of readability.</p>	Naoyuki Hasegawa Japan
9	13	28			<p>a regional climate may be modified to a regional climate centre.</p>	Naoyuki Hasegawa Japan
9	23	2			<p>USD 50 M may be modified to USD 50 million.</p>	Naoyuki Hasegawa Japan
9	2	12	2	13	<p>If the shorthand term "climate-vulnerable" is to be used, it may be best to clearly define it in a footnote or similar as something like "vulnerable to the adverse impacts of climate variability and change".</p>	Neil Gordon Meteorological Service of New Zealand P.O. Box 722 Wellington 6015 New Zealand 6444700762 64294700762 neil.gordon@metSERVICE.com
9	2	29	2	30	<p>It is not clear that the "Framework" itself can "communicate and advocate the benefits". Perhaps those designing it can, or those implementing and promoting services under the Framework can. There is similar wording elsewhere in these principles that may need clarifying in terms of the distinction between the role of the Framework as an overarching design and implementation, and the activities which are either carried out to set it up, or to provide the services. In this Chapter it is more clearly expressed on page 10, lines 1 to 7.</p>	Neil Gordon New Zealand
9	3	1	3	10	<p>Suggest replacing "international" by "global", since "regional" is also "international". Furthermore, I note that Figure 9.2 uses "Global" rather than "international".</p>	Neil Gordon New Zealand
9	4	5	4	5	<p>Resolution 40 of WMO Congress-12 was not just about "weather data" as incorrectly stated here. The text should clearly state that it covers "meteorological and related data and products" including climate data.</p>	Neil Gordon New Zealand

					Annex 1 to the resolution (available at <a href="http://www.wmo.int/pages/about/AnnexItoRes40_en.html">http://www.wmo.int/pages/about/AnnexItoRes40_en.html</a> ) specifically refers to climate data under the minimum set of data and products to be exchanged without charge and with no conditions on use, as "(5) All reports from the network of stations recommended by the regional associations as necessary to provide a good representation of climate, e.g. data in CLIMAT/CLIMAT TEMP and CLIMAT SHIP/CLIMAT TEMP SHIP codes, etc.;" Although it has not been formally tested, in principle "(6) Products distributed by WMCs and RSMCs to meet their WMO obligations;" could also be interpreted to cover not just the World Weather Watch but a similar global-regional-national cascading principle of distribution of climate information and services including GPCs and RCCs.	
9	4	32	4	32	Another use of "international" where "global" may be better (see comment about page 3, lines 1-10) - there are others later.	Neil Gordon New Zealand
9	6	22	6	22	"developing" should be "developed"	Neil Gordon New Zealand
9	15	3	15	4	A cost of US\$30m to establish a new regional climate centre seems high. To be credible for potential funders (amongst others), this needs more detail on how it has been arrived at. (And even for "new centres", there may be existing infrastructure, facilities and staff to build on.)	Neil Gordon New Zealand
9	17	12	17	12	USD30,000 was the indicative cost of a manual station from Chapter 2, although not documented. There should be a corresponding, and documented, figure for a well maintained and calibrated automatic weather station as part of a network. This may be more cost effective.	Neil Gordon New Zealand
9	11	0			General comment on Section 9.5 - there could be more focus in the fast-track projects on the User Interface aspects.	Neil Gordon New Zealand
9	2	21			Some efforts should be done on making the climate information understandable for users.	Joanna WIBIG <jwibig@geo.uni.lodz.pl Poland
9	12	15			Figure 9.3 It should be "2014-2017" instead of "2014-2019"	Joanna WIBIG <jwibig@geo.uni.lodz.pl Poland
9	15	24	16	2	The costs collected in Figure 9.4 should be described more precisely as well as necessary equipment of these centres	Joanna WIBIG <jwibig@geo.uni.lodz.pl Poland
9	19	12	19	13	in title: the costs in the table cover the period of ten years not eight as is in the text.	Joanna WIBIG <jwibig@geo.uni.lodz.pl Poland
9					AEMET considera que los fondos de adaptación al cambio climático deberían	José Antonio Fernández-Monistrol

				tener una partida expresa para la financiación del MMSC, teniendo en cuenta también las necesidades de los SMHN.	Director for Planning Direction for Planning Spanish State Agency of Meteorology Leonardo Prieto Castro, 8 Madrid 28040 Spain 34 91 5819 879 jfernandezm@aemet.es
9&10				AEMET considera que los SMHN deben ser la base para proveer los Servicios Climáticos, utilizando los recursos y experiencia ya existentes, reforzando aquellas capacidades que sean necesarias y que la prestación de estos servicios es una de las actividades esenciales de los SMHN.	José Antonio Fernández-Monistrol Spain
9	23			The Permanent Mission of the Republic of the Sudan recalls that among the key terms of reference for the HLT in outlining a plan for implementation of the GFCS is that of “ensuring the central role of national governments.” In Annex 2 of the Report of the Intergovernmental Meeting of 11-12 January 2010, many developing countries stressed that among the general principles that the HLT was requested to take into account are that “National governments shall play a central role in all aspects relating to the GFCS including its development, operation, governance and usage”.. In this regard, the Permanent mission of the republic of the Sudan urges that the central role of governments be explicitly referred to and discussed as a principle in Chapter 9 of the draft Report, including being indicated as a principle in Chapter 9, p. 23.	M.A. Abdel Gadir Director- General Sudan meteorological Authority E-mail: <a href="mailto:info@ersad.gov.sd">info@ersad.gov.sd</a>
9				The Permanent mission of the republic of the Sudan considers that the scale of financing being suggested in the draft Report might not be fully adequate to meet the scale of financing needed, especially with respect to capacity building for the provision of climate services in developing countries. More refinements and discussions should be reflected in Chapter 9 to more realistically assess the probable scale of financing required, especially by developing countries, in relation to the implementation of the GFCS.	M.A. Abdel Gadir Sudan
9	23			The Permanent mission of the republic of the Sudan suggests that Recommendation 1 in Chapter 9, p. 23, of the draft Report shall be appropriately reworded. The reference to “the most vulnerable communities in the developing world” should be reworded to “developing	M.A. Abdel Gadir Sudan

