

WORLD METEOROLOGICAL ORGANIZATION

Meeting of the WMO Forum: Social and Economic Applications and Benefits of Weather, Climate and Water Services

Geneva, Switzerland, 18-19 June 2009



FINAL REPORT



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I INTRODUCTION

1. The Meeting of the WMO Forum: Social and Economic Applications and Benefits of Weather, Climate and Water Services was held in Geneva, Switzerland, from 18 to 19 June 2009. On behalf of the Secretary-General, the meeting was opened by Dr Geoff Love, Director of the Weather and Disaster Risk Reduction Services (WDS) Department of WMO. Dr Love mentioned that the newly established Executive Council Working Group on Disaster Risk Reduction and Service Delivery (EC/WG DRR&SD) was preparing the Policy Framework on Service Delivery. A draft of the Policy Framework had been drawn up, but much work still needed to be done to produce a comprehensive framework for use by Members. He also mentioned that a framework on climate services was the expected outcome of the Third World Climate Conference (WCC-3) which would fit into the larger framework of whole service delivery. Dr Love stated that while the monopoly of National Meteorological and Hydrological Services (NMHSs) on data is largely over now, they have to compete in the services area. Dr Love concluded his remarks by saying that not many groups or teams worked exclusively on services, but that this Forum was one group that paid the most attention to this subject. The Forum is also the principal mechanism to implement actions associated with the Madrid Action Plan (MAP). The Meeting was chaired by Professor Donald Wilhite. The agenda as approved by the Forum and list of participants are given in Appendices I and II, respectively.

II OBJECTIVES AND EXPECTED OUTCOME OF THE MEETING

2. The Meeting agreed to the broad objectives and outcomes as follows:
- a. Review the Action Plan from the previous meeting (2007);
 - b. Review accomplishments to date of the Forum;
 - c. Focus on future activities with a particular emphasis on service delivery in collaboration with partners and stakeholders and build on the past experiences and accomplishments to develop new initiatives;
 - d. Contribute to the WMO Framework on Service Delivery; and,
 - e. Review the Terms of Reference (ToRs) of the Forum.

III VISION OF THE FORUM

Overview from WMO on the role of Forum within WMO and links to WMO Programmes

3. The Meeting participants were informed that the responsibility to follow up the MAP had been vested to the WDS Department and that the Forum was the main group with focus on the implementation of MAP. While the WDS Department would need to work with other Programmes across the WMO Secretariat to ensure that MAP was addressed in a comprehensive manner, it looked towards the Forum for advice and guidance on how to best progress this process forward.

Role of the Forum from the perspective of NMHSs - What do NMHSs need?

4. Mr Gerald Fleming led this discussion by making a presentation on "Social and Economic Applications- Needs of NMHSs". Mr Fleming very clearly divided the NMHS needs into two internal and external categories. Under the **internal** needs, **clarity** as to the public service role; **knowledge** of weather sensitive sectors; **knowledge** as to how weather information is accessed, understood and used; **understanding** of the importance of quality presentation; **culture** of listening to users and hearing their voices (especially if it is critical); and **leadership** focused on service and quality were listed. **External** needs included **Feedback** from the committed user;

encouragement to go out and survey the users; **guidance** on how to engage with users; **insight** into the needs of non-traditional user groups; **prodding** to think beyond the traditional weather time scales; a **catalyst** to break down internal divisions between weather and climate; **assistance** with understanding and correctly formulating long-range and seasonal forecasts; **encouragement** and **guidance** on how to integrate services across timescales from Nowcasting to seasonal; **knowledge** of the order of magnitude of economic benefits provided to society by services; and **appreciation** of how to shape services within available resources to maximize those benefits.

Discussions following the presentation

5. The Meeting agreed that a culture shift in how information was delivered was needed so as not to build internal and external divisions in such delivery. Rather, to involve the users in defining and designing the desired information and services.

