



# FINAL REPORT OF THE FIFTY-THIRD MEETING OF THE CARIBBEAN METEOROLOGICAL COUNCIL



**CHAIRPERSON:**

**Dr. the Hon. David Estwick,**  
Ministry of Agriculture, Food,  
Fisheries, Industrial and Small  
Business Development of  
**BARBADOS**

**VENUE AND DATE:**

Radisson Aquatica Resort,  
Bridgetown  
**BARBADOS**  
18-19 NOVEMBER 2013



## **1. OPENING OF THE SESSION AND ELECTION OF CHAIRPERSON**

1.1 At the kind invitation of the of the Government of Barbados, the Fifty-Third Session of the Caribbean Meteorological Council was held at the Radisson Aquatica Resort in Bridgetown on 18-19 November 2013. The Caribbean Meteorological Council is the Governing and policy-making body of the Caribbean Meteorological Organization (CMO).

1.2 *Mr Hampden Lovell*, Director(Ag) of the Meteorological Service of Barbados, commenced the Opening Session of the Meeting by extending words of welcome, after a prayer was offered by the *Pastor Herbert Kirton* of the Evangel Tabernacle of Barbados.

1.3 *Mr Tyrone Sutherland*, Coordinating Director of the CMO, delivered remarks that focussed on regional issues in meteorology and the important role that the Organs of the CMO play in guiding the development of the National Meteorological and Hydrometeorological Services (NMHS) of Member States. He indicated that the provision of services in meteorology, hydrology and related sciences was important to many public-related issues such as poverty reduction, food safety and security, water security, improving public health, national as well as individual safety and security, to name a few. He noted that the CMO had helped guide and shape the development of the NMHSs in the English-speaking Caribbean to contribute to all these sectors, although the prime focus had been the development and operation of a regional hurricane warning system and services to the aviation sector.

1.4 He cautioned however, that global and regional variations in climate and climate-change issues were also likely to become “bread and butter” issues for the meteorological community in the future and that the Meteorological Services in the Caribbean region needed to be adequately prepared to meet these challenges. He therefore welcomed the recent establishment of the new *Global Framework for Climate Services (GFCS)*, a UN-led initiative that would help guide the region in providing improved climate forecasts that would allow policy formulation aimed at mitigating our changing climate’s negative impacts, while taking advantage of positive influences. In this regard, he considered it fundamental and critical that the regional governments continue to show strong commitment to the organs of the CMO.

1.5 *Dr. Federico Gómez*, Representative of the World Meteorological Organization (WMO) office in San José, Costa Rica, addressed the Council on behalf of the WMO Secretary-General. *Dr. Gómez* referred to the role that the CMO had been playing in assisting the WMO in some of the important regional activities, such as the integration of new observing and telecommunication systems, as well as the continual improvement of the regional hurricane warning system. He mentioned that CMO had been pushing for years to have the Caribbean Institute for Meteorology and Hydrology (CIMH) designated as a *WMO Regional Climate Centre (RCC)*, which was set in motion in 2013. The CIMH, as an organ of the CMO, was well recognized and respected within the WMO as one of the most progressive WMO Regional Training Centres around the world. *Dr. Gomez* also referred to the fact that, as a member of the WMO Executive Council, the Coordinating Director of CMO ensured that the Caribbean region as a whole, and the CMO Member States in particular, were able to continually contributing to and benefitting from the global programmes of the WMO.

1.6 The feature address was delivered by *Dr. the Hon. David Estwick*, Minister of Agriculture, Food, Fisheries and Water Resource Management of Barbados. The Minister spoke about the importance of the information emanating from the Barbados Meteorological Service with regards to severe weather, especially during the passage of tropical storms and warnings. He also referred to the important new WMO-led global initiative, the GFCS, which he recognized would bring significant benefits to the islands of the Caribbean. He spoke about the important contribution that the Barbados-based CIMH had been making to various sectors of society and had particular praise for its drought-monitoring programmes and its projects in agrometeorology, all of which had direct impacts on the agricultural sector in Barbados and the region. He urged the Meteorological Services and the organs of the CMO to continue to be at the forefront of the appropriate technology that would ensure their contribution to the region in the future.

1.7 After the feature address, a vote of thanks was given by the Minister of Agriculture of Guyana, *Dr. the Hon. Leslie Ramsammy*. He particularly thanked the Government of Barbados for hosting the session. In addressing a few of the regional matters, he also implored the meteorologists of the region to be advocates for their profession and the services they provide.

