



WMO Climate Coordination Activities: 1979-Present

Background Information

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WCP Background

The World Climate Program (WCP) was established in 1979 by Resolution 29 of WMO Congress VIII. This resolution formed WCP with four component programs: The Climate Data Programme (CDP), The Climate Applications Programme (CAP), The Climate Impact Study Programme (CIP), as well as the Climate Change and Variability Research Programme (CRP). These four components were renamed in 1983 with Resolution 14 of Congress IX as The World Climate Data Program (WCDP), The World climate Applications and Services Program (WCAP), The World Climate Impact Assessment and Response Strategies Program (WCIRP) (implemented by UNEP), and The World Climate Research Program (WCRP) (implemented jointly by ICSU and WMO).

The initial structure of the WCP as of the 1983 resolution called for annual review and guidance to be conducted by the WMO Executive Council (EC). This coordination included the meetings of executive heads of international organizations involved in the WCP, meetings of the chairmen of the WMO Advisory Committee for WCAP and WCDP (ACCAD), meetings of the ICSU/WMO Joint Scientific Advisory Committee (SAC), as well as meetings of the Advisory Committee for the WCAP and WCDP. The continuous coordination of these activities was to be handled by the WMO secretariat.

After the second World Climate Conference in 1991, Resolution 12 was passed in Congress XI. It gave the programs the names they bear today WCDMP, WCASP, WCIRP, and the WCRP. This resolution also added the support of GCOS as an essential activity of the WCP. Resolution 12 created the Coordinating Committee for the WCP (CCWCP) to act as the coordinating body for program activities. In consultation with UNEP, UNESCO and its IOC, FAO and ICSU, and other relevant organizations, invitations to join the committee were sent to the chairmen of steering/advisory committees for the WCDMP, WCASP, WCIRP and WCRP, the chairman of the scientific and technical committee for the GCOS, the chairman of the ICSU scientific committee for the IGBP, the chairman of the IPCC, the chairman of the INC/FCCC, as well as the representatives of World Data Centres. These resolutions provided the initial mechanism that began inter agency climate coordination activities.

Building upon the WCP: The Climate Agenda

In 1991 *The Climate Agenda* was drafted as a new model for interagency cooperation in relevant climate impacted sectors. The partner agencies involved were WMO, UNEP, IOC of UNESCO, FAO, and ICSU. The agenda consisted of four thrusts which closely reflected the four components of the WCP. They included:

- 1) *New frontiers in climate science and prediction* whose focused programs included: WCRP, IGBP, IHDP
- 2) *Climate services for sustainable development* whose focused programs included: WCASP
- 3) *Studies of climate impact assessments and response strategies to reduce vulnerability* whose focused programs included: WCIRP, IHDP
- 4) *Dedicated observations of the climate system:* whose dedicated programs included GCOS

In 1995 the agenda was formally endorsed by WMO in Resolution 7 of Congress XII. This resolution also offered an invitation to WHO which joined as a partner in 1997.

WMO assumed the leadership role regarding interagency coordination for the agenda. It utilized the existing CCWCP, which already worked with, and was comprised of, members of the focused programs of the agenda, as an interim coordinating body. The CCWCP fulfilled this role until 1997 when the Inter Agency Committee for the Climate Agenda (IACCA) was formed as the official interagency coordinating body for the agenda.

The original proposal determined that the agenda could be fully implemented within the existing structure of international climate related programs if other international organizations sponsoring climate related programs:

- 1) Strengthened and extended existing international programmes according to the priorities of the agenda
- 2) Introduced management practices which monitored outputs against agreed performance standards
- 3) Ensured better planning and coordination by establishing an inter agency coordination mechanism

The report also expected full implementation to depend on government action. These actions included:

- 1) Increasing support to national activities as a part of international programmes which they had helped to design
- 2) Strengthening or establishing, as appropriate, national climate programmes, or programmes with similar responsibilities
- 3) Building scientific and technical capacity in developing nations as well as nations with economies in transition
- 4) Funding international planning and coordination mechanisms
- 5) Taking decisions in response to the climate agenda to meetings of the governing bodies of the international organisations involved in the agenda

The value added by the climate agenda was to be increased efficiency as well as guidance and priority setting for members and programs. Specifically the agenda sought to:

- 1) Identify and eliminate duplicate efforts
- 2) Identify and eliminate activities to fill gaps
- 3) Provide guidance as to climate priorities for agencies and programs
- 4) Enhance the quality of all activities by strategically targeting goals and actions to meet them, all at the global level

These goals depended on the guidance and cooperation organized by the IACCA. A number of strengths and weaknesses of these coordination efforts are raised in the reports of the IACCA and provide a valuable lesson for future coordination between WMO and other agencies in the realm of climate change.

IACCA

The two principle functions of its composition were 1) The identification of priorities and 2) The review, planning and coordination of activities as well as continuous monitoring of progress towards achievement of the aims of the climate agenda.

Within this general scope the IACCA focused on creating an increased emphasis on the outputs of the intended work while building effectively upon the strengths and contributions that international climate related programmes brought. This required:

- 1) The augmentation and, where necessary, creation of scientific steering committees for individual programmes charged with determining the best way of meeting identified goals
- 2) The establishment of clear mechanisms through which planning and coordination of the programmes within each thrust could be achieved while ensuring the use of effective management practices that created a clear set of results and associated outputs, against which progress could be assessed
- 3) That activities and programme goals underwent coordinate review at appropriate points in their evolution
- 4) Coordination at the national level in the form of national climate programmes
- 5) The alignment of national funding priorities with international programmes
- 6) The simplification and strengthening of links between national funding agencies and international programmes and,
- 7) That national climate programmes provide a mechanism which coordinated national climate related activities, allocation of national priorities, and reporting to the bodies responsible for the management of the climate agenda

The IACCA had three specific responsibility areas: 1) review of coordination activities, 2) resources requirements for priority areas, and 3) reporting information to member agencies.

- 1) The first area entailed a continual review of the coordination of agenda activities. This included introducing output oriented evaluation methodologies, coordinating the review of projects on the basis of these methodologies, and highlighting areas of synergy between programmes so that mechanisms could be devised to exploit these synergies.
- 2) The second entailed identifying priority areas, and their resource requirements, within the agenda. This included pursuing the development and implementation of a methodology for assessing the resources required to implement international climate related programmes. It also required seeking commitments of resources from both national and international organisations and governments in order to implement the climate agenda. This responsibility proved to be a particular failure of the coordination which will be discussed subsequently.
- 3) The final responsibility area was reporting. This included reporting to the governing bodies of the organisations involved in the climate agenda, as well as providing information to other organisations as they required it. IACCA documents

show that the agenda as well as the IACCA did not live up to these expectations. The following is a synthesis of its weaknesses and strengths.