					countries, taking into account paragraph 1 of the Terms of Reference of the HLT.”	
9	23	17			Principles 2 and 4 of Recommendation 2, contained in Chapter 9, p. 23, Line 17, should also be reworded as follows:  Principle 2 – The primary focus of the Framework will be enhanced capability which leads to greater availability, access to, and use of climate services Principle 4 – Operational climate services will be the focus of the Framework, in particular through capacity building in developing countries for the enhancement of climate prediction capability	M.A. Abdel Gadir Sudan
9	24				Recommendation 4 in Chapter 9, p. 24, should be reworded in order to highlight the priority that needs to be given to capacity building in developing countries. This implies, therefore, that the highest priority and focus of the GFCS should be on building the national capabilities of countries, especially developing countries, rather than regional capabilities.	M.A. Abdel Gadir Sudan
9	3 4	19 1		32 9	Chapter 9, p. 3, Lines 19-32 and going on to p. 4, Lines 1-9, of the draft Report suggests the continued use of existing data policies under various WMO Congress resolutions (Resolution Nos. 40(Cg-XII) and 25(Cg-XIII)).	M.A. Abdel Gadir Sudan
9	23	18		20	The essential concepts in Principles 5 and 6, Recommendation 2, in Chapter 9, p. 23, Lines 18-20, are already embedded in Principles 2 and 4, including the amendments proposed in this document. To avoid duplication, Principles 5 and 6 may be deleted or could be reformulated to highlight ownership by national governments of the data collected and generated in relation to the GFCS. It’s sharing and application should be intergovernmentally agreed upon. The principles should also highlight confidentiality issues including prohibition for use in other international instruments such as the UNFCCC as well as for commercial advantage by non-authorized recipients.	M.A. Abdel Gadir Sudan
9	2	14		20	It is to be recalled that the UNFCCC recognizes explicitly that developing countries are particularly vulnerable to the adverse effects of climate change arising from their specific needs and concerns and special circumstances. In this context, the focus in Chapter 9, p. 2, Lines 14-20, should be sharpened and refined so as to link it more tightly to the climate change and development challenge (including meeting the Millennium	M.A. Abdel Gadir Sudan

					Development Goals) facing developing countries as highlighted in Chapter 6.	
9	23	11		12	Additionally, the phrasing of Principle 1, Recommendation 2, in Chapter 9, p. 23, Lines 11-12, should be state that priority will be given to the needs of “developing countries, taking into paragraph 1 of the Terms of Reference of the HLT.”	M.A. Abdel Gadir Sudan
9	2	13	2	20	the concept of climate vulnerable countries is not clarified anywhere in the ext. If the idea is to single out those that are climate vulnerable due to their geographical location or physical features, then it could be good to state this clear. Furthermore the para speaks of the special needs of some countries. Mountainous countries, those with inland deltas, low lying coastlines also are particularly vulnerable. Are these included in the category climate vulnerable or should the countries with these features be singled out. Some clarity could help as this issue remains politically sensitive, at least when used as a reason to prioritise attention.	<b>Angela Kallhauge</b> Tel. +46 (0)16 544 22 41  Sweden
9	2	21			I assume the framework through its activities would facilitate availability and not do this itself.	<b>Angela Kallhauge</b> Tel. +46 (0)16 544 22 41  Sweden
9	3	7			regional institutions and "activities ". Projects is too limited and does not capture the essence of the range of activities at this level.	<b>Angela Kallhauge</b> Tel. +46 (0)16 544 22 41  Sweden
9					General comment: while the establishment of four regional centres has been used for cost estimation, it is important to also take into account the existence of centres that could be strengthened to operationalise the areas identified as priorities for the framework.	<b>Angela Kallhauge</b> Tel. +46 (0)16 544 22 41  Sweden
9	0				There is potential disconnect in the dynamics of climate services provision implied by figure 9.1 and 9.2. Figure 9.1 implies that multiple users can have access to the user interface platform, including governments, but also the private sector, research, sector organizations such as agricultural	Liliana Andonova professor, Deputy Director of the Center for International Environmental Studies Political Science

					organization, many of which might operate at the sub-national or local levels. Figure 9.2 includes level across which data and data products are shared - global, regional, and national. It is thus not entirely clear whether only national (public) and regional organizations would have direct access to the Global Framework, or whether the Task Force also envisages the possibility of direct access by a variety of user groups through the User Interface Platform. The chapter can also clarify better what relationship and what type of information exchange is envisaged between the IPCC and the Global Framework. Finally, a number of regional organizations and partnerships are already active in providing climate services (some of which were listed in previous chapters and others not). In the interest of avoiding duplication and minimizing the cost of strengthening regional capacity, it may be useful to provide an extensive inventory of regional scientific organizations that are already providing some climate information, research and products or organizations whose work could be expanded to provide platforms for such information and services.	Graduate Institute for International and Development Studies Voie-Creuse 18 Geneva CH-1202 Switzerland liliana.andonova@graduateinstitute.ch
9	5	17	5	33	It may be helpful to consider what mechanisms can be established as part of the Interface Platform to facilitate exchange of information, participation, and engagement of different user groups.	Liliana Andonova Switzerland
9	5	20			"is the focus of the" NOT "is the locus of the"	Mustafa COŞKUN Acting Director Weather Forecasting Turkish State Meteorological Service Kütükçü Ali Bey Caddesi Ankara 61120 Turkey mcoskun@dmi.gov.tr
9	8	27			"Taskforce" NOT "taskforce"	Mustafa COŞKUN Turkey
9	16	6			"silent stations" NOT ""silent" of stations"	Mustafa COŞKUN Turkey
9	17	22			"actual costs over" NOT "accrual costs over"	Mustafa COŞKUN Turkey
9	2	21	2	22	Should this principle be greater availability and improved ease of access and use of decision-relevant climate information - climate information itself	Roger Street Technical Director