1.8 The Meeting elected the *Dr. David Estwick* as the Chair of the Caribbean Meteorological Council for its 53<sup>rd</sup> session and the intercessional period until the next annual meeting of the Council. Dr. Estwick, who was “under the weather” at the time, was unable to chair the full session. At his request, *Hon. Charles Kirnon*, Minister of Communications and Works of Montserrat, deputized as Chairman of the session on his behalf.

## **2. ADOPTION OF AGENDA AND PROCEDURAL MATTERS**

2.1 The Agenda adopted by the Meeting is shown in **ANNEX I** of this Report. The Meeting fixed its hours of work and determined the order in which it would conduct its business. The list of Delegates attending the Meeting is attached as **ANNEX II** to this Report.

## **3. CMO EXECUTIVE REPORTS**

### **3(a) Coordinating Director’s Report**

3.1 The CMO Coordinating Director presented his report on the activities and issues concerning the CMO Headquarters Unit since the previous session of the Council. The Council discussed the activities in 2013, noting that many were aimed at laying the groundwork for regional implementation of many global programmes and initiatives, particularly those set in motion by the Congress and Executive Council of the World Meteorological Organization as they relate to the Caribbean region in general and CMO Member States in particular.

3.2 The Council noted that the region’s move to implement a *Quality Management System* (QMS) for aeronautical meteorological services, as mandated by the *International Civil Aviation Organization* (ICAO), remained a major activity of the CMO Headquarters and the Caribbean Institute for Meteorology and Hydrology (CIMH), which had been working very closely with the NMHS of CMO Member States to become QMS-ready. The Council noted that most of the NMHSs had missed that deadline *November 2012* but had made, for the most part, the necessary preparation for certification.

3.3 The Council noted the CMO Headquarters activities in support of the *Global Framework for Climate Services* (GFCS), particularly the efforts of the Coordinating Director of the CMO at the global level, in which he continued to push for significant activity to enable the region to participate meaningfully in the implementation of the GFCS. The Council noted with great pleasure that staff members of the CMO Headquarters continued to be heavily involved in the testing and commissioning of the Cayman Islands radar as part of its contract for the implementation of the Cayman Islands Radar Project. Council was also aware of the construction underway to build a new international airport at Argyle in St. Vincent and the Grenadines. Council noted that the CMO Headquarters had undertaken a detailed wind study for the new airport for the benefit of the Government of St. Vincent and the Grenadines and had agreed to provide further technical assistance and advice to ensure that all meteorological requirements and services could be properly planned and implemented.

3.4 The Council expressed its great pleasure that, following a return to a normal constitutional situation in November 2012, the Turks and Caicos Islands had resumed its involvement within the Caribbean Community (CARICOM). As a result, the Organs of the CMO were also able to resume high-level contact with the TCI and noted some of the planned activities in 2014, including important work to bring the Turks and Caicos Islands up to the rest of the region on aviation safety issues.

3.5 The Council recalled its discussion at the 52<sup>nd</sup> session in Saint Lucia, November 2012, for one of the official organs of the CMO, namely the ***Caribbean Meteorological Foundation*** (CMF), which had only been functional for a brief period in the early days after the establishment of the CMO. The 52<sup>nd</sup> session of the Council had urged the CIMH and the CMO Headquarters to explore the possibilities for a “restart” of CMF and report the findings to this 53<sup>rd</sup> Council session. The Council noted, however, that the CIMH and CMO Headquarters have only been able to hold initial exploratory discussions in 2013 with a few institutions with similar experience. Council therefore agreed that appropriate experts should continue to be sought to provide more guidance on the matter.

3.6 As had occurred at its previous few sessions, the Council expressed concern that the low level or very late receipt of contributions to the Organization from Member States continued to plague the operations of the Organs of the CMO. It noted that the effect of this had been wrapped up with the continued unresolved status of the building occupied by the CMO Headquarters in Port of Spain. Council was therefore very pleased to learn that a resolution appears to have been accomplished with the Government of Trinidad and Tobago, so the Council expressed some optimism that 2014 could bring about the implementation of some matters held in abeyance.

3.7 The Coordinating Director briefed the Council on some of the scientific, technical and training events in which technical staff participated in, particularly those sponsored by the WMO and its partners that have a special relevance to the region. Council thanked *Mr Thomas Auguste*, who would commence his retirement in December 2013 as Director of the Meteorological Services of *Saint Lucia*, for his 36 years of dedicated professional service. The Council wished Mr Auguste well in the future.

3.8 **The Council** therefore:

- (a) **Noted** the activities and issues concerning the CMO Headquarters in 2013, particularly those dealing with the implementation of major WMO and ICAO-related activities;
- (b) **Urged** all Member States to complete the process of Quality Management System readiness and certification;
- (c) **Also urged** Member States to increase efforts to rectify the level of contributions to the organization.