Weaknesses

The IACCA identified several general limitations or weaknesses of the initial planning and implementation phase of the agenda, these included:

- 1) A limited set of documentation demonstrating prioritization of issues, joint objectives and how to move forward
- 2) A lack of adequate documentation of proposed contributions to other agencies prepared by WMO
- 3) An apparent lack of commitment of other agencies beyond the early stages of planning.

These limitations led to a number of specific recommendations at the three meetings of the IACCA between 1997 and 1999.

Lack of Documentation

The first was the need to develop an external message, through coherent documentation, that could be used in presentations to other bodies, such as the UNFCCC or the UNCCD, to help properly explain the position and purpose of the agenda. Conversely, the committee found it important for the agenda to properly differentiate, perhaps through documentation, the broader agenda from the narrower focus of the WCP. This was particularly important due to the significant overlap between the 4 thrusts of the agenda and the 4 components of the WCP, in addition to the significant leading role WMO played in the coordination and funding of the IACCA. Additionally they found that no clear priorities for the agency existed which led to a limited understanding of the agencies motivation and purpose. This resulted in a broad, unfocused multi-agency approach that did not help the IACCA utilize sector specific climate risk management.

In response to the problems of broad and unfocused activities the committee determined that participating agenda agencies needed to prioritize activities under a few issues of critical importance to member governments. The committee saw the necessity of focusing on a single issue of national or regional economic importance which would benefit from the application of climate information. Within this issue area work would proceed with as many partners as possible, including national governments when developing proposals. Additionally these activities should be planned for short to medium term time horizons.

Funding and Resource Allocation Restraints

A common theme evident throughout review documents concerned the inadequate level of support available for international coordination activities within the various secretariats and programmes. International funding organizations in general support the implementation of projects, not the interagency coordination of them. Thus the IACCA saw the need to be more project focused.

A specific example of a model project brought to the attention of the committee at its second meeting in 1998 was CLIMAG (Climate Prediction and Agriculture). This project aimed at improving crop production through climate forecasting skills and was seen as an ideal model for cooperation. It sought to establish the forecasting needs of local, sub

national and national decision makers demonstrating its focus on community and end user needs. It created a robust framework for developing improved techniques for forecasting and yield as well as developing and evaluating ways of using such information to improve decision making in crop production. In the end it owed its success to its efforts to build upon the strengths of several agencies from several disciplines. In essence the strength of this program was the contextualization of climate information through the participation of various sectors and end users. This contextualization provides the basis of any successful knowledge management system and is at the heart of what WMO is seeking to achieve with its climate coordination activities.

A part time, minimally funded secretariat was seen as clearly inadequate to provide the necessary support to IACCA to enable it to carry out its functions effectively. A lack of proper planning and coordination of a coherent and organized approach that garnered the full support, in terms of both financial and human resources, was evident from the outset of the agenda. The committee felt that this severely hampered the effectiveness of the overall agenda. In fact the IACCA agreed in its second session that members either invest in the climate agenda concept or reject it and dissolve IACCA. One suggestion to remedy the urgency of the problem was the possibility of a rotating secretariat function in order to reduce financial burden which primarily fell upon WMO. Another was to compile information on current levels and profiles of funding across agencies engaged in climate related activities so that an accurate picture of available funding was drawn.

However financial dilemmas were not isolated to the IACCA. Partner agencies such as UNEP faced large annual variations in budget that produced problems in planning and implementation. Considering the large role that UNEP played in the agenda through its implementation of the third thrust this proved to be a critically limiting factor. This is reflected by evaluations of the success of the various thrusts which noted that the third thrust, whose focused program was the WCIRP, was the least successful, due in large part to these budgetary restraints.

Lack of Ownership on behalf of Partner Agencies

There was a distinct lack of human resources that manifested itself through a lack of ownership of the Climate Agenda and its activities across participating agencies. FAO and WHO for example, were full participants in the Climate Agenda, but did not formally co sponsor any thrust. The committee found that the most successful components of the Climate Agenda were those with two or more agencies in active partnership. This lack of ownership in the agenda combined with a lack of stable financing proved to be the two largest factors in its limited success.

Strengths

While many weaknesses were highlighted there were silver linings to the failures of the IACCA and previous attempts at climate coordination activities. In general, coordination provides a cost effective method of delivering international commitments as well as a useful mechanism for enhancing benefits from national programmes. The most significant achievement of coordination efforts thus far has been the establishment of IPCC with UNEP which has provided authoritative and unbiased information on climate change and variability. However WMO has not consistently promoted itself as the primary provider of the information underpinning the IPCC reports.

The internal coordination that WMO provides its NMHS' was seen as playing a vital role in the success that the climate agenda did enjoy. Observations of the climate system through coordinated national efforts produced global data sets which have greatly aided in the work of the IPCC and other agencies. WMO must recognize this vital asset and continue to improve international understanding of the value of these observations through its external messages and documentation.

Additionally the agenda enjoyed the success of early warning systems that continuously monitor environmental conditions and their impact on food crops. These have been developed and deployed in Africa, Asia, and Latin America. This is a prime example of the success of a knowledge management system informed by a scientific knowledge base provided by WMO and contextualized by partners in various sectors as well as end users.

IACCA Suggestions for WCP

The agenda was built to closely mirror the work of the 4 component programs of the WCP. Within the WCP certain programs have demonstrated a high level of success while others have faltered. The WCRP, for example, has served to empower the research community very well and its performance has been seen as an outstanding success. However the WCIRP was the least successful of the component programs due in large part to instability in funding levels. The WCIRP also suffered due to the fact that social science, impact research and economic communities lack a cohesive international structure that facilitates the identification of needs. Finally overlap between the activities and mandate of the WCIRP and those of the WCASP led to further limitations to the success of the WCIRP.

WCASP and WCDMP while moderately successful were limited due to a lack of support on the behalf of Climate Agenda agencies. This included support solely provided by WMO even though their activities involved FAO, WHO, and UNESCO. Despite strong urging on behalf of WMO for the other members to become formal sponsors of these programs nothing materialized.

A final strength recognized by the IACCA was inter-agency coordination mechanisms between thrusts of the climate agenda were in place and operated effectively. This resulted from the efforts of the partners created by the formation of the WCP. The committee saw that these partnerships were a strong base from which to build future inter-agency coordination success.