6. The Meeting considered that NMHSs should gather information about the users in a regular and systematic manner. One of the main problems is a lack of expertise to design good surveys and also to know how to use the results of those surveys. The Meeting agreed to consider providing guidance to NMHSs as to how to design and analyse surveys and how to apply the results obtained. This point was taken up again under agenda item V.

7. While all sectors are weather-sensitive, the real question is which sectors can get the most benefit from NMHS services? It was also important to distinguish between NMHS new products and those products that assist specifically in decision making.

8. The application of data policy to water is especially difficult: a point which should be kept in mind in discussing provision of water services.

9. The NMHSs do not communicate risk information, only the weather information and this is not enough to help people with decision making. The NMHSs need to consider how to provide information to ultimately reduce risk.

10. In terms of the role of the Forum in assisting WMO Programmes, the Resource Mobilization Office (RMO) of WMO asked what the Forum could provide that could be used by the NMHSs in the countries where Spain has provided funding for the implementation of MAP? This question was addressed under agenda item V.

11. With regard to service provision, it is important to pay attention to the agencies or users dealing with high impact events and establish partnerships with them. Health is a new frontier for NMHSs and needs to be explored. In the case of megacities, emergency management, health services, and energy are three primary high-impact sectors. User surveys are important and need to be done on a group by group and service by service basis to produce the desired detailed feedback.

12. The creation of a climate services framework resulting from the WCC-3 will require attention as to how it will fit in with a larger overall services framework currently under development. How can NMHSs best package a “seamless” service? The Meeting believed that building a “climate service” divorced from “weather service” does not seem the right way to proceed since the public does not in general understand the distinction between climate services and weather services. It may be best to look at national Services and bring several institutions together (weather, climate and water) in terms of development, rather than creating new institutions. The Meeting discussed how to bring these two frameworks together and recommended building on the credibility of the day-to-day weather services, given that the core capacity of NMHSs is weather forecasting, in which they generally do very well.

13. The Meeting agreed that there was an urgent need to establish good basis for socio-economic benefits information and to incorporate it as part of normal business practice of NMHS.

14. In the most Least Developed Countries (LDCs), services are non-existent and it is very difficult to start moving from traditional practices to a service-oriented Service. It may not be a good idea to create a new separate climate service agency in those countries. The World Bank has successfully managed to use very basic data on socio-economic benefits of NMHSs in some LDCs to convince finance ministries of the value of services provided by those NMHSs.

15. The Meeting stressed that there is great benefit in interacting with other sectors and disciplines and getting to know them. In this context, the Intergovernmental Panel on Climate Change (IPCC) is an example of successful bridging between politicians and scientists.

16. The Meeting stressed that partnership was crucial in public service delivery and that it is necessary to develop Standard Operating Procedures (SOP) between users and providers. The case of Shanghai was given as example where a public weather service platform has been established in the Shanghai Meteorological Bureau (SMB), which is a very different platform from forecasting platform, and where a Chief Service Officer (CSO) coordinates the service delivery. This has provided a bridge between PWS provider and user. The Meeting returned to this topic again under agenda item V.

Role of the Forum from the Wider Community Perspective

17. The Meeting stressed that the iterative process to engage and connect user-provider communities is not about creating a new organization, but about bringing the multiple communities together. In this regard, and on the question of its role in the wider community, the Forum is a think tank and as such its major role is to get clear messages into the different constituent bodies of WMO and through them into the design and operation of WMO Programmes, and down to national levels to trigger actions. In this way, the Forum is a very valuable mechanism to WMO.

18. On the more practical level, the Meeting agreed that the tools and experiences gathered over the past three years (since the creation of the Task Force in 2006), should now be used to develop action plans on “how to” approaches to problems of Regional Associations. It also agreed that NMHSs could benefit from some guidelines on service delivery.