### **3(b) CIMH Principal's Report**

3.9 The Principal of the Caribbean Institute for Meteorology and Hydrology (CIMH) briefed the Council on the activities of the CIMH since the last session in 2012. He indicated that the CIMH continued to maintain a strong global presence in the area of meteorological training and to a lesser degree hydrological training. This strong global presence had resulted in CIMH providing technical support in the area of training to other developing states through South-South partnerships, which included:

- The water resources management initiative for Kiribati that was developed by CIMH and submitted by the UNDP Office for the South Pacific to the *Global Environmental Fund* (GEF);
- Provision by CIMH of a guest lecture to students at the University of the South Pacific (USP) at its Suva, Fiji campus, on the influence of climate on present-day and future water resources;
- Consultations (while in Suva) by the CIMH Principal with several Directors of National Meteorological and Hydrological Services (NMHSs) from the region;
- Participation by CIMH in the 2013 Joint Meeting of the Pacific Platform for Disaster Risk Management and Pacific Climate Roundtable held in Fiji.

3.10 The CIMH, through a South-South partnership, shared its experience in online Aeronautical Professional Development Training with the *Kenya Institute for Meteorological Training and Research* (IMTR). The CIMH also responded to a request for competency assessment training received from the *Qatar Regional Training Centre* (RTC).

3.11 The delivery of quality training programmes in the areas of meteorology, hydrology/water resources management, climatology and instrument management, maintenance and calibration continued to be of critical importance for CIMH, despite the significant progress made in other areas of the Institute's activities. The training programmes continued to be viewed by the WMO as extremely innovative in the use of online technology, responsiveness to the needs of stakeholders and changing policies and trends. The regional training programmes included:

- The CIMH AeroCPD programme, of which the second class of students enrolled, graduated in 2013.
- The Operational Aeronautical Forecasters course, the value of which was recognized outside of Member States. In 2012, Saint Maarten sent a participant to the course. In 2013, the CIMH received inquiries from non-CMO Member States about participating in the course.
- The internship programme which the Institute continues to take pride in the outputs and outcomes. Graduates from the programme continue to achieve academic excellence in the undergraduate programme at UWI.
- The first online Hydrology course entitled "Basic Surface Water Modelling".

3.12 CIMH continued to attract many research and development projects and offers for collaboration. Projects were developed or chosen based on complementarity to the established long-term goals of the Institute. This approach ensured that the Institute can remain focused on achieving its clear long-term objectives. Currently, the objectives of the various research and development projects and collaborations were focused on:

- Informing decision-making in disaster risk reduction through the development of data fusion decision support systems for multiple stakeholders;
- Improving training; and
- The development of sector based climate products and the delivery of climate services.

3.13 CIMH had also engaged in several commercial activities that generated revenue. Funds generated through commercial activities were used to support various activities at the Institute, including staff travel, updating of infrastructure, capacity development and updating of the Information Technology (IT) infrastructure. At times, the funds generated from commercial activities were used to support the operations of the Institute.

3.14 As was reported in 2012, the draft of the proposed *Host Country Agreement* (HCA) between CIMH and the Government of Barbados, prepared by CIMH using the CDEMA agreement as a template, was not approved by the Barbados Ministry of Foreign Affairs and Foreign Trade. Instead, the Ministry of Foreign Affairs and Foreign Trade recommended that CIMH use the recently signed agreement with the *CARICOM Regional Organization for Standards & Quality* (CROSQ). Under this HCA, income tax exemptions for local staff were not permitted; whereas, in the case of the former (CDEMA), they were permitted. This had created an impasse. It was agreed that CIMH would provide more information on the value of its services to Barbados and wider Caribbean to make a stronger case for a HCA.

3.15 As part of the Institute's outreach and public education/awareness programme and, in particular, its desire to engage young people, the CIMH had launched a Facebook page. The page was easily accessible from the Institute's main webpage. It is a valuable resource for students and educators. Several regional and international organizations, including WMO, had established links to the page. Quite a number of student applications and requests had come via the page. During 2014, the Institute planned to perform a detailed analysis of the visitor information to the site and the information viewed to get a better understanding of the types of information that people visit the page to view.

### 3.16 **The Council:**

**Noted** the Principal's Report setting out the activities and issues relating to the CIMH since the Forty-Ninth Meeting of the Board of Governors.