The IACCA felt that the WCP could learn from these mistakes. Specifically it saw needed adjustments to improve the effectiveness of its weaker components, the integration of activities across its components, as well as the linkages to other environmentally related programmes. It also stressed the need, as previously mentioned, for WCP and WMO to differentiate the activities of WCP from broader coordination activities. These were at the time coordinated under the agenda but have now taken on new form under the auspices of the emerging HLCP coordination mechanism. As WMO assumes its role in the new coordination mechanism the depth of its experience in this field, drawn from the lessons learned, will play a vital role not only in its success, but the success of the efforts of all agencies involved.

2004 EC-AGCE Advisory Report: Leadership Role in Climate

In 2004 the Executive Council Advisory Group on Climate and Environment, drafted a report which identified six recommendations which would help to establish the leadership role of WMO in climate in the years to come. This report provides an excellent addition to the lessons learned from the IACCA. It is focused exclusively on WMO activities that can help provide strong internal coherence to ensure WMO as a leader in climate activities. Although it was drafted prior to the emergence of the HLCP mechanism many of its recommendations compliment and echo the lessons from the IACCA.

The six recommendations of the report were:

1) *Establishment of clear organisation wide vision and strategic priorities to guide WMO climate related initiatives and activities*

The report recommended that a detailed study be conducted to provide critical background information that would enable WMO to make informed decisions. This study would identify and define clear organisation wide strategic priorities including goals and objectives in core areas of climate activity (data, research and predictions, sector specific applications etc...) as well as communicate these effectively across WMO. In order to accomplish this it recommended that the long term strategic planning process of WMO be objectively evaluated and revised to ensure it reflects the strategic priorities of WMO. It also recommended that the vision and strategic priorities be effectively communicated, understood and accepted across WMO.

2) *Strengthening of WMO core capabilities in areas that are strategic to its leadership role*

Proceeding from the creation of clear strategic priorities, the report found that WMO could further strengthen its core capabilities by harnessing the contributions of the activities of programs and NMHS. It defined the core capabilities as i) observations, data exchange, data management, ii) research and predictions, iii) climate product and services, and iv) capacity building, educational and training services. It recommended an evaluation be completed to determine WMO strengths, weaknesses, and challenges in each of the core areas. This information would then aid in developing an implementation plan that would build upon WMO strengths while addressing its weaknesses. It recommended more active and consistent participation by the secretariat to ensure that WMO support and capabilities are conveyed to other bodies. It also recommended prioritizing, coordinating and communicating activities in each of the core activities across the relevant programmes within the secretariat to ensure optimal contributions to WMO strategic priorities.

3) *Improvements to WMO organisational structure and dynamics to ensure effective integration and communication of activities across WMO*

The report recommended that WMO implement formal coordination and communication of climate activities within the secretariat via a matrix management approach. An organizational analysis would provide the background information for the implementation of effective coordination and communication mechanisms that build on the currently effective structures and address existing organizational weaknesses. Additionally, it found that communication and feedback mechanisms needed to be strengthened to ensure that the WMO community is kept abreast of the latest activities both internally and externally as well as their implications for core areas of strategic priority.

4) Development of strong and on going relations with international and regional agencies involved in areas of high priority to WMO

It found that WMO could strengthen its leadership and visibility in its core areas through strategic partnerships with key international and regional agencies with activities in sectors of high priority to WMO. Such collaborations could lead to i) Enhanced capabilities in developing sector specific climate product and services by leveraging other agencies activities and, ii) Increased visibility for WMO. This could be achieved by the secretariat proactively identifying and prioritizing potential strategic partners based on evaluation of other agencies' climate related activities, identification of joint objectives and their mutual benefits, establishment of specific joint activities, as well as identification of each organizations' roles in accomplishing these goals. It found it important to clearly articulate WMO capabilities and potential contributions as relevant to the objectives of its potential partners. Strategic partnerships should then be developed on a bilateral or a multilateral basis depending on the interest and situation. These partnerships should create organizational mechanisms that would facilitate on going effective collaborations with the target partners.

5) Development of effective sector specific climate products and services

To achieve this objective it found that WMO should urge NMHS to promote at the ministerial level the linkages between climate and their high priority national issues and the important climate info in enhancing climate sensitive policy and business decisions. It found that sector specific climate application programs of the secretariat need to be prioritized, designed, and implemented to ensure continuity and consistency over time. Specific capabilities at this level should be strengthened through strategic partnerships with international and regional agencies. The secretariat by coordinating the activities of WMO sector specific application programs, could continue to provide necessary support to NMHS to broaden and enhance their capabilities in provision of sector specific climate products and services. NMHS could further strengthen their capabilities by establishing strategic partnerships with key organizations in their countries as well as with relevant regional agencies.

6) Establishment of strong visibility on international, regional and national level sin areas that are strategic to its leadership role.

This first and foremost recommendation for this objective was to organize and host a world climate conference 3. Additionally it found that the secretariat would need to proactively and consistently participate in relevant UN conventions and other high profile conferences. This required appropriate advance planning, with the goal to promote new scientific and technological climate developments and WMO core activities as relevant to the forum. A more proactive approach to marketing WMO as the main provider of climate information to the IPCC was also a main priority. On regional level, opportunities for promoting WMO activities in regional high level political and economic forums should be identified and realised. More effective educational and promotional materials and brochures should be developed to promote WMO capabilities related to national issues of high priority. On national level, particularly in LDCs, with support from the secretariat, a promotional programme should be implemented through the PRs to raise awareness about climate, at the ministerial level.

Current Climate Change Coordination: High Level on Committee Programs (HLCP)

System wide reform efforts known as ONE UN are currently underway. They are focused on the fields of development, humanitarian assistance and the environment, while taking into account the cross-cutting areas of gender equality, sustainable development and human rights. In the past UN agencies have suffered from a lack of cooperation between organizations due to competition for funding, mission creep and outdated business practices. This reform has been undertaken in order to address inefficient and ineffective governance, and unpredictable funding which have led to incoherent policy, duplicative efforts, and operational ineffectiveness across the UN system. A set of clear recommendations have been proposed to remedy the situation based upon the following five strategic directions:

- 1) Ensure coherence and consolidation of United Nations activities, in line with the principle of country ownership, at all levels (country, regional, Headquarters)
- 2) Establish appropriate governance, managerial and funding mechanisms to empower and support consolidation, and link the performance and results of United Nations organizations to their funding
- 3) Overhaul business practices of the United Nations system to ensure a focus on outcomes, responsiveness to needs and the delivery of results by the United Nations system, as measured in advancing the Millennium Development Goals
- 4) Ensure significant further opportunities for consolidation and effective delivery of "One United Nations" through an in-depth review
- 5) Undertake implementation urgently but not in an ill-planned and hasty manner that could compromise permanent and effective change.