19. The Meeting stressed that all Members should be more proactive as regards service delivery. The example of China, where a Service Department has been created by the China Meteorological Administration (CMA) clearly shows that besides making the information available to the media and on the website, in order to provide comprehensive service, it is needed to develop a comprehensive service system. The concept of public weather services platform was created with this objective in view.

20. The support of not only WMO constituent bodies but also the senior management of WMO was viewed as crucial in enabling the Forum to influence and assist. Nevertheless, it was agreed that a number of projects and activities have taken shape and are underway which would not have happened if the Forum had not existed and these ideas had not been discussed over the past three years. The Climate and Health Working Groups in Madagascar and Ethiopia are excellent examples of this. The Meeting agreed that the Forum should forge ahead with new initiatives and plans as it has done in the past.

21. From a hydrological perspective, guidelines on service delivery and case studies on benefits of hydrological services are definitely needed and the Forum could help formulate the benefits from hydrological services.

22. The Meeting was given a presentation on the potential human health impacts of climate change. The creation of a heat health vulnerability map for the United States by the Environmental Protection Agency (EPA) as a necessary input to the development of a resilience strategy was presented. Another example of the impact of climate change is the change in flood frequency in the US Great Lakes region where it has been shown that a 10% increase in flow can result in 2.5

times increase in the probability of sewer and storm water system collapse. These examples demonstrated the application of climate data to user sectors.

23. The Meeting considered it important as to whom it aimed to influence, e.g., broadcasters as a community outside of NMHSs could play a catalyst role in broader community understanding. The World Bank is another entity that could be supportive of the initiatives of the Forum.

24. The Meeting agreed to gather the ideas of Forum members and to formulate best practices and guidance on service delivery that are implementable in a systematic manner. The idea of a small team composed of a few Forum members to work on best practices for service delivery was put forward.

How is WMO meeting the United Nations Millennium Development Goals (MDGs)?

25. The Meeting raised the question of how to ensure the involvement of climate in MDGs. One way to respond to MDGs is through ClimDev Africa. It discussed in some detail ClimDev which is completely African-owned, but so far NMHSs have not been properly engaged, even though WMO and Global Climate Observing System (GCOS) Secretariats are on the Steering Committee of ClimDev. WMO can help NMHSs develop good proposals and submit to ClimDev for funding. Unfortunately, at the moment, there exists a feeling of disillusionment and WMO needs to work hard to ensure that NMHSs are engaged. The Greater horn of Africa (GHF) project "Weather Information for All" in Africa is focused to work with NMHSs and the private sector and is a piece of solution being proposed by ClimDev.

26. As regards the MDGs and health, it is recognized by the health community that health is failing the MDGs. Hence, WHO is now increasing its efforts in this regard through engagement with the International Health Partnership (IHP).

IV REVIEW OF CURRENT ACTIVITIES

Review of the Action Plan adopted by the Second Task Force Meeting

27. The Meeting proceeded with reviewing the Action Plan from the 2007 meeting. It noted the status of implementation of the actions and requested that they be completed as indicated in the updated Action Plan (see Appendix IV).

28. The Meeting examined in detail the actions related to the decision-support tools inventory and case studies. It appreciated the work done by Dr Jeffrey K. Lazo (NCAR) in this area which had improved the information on PWS web page on socio-economic applications and benefits. It agreed that the website needed to be updated periodically, display more tools, and be expanded to include hydrology as well. It discussed whether a global website on weather economics should be constructed but decided that it may be too ambitious to embark on such a project at the moment. Rather, it provided suggestions on how to improve the Website and make it WMO-wide with connections to all departments. Details of these suggestions are given as Appendix IV to this report.

Accomplishments: Review of Projects

29. The Meeting reviewed a number of projects which had either arisen directly from the work of Forum or that in the context of service improvement had linkages with the Forum and its objectives.

30. The Climate and Health Working Group established in Ethiopia provided an effective interface between the Ministry of Health and the Met Service (see WMO Bulletin, October 2008). This framework has been used to set up similar working groups in other countries using key ingredients needed. Madagascar established a Climate and Health Working Group resulting directly from the Task Force meeting in 2007. Similarly it is likely that Kenya will proceed along similar lines.