### (c) **CIMH Board of Governors' Report**

3.17 The Chairman of the CIMH Board of Governors, Mr Michael King of Barbados, briefed the Council on the Meeting of the Board, which took place on November 14-15, just prior to this Council session. He provided the outline of the discussions on the CIMH budget proposals, in which the Board of Governors agreed that only one of the two technical posts, requested by the Principal of the CIMH, would be filled during 2014 due to budgetary constraints. The position to be filled was that of the Agrometeorologist. The Board felt that the Chief Agrometeorologist, Mr Adrian Trotman, who had been working on his own for some time, needed assistance as agricultural services were expanding within the region.

3.18 An important item which was considered by the Board was the *Travel and Entertainment Allowances* for the Principal and the Senior Administrator Officer. The Board felt that an adjustment had to be made to the allowance retroactively to take into consideration that since 2011, these allowances became taxable in Barbados. It was agreed that, in the context of the laws of Barbados which govern the payment of tax on earned income, an adjustment should be made to the budget to facilitate the payment.

3.19 The Board thus proposed amended Estimates of Expenditure of BB\$6,972,773, which took into consideration the hiring of the Agrometeorologist and the adjustment to the taxable allowances paid by the Principal and Senior Administrative Officer. The Board noted that pensions would have to be adjusted for both officers since the taxable allowance becomes part of their emoluments package. These estimates would be considered under Agenda item 7(b).

3.20 The future direction of the Institute was discussed. The Institute was expanding on a mandate which was forty years old in response to global changes which impact on the quality and delivery of services of National Meteorological Hydrological Services. In order that the Institute continues to be on the forefront of training and the delivery of services, it must change its mandate to reflect the changes at the national, regional and international levels. There was not a clear mandate provided for water and the mandate for climate services was implicitly and not explicitly stated in the current mandate. The Institute should first define explicitly what the mandate should be before it was taken to the policymakers.

3.21 The Chairman recommended that a tripartite committee be formed comprising the Principal, the Coordinating Director and a Member of the Board to review the terms of conditions of the employment of the Principal and conclude the negotiations by 31 March 2014.

3.22 The Chairman of the CIMH Board of Governors, Mr Michael King of Barbados, informed the Council of his retirement from the Government service of Barbados at the end of the Council session.

3.23 **The Council:**

**Noted** the decisions emanating from the Board of Governors.

**4. STATUS OF ACTIONS FROM THE PREVIOUS SESSION**

4.1 Following every session of the Council, the CMO Headquarters produces a single document containing an **Action Sheet** that would allow the Council to follow-up on the actions taken on the decisions of its previous session, and to discuss any further actions if required. A summary of the decisions of CMC52 (Saint Lucia, 2012) was prepared, giving the status of actions taken to implement these decisions of Council, and to indicate areas where action as proposed had not materialized.

4.2 The Council was reminded of the discussions at CMC52 under the item "*Special CMO and WMO Issues.*" Specifically under the discussion on Aeronautical Met Services, there was a requirement for all aeronautical meteorological personnel to be assessed as competent. The deadline to have the personnel assessed was 1 December 2013.



## 5. SPECIAL CMO AND WMO ISSUES

5.1 The Coordinating Director briefed the Council on the following special CMO and WMO-related issues in connection with the following:

- A. Outcome/Highlights of the 65<sup>th</sup> Executive Council (EC) of the World Meteorological Organization (2013);
- B. Outcome/Highlights of the 2013 WMO Regional Association IV – North America, Central America and the Caribbean;
- C. Implementation of the *Global Framework for Climate Services (GFCS)*;
- D. Aeronautical Meteorological Services – Current and Future Activities;
- E. Network of WMO Regional Training Centres;
- F. Meteorology and Services to Special Sectors – Hydrology, Agriculture, Fisheries, etc;
- G. The IPCC 5th Assessment Report – A synthesis;
- H. WMO Data Policies.

### 5 (A): **Outcome/Highlights of the 65<sup>th</sup> session of the Executive Council (EC) of the World Meteorological Organization (2013)**

5.2 The Coordinating Director of the CMO, as a member of the WMO Executive Council, having been first elected in 1999 and then serving as the Second Vice-President of the WMO for the maximum two terms between 2003 and 2011, attended the 65<sup>th</sup> session of the Executive Council in Geneva, Switzerland from 15 to 23 May 2013. The Coordinating Director was accompanied to this session by a team of advisers and experts, comprising *Dr David Farrell*, Principal of the CIMH, *Mr Fred Sambula*, Director-General of the Cayman Islands Weather Service, *Mr Keithley Meade*, Director of the Antigua and Barbuda Meteorological Service and *Mr Glendell De Souza*, Science and Technology Officer at the Headquarters of the CMO. Mr Meade was once again an addition to the regular team of advisors, in order to widen the involvement and experience of senior officials in the region to the high-level WMO activities.