					may not be sufficient.	UK Climate Impacts Programme Oxford University Oxford University Centre for the Environment, South Parks Road Oxford OX1 3QY United Kingdom of Great Britain & Northern Ireland roger.street@ukcip.org.uk
9	2	23	2	30	Would expect to also see support through engagement.	Roger Street UK
9	2	29	2	30	Benefits of applying decision-relevant climate information. To meaningful this communication and advocacy should be in a manner that is meaningful to the user community, not just to the provider community	Roger Street UK
9	3	3	3	3	Is a focus on climate impacts sufficient? Is it not not also vulnerability and adaptation, both of which also have a geographic dimension. I would also not that there will be a need to operate at the national level and delivery at the local level will be through national delivery mechanisms	Roger Street UK
9	3	14	3	14	... Include appropriate performance monitoring and evaluation systems and targets...	Roger Street UK
9	4	19	4	19	...contributions, especially in data collection and product generation and evaluation.	Roger Street UK
9	4	21	4	21	...build through engagement that includes users and providers.	Roger Street UK
9	4	24	4	24	...organisations and communities that make decisions based on climate information will need to..	Roger Street UK
9	4	26	4	26	...the effective delivery and support of climate services.	Roger Street UK
9	5	23	5	24	...to obtain the required climate information and to learn how it can be used.	Roger Street UK
9	5	32	5	32	...and researchers through such mechanisms as	Roger Street UK
9	6	1	6	1	This subsection appears to be just about climate data. Is this the intent? Climate services, by definition are more than just data and data products.	Roger Street UK
9	6	2	6	2	...and information according to the identified needs of users as..	Roger Street

						UK
9	6	16	6	17	There should also be opportunities for users to share knowledge and experiences	Roger Street UK
9	6	21	6	21	...should address users' and providers' capacity building...	Roger Street UK
9	6	17	6	24	I would note that according to earlier text in this document, I interpreted observations and monitoring to include more than just climate. I believed that it included environmental and socio-economic data	Roger Street UK
9	6	24	6	24	...The scientific and user communities will need to me active participants in this	Roger Street UK
9	6	25	6	25	There is a need to include research on improving climate services. In addition, especially for this latter area of research, there is a need to engage users in this research. This should be particularly the case where the research is linked to the interface.	Roger Street UK
9	7	3	7	23	Need to increase the capacity of providers to engage users with the intention of developing and evaluating services with them	Roger Street UK
9	8	1	8	18	This subsection should include monitoring and evaluating of the Framework	Roger Street UK
9	8	2	8	4	Enhancing the capacity at the regional and national level	Roger Street UK
9	8	11	8	18	These should be done with users engaged.	Roger Street UK
9	9	1	9	11	Add establishing a means for monitoring and evaluation	Roger Street UK
9	9	14	9	22	Should also include the role of users who also have required expertise	Roger Street UK
9	9	31	9	31	Is one role and responsibility of the secretariat to undertake the necessary monitoring that will used in the subsequent evaluation?	Roger Street UK Roger Street UK
9	10	4	10	4	...awareness of its scope and capabilities.	Roger Street UK
9	10	6	10	7	The strategy for informing user groups should be linked to an engagement strategy.	Roger Street UK
9	10	14	10	14	Understand the need for a cost/benefit analysis, but is this sufficient (suggest not) considering the desired outcomes and nature of the benefits?	Roger Street UK

9	11	2	11	14	Need for an understanding of the scope of the required expertise. What is the role of the user community in building a sustained leadership and management capability? It should be addressed here.	Roger Street UK
9	12	1	12	5	Are these skills and core competencies sufficient for the intended purpose? I would suggest that engagement skill are also needed.	Roger Street UK
9	12	7	12	7	..with a small number of climate zones, a climate services unit of two to... Is this about describing the climate or delivering climate services?	Roger Street UK
9	12	7	12	9	Need to relate more directly to the size of the user community rather than just the climate complexity	Roger Street UK
9	13	4	13	10	Will need to recognise the costs of engagement - non-trivial.	Roger Street UK
9	13	26	13	29	Are these climate services centres or climate centres? As described they are climate centres which is disappointing considering that this is a global framework for climate services not a global framework for climate.	Roger Street UK
9	14	1	14	16	Should include identification and engagement of users	Roger Street UK
9	14	1	14	3	Should include a role related to information based on observed data and trends. Not clear why the focus appears to be on predictions and projections.	Roger Street UK
9	14	4	14	4	...products relevant to identified user needs, including...	Roger Street UK
9	14	9	14	9	agree with the need for on-line access, but this should also include user-appropriate access	Roger Street UK
9	14	10	14	10	Monitor and evaluate regional centre's products and services based on feedback from users	Roger Street UK
9	14	22	14	23	These should be defined through sustained engagement of users	Roger Street UK
9	14	22	14	26	Who has the role of informing research and research funding of the needs of the users ?	Roger Street UK
9	14	27	14	29	Need to be clear as to whether this is based on a users' analysis (demand) or a supply analysis.	Roger Street UK
9	17	17	17	17	How would the most difficult data gaps and therefore priorities for action be defined?	Roger Street UK
9	18	14	18	24	Evaluation should include demonstrating benefits of engagement to from the perspectives of both users and providers	Roger Street UK

9	18	20	18	21	Also to demonstrate value added, therefore the need for monitoring and evaluation	Roger Street UK
9	19	6	19	9	Need to be able to demonstrate this.	Roger Street UK
9	20	4	20	11	Need to include experts in user support and engagement	Roger Street UK
9	20	17	20	19	Success measurement by outcomes and user focused not only by outputs	Roger Street UK
9	20	29	20	30	Participated but the true measure of success is whether the desired outcomes have been realised.	Roger Street UK
9	21	6	22	14	I would have expected the risk of poor engagement of the users to be identified amongst this risk assessment	Roger Street UK
9	22	4	22	5	...minimised by demonstrating through outcomes (monitoring and evaluation) the benefits...	Roger Street UK
9	23	5	23	7	These should be confirmed ty the user community	Roger Street UK
9	23	11	23	23	Please see earlier comments regarding these principles	Roger Street UK
9	23	31	23	32	...plan should set outcome and process-based targets to be achieved over the next fiva and ten years, along with the means of monitoring and evaluating progress.	Roger Street UK
9	24	3	24	3	How can these be changed from climate centres to climate service centres?	Roger Street UK
9	0				<p>We are supportive of the key role being proposed for regional climate centres in this section. We would like to see the following further emphasised in this section:</p> <ul style="list-style-type: none"> <li>- Roles of RCCs should include provision of services and products for the adaptation community, yet the adaptation word is missing.</li> <li>- The regional centres will need to operate in providing a good hub to integrate national and international efforts to ensure the Framework is a success.</li> <li>- They should have an important role in interacting with user groups.</li> </ul> <p>There is a lot of emphasis on Regional Climate Outlook Forums (RCOFs), but note that these are</p>	<p>John Hirst</p> <p>Permament Representative of the UK with WMO and CE of the Met Office FitzRoy Road Exeter EX1 3PB United Kingdom of Great Britain &amp; Northern Ireland mike.gray@metoffice.gov.uk (for correspondence purposes)</p>