It is within these reform efforts that the HLCP has proposed a new mechanism for climate coordination efforts. With the election of Ban Ki-moon to the post of Secretary General of the UN, climate change emerged as a central priority requiring system wide coordination. With this in mind the HLCP after some deliberation created a coordination framework which has identified five focus areas of climate change coordination. These include:

- 1) Reducing Emissions from Deforestation (REDD): FAO, UNDP, UNEP
- 2) Technology Transfer: UNIDO, UNDESA
- 3) Finance for Mitigation and Adaptation: World Bank, UNDP
- 4) Capacity Building: UNDP, UNEP
- 5) Adaptation: HLCP working group on Climate Change

These five focus areas are supported by convening agencies which address cross cutting issues. These include:

- 1) *Science knowledge base* consisting of science, assessment, monitoring and early warning which is implemented by WMO and UNESCO
- 2) *Support of global, regional, and national action* implemented by UNDP, UNDESA, and UN regional commissions
- 3) *Public awareness* implemented by UNEP, and the UN communication group

4) *Climate Neutral UN* implemented by UNEP.

This framework has additionally identified twelve relevant sectors. These include:

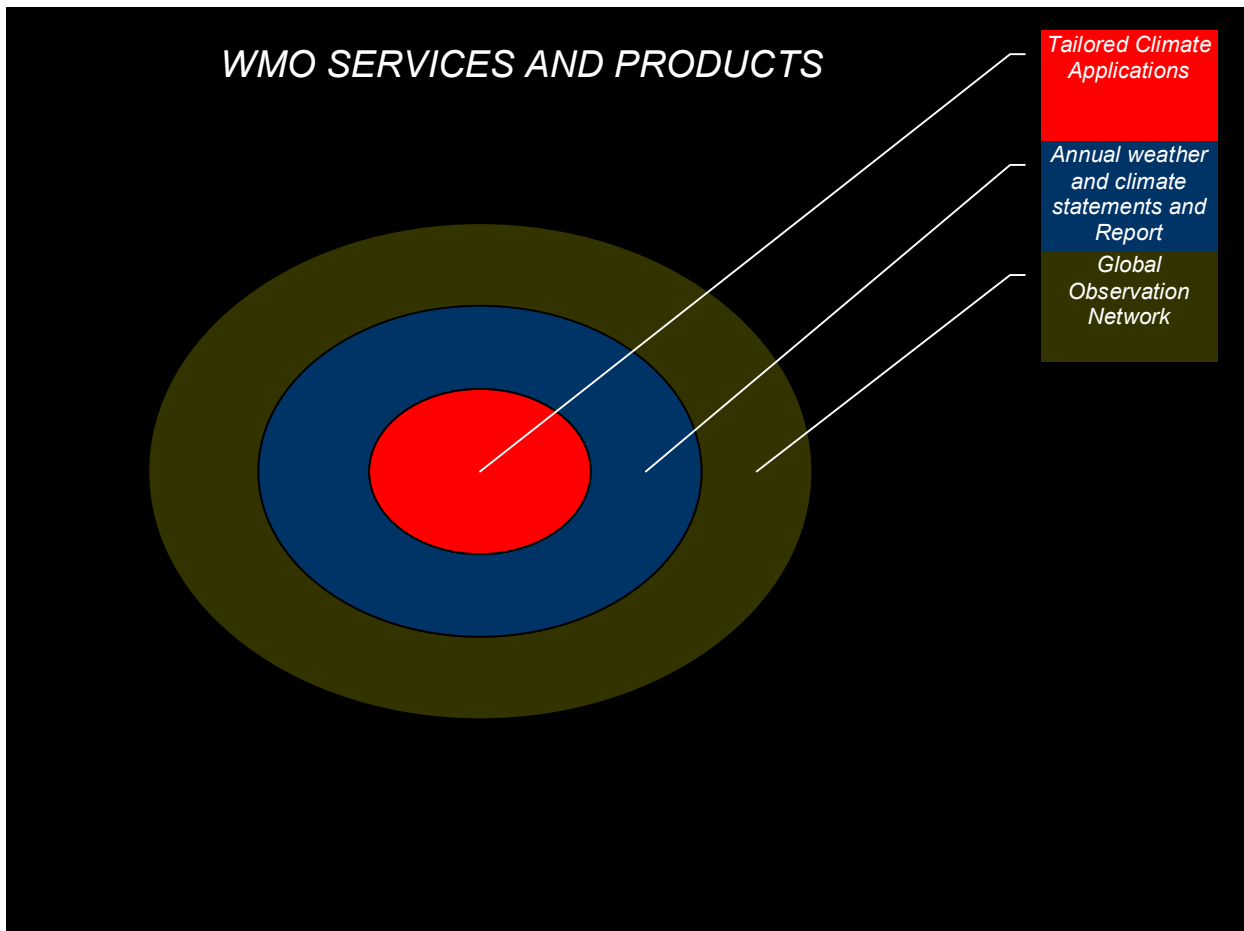
- 1) Energy (UN Energy)
- 2) Agriculture (FAO)
- 3) Fresh water (UN-Water)
- 4) Oceans (UN-Oceans)
- 5) Health (WHO)
- 6) Forestry (FAO)
- 7) Transport (IMO, ICAO, UPU)
- 8) Disaster Risk Reduction (ISDR, WMO)
- 9) Human settlements (UN-HABITAT)
- 10) Education (UNESCO)
- 11) Industry (WIPO)
- 12) Green UN (EMG/UNEP)

The five focus areas, the four convening programs, and the eleven sectors combine to form the present climate coordination activities mechanism.

HLCP Climate Coordination Activities					
	Five Focus Areas				
	Adaptation	Financing	REDD	Technology Transfer	Capacity Building
	HLCP	World Bank UNDP	FAO UNDP UNEP	UNIDO UNDESA	UNDP, UNEP
Convening Agencies & Cross Cutting Issues <u>Science Knowledge Base</u> <u>Support of global, regional, and national action</u> <u>Public awareness</u> <u>Climate Neutral UN</u>	<i>Implementing Agencies</i>				
	<i>WMO & UNESCO</i>				
	<i>UNDP, UNDESA, & UN regional commissions</i>				
	<i>UNEP & UN communication group</i> <i>UNEP</i>				
Sectors <u>Energy</u> <u>Agriculture</u> <u>Fresh Water</u> <u>Oceans</u> <u>Health</u> <u>Forestry</u> <u>Transport</u> <u>Disaster Risk Reduction</u> <u>Human Settlements</u> <u>Education</u> <u>Industry</u> <u>Green UN</u>	<u>UN Energy</u> <u>FAO</u> <u>UN Water</u> <u>UN Oceans</u> <u>WHO</u> <u>FAO</u> <u>IMO, ICAO, UPU</u> <u>ISDR, WMO</u> <u>UN-HABITAT</u> <u>UNESCO</u> <u>WIPO</u> <u>EMG/UNEP</u>				

WMO Proposed role in the HLCP

WMO has laid out its role in the HLCP mechanism as the science knowledge base by demonstrating its expertise in global climate information. It has demonstrated the multiple levels of information and products it offers in the form of direct observations, annual



weather and climate reports, as well as tailored climate applications. This role was proposed to Ban Ki-moon prior to the Bali climate talks and forms the basis of WMO current climate coordination activities. WMO has a strong set of capabilities and experience to draw from to further improve its proposed role.