31. Other projects resulting directly from the work of Forum are those in Chile, Peru and Panama where different user sectors have been chosen to work closely with the NMHSs to improve service delivery to those sectors.

32. The Shanghai World Expo in 2010 Nowcasting Service Demonstration Project (WENS) has provided the opportunity for a PWS Nowcasting project in Shanghai to demonstrate the application of Nowcasting to public service delivery. This is a good example of multi-agency response to severe weather events.

33. The Severe Weather Forecast Demonstration Project (SWFDP) in Southern Africa where PWS is a partner is another example of good practice of end-to-end service. The PWS involvement in this project is directly related to the improvement of service delivery, and follows the principles set out by the Forum.

34. The Meeting was also given a presentation on Development of Action Plans for Improving Weather and Climate Service Delivery in Kyrgyzstan, Tajikistan and Turkmenistan. The Action Plans are based on assessment of weather, water and climate risks; user / client needs in hydromet information; status of Hydromet services (NMHS); and economic benefits of NMHS modernization. Expected results of NMHS modernization are: capacity improvement and better service delivery; reduction of economic losses and saved lives; regional and global benefits; and, better ability to deal with climate change.

35. The Meeting agreed that good practices emerging from these projects will help other countries to learn from the experiences gained from these projects.

V WAY FORWARD

WMO Policy Framework on Service Delivery

36. The Meeting stated that in their role as data providers, NMHSs take the back stage, whereas service delivery role will give them visibility in the national arena. Thus, NMHSs should build on their existing capacity to assume the authority for delivery of services to all users / clients.

37. The Meeting reviewed the draft WMO Policy Framework on Service Delivery with the aim of contributing towards its elaboration. At first glance, it was agreed that the Framework needed to be expanded to include: i). Description of content of a service; ii). Description of the basis on which it is provided, i.e., publicly available, commercially available or cost recoverable. Each country needs to decide how the service delivery role of their NMHS fits in with those of the private sector, academia, etc.; and, iii) Relationship between services provided as part of individual national policy and those provided internationally. The Meeting also agreed that options need to be considered on how services are physically delivered. Examples include China where a service platform is set up, or the NWS Hurricane Centre where emergency managers work alongside the forecasters during hurricanes. In any case, the delivery should be seamless. There is no prescriptive way for service delivery and the Framework should prompt NMHSs to consider how to deliver services, taking into consideration their particular circumstances.

38. It was observed that while NMHSs in some regions continue with the traditional work of gathering and maintaining climate statistics, regional centres provide an additional layer of providing services which is beyond the capacity of most small NMHSs.

39. The delivery of hydrological services is very different from weather services and not many hydrological services are destined for end-users. Hydrological service delivery is a relatively new concept.

40. Improving service delivery should be included in the Framework as well as metrics or systematic ways to measure impacts of services. It should also make the distinction between

intermediate and end-users; the purpose for which the service is provided (safety, commerce, etc.); and the different range of services (warnings, forecasts, advisories, etc.); in all cases the ultimate purpose for the service should be clear.

41. The Meeting agreed that a soft copy of the Framework should be circulated to Forum members for comments, expansion of the existing content and addition of new items in line with the discussion that took place at the session.

New Initiatives

42. The Meeting reflected that it had put considerable resources in the area of health and that the projects initiated were at the implementation phase. It considered areas where it could be effective in launching new initiatives.

43. A fundamental problem faced by all NMHSs is how to connect to their users. How could the Forum come up with a model to address this important obstacle? This problem seems to occur in all user sectors and is one that hampers improving services. What are the resources required to do so? The Meeting agreed that anything that could encourage the discipline of outreach to users is useful. Perhaps the NMHSs should be encouraged to dedicate a certain percentage of their budgets for outreach programmes.