					limited to a few (albeit important) regions and seasons and are struggling to maintain resources required to hold such events.	
9	2	12	2	20	Principle 1. How will “vulnerability” be defined and assessed? Or are they simply going to prioritise the categories of countries listed, on the assumption that these are the most vulnerable? This needs to be made clear.	John Hirst UK
9	3	11	3	18	Principle 4. The focus on operational services seems premature. The state of scientific knowledge does not always permit operational services - much R&D remains to be done. So this Principle should say what operational services they envisage being feasible already, and which might follow later.	John Hirst UK
9	6	1	6	16	It is recommended that the Climate Services System use the existing internationally-agreed mechanisms for transmitting climate data. However there are existing, tailor-made systems for disseminating climate data (especially model output) which may be more suitable.  Something should also be said here about interactive information distilling, e.g. Climate Outlook Forums, and provision of guidance, i.e. background information on how to interpret and apply the climate information.	John Hirst UK
9	6	19	6	21	There should be something here about past observations for information on climate means/variability/extremes.	John Hirst UK
9	14	0			Activities of regional climate centres – given the emphasis rightly placed throughout the document on interacting with applications groups that would make use of climate product, RCC should have development of contacts with such groups as an activity.	John Hirst UK
9	14	20			Reword this bullet point to read: "Provide scientific guidance on reanalysis, regionally downscaled reanalysis and regionally downscaled climate change scenarios that are available through the centre."	John Hirst UK
9	18	0			The new system will require substantial resources to operate, as described. Some examples of the tangible benefits to such expenditure would be very welcome.	John Hirst UK
9	19	3			Figure 9.5 (costs). The assertion “costs are small in comparison with current expenditure” should be justified. What do they estimate the current expenditure to be, and how do they arrive at the estimate?	John Hirst UK
9	19	14	20	30	The need for sustained funding should be explained. The discussion does	John Hirst

					not seem to cover the period beyond 2021.	UK
9.8	21	28	22	15	In the resourcing bullet point, something should be included noting that risks are also minimised by guaranteeing long-term engagement as a motivation for national and regional bodies to get involved.	John Hirst UK
9	4	3	4	5	IT should be noted that this implies that countries with the most need for research would be best served by making all their data freely available.	Thomas C. Peterson, Ph.D. President, WMO Commission for Climatology Chief Scientist, NOAA's National Climatic Data Center 151 Patton Avenue Asheville, NC 28801 Voice: +1-828-271-4287 Fax: +1-828-271-4246
9	5	16	5	16	The singular form of platform implies one platform which implies countries should make all their data available to this platform as it will be serving their local customer.	Thomas C. Peterson USA
9	6	20	6	20	Does ground-based include ocean-based - or rather can you clarify the statement so it won't be misinterpreted as only over land?	Thomas C. Peterson USA
9	11	16	18	12	Needs a comment on the moral hazard of having international help for poor countries. That is if you help country A because they can't afford to upgrade stations does that give an incentive to neighboring country B to decide that they are not going to fix their problem stations and just let them get worse in hopes that international aid will come in to help them. This shows the cost of doing this work, there should also be a statement as to the benefit that this work would bring, that is that this is not just a cost but it is a savings in the long run.	Thomas C. Peterson USA
9	12	18	12	21	This should include a statement that international aid should come with a clear obligation that the data from the improved obs needs to be freely exchanged internationally.	Thomas C. Peterson USA
9	16	3	17	3	This whole section is GCOS based and suffers because of that narrow focus.	Thomas C. Peterson USA
9	16	17	16	26	The GCOS Surface Network is mis identified, which continues to show that on line 16 they are mis identified as synoptic stations	Thomas C. Peterson USA
9	16	21	16	22	The GCOS Upper Air Network is mis identified	Thomas C. Peterson USA

9	16	4	16	15	The question of silent GCOS station is often a matter of telecommunications or simply national desire to internationally share the data in a timely fashion. Globally we do not know which stations are reporting in a country. A station could be very noisy, sending in regular observations to the country's capital city, but if the data are not transmitted internationally they are called in this report silent.	Thomas C. Peterson USA
9	16	25	17	3	The GCOS Upper Air Network is a subset of global radiosonde stations. As climate science has progressed, the data from radiosonde stations have increasingly been found to be problematical as there are a huge number of small and large artificial biases in their data. Also, these disposable instrumentation can not measure water vapor very well, particularly in upper levels where it matters most from a climate perspective. At the same time satellite data has advanced considerably over the last few decades. These factors combine to make radiosonde data less and less valuable. Therefore, upgrading these expensive stations should NOT be a high priority. Surface stations play a very key role as satellite data are not very good at appropriate surface measurements, particularly from a climate point of view (e.g., clouds get in the way). So it is much better to focus on the surface stations than the radiosonde stations -- with the expectation of a new reference quality radiosonde station (the GRUAN), but they would only be a handful stations world wide.	Thomas C. Peterson USA
9	4	21	4	27	Explicitly reference that attention is needed to include most marginalized stakeholders (per previous notes).	Tracy Raczek External Relations Specialist UNIFEM (part of UN Women) 304 East 45th Street New York City 10017 United States of America 1.212.906.6897 tracy.raczek@unifem.org
9	5	16	5	33	Is consideration given to how Platform can address diverse needs of users and means for dissemination, including technological capabilities? Perhaps bits of information designed such that can be transmitted by cell phone, radio, and other relatively low-tech means so can reach most diverse audience, especially in developing states? I leave that to you experts.... :)	Tracy Raczek USA
9		20			General comment: We are of the belief that form follows function. The	Daniel A. Reifsnnyder