5.3 The 2013 session of the Executive Council reviewed the Organization's goals and activities as set out in the WMO Strategic Plan 2012-2015 and the WMO Secretariat Operating Plan, as well as WMO's activities since its previous session in June 2012, including:

- (i) The ***Global Framework for Climate Services (GFCS)***;
- (ii) Priority activities towards ***Disaster Risk Reduction (DRR)***;
- (iii) Expanding, improving and implementing observation and information systems, namely the ***WMO Integrated Global Observing System (WIGOS)*** and the new ***WMO Information System (WIS)***;
- (iv) Improving and providing new ***meteorological services to Civil Aviation***; and
- (v) ***Strengthening the capacity*** of National Meteorological and Hydrological Services (NMHSs) in developing countries.

The GFCS and services to aviation are discussed in detail in paragraphs 5.11 to 5.15 below.

5.4 The Executive Council reviewed progress with the implementation of the **WMO Disaster Risk Reduction (DRR) Programme** Work Plan (2012-2015) and related strategic issues, which aim to strengthen national and regional institutional capacities and cooperation among the NMHSs and Disaster Risk Management agencies. In the Caribbean, the WMO DRR Programme aims at building on the existing regional coordination for tropical cyclones and other hazards (e.g., tsunamis). The Council noted that the *Hyogo Framework for Action (HFA) 2005-2015*, had served as the primary driving force for the development of DRR capacities nationally, regionally and globally, was drawing to a close in 2015. NMHSs and other entities were urged to seek opportunities to contribute to the post-2015 Framework.

5.5 The Executive Council discussed how to accelerate progress towards the new **WMO Integrated Global Observing System (WIGOS)**. WIGOS was an all-encompassing approach to the improvement and evolution of WMO's global observing systems. WIGOS was needed to consolidate progress in meteorological research, numerical modelling, and computer and communication technologies. WIGOS implementation was being guided by an *Inter-Commission Coordination Group on WIGOS (ICG-WIGOS)*. The Coordinating Director of CMO is the Executive Council's Focal Point on the ICG-WIGOS and also represents North America, Central America and the Caribbean on the ICG.

5.6 WIGOS was scheduled to become operational by 2016. The Council therefore looked at the development of **Regional WIGOS Implementation Plans (RWIP)**, while guidelines for a *National Implementation Phase* for WIGOS were proposed, from which the activities of the National Meteorological and Hydrometeorological Services (NMHS) of CMO Member States would evolve. In this connection, in addition to its global role on the ICG-WIGOS, the CMO Headquarters has taken on a major role in the planning and implementation of this regional WIGOS component, for which the Science and Technology Officer of the CMO Headquarters was selected to serve as chair of the Regional Task Team for the implementation of WIGOS and WIS (see paragraph 5.7). The regional Task Team also included representatives of Antigua and Barbuda, and Trinidad and Tobago.

5.7 Closely related to the implementation of the WIGOS was the new **WMO Information System (WIS)**, both of which are essential to all technical and scientific activities of Meteorological Services in the Caribbean and worldwide. WIGOS, together with WIS, will be the basis for the provision of accurate, reliable and timely weather, climate, water and related environmental observations and products by all Members and WMO Programmes, which will lead to improved service delivery.

5.8 The Executive Council updated its **Capacity Development Strategy (CDS)** and *Implementation Plan*, which seeks to provide a coordinated and cohesive approach to WMO capacity development activities, aimed primarily at sustainable development of the NMHSs in developing countries, with a particular emphasis on the Least Developed Countries and Small Island Developing States (SIDS), such as the Caribbean islands. The *Executive Council's Working Group on Capacity Development*, currently chaired by the Coordinating Director of the CMO, was established to address all aspects of assistance provided by WMO and its partners to Member States.

## **5(B) Outcome/Highlights of the 2013 WMO Regional Association IV – North America, Central America and the Caribbean**

5.9 The sixteenth session of Regional Association IV (North America, Central America and the Caribbean) was held in Curaçao from 12 to 19 April 2013. Many CMO Member States were in attendance. The Association discussed and made decisions on a number of specific activities or strategic thrusts including, among others:

- (i) *Improving Service Quality and Delivery* in the Public Weather Services, Agricultural Meteorology, Marine Meteorology and Ocean Affairs
- (ii) *Data-processing and forecasting: weather, climate and water*
- (iii) *WMO Space Programme.*

5.10 As a result of the destruction caused by the 2010 earthquake in Haiti, WMO and the Meteorological Service of Canada signed a grant agreement for a project titled “*Haiti Weather Systems Programme: Climate Services to Reduce Vulnerability in Haiti.*” The Government of Canada had put up 6.5 million Canadian dollars for this five year project, aimed at re-establishing the Haitian Meteorology and Hydrology Services - the *National Meteorological Centre (CNM)* and *National Water Resources Service (SNRE)*, under the coordination and management of WMO. The Coordinating Director of the CMO accepted the invitation of Canada to be a part of an *International Technical Advisory Committee (H-ITAC)* to support the implementation of the project.