Science Knowledge Base

In undertaking the task of creating one unified science knowledge base for the UN system WMO has found that information on activities of UN agencies is presently haphazard and scattered. This requires initial efforts to collect basic information on what work various agencies and actors are actually doing in this cross cutting area. A possible platform for the centralization of this information, as well as a basis for the knowledge management system, is the UN web tool that is being created through the HLCP mechanism.

Another initial activity undertaken by WMO, in conjunction with UNEP, FAO, and UNESCO IOC, to further standardize observations has been the establishment of the Inter Agency Coordination and Planning Committee (ICPC). This body sets standards and reporting guidelines for terrestrial observing systems for climate data and associated products. This international framework mechanism will effectively and efficiently enhance the research of international climate scientists.

Aside from these initial activities, the first and foremost role for WMO is the maintenance of its worldwide observing and monitoring networks. These networks are largely the result of the cooperation fostered by the WMO between NMHS'. Building upon this network WMO will seek the establishment and maintenance of systems for the rapid exchange of climate information. This includes early warning systems in the form of drought monitoring and heat wave systems, which WMO has been instrumental in creating in Europe as well as Africa. WMO will also proactively seek to apply weather, climate, water and related environmental information to agriculture, development, transport, water resources, health and many other relevant human sectoral activities. As a means of building upon the impressive scientific body of information regarding climate in order to further a knowledge management system, WMO will seek to increase the coordination of international aspects of research, capacity building, training and generation of relevant knowledge.

While WMO will provide information from these observation networks to decision makers in all thirteen identified sectors across the five focus areas, it will specifically focus on Mitigation and Adaptation due to its expertise in each field. This will be accomplished by providing a knowledge management system fed by WMO authoritative science. It will work to create sector focused projects, guidelines, and activities which are grounded in the scientific information provided by WMO.

WMO operational network consists of Climate Data Management, Monitoring, and Decision making tools. The World Climate Data Management Programme (WCDMP) of the WCP coordinates efforts in capacity building, training, research and development to provide reliable climate observations, which can be transformed into useful products for stakeholders to use in the development of their adaptation strategies. WMO coordinates through the WCP global efforts in the collection, management and provision of quasi-real time and historical climate data. It also regularly monitors the state of the climate to keep track of its trends and major phenomena all over the world. Products created from these efforts include: the WMO Statements on the status of the Global Climate, Climate Watch Systems, Climate Change Detection Tools, Regional Outlook Forums and the El Nino Update. Finally WMO contextualizes basic climate data into relevant sectoral information through its focus on knowledge management. WMO utilizes this knowledge management system to aid developing countries and regions by helping them to obtain full benefit from expertise and knowledge in the form of decision support systems and tools relevant to local needs. The next step for the knowledge management system is The World Climate Conference 3 which expects to provide the benefits from seasonal to inter annual prediction which are of direct interest and relevance to policy makers, the media and the public.

A highlight of WMO past activities which will be forefront in providing the background scientific analysis of climate change has been the WMO-UNEP joint body of IPCC. This body assesses the scientific, technical and socio-economic information relevant to understanding the scientific basis of the risk of human-induced climate change, its potential impacts as well as options for adaptation and mitigation. These assessments first alerted the world to the severity of climate change and will continue to be completed to help evolve our understanding of the complex nature of climate change so as to enhance the knowledge management system.

All of these capabilities rely on WMO network of NMHS' throughout the world. In order to maintain this network WMO has championed capacity building and knowledge transfer in its interaction with NMHS'. WMO has achieved this through a variety of ongoing programs

including its education and training programme. Through this program WMO assists the NMHS' in their efforts to contribute, to the development plans of their countries and to become full partners in global collaborative efforts. This includes 23 regional training centres as well as a network of cooperating universities and advanced training institutions. The CLIPS project also provides regional training sessions around the world which assists users in applying climate information. Additionally, The Implementation of Climate Data Management Systems (CDMS) aims at using modern IT technologies to improve data management infrastructure in LDCs. Underlying all of these efforts are a set of eight Technical Commissions, maintained by WMO, that establish methodology and procedures as well as make recommendations.

One example of WMO climate information aiding communities in sustainable development is its disaster risk reduction programme (DRRP). Natural disasters present a significant obstacle to sustainable development and are particularly damaging to developing countries. Through the DRRP, WMO leverages its network, and partners, for development of capacities for improving hydro meteorological disaster risk assessment within the context of changing climate to provide tools and options for policy makers.

Additionally, WMO is proactively contextualizing its climate information to provide communities with agricultural tools and applications. WMO assists members in the provision of meteorological and related services to the agricultural community to help develop sustainable and economically viable agricultural systems, improve production and quality, reduce losses and risks, increase natural resources and decrease pollution by agricultural chemicals or other agents that contribute to the degradation of the environment.

Learning from the past: The way forward for WMO in the HLCP

The role laid out by WMO incorporates many of the lessons and recommendations of the past. It can however still benefit by more heavily emphasizing certain activities and core competencies as well as further defining its version of a knowledge management system and all that it entails. The following is a synthesis of the recommendations from the EC-AGCE as well as the dissolved IACCA and how they can aid in improving WMO leadership role as the science base of the HLCP mechanism.

The first and foremost concern of the IACCA was the need for stable sources of funding and leadership for any set of coordination activities. This may have been the single largest problem facing the climate agenda. This however is not reflected in the current description of WMO role and activities in the HLCP mechanism. Despite the prominence of climate change in the international arena, there is the potential for improper or insufficient resource allocation. WMO will not shoulder the same responsibilities for spearheading the cooperation of UN agencies as it has in the past however it should begin any and all activities in climate coordination by securing the proper amount of funding from all involved agencies.

This also serves the purpose of increasing ownership in programs by partner agencies. A lack of ownership was viewed by the IACCA as one of the large failures of the climate agenda. Conversely programs which had at least two contributing organizations were successful. The same concerns were voiced by the EC-AGCE concerning effective partnerships. Any programs or activities undertaken, which do not address this as a fundamental issue, will likely face the same failures as the climate agenda.