44. The Meeting saw a role of the Forum as a body to measure improvements in services. The services could be measured now. Next, performance indicators could be developed and applied and the services measured again.

45. The Meeting agreed that there were major problems as regards data and associated policies at national level. This applies equally to weather, climate and water data where NMHSs are increasingly being required by governments to sell or recover costs for data. Given that this is the reality on the ground, WMO should take the lead in guiding and advising Members on how to adapt and cope with this situation so that official NMHS data can reach the user sectors. An example was given where scientific papers published on health and climate in Kenya highlands claim no change in climate based on the climate data used. The source for climate data is not the Kenya Meteorological Department (KMD) which has not been engaged in the debate. Such publications clearly send the wrong message to both the health and climate communities. The Meeting agreed that KMD should be informed of this publication with the view of creating the opportunity to provide the correct climate data for the location in question.

46. The Meeting agreed that the Forum had collected decision-support tools and case studies at the early stage of its work. It now needed to turn its attention to an approach to service delivery and to use all the guidance materials including the tools collected for provision of services. To be sustainable, such an approach needs to be systematic, and have an infrastructure. Attention of the Meeting turned again to the concept of public weather service delivery platform initiated in China. Such a platform was needed to bridge the gap between public service providers and users. Guidance was needed from WMO on how to build such a platform and adapt its architecture to different countries, for example in Central Asia, where because the government funding for NMHSs is very small, the services have to be sold to sustain the Service. Improving services will empower the NMHS. The Meeting agreed that a small sub-set of the Forum will work to develop the concept of a public service platform. It also agreed to define the process of engaging with users. How to measure progress in service delivery, and to determine the parameters to monitor level of services and improvements?

VI ACTION PLAN OF THE FORUM

47. Based on its deliberations, the Meeting drew up an Action Plan as outlined below:
- a. Establish a sub-group on service delivery to work on the concept of public service platform using the model of China. The architecture of the platform will need to be

adaptable to all countries in different stages of development (**Action: David Rogers, Tang Xu, Pai-yei Whung, Vladimir Tsirkunov and Mohammed Boulahya**). The concept of platform will be tested in the Central Asian Republics where the World Bank is engaged in modernization project (**Focal Point: Vladimir Tsirkunov**) and RAs III / IV (**Focal Point: Francisco Villalpando**).

- b. The Forum to assist the WMO Secretariat on socio-economic assessment of benefits of NMHSs during workshops to be held in Mauritania and the Dominican Republic (**Action: Haleh Kootval to liaise with Francisco Villalpando**).
- c. Develop a brief background paper (5-10 pages) exploring possible approaches to engaging users and evaluating service needs. The following might be included in the discussion: identifying processes of engaging with users, including user need assessment; developing parameters to monitor level of services, and how to measure progress in service delivery; developing matrices to measure impacts on service delivery of building capacity of NMHSs. (**Action: Brian Mills, Jeffrey Lazo, Vladimir Tsirkunov and Haleh Kootval**).
- d. Recommend to the WMO Secretariat that senior management designate a single contact point on ClimDev Africa (**Action: John Zillman**).
- e. Develop a poster on Service Delivery for WCC-3 (**Action: Haleh Kootval and Samuel Muchemi**).
- f. Develop the WMO Framework Policy on Service Delivery for its incorporation in the climate services discussion at WCC-3 (**Action: Haleh Kootval to send electronic copy to all Forum Members for comments. The sub-group on service delivery will incorporate all comments and further develop the existing draft. The draft will be sent to the WCC-3 Secretariat and John Zillman. Deadline, end-July 2009**).
- g. Develop a working list of key considerations in the generation and use of surveys for monitoring and evaluating service delivery. In addition, develop workshops on (1) user needs assessments and metrics development for users in Central Asia and (2) survey research methods and applications. (**Action: Haleh Kootval**).
- h. Develop a working list of key considerations in the generation and use of surveys for monitoring and evaluating service delivery. In addition, develop workshops on (1) user needs assessments and metrics development for users in Central Asia and (2) survey research methods and applications. (**Action: Brian Mills and Jeffrey Lazo**).
- i. Madrid+5: Check if Congress requested specific actions to be taken on this, and if so, what will be the role of Forum (**Action: Haleh Kootval to investigate and report back to Forum**).
- j. Assist in completing the guidelines on the benefit of hydrological services and identify relevant case studies on the benefit of hydrological services (**Action: Haleh Kootval to use the occasion of Nanjing workshop in September to collect some case studies**).
- k. Investigate the possibility of contributing to user training in “African Early Warning and Advisory Climate Services” supported by the African Centre of Meteorological Application for Development (ACMAD) (**Action: Haleh Kootval to discuss with the Regional Office for Africa**).
- l. Concerning the Kenya highland climate data, explore if there is a collaborative interest between the Kenya Meteorological Department and the health sector