## **5(C) Implementation of the *Global Framework for Climate Services (GFCS)***

5.11 The Caribbean Meteorological Council was given an update on the ***Global Framework for Climate Services (GFCS)***, which is a UN-led initiative, spearheaded by the World Meteorological Organization, to guide the development and application of science-based climate information and services in support of decision-making. The *GFCS* will bring together providers of climate services, researchers and users, to make sure that the information provided by meteorologists and climate scientists is understandable and relevant to climate-sensitive activity. The *GFCS* thus has four initial priority sectors, namely agriculture and food security, water, health and disaster risk reduction. As the *GFCS* is one of the five top priorities of the WMO, it will be underpinned by WMO Programmes and will build on existing structures, in which the WMO *Commission for Climatology (CCI)* will have a central role in the implementation of the *GFCS*.

5.12 The Council recalled that the *GFCS* was officially launched in October 2012 when the draft Implementation Plan of the *GFCS* was adopted and the process set in motion for the establishment of an *Intergovernmental Board on Climate Services (IBCS)*. A major contributor to the implementation of the *GFCS* is the expansion of the network of WMO ***Regional Climate Centres (RCCs)*** to address the regional impacts of climate variability and climate change. The Council recalled that in 2012, the CIMH began the process of seeking recognition as a *WMO Regional Climate Centre (RCC)* for the English-speaking Caribbean, as the CIMH will have a very important role in supporting CMO Member States in their implementation of the *GFCS*. Council was therefore very pleased that this request was provisionally accepted and on 29 April 2013, the CIMH officially began functioning as a *WMO RCC “in demonstration phase”*, covering the entire Caribbean basin and focusing on the Member States of the CMO. Dr David Farrell, as Principal of the CIMH, has overall responsibility for the *RCC*, while Mr Adrian Trotman has been designated as the *RCC* Coordinator. After a period of demonstration, the CIMH will undergo a detailed evaluation to determine its ability to function as an *RCC*.

5.13 The first session of the *Intergovernmental Board on Climate Services* (IBCS) was held in July 2013 to prepare for the implementation of the GFCS. The IBCS is meant to ensure coordination from the global to the national levels and engage all stakeholders and the entire UN system. Among other things, the WMO Executive Council had requested Member States to nominate experts to the IBCS and experts who could serve on the subsidiary bodies of the IBCS. In this regard, the Coordinating Director of CMO, as the Permanent Representative of the *British Caribbean Territories* (BCT) with WMO, nominated Dr David Farrell of the CIMH as the Principal Delegate for the BCT on the IBCS with Mr Adrian Trotman as the alternate. The IBCS accepted the nomination of Dr Farrell. The BCT, through Dr. Farrell, was also selected among 28 Principal Delegates to serve on the IBCS Management Committee. The IBCS would decide on whether there would be rotation among members on the Management Committee.

5.14 Council was pleased to note that regional GFCS implementation activities had already begun. In this regard, a *Regional Workshop on Climate Services at the National Level for the Caribbean* was held in Port of Spain, Trinidad & Tobago, from 29-31 May 2013. Council also noted with pleasure, the growing numbers of examples of collaboration between developed and developing countries and among developing countries for the implementation of the GFCS. As of June 2013, contributions and pledges to the GFCS total 29 million Swiss francs, with Norway and Canada being the top donors and most active supporters of the programme.

5.15 In this regard, the *Canadian-funded GFCS Project called the “Programme for Implementing the Global Framework for Climate Services (GFCS) at Regional and National Scales Project”*, financed by Environment Canada, was in its early implementation stages. This important initiative will undoubtedly contribute to develop and improve the capacity of the *Meteorological Services in the Caribbean* in terms of providing better climate services. The goal of this intervention was to enhance resilience in social, economic and environmental systems to climate variability and climate change, through the development of effective and sustainable Regional and National Climate Services under the GFCS in selected regions and countries. The WMO Office in Costa Rica had already begun preliminary activities with CMO Member States.