					functions of the various elements of the GFCS are vague and ill-formed in this document, yet some of the institutional and financial requirements are very specific, including the formation of various committees and management structures and the need or communication, advocacy and resource planning. Without more clarity on substance it would be hard to support those items.	Deputy Assistant Secretary for Environment & Sustainable Development Department of State 2201 C Street, N.W. Washington, D.C. 20520 United States of America 202-647-2232 202-647-0217 reifsnderda@state.gov
9	2	1	4	27	The U.S. has not had a chance to fully vet the principles and to provide an official view on their suitability. We can see merit in focusing on the needs of all countries participating in the Framework and on the breadth of important issues contributing to the provision and use of climate services. We are unclear whether, given the diversity of approaches countries are taking to climate services (see case studies) the Global Framework should play a significant role at the national level. Also, as previously stated, we do not believe climate services are always or even primarily operational in the weather sense of that word.	Daniel A. Reifsnyder USA
9	2	29	2	26	Suggest adding Non-governmental organizations (NGOs) in the list of intermediaries.	Daniel A. Reifsnyder USA
9	2	8	2	30	Given earlier text and the intent of this Principle, it might be helpful to ensure that this Principle captures the two-way character of the desired engagement/dialogue with users. The current text emphasizes the delivery of information to users but could be strengthened with the addition of text that also emphasizes the important, continuing role of users in helping to guide the development of future climate data products and information services. We suggest adding the following phrase at the end of the closing sentence of this paragraph: "...applying climate information and provide a mechanism for sustained dialogue with users through which changing conditions and information needs can help guide the evolution of Framework products and services."	Daniel A. Reifsnyder USA
9	2	2			The notion of three geographic scales of services is introduced here, but neither here nor in the recommendations are the roles of the components clearly articulated and shown to be synergistic (and not competitive). In	Daniel A. Reifsnyder USA

					particular the rationalization for what is done at the regional scale is poor.	
9	3	18	3	18	Suggest deleting the word "formal" which will allow for informal and voluntary structures. Formal agreements often serve to slow, rather than advance the progress of data sharing	Daniel A. Reifsnyder USA
9	4	9	4	9	The GEOSS Data Sharing Principles are more liberal than the policies adopted by WMO. Embedding the GFCS in the UN system means that it cannot benefit from the more forward-leaning data sharing agreements achieved by the 85 governments assembled in GEO	Daniel A. Reifsnyder USA
9	4	17	4	20	The role of Met Services is overemphasized here.	Daniel A. Reifsnyder USA
9	4	2	4	18	We recognize the importance of acknowledging a/the critical role of National Meteorological Services but some countries are already moving out in the area of establishing formal climate and/or climate service agencies. It might strengthen the broad acceptance if Principle 7 acknowledged the potential from both 'national meteorological services and emerging national climate and/or climate service agencies.'	Daniel A. Reifsnyder USA
9	4	1			This paragraph ignores the disastrous situation in many countries where the met services hold their data on the basis that it has inherent value. Met data is only valuable when it is used. A much stronger statement on the need to develop climate data as a public good and to harness the talents outside of the global research community and private sector to develop this data into products is warranted.	Daniel A. Reifsnyder USA
9	5	28	5	22	This idea needs to be further developed before it can be supported. The accountability mechanisms of this envisioned "user interface platform" are unclear	Daniel A. Reifsnyder USA
9	5	16		33	The description of the User Interface Platform does not contain the specifics needed to fully understand how it works and whether it is structured to engage users in appropriate ways. This needs further elaboration.	Daniel A. Reifsnyder USA
9	5		5	16	The singular form of platform implies one platform which implies countries should make all their data available to this platform as it will be serving their local customer.	Daniel A. Reifsnyder USA
9	5		5	33	As is said, this is the most novel and least developed part of the Framework. It is also the most crucial for the Framework to be successful in its goals. The report does not give any guidance on the substance of this component. What are the mechanisms through which a UIP would be implemented?	Daniel A. Reifsnyder USA

					What would be the key institutions engaged? It simply is not acceptable to leave this unanswered. And there are various ideas and models to draw upon. We need to know how these programs could be developed and what resources will be devoted to them. To give just one example: a coordinated exchange program among appropriate sector, government and climate based institutions can go a long way toward creating new opportunities and building capacities.	
9	6		6	5	This is quite a limitation. It's difficult to imagine biodiversity and land use change data being accommodated by systems organized for meteorological data	Daniel A. Reifsnyder USA
9	6	3	6	6	Don't the existing networks in the Climate Services Information System address "providing access to" data and data products as well as "exchange" of data products?	Daniel A. Reifsnyder USA
9	6	17	6	24	Given the subsequent emphasis on the role of GCOS later in this Chapter, shouldn't this section also explicitly call out GCOS here?	Daniel A. Reifsnyder USA
9	6	4	6	20	Does ground-based include ocean-based - or rather can you clarify the statement so it won't be misinterpreted as only over land?	Daniel A. Reifsnyder USA
9	7	25	7	2	Throughout the text and later in Chapters 9 and 10, the Task Force's emphasize the critical synergy to be gained from close linkages among all functional elements of the Framework and the linkage of all to the User Interface Platform is particularly important to the success of the Framework. The closing sentence of this section as written could be read to imply that the User linkage is only important to Research, Modeling and Prediction. Suggest a slight language change to something like "We expect that there will need to be a particularly strong linkage between this area of Framework concern and those of the User Interface Platform."	Daniel A. Reifsnyder USA
9	8	26	8	32	This sentence is very general and an inadequate treatment of non-meteorological climate data. What do we mean here?	Daniel A. Reifsnyder USA
9	8		8	8	"providing" access to versus "obtaining" access to?	Daniel A. Reifsnyder USA
9	8		8	5	More attention could be given to monitoring products – the keystone for engaging the user community is for them to be able to assess what is currently happening and how climate has impacted on various outcomes historically. Focusing only on forecasting products (seasonal, decadal, change) which may be irrelevant in some parts of the world is unnecessarily	Daniel A. Reifsnyder USA