(Action: Steve Connor and David Rogers). Informally investigate with the KMD as to the availability of official climate data for the publication in question **(Action: Steve Connor to send the publication references to Samuel Muchemi who will unofficially enquire on any problems with climate data delivery to user sectors, especially the health sector).**

- m. Compile a list of meetings up to two years ahead, and identify where the Forum can participate and contribute **(Action: Haleh Kootval).**
- n. Circulate the client data requirement questionnaire developed by Steve Connor to all Forum members for input. Once completed, post on the website and send as a circular letter to all NMHSs **(Action: Haleh Kootval).**

VII TERMS OF REFERENCE (TORS) OF THE FORUM

The Meeting reviewed the Terms of Reference (ToRs) of the Forum and agreed upon the following revised ToRs. The Forum will:

- a. Support the implementation of the Congress decisions on the Espoo Statement and Madrid Action Plan (MAP);
- b. Consist of invited experts in the provision and application of weather, climate and water services (core membership);
- c. Assess opportunities to improve the interactions between the providers of weather, climate and water information and the users of these products and services;
- d. Continue to build an inventory of the existing decision-making tools, which incorporate weather, climate and water information. The Forum will also continue to assemble case studies of the use of weather, climate and water information in decision-making together with assessments of the related social and economic values;
- e. Provide WMO with recommendations and guidance for assisting NMHSs to more fully assess and enhance the socio-economic benefits of weather, climate and water information through the full-range of user communities;
- f. Provide WMO with recommendations and guidance for enhancing abilities of NMHSs in operation of PWS delivery;
- g. Facilitate approaches to national governments, donors and the private sector with a view to mobilize resources;
- h. Facilitate development of guidance on economic methods and applications;
- i. Facilitate pilot projects supporting service delivery through NMHSs and enhance provider-user dialogue;
- j. Keep abreast of plans for the follow-up conference (Madrid+5) proposed in the Madrid Action Plan;
- k. Review and amend the ToRs as required;
- l. Seek opportunities to disseminate information on its activities and to participate as a resource at relevant regional events; and,
- m. As a think-tank advisory mechanism, operate globally within the WMO system to provide advice on socio-economic and service delivery issues related to weather, climate and water.

VIII CLOSURE OF THE MEETING

The meeting was closed on Friday, 19 June 2009 at 1800 hours.

MEETING AGENDA

1. ORGANIZATION OF THE SESSION

- 1.1. Opening of the meeting
- 1.2. Adoption of the agenda
- 1.3. Working arrangements

2. VISION OF THE FORUM

- 2.1. Overview from WMO on the role of Forum within WMO, links to WMO Programmes
- 2.2. Role of Forum from perspective of NMHSs - what do NMHSs need?
- 2.3. Role of Forum from wider community perspective-how can it help civil society get more out of NMHSs?
- 2.4. WMO and the Millennium Development Goals (MDGs)

3. REVIEW OF CURRENT ACTIVITIES

- 3.1. Review of the Action Plan adopted by the Second Task Force Meeting
- 3.2. Accomplishments