#### **5(D) Aeronautical Meteorological Services – Current and Future Activities**

5.16 For several years, the Council has been examining the vital issue of Aeronautical Meteorological Services. Aeronautical meteorology is vital for the efficiency, safety and environmental sustainability of civil aviation, and a major or even prime focus for many National Meteorological and Hydrometeorological Services around the world, including the Caribbean. Council recognized that the *International Civil Aviation Organization* (ICAO) and the *World Meteorological Organization* (WMO) have together placed high priority on the imposition of a **Quality Management System (QMS)** for all types of service to civil aviation. As the requirement for a QMS was a mandated decision of the ICAO, WMO and the ICAO have been collaborating to ensure that National Meteorological and Hydrological Services (NMHS) all over the world are equipped to meet the requirement. Specifically, ICAO had mandated that from *15 November 2012*, every designated Meteorological Authority around the world must have implemented a Quality Management System.

5.17 Because of the high priority of this matter, Council was provided with an update on the status of the QMS progress in CMO Member States. Council noted with some concern that several CMO Member States had not met the November 2012 deadline, although most appeared to be close to completing the process. The Council recalled that ICAO had cautioned the Council about possible ramifications for failure to complete the certification process. In this regard, Council urged Member States to follow Resolution 4.1 of the 2013 WMO Executive Council entitled “*Steps to Be Undertaken to Achieve Compliance with the Regulations of the World Meteorological Organization and the International Civil Aviation Organization*”, in which recommendations are made about notification on the state of compliance and remedial action by Member States.

5.18 Council discussed the fact that the QMS issue remained closely tied to the implementation of WMO’s *aeronautical meteorological personnel competency standards* and several other emerging challenges in aeronautical meteorology. Because of the importance of this topic, the Council noted that the Directors of the Meteorological Services had been devoting considerable time and resources to the QMS and the competency standards, as will be elaborated under **Agenda Item 8**. Council also reminded Member States that, in addition to completing the QMS process, there was also a WMO deadline of 1 December 2013 for the process of undertaking assessment and documentation of the competency of Aeronautical Meteorological Personnel (AMP). Council noted that *Competency Requirements* should be included in the WMO *Technical Regulations* and become a recommended practice for the operations of WMO Regional Training Centres, such as the *Caribbean Institute for Meteorology and Hydrology* (CIMH). Council also noted that WMO had recommended that Member States investigate the use of cooperative mentoring and twinning arrangements to help meteorological services to comply with these requirements.

5.19 Council also recalled that the process of attaining certification for the NMHS was not the end of the QMS process and that certification had to be retained, as well as staff competencies had to be periodically assessed. Council therefore discussed the development of a sustainable system of regional QMS auditors to ensure that each NMHS remains ready for formal external auditing at any time in the years to come. This idea had been supported in principle by both ICAO and WMO. Council therefore agreed that the development of a system of regional QMS auditors for the NMHSs be studied by the CMO Headquarters in collaboration with relevant parties. In this regard, Council noted that the second phase of the Finland-funded SHOCS Project included a component for the training of regional auditors, which would form the basis for the development of such a system. Council recognized that it was unlikely that the region would commence the use of regional auditors in 2014, although a test case could be explored by the CMO Headquarters.

5.20 In this regard, **Council:**

- (i) Re-emphasised the need for the NMHSs to designate one or two staff members to be their National Focal Points for WIGOS and WIS and to actively participate in the development of national activities in keeping with the regional and global programmes. Directors of NMHSs were urged to nominate National Focal Points on WIGOS & WIS by 20 November 2013;
- (ii) Expressed its continued strong support for the *Global Framework for Climate Services* and urged Member States to actively participate in GFCS activities as appropriate;

- (iii) Urged Member States to provide any technical and financial support to the NMHS to complete the ICAO-mandated Quality Management System as a matter of urgency, or take the recommended actions to avoid possible negative ramifications;
- (iv) Urged the CMO Headquarters to continue consideration of a methodology for the development and operation of a system of regional QMS auditors;
- (v) Urged Member States to give some priority to complying with the competency standards for aeronautical meteorological personnel.

## **5(E) Network of WMO Regional Training Centres**

5.21 Council was given a briefing on the role and status of the network of 38 designated **WMO Regional Training Centres** (RTCs) in 26 countries, all of which play a key role in education and training for Member States. The *Caribbean Institute for Meteorology and Hydrology* (CIMH) is the designated WMO RTC for the English-speaking Caribbean. As an Organ of the CMO and a WMO RTC, the CIMH provides training for the region's weather observers and technicians, weather forecasters, specialists in hydrology, agrometeorology, climatology and other related disciplines. The CIMH provides training to the Major in Meteorology in the Faculty of Pure & Applied Sciences Bachelor of Science degree, in cooperation with the University of the West Indies Cave Hill Campus.