A fundamental issue that is not entirely addressed in WMO proposed role is its definition of a knowledge management system. The knowledge management system *is* WMOs' contribution to the HLCP mechanism. The system will provide many functions but the highest level function is the development of issue specific climate tools and applications. However in order for WMO to manage the system it needs to define its internal capabilities and vision. From this internal vision WMO can then act in its external role in the HLCP as a convening agency for the science knowledge base.

Both the IACCA and the EC-AGCE recommended that WMO produce documentation that clearly defines and differentiates WMO in the climate arena. The IACCA found that WCP activities needed to be differentiated from broader coordination activities. This differentiation is echoed by the EC-AGCE recommendation which called for the establishment of a clear organisation wide vision and strategic priorities. In order to achieve this, the EC-AGCE called for the strengthening of WMO core capabilities related to the strategic role it wishes to take in climate. These core capabilities are:

- i) observations, data exchange, data management
- ii) research and predictions
- iii) climate product and services
- iv) capacity building, educational and training services

The contributions of WMO to the HLCP, and specifically the WCP, should be internally aligned along these four core capabilities. This is addressed in the role WMO has proposed but should become more coherent and codified to further strengthen WMO role.

One significant issue stemming from the absence of documentation regarding the value WMO brings to partnerships was raised by both the IACCA and the EC-AGCE regarding the lack of understanding in the international community as to the role WMO plays in the IPCC reports. The IPCC was mentioned as a part of WMO role in the HLCP but it was not highlighted as an integral piece of the services WMO offers. It may serve WMO better to take a more proactive approach to consistently align itself with the stature of the IPCC in order to raise its own status in the international community. This should be reflected in the description of its role in the HLCP.

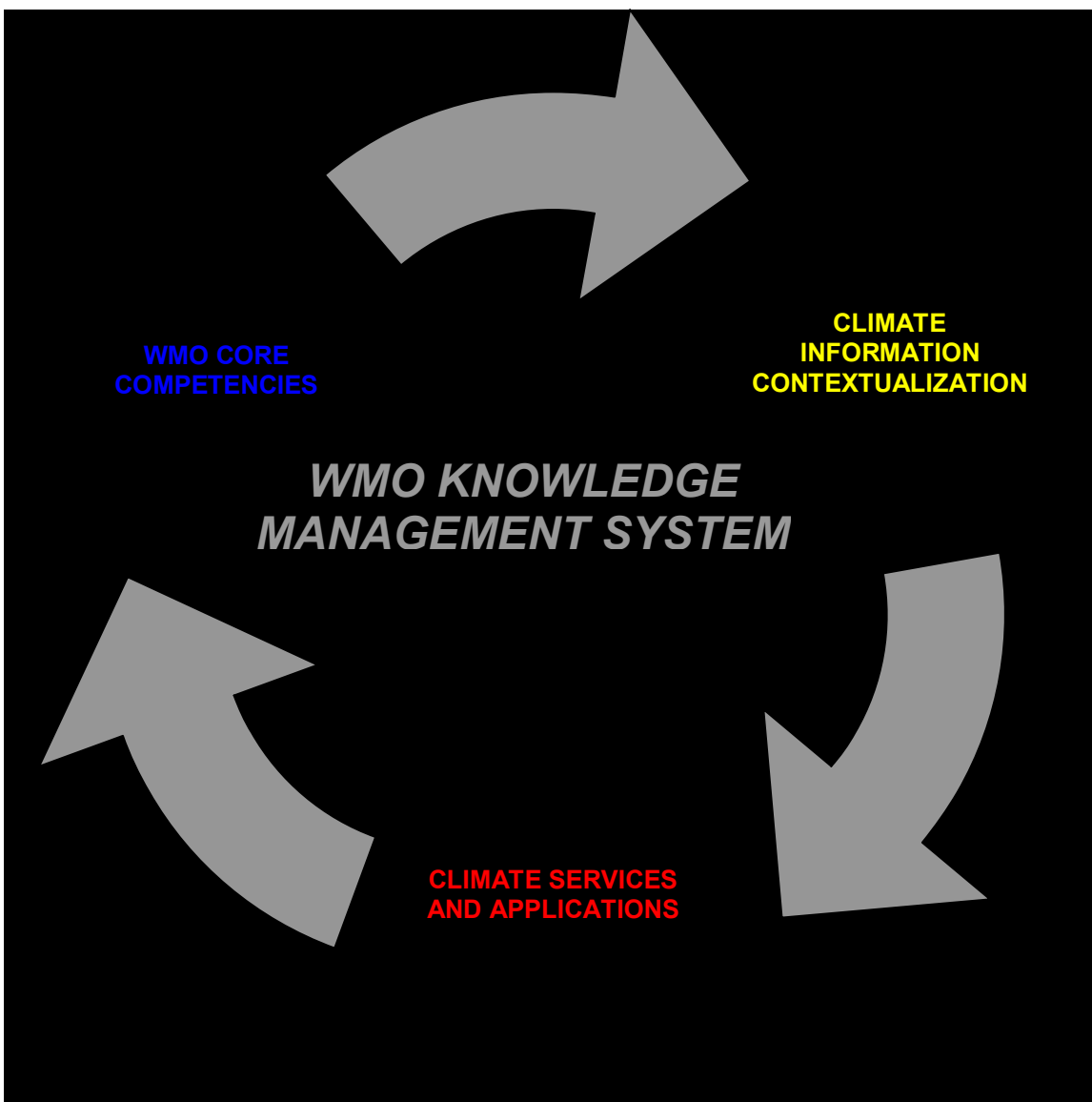
The proposed contribution to other agencies was lacking in the climate agenda, and compromises a key component of future climate coordination. To remedy this WMO should develop documentation regarding its core competencies as well as the value they add to each specific project and partnership. Additionally participating agencies and programmes should develop action plans for specific projects in which the interests and contributions of each agency are described and the scope of the inter-agency coordination and collaboration is specifically and accurately identified.

The EC-AGCE report called for partnerships at multiple levels, including national, regional, and international. It recommended that WMO develop strong and on-going relations with international and regional agencies in areas of high priority to WMO. These recommendations can be incorporated into the WMO role as the convening and facilitating agency for the knowledge management system by focusing on furthering existing programs which build upon core competencies at all of these levels. These programs should incorporate an approach which identifies a specific issue around which a diverse set of partners, or cluster of agencies, willing to invest time, money and resources into the partnership is formed. The issue should be of vital economic importance to national, regional, and international interests. In this way WMO can provide a science knowledge

base for the cluster which will then be contextualized with social and economic components. This approach should incorporate national requirements attuned to international objectives, that anticipate and promote private sector involvement, and are of finite duration, with hard outputs that improve economic performance in an environmentally sustainable way.