4. WAY FORWARD

- 4.1. Review and amend the ToRs for Forum based on the vision developed during the meeting
- 4.2. Develop a new Action Plan, building on existing initiatives and the vision

5. ANY OTHER BUSINESS

6. CLOSURE OF THE MEETING

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TABLE OF ACTIONS: WMO FORUM 2009

WMO Forum: 'Social and Economic Applications and Benefits of Weather, Climate, and Water Services'					
No.	NAME	ACTION	DEADLINE	ACTION STATUS	COMMENT
1.	David Rogers, Tang Xu, Pai-yei Whung, Vladimir Tsirkunov and Mohammed Boulahya	Establish a sub-group on service delivery to work on the concept of public service platform using the model of China. The architecture of the platform will need to be adaptable to all countries in different stages of development.	-	-	
2.	Focal Points: Vladimir Tsirkunov and Francisco Villalpando.	The concept of platform will be tested in the Central Asian Republics where the World Bank is engaged in modernization project, and RAs III / IV.		-	
3.	Haleh Kootval to liaise with Francisco Villalpando	The Forum to assist the WMO Secretariat on socio-economic assessment of benefits of NMHSs during workshops to be held in Mauritania and the Dominican Republic.	-	-	
4.	Brian Mills, Jeffrey Lazo, Vladimir Tsirkunov and Haleh Kootval	Develop a brief background paper (5-10 pages) exploring possible approaches to engaging users and evaluating service needs. This may include: identifying processes of engaging with users, including user need assessment; developing parameters to monitor level of services, and how to measure progress in service delivery; developing matrices to measure impacts on service delivery of building capacity of NMHSs.			
5.	John Zillman	Recommend to the WMO Secretariat that senior management designate a single contact point on ClimDev Africa.	-		
6.	Haleh Kootval and Samuel Muchemi	Develop a poster on Service Delivery for WCC-3.		-	

No.	NAME	ACTION	DEADLINE	ACTION STATUS	COMMENT
7.	Haleh Kootval, All Forum Members,	-Develop the WMO Framework Policy on Service Delivery for its incorporation in the climate services discussion at WCC-3. -Haleh to send electronic copy to all Forum Members for comments. The sub-group on service delivery will incorporate all comments and further develop the existing draft. The draft will be sent to the WCC-3 Secretariat and John Zillman.	End-July 2009-	-	
8.	Haleh Kootval	Prepare a quarterly message to the Forum members on the progress made on different projects and activities.			
9.	Brian Mills, Jeffry Lazo	Develop a working list of key considerations in the generation and use of surveys for monitoring and evaluating service delivery. In addition, develop workshops on: (1) user needs assessments and metrics development for users in Central Asia, and (2) survey research methods and applications.			-
10.	Haleh Kootval	Madrid+5: Check if Congress requested specific actions to be taken on this, and if so, what will be the role of Forum. To investigate and report back to Forum.			
11.	Haleh Kootval	Assist in completing the guidelines on the benefit of hydrological services and identify relevant case studies on the benefit of hydrological services. To use the occasion of Nanjing workshop in September to collect some case studies			
12.	Haleh Kootval	Investigate the possibility of contributing to user training in "African Early Warning and Advisory Climate Services" supported by the African Centre of Meteorological Application for Development. To discuss with the Regional Office for Africa.			
13.	Steve Connor and David Rogers	Concerning the Kenya highland climate data, explore if there is a collaborative interest between the Kenya Meteorological Department and the health sector.	-	-	

No.	NAME	ACTION	DEADLINE	ACTION STATUS	COMMENT
14.	Steve Connor and Samuel Muchemi	To informally investigate with the Kenya Meteorological Department (KMD) as to the availability of official climate data. Steve Connor to send the references of the publication in question to Samuel Muchemi who will unofficially enquire on any problems with climate data delivery to user sectors, especially the health sector.		-	
15.	Haleh Kootval	Compile a list of meetings up to two years ahead, and identify where the Forum can participate and contribute.			
16.	Haleh Kootval	Circulate the client data requirement questionnaire developed by Steve Connor to all Forum members for input. Once completed, post on the website and send as a circular letter to all NMHSs.		-	