					limiting.	
9	9	26	9	22	The GFCS will be greatly burdened by a "range" of technical committees providing advice, each of which will require support	Daniel A. Reifsnyder USA
9	9	25	9	11	Recommend adding "user interface" to the list of Framework program components in this bullet and also suggest that this bullet provides another opportunity to highlight the importance of 'internal working methods' that emphasize the synergy to be gained from coordinated implementation of all elements of the Framework as part of an integrated approach to end-to-end services in which the insights of users and applications experience will continue to guide the evolution of the Framework.	Daniel A. Reifsnyder USA
9	9		9	17	"(...service delivery, user engagement and dialogue). Again, want to reinforce the Task Force's recognition of the importance of a sustained program of user engagement that promotes two-way dialogue and collaboration in the development and evaluation of products and services.	Daniel A. Reifsnyder USA
9	9	12			As mentioned previously, among the most urgent of near term priorities needs to be establishing key elements of the UIP. This will be the point of departure on business-as-usual that will provide the value added by the GFCS.	Daniel A. Reifsnyder USA
9	10	24	10	4	Suggest adding a new second sentence that recognizes the two-way character of communications strategy which is to provide a mechanism for user feedback on changing conditions and information needs as well as the benefits and/or challenges associated with using the climate services facilitated by the Framework.	Daniel A. Reifsnyder USA
9	11		11	29	Chapter 9, up to and including Figure 9.5, proposes a total of roughly \$500 million over 10 years for executing the proposed fast-track projects. This is independent of "preparatory costs" and the costs associated with strengthening the Global Climate Observing System. Approximately 1000 staff are envisioned worldwide for national capacity building alone. These numbers seem unrealistic and unsupported.	Daniel A. Reifsnyder USA
9	11		18	12	Could benefit from a comment on the moral hazard of having international help for poor countries. That is if you help country A because they can't afford to upgrade stations does that give an incentive to neighboring country B to decide that they are not going to fix their problem stations and just let them get worse in hopes that international aid will come in to help them.	Daniel A. Reifsnyder USA

9	11				<p>It appears that most of the emphasis here is on developing capacities of climate information providers. Though important, this is wholly inadequate. The fast-track projects need to address all aspects of the framework, including in particular the UIP elements. Please consider the potential contributions of research institutes and universities, as well as sector-based and governmental institutions as part of the capacity building and demonstration project activities.</p> <p>There are several recommendations that appear without any rationale to support them. Why is it appropriate to develop 4 new regional centers, and strengthen another 4? Why 4 and not 2 or 10? Where would they be, and why? Without proper justification, the recommendations come across as somewhat random.</p> <p>Do regional climate centers focused only on climate information make sense for the GFCS? Wouldn't their value be increased greatly if their mandate expanded to climate risk management innovations and associated climate services? This would mean entraining a multi-sectoral professional staff and actively reaching out not only to met centers but to the relevant regional sectoral organizations, both governmental and nongovernmental. If this is NOT done, then the same would be needed from yet other institutions that largely do not exist presently.</p>	Daniel A. Reifsnyder USA
9	16		17	3	<p>This whole section is GCOS biased and suffers because of that narrow focus.</p> <p>The GCOS Upper Air Network is a subset of global radiosonde stations. As climate science has progressed, the data from radiosonde stations have increasingly been found to be problematical as there are a huge number of small and large artificial biases in their data. Also, these disposable instrumentation can not measure water vapor very well, particularly in upper levels where it matters most from a climate perspective. At the same time satellite data has advanced considerably over the last few decades. These factors combine to make radiosonde data less and less valuable. Therefore, upgrading these expensive stations should NOT be a high priority. Surface stations play a very key role as satellite data are not very good at appropriate surface measurements, particularly from a climate point</p>	Daniel A. Reifsnyder USA

					of view (e.g., clouds get in the way). So it is much better to focus on the surface stations than the radiosonde stations -- with the exception of a new reference quality radiosonde station (the GRUAN), but they would only be a handful stations world wide.	
9	16		16	26	The GCOS Surface Network is mis identified, which continues to show that on line 16 they are mis identified as synoptic stations.	Daniel A. Reifsnyder USA
9	16		16	15	The question of silent GCOS station is often a matter of telecommunications or may be a lack of desire to share the data internationally in a timely fashion. Globally we do not know which stations are reporting in a country. A station could be very noisy, sending in regular observations to the country's capital city, but if the data are not transmitted internationally they are called silent in this report.	Daniel A. Reifsnyder USA
9	18		18	26	The reference to "management group" is confusing here without the benefit of the organizational options discussion in Chapter 10. In fact, one wonders if the resource requirements might not differ depending on the Governance arrangements discussed in Chapter 10. Would the discussion of resource requirements associated with 'managing the Framework' be better placed in Chapter 10 following discussion of the two options for governance?	Daniel A. Reifsnyder USA
9	18				The report proposes to spend approximately \$50M/year over many years, seemingly mostly to develop climate information capacities, new climate observations, new climate centers, and program management. Please consider that none of these will guarantee demonstrations of value for the key stakeholders who are the supposed beneficiaries of the GFCS. These investments are, rather, mostly in the realm of doing more of what is already being done (which by and large is not yielding the desired benefits). Alternatively, the proposal could recommend serious user-provider linkages and projects that would at the very least serve to increase awareness and develop ideas for new services responsive to practical needs... this could be done in parallel with basic capacity building but the perceived value is likely to be much greater. Adding global scale knowledge management functions, platforms for universal access to key information products, mechanisms to evaluate effectiveness of services, and establishment of good practices guidance, and value will be much greater still.	Daniel A. Reifsnyder USA
9	19				It makes sense to start to develop the framework around a select set of sectoral problems (water, health, disasters, agriculture are suggested). If	Daniel A. Reifsnyder USA