Many sectors still do not fully understand how climate information intersects with, and can enhance their activities. Clarification of WMO core competencies and how they relate internally and externally to the end goal of a knowledge management system which creates contextualized climate services and applications will bring greater coherency to the system as a whole. This coherency can then provide a clearer picture of the significance of the climate information provided by WMO.

WMO Knowledge Management System Defined



WMO components, processes, and end products have the potential to form an organizational wide system which centralizes information making it readily and easily accessible for end users. This system should be multi layered embodying a primary, or core layer, of informational access via a centralized database, such as the UN web tool,

complimented by multiple end user communication forums to increase communication between WMO and end users, as well as UN agency cross sectoral teams.

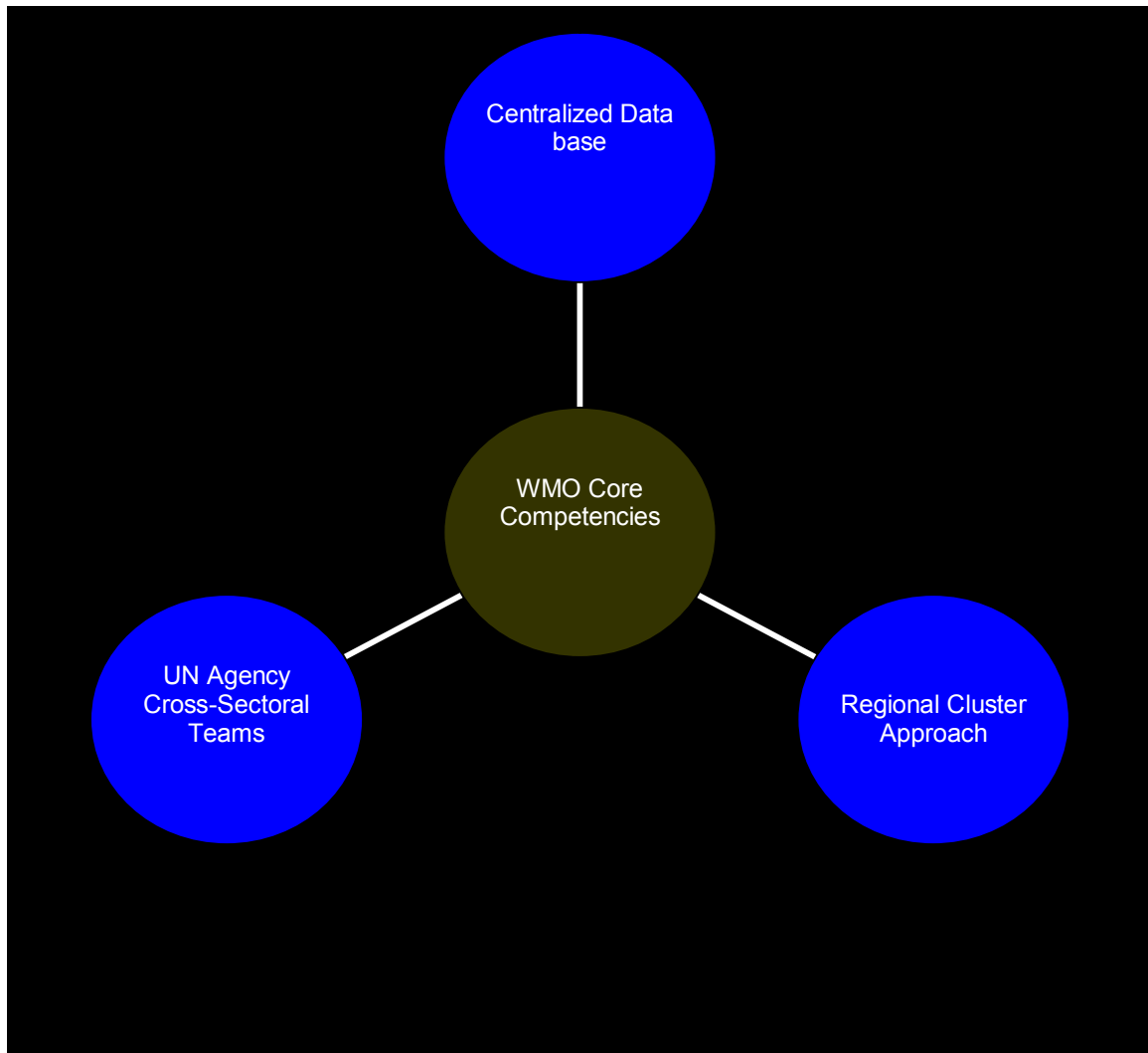
When envisioning the knowledge management system of WMO, the end users of climate information and products must be seen as being a part of the system. As in any business which utilizes a knowledge management system the benefit of the system is knowledge retrieval for employees use in day to day business activities. In the case of the WMO, “employees” are a range of actors including UN agencies, NGOs, sectoral ministries and others who are end users of climate information. These users will benefit most from as near direct access to the information and products provided by WMO as possible. This is slightly problematic considering the dispersed range and capabilities of these actors. WMO can achieve this by defining a system of delivery and access of all of its information and products.

A functional system will incorporate many layers of access and delivery. These layers include:

- 1) A core, centralized database or web portal which acts similarly to the business analogy as a database for information and products which makes retrieval of information easy and relevant to specific sectors
- 2) Multiple end user communication forums that create an iterative process which helps to design end products which meet specific needs of end users
- 3) Cross sectoral teams that combine the expertise of a cluster of UN agencies to create a holistic approach to issues of significant importance

1) *First Layer of Access: Centralized Database*

The core layer should take the form of a readily accessible centralized database of



information and products such as the UNFCCC's local coping strategies database for adaptation. This database is freely available online and allows end users to search for adaptation strategies according to hazard, impact, and strategy. This not only provides governmental policy makers as well as NGOs working in the field a wealth of knowledge, it contextualizes the knowledge in order to make it relevant to decision makers. Ideally this system allows any end user to gain benefits from the information (i.e. individual farmers) rather than bottlenecking information by disseminating it through a top down structure (governments, agencies). It overcomes this by being available directly to end users who have internet access. This strategy of course assumes available internet access for all end users. In order to ensure access to information the system must be multi layered to provide overlap that bridges the gaps between the access which various layers provide.

2) *Second Layer: End User Communication Forums*

In addition to a lack of internet access, forums for input are another reason to add layers to the knowledge management system. Communication generally tends to flow in a directional pattern, from producer to end user. In order to create a two way flow of information WMO should continue to convene partners in relevant sectors, as well as end users around a specific issue prior to traditional product delivery. Rather than simply presenting products for use by end users, WMO should create an organization wide

system which integrates end users into the entire process of product creation. This will serve to inform WMO of their needs as well as inform end users of the context and use of the product. This can be achieved through end user communication forums such as cluster approaches.