TABLE OF OUTSTANDING ACTIONS FROM 2007 MEETING OF THE TASK FORCE

<p align="center">WMO Forum: ‘Social and Economic Applications and Benefits of Weather, Climate, and Water Services’ - formerly, Task Force (TF)</p>					
No.:	NAME:	ACTION:	DEADLINE:	ACTION STATUS:	COMMENT:
1.	All Members of TF	To review the list of decision-support tools and case studies on the Website and re-submit missing ones to the WMO Secretariat, i.e., SMuchemi@wmo.int .	-	-	To do
2.	All Members of TF	To continue to add new tools and case studies to the inventory. New members are especially encouraged to submit these items.		-	To do
3.	WMO Secretariat	The list of inventories to be carried in future PWS Guides.	-	-	On going
4.	Prof. Wilhite / Ms Kootval	To consider the establishment of an expert team on Economic Assessment.	31/10/2007	On agenda for discussion	To keep this in view
5.	Secretariat	It was agreed that Dr Bruce Stewart would be requested to take lead on screening future inventories.	-	-	To do

Table of Actions on Improvements to the Socio- Economic Applications Website

Number:	Action:	Action by:	Deadline:	Comments:	Date done:
1.	To style the Socio-Economic (SE) Website along the lines of the WCC-3 Website.	Samuel Muchemi – To coordinate with the WMO Web Master	31/07/2009	Request to Webmaster sent on 25/06/2009 but no response as of 16/07/2009. To follow -up.	
2.	Immediately review the website material and provide more input and design suggestions.	Jeffrey Lazo	31/07/2009		
3.	Link SE Website from the WMO main page.	Samuel Muchemi / Webmaster	31/07/2009	Linked on 7/07/2009, but link caused problems and was temporarily removed to be restored.	
4.	Provide tools and case studies for Hydrology.	Datus Rutashobya	On-going		
5.	Request for more decision-support tools and case studies proactively.	WMO Secretariat	On-going		
6.	Complete tool and case studies description forms and keep them updated.	Samuel Muchemi	31/07/2009		
7.	Include published papers of case studies or post links to the published papers depending on copyright constraints.	Samuel Muchemi	On-going	Link done to: WAS*IS paper by Julie L. Demuth ^a , Eve Grunfest ^b , Rebecca E. Morss ^a , Sheldon Drobot ^c and Jeffrey K. Lazo ^a	16/07/2009
8.	Consistently verify that all decision-support tools on the Web are of good quality.	All Forum Members	On-going		
9.	Make a feedback link for users to assess usefulness of the Website.	Samuel Muchemi / WMO Webmaster	31/08/2009	Awaiting 1. above	
10.	The WMO Forum – make it more visible on the SE Web and make a short mission statement.	WMO Secretariat / Donald Wilhite	31/07/2009		

Table of Actions on Improvements to the Socio- Economic Applications Website

11.	To link SE Website main page to the National Drought Mitigation Centre Website. Make other relevant links as well.	Samuel Muchemi	31/07/2009	Done	16/07/2009
12.	To include visits counter.	Samuel Muchemi / Webmaster	31/08/2009	Awaiting 1. above	
13.	Link SE Website to all WMO Departments.	Samuel Muchemi / Webmaster	31/08/2009	Awaiting 1. above	
14.	Review site and have potential users review it as well.	Forum Members	30/09/2009	Awaiting 1. above	
15.	Evaluate Website on a regular basis.	Jeffrey Lazo	On-going		
16.	Add names and update contacts of WMO Forum Members.	Samuel Muchemi	31/07/2009		