					this is the case, then the lead agencies and institutions from those sectors should be engaged IMMEDIATELY, not over a 6 year time frame. That engagement process will dictate the implementation plans for the framework activities.	
9	20				Whereas 4 sectors are suggested over 6 years, it is proposed that ALL sectors can be engaged by 10 years. This appears unrealistic, and is unsupported by specific plans.	Daniel A. Reifsnyder USA
9	23		23	27	The recommendation 3 of this 256 page framework report is the development of another document explaining the GFCS. This seems inefficient.	Daniel A. Reifsnyder USA
9.2	2				The notion of three geographic scales of services is introduced here, but neither here nor in the recommendations are the roles of the components clearly articulated and shown to synergistic (and not competitive). In particular the rationalization for what is done at the regional scale is poor.	Stephen Zebiak Director-General International Research Institute for Climate and Society Columbia University Lamont Campus, 61 Route 9W Palisades, NY 10964 United States of America 1-845-680-4497 1-845-680-4468 1-845-680-4866 steve@iri.columbia.edu
9.2	4	6			This paragraph ignores the disastrous situation in many countries where the met services hold their data on the basis that it has inherent value. Met data is only valuable when it is used. A much stronger statement on the need to develop climate data as a public good and to harness the talents outside of the global research community and private sector to develop this data into products is warranted.	Stephen Zebiak USA
9.3	5	16	5	33	As is said, this is the most novel and least developed part of the Framework. It is also the most crucial for the Framework to be successful in its goals. The report does not give any guidance on the substance of this component. What are the mechanisms through which a UIP would be implemented? What would be the key institutions engaged? It simply is not acceptable to leave this unanswered. And there are various ideas and models to draw	Stephen Zebiak USA

					upon. We need to know how these programs could be developed and what resources will be devoted to them. To give just one example: a coordinated exchange program among appropriate sector, government and climate based institutions can go a long way toward creating new opportunities and building capacities.	
9.4					The Framework could sponsor “challenge programs” that support major programs to demonstrate the GFCS vision, involving both regional and national scale institutions, supported by international partners as needed; engaging particular problems with relevant stakeholders fully engaged.	Stephen Zebiak USA
9.4	8	2	8	5	More attention could be given to monitoring products – the keystone for engaging the user community is for them to be able to assess what is currently happening and how climate has impacted on various outcomes historically. Focusing only on forecasting products (seasonal, decadal, change) which may be irrelevant in some parts of the world is unnecessarily limiting.	Stephen Zebiak USA
9.4	9	2			As mentioned previously, among the most urgent of near term priorities needs to be establishing key elements of the UIP. This will be the point of departure on business-as-usual that will provide the value added by the GFCS.	Stephen Zebiak USA
9.5	11				<p>It appears that most of the emphasis here is on developing capacities of climate information providers. Though important, this is wholly inadequate. The fast-track projects need to address all aspects of the framework, including in particular the UIP elements. Please consider the potential contributions of research institutes and universities, as well as sector-based and governmental institutions as part of the capacity building and demonstration project activities</p> <p>There are several recommendations that appear without any rationale to support them. Why is it appropriate to develop 4 new regional centers, and strengthen another 4? Why 4 and not 2 or 10? Where would they be, and why? Without proper justification, the recommendations come across as somewhat random.</p> <p>Do regional climate centers focused only on climate information make sense for the GFCS? Wouldn't their value be increased greatly if their mandate</p>	Stephen Zebiak USA

				expanded to climate risk management innovations and associated climate services? This would mean entraining a multi-sectoral professional staff and actively reaching out not only to met centers but to the relevant regional sectoral organizations, both governmental and nongovernmental. If this is NOT done, then the same would be needed from yet other institutions that largely do not exist presently.	
9.6	18			The report proposes to spend approximately \$50M/year over many years, seemingly mostly to develop climate information capacities, new climate observations, new climate centers, and program management. Please consider that none of these will guarantee demonstrations of value for the key stakeholders who are the supposed beneficiaries of the GFCS. These investments are, rather, mostly in the realm of doing more of what is already being done (which by and large is not yielding the desired benefits). Alternatively, the proposal could recommend serious user-provider linkages and projects that would at the very least serve to increase awareness and develop ideas for new services responsive to practical needs... this could be done in parallel with basic capacity building but the perceived value is likely to be much greater. Adding global scale knowledge management functions, platforms for universal access to key information products, mechanisms to evaluate effectiveness of services, and establishment of good practices guidance, and value will be much greater still.	Stephen Zebiak USA
9.7	19			It makes sense to start to develop the framework around a select set of sectoral problems (water, health, disasters, agriculture are suggested). If this is the case, then the lead agencies and institutions from those sectors should be engaged IMMEDIATELY, not over a 6 year time frame. That engagement process will dictate the implementation plans for the framework activities.	Stephen Zebiak USA
9.7	20	26		Whereas 4 sectors are suggested over 6 years, it is proposed that ALL sectors can be engaged by 10 years. This appears unrealistic, and is unsupported by specific plans.	Stephen Zebiak USA
9&10				Chapters 9 and 10 deal with implementation of GCFS. But no-where among the principles are any of the considerations mentioned in the opening overview comments addressed. A climate services information system is proposed, but falls short in my view, see above. It says "much of this system is already in place" and that is the problem with this whole framework,	Kevin Trenberth USA

					because much of what is needed is NOT in place.	
9					<p>I would like to draw your attention on a factual error in the table below:  The TOTAL should read 52.5 to 64.0 and 50.0 to 60.0 to be consistent with other figures.  I didn't check whether this entails corrections in the other tables.  ( to add figures in he 2012-2013 column might also help)</p> <p>Building national climate services capacity  Investment necessary to upgrade  (USD x millions, 2010 prices)  Period  2012 - 2013  2014 - 2019  2018 - 2021  Six small countries with very low or non-existent capacity  2.5 to 4.0  0  36 small countries with an existing low capacity  20 to 25  20 to 25  28 countries with an existing low capacity  30 to 35  30 to 35  TOTAL  1 to 2  52.5 to 74.0  50.0 to 70.0</p>	Christian Blondin WMO/CER
9	2	8	2	11	<p>The focus of the framework is indicated to facilitate the use of climate information.  The declaration establishing the GFCS indicates the intention as to strengthen the production, availability, delivery and application of science-based climate prediction and services.  Does the use, which could be use to refer to application, represent the intention adequately?</p>	WMO
9	2	12	4	27	There may be a need to assess if the eight principles captures the intention for which the GFCS was established.	WMO
9	0				1. The 8 principles outlined in chapter 9 are balanced. However for the	Malaysia