Cluster Approach

RCOFs are a great example of end user communication forums currently utilized by the WMO. WMO should build upon these by acting in its role as the convening agency of the knowledge base for new and more inclusive forums based on specific climate sensitive issues. This approach should cluster relevant agencies, sectors, and actors around specific climate sensitive issues such as food security, urban health issues, or climate induced migration. The 2005 RCOF for the horn of Africa which provided seasonal and annual climate information in order to aid decision makers in creating policies for food security is a prime example. WMO should take the lead by inviting international development, health and economic agencies as well as civil society and private sector actors to participate in the creation of policies and instruments for regional sustainable development forums. The active search for input from a variety of actors and end users counteracts the bottlenecking of information that occurs when information “trickles down” through hierarchical structures. Forums should be collaboratively planned and implemented with partner organizations in order to spread costs and responsibilities as well as provide necessary inclusion of a variety of interested organizations and affected communities. The cluster approach must necessarily incorporate the relevant lessons learned about ownership of activities by partner organizations as well as stable management, coordination and financing. These types of events are extremely important for disseminating WMO products and should be elevated as a forum for displaying WMO expertise as well as collaboration and cooperation in the international community against the common threat of climate change.

WMO should also play a vital role through its NMHS network of emphasizing sharing of information across sectors at local levels in order to help information “filter up” to WMO and other agencies. This information allows the community to explain the human context of climate and weather in order to better inform scientists about the types of products which would benefit them in their daily lives. The NMHS network will also play a vital role in convening partnerships, forums, and other activities on the national level so that WMO can achieve its goal of operating at national, regional, and international levels.

3) Third Layer: UN Agency Cross Sectoral Teams

The knowledge management system should continually seek a back and forth iterative process between relevant agencies which creates holistic, contextualized products. This lowers the misunderstanding of the information by involving various agencies with some of the more core elements of the science or knowledge each agency brings to the partnership that can be hidden or not clearly visible in end products.

Cross-sectoral teams, formed from experts in various fields and agencies, are an example of this process and should be formed to exchange information at the global level in order to create contextualized products informed by various sectors. The previously mentioned centralized web platform would allow for a more efficient form of communication for such teams if travel and meeting expenses are too large for budget constrained agencies.

The platform would allow team members to discuss relevant topics online, or post specific questions to a forum of experts from any of the 13 affected sectors. The platform could help enhance communication as the forum for communication between agencies. It could be possible for projects to search through a database of agencies providing support for specific activities and/or expertise in a given field.

The database would also have the capability of uploading documents with specific questions or needs of end users to a database which is accessed by WMO technical experts who then provide direct feedback. These teams in addition to guiding product design through contextualization of climate information could help provide overall direction and structure for vital knowledge management activities such as the regional forum cluster approach.

Finally these teams would create holistic guidelines and practices for the various UN field projects to achieve full contextualization of climate information. An example could include food security projects in East Africa which include health, agricultural, and economic aspects that create holistic products which ensure sustainable development.

Climate Agenda Revisited

ECWG-CWE

With the emergence of the new HLCP mechanism climate coordination activities have once again emerged as a top priority for WMO. The HLCP mechanism is currently replacing the Climate Agenda that laid dormant after its third meeting of the IACCA in 1999. The EC-AGCE was formally renamed as the Working Group on Climate and Related Weather, Water and Environmental Matters (ECWG-CWE) during the 58th meeting of the EC. The role of the ECWG-CWE is to provide overall high-level guidance on climate and related matters on behalf of the Executive Council. The EC called upon the ECWG-CWE to revisit the Climate Agenda and its original coordination mechanism in light of the emergence of the new HLCP mechanism and to provide its recommendations to EC-LXI (June 2009).

The ECWG-CWE considered a range of options and concluded that WMO should retain the WCP as the overarching framework for all its activities in support of climate relevant expected results. The EC reaffirmed this notion and believed it was time for a major refocusing of activities carried out under the WCP broadly in line with the major thrusts of the Climate Agenda. The Council however recognized the increasing role of non UN actors as well as the limited amount of interaction WMO has had with such actors. It encouraged WMO to strengthen its partnership with both UN and non-UN agencies relevant to its climate-related activities.

Given the strong interests of the UN-System and the global community in climate and in adaptation to climate variability and change, the EC reaffirmed the need for a strong, coordinated focus on climate at both Council and Secretariat levels and urged the ECWG-CWE to report to the next session of the Executive Council (EC-LXI, June 2009) on development and implementation of a coordinated WMO framework for handling climate issues.

The EC also agreed that it was appropriate for the EC to debate and express its views on its expectations from, and guidance for, the WCC-3. It found that the ECWG-CWE should closely interact with WIOC in planning for the upcoming WCC-3, to help ensure its success.

Steering Committee on Climate Activities: A mechanism for internal coordination

In addition to the ECWG-CWE the Steering Committee on Climate Activities has been established to help guide climate coordination activities. It has been given the task of implementing the management matrix approach advocated by the EG-ACGE report. This approach is to be taken towards cross-cutting projects and activities dealing with complex issues such as climate adaptation. It is also charged with guiding resource mobilization for any such activities. This approach will ensure communication between different climate-related entities while providing a joint vision to the organization on climate. It will also serve to eliminate redundancy and provide for an effective use of staff time and talent.

Conclusion

WMO has remained the science knowledge base for climate coordination activities from the inception of the WCP until the present. Though inter-agency coordination has taken multiple forms with varying levels of success the underlying objective science has continually been provided by WMO. With the emergence of the HLCP mechanism as well as the two bodies charged with guiding WMO in its future coordination activities, the ECWG-CWE and the Steering Committee on Climate Activities, WMO is now preparing to combine the lessons of the past with the its role in the HLCP and the climate coordination future.

Regardless of the shape which coordination mechanisms take, the role of WMO has been defined as the science knowledge base of a climate information knowledge management system. Issue specific climate applications and services are the end products of this system. WMO already has a vast amount of experience in coordination between agencies, maintenance of forums for the creation of climate applications and services, as well as the delivery of these products. It must simply define and clarify its efforts to create internal cohesion which will lead to a functioning knowledge management system focused on Mitigation and Adaptation across the 12 sectors. WMO is now poised to incorporate these recommendations into an emerging climate information knowledge management system ensuring its role as the authoritative scientific voice in the climate arena.

WCP and Climate Agenda Coordination Chronology Summary