				<p>GFCS to attract greater national attention and commitment, the role of the national governments in the development, operation, governance and usage of the GFCS should be emphasized in the principles. It should also be emphasized that in a changing climate, climate services is required by all countries in particular (all) developing and least developing countries, hence commitment shall be given within the UN Framework to the development of the GFCS.</p> <p>2. Policy and decision makers are very concern about the changing climate. While the report recognise the synergy of the work between the GFCS and the IPCC, the report should state more explicitly and clearly how the services of the different time scales of climate shall be administered and delivered (i.e. between GFCS and IPCC).</p> <p>3. The report should state clearly a strategy for capacity building of the developing countries, in particular the development of the national component of each GFCS.</p> <p>4. On fast tracking and baseline national capabilities, the suggested baselines for enhancement of climate services are largely unestimated. The numbers quoted are for a business as usual scenario. A more thorough analysis of the requirements need to be done including the financial analysis and requirements.</p>	
9	0			<p>1) Climate data policy is a complex issue that has been discussed within WMO in the past, and that led to Resolutions 40 and 25. However, restricting access to climatological data frustrates international co-operation that is advocated in this report and that is essential for the provision of the services that are needed. Although it is mentioned in 'Principle 6' of chapter 9 that 'as much free and open data exchange' is encouraged, I believe that a more ambitious goal should be persued. The establishment of the Framework is an excellent opportunity to make a significant step towards real open data policy, a prerequisite for its success. Moreover, it is mainly a political issue and the High Level Taskforce is the forum where this can and should be addressed. We propose that within the framework the initiative is taken to start negotiations for a new international agreement on free access to climate data.</p> <p>2) The taskforce focuses on operational climate services. In contrast to weather forecasts most climate services are still in their infancy. Climate</p>	<p>Frits Brouwer  Director General  Management  Royal Netherlands Meteorological  Institute (KNMI)  Wilhelminalaan 10  De Bilt  3732 GK  Netherlands  31302206336  31302206686  31302210407  frits.brouwer@knmi.nl</p>

				<p>services are (and will likely remain) embedded in the various research communities and therefore it is essential to establish strong links with climate research. In my opinion the framework should therefore link explicitly to IPCC to assess gaps in knowledge, assess impacts, and indicate vulnerable areas. The framework could also take the initiative for a data warehouse, where data used for the IPCC assessment reports are made available for all countries in a user friendly way. In several regions of the world the WMO Regional Climate Centres may provide a suitable platforms for this.</p> <p>3) Users of climate services are very diverse and their interest may be very local. The report states that bringing the services to local stakeholders (the 'last mile') is a challenging task. As it is practically unfeasible for the framework to directly involve local stakeholders the report should more clearly point out how this 'last mile' is bridged. It is suggested to organise a series of regional workshops to discuss the needs and specifications of the climate services, with a focus on the local users.</p> <p>4) In chapter 9, principle 1, priority is given explicitly to individual countries labelled as developing and/or African countries. I suggest that the framework gives priorities by the vulnerability of regions. Regions that do not have sufficient capacity to developing adequate climate services and therefore can not cope with the climate impacts should also be considered vulnerable. Choosing for regions rather than individual countries has the advantage that it is in line with the approach of the WMO Regional Climate Centres and that it prevents imbalances in the profits of individual countries.</p>	
9				<p>The principle 7 clearly notes the importance of the potential for national meteorological services to develop or expand their climate-related capacities. In view of our previous remarks on confusing terminology in Chapter 1, I wonder how this will be interpreted by the community at large. I don't think that NMHSs that provide two-week or monthly EPS forecasts thought they were doing climate prediction.</p>	<p>Beland Michel (ASTD)  <a href="mailto:Michel.Beland@ec.gc.ca">Michel.Beland@ec.gc.ca</a>  CAS</p>
9&10				<p><i>9.2 Principles for implementing the Framework</i></p> <p>The following paragraph could be added:</p> <p>The Framework should be informed of and include human rights principles,</p>	<p>Oyuna Umuralieva  Human Rights Officer  Human Rights, Economic and Social Issues  Section  Development and Economic and Social</p>

					<p>specifically non-discrimination, access to information to all persons, effective participation of rights holders in decision making principles and access to justice as core principles for implementing the Framework as a sustainable, operational system.</p> <p><i>P- 2 - Principle 2: The primary focus of the Framework will be greater availability and improved ease of access and use of climate information</i></p> <p>The issue of accessibility and affordability should be incorporated in this principle, especially for persons with disabilities.</p>	<p>Issues Branch Office of the High Commissioner for Human Rights Av. Giuseppe Motta 48 (of. 1-03) CH-1211 Geneva 10 Switzerland Phone: + 41 22 928 9647 Fax. +41 22 928 9050 Email: <a href="mailto:oumuralieva@ohchr.org">oumuralieva@ohchr.org</a></p>
9					<p>I must have been asleep if I did not point out that there is an absence of mentioning the role of research within the principles. I don't want to tell you how to write it but progress in climate services will be based on three components: observations, research and climate services. Research is almost invisible in the principles.</p> <p>I think that it would be good to address the comments (perhaps too strong) of Tony Busalacchi about the first 8 chapters (he has not seen 9 and 10). He basically says that the focus is too much on meteorology and not as much on climate, and not enough on climate scales, including decadal, and also that more recognition should be made of the trailblazing role of the IRI. I basically sympathize with what he says, perhaps he would be less critical if he had access of the two most important chapters 9 and 10.</p> <p>WRT the executive summary, without reading the three versions it is difficult to tell. I think you and your team should write the one you prefer (option 2?) and we should look at it.</p>	<p>Eugenia Kalnay <a href="mailto:ekalnay@atmos.umd.edu">ekalnay@atmos.umd.edu</a></p>
9	2	8	2	11	<p>The focus of the framework is indicated to facilitate the use of climate information. The declaration establishing the GFCS indicates the intention as to strengthen the production, availability, delivery and application of science-based climate prediction and services.</p> <p>Does the use, which could be use to refer to application, represent the intention adequately?</p>	<p>Dr William Nyakwada Strategic Planning and Risk Management Officer, Office of the Assistant Secretary- General, World Meteorological Organization 7 bis, avenue de la Paix CH-1211 GENEVE 2, SWITZERLAND</p>

						Tel: +41 22 730 84 58 Fax:+41 22 7308023 Email:wnyakwada@wmo.int
9	2	12	4	27	There may be a need to assess if the eight principles captures the intention for which the GFCS was established.	Dr William Nyakwada WMO