5.22 Council discussed the importance of the RTCs to the nations that support them and of the CIMH to the Caribbean. Considerable investments had been made and continued to be made by Member States to ensure that these institutions meet the educational, instrumentation, weather, water and climate research and applications needs. There was considerable collaboration between various RTCs in the WMO network in areas of common interest and concern. Expertise from one was sometimes used to guide or assist another RTC in the development of certain programmes. Every RTC in the system therefore served the overall WMO system where no single institution dominated or attempted to dominate any area that could potentially negatively impact on the programmes of another RTC. In this regard, the Council stressed the need for strong support for the RTCs to be assured at the regional and international levels.

## **5(F) Meteorology and Services to Special Sectors – Hydrology, Agriculture, Fisheries, etc**

5.23 Council held a discussion on the fact that National Meteorological and Hydrometeorological Services (NMHSs) constitute the single authoritative voice on weather warnings in each of their respective countries. In addition, the NMHSs in various countries have been well positioned to identify and deal with a wide range of weather, climate and water-related issues that affect human life and socio-economic development. The various sectors of society that rely on weather, climate and water information that emanate from NMHSs include agriculture, water management, the construction industry, tourism, fisheries, land and marine transportation and human health. In this regard, Council recognized the fact that there have been many calls by various economic sectors and international partners for the strengthening of NMHSs, especially those in developing countries, to enable them to widen their scope and areas of expertise beyond their traditional areas, to enable them to routinely work more closely with and contribute more to the sectors that depend on their input.

5.24 Council therefore urged a greater dialogue on whether the NMHSs and the Organs of the CMO were being adequately supported to undertake their current missions and how they could be strengthened to meet the growing demand for their services for the benefit of a wider-than-traditional society, including the need to provide improved climate services as part of the GFCS, discussed in Section 5C above.

#### **5 (G): The IPCC 5th Assessment Report – Volume 1: A synthesis**

5.25 The Council held a discussion on the 27 September 2013 launch by the WMO/UNEP *Intergovernmental Panel on Climate Change* (IPCC) of the “*The Physical Science Basis*”, the first volume of its **Fifth Assessment Report** (AR5). This launch encouraged greater awareness of climate change science and the role that WMO Member States play in providing the underlying observations and analyses.

5.26. Council was also provided with an accompanying document “**Headline Statements from the Summary for Policymakers**”. Council noted the positive international reaction to the IPCC Fifth Assessment Report, as well as those of the sceptics to the evidence of global warming. Council therefore urged Member States to note and make use of these IPCC releases and other published material by the IPCC, WMO or UNEP.

#### **5(H) WMO Data Policies**

5.27 Council recalled that, at its 52<sup>nd</sup> session in Saint Lucia (November 2012), it held a very important discussion on the “ownership” and use by third parties of meteorological and hydrological data emanating from any Member State. The discussion at CMC52 came from the floor and there was no document prepared on the topic, so that details of the international agreements and Council’s own decisions on these matters could only be provided in the Final Report of CMC52. In the intervening period since CMC52, there appeared to be some continuing uncertainty about this matter. The Council was cognisant of the fact that the principle of the international exchange of meteorological and hydrological data and products was fundamental to the existence and functionality of any NMHS, and that knowledge and adherence to these by the NMHSs were issues that concern national governments.

5.28 Council was therefore again provided with the following relevant two major international agreements, as well as a related decision of the 43<sup>rd</sup> session (2003) of the Caribbean Meteorological Council, as the supreme body of the CMO, on the use and distribution by the CIMH of such data and products originating in Member States. These documents listed below are repeated for information in **ANNEXES III** and **IV** to this Report.

- **WMO Resolutions 40** of the 12<sup>th</sup> WMO Congress (1995) - “*WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities*”;
- **WMO Resolution 25** of the 13<sup>th</sup> WMO Congress (1999) - “Exchange of Hydrological Data and Products”;
- **CMC43 decision** (2003) on the “*Provision of Meteorological and Hydrological Data and Products by CIMH*”.

5.29 Council emphasized the need for Directors and all staff members of the National Meteorological and Hydrological Services to become very familiar with these two Resolutions and the CMC43 decision, and to revisit the input into various projects in which data provision was involved, to avoid any negative implications at the national and international levels.

**6. FINANCIAL REPORTS**

**6(a) Status of Refundable Balances**

6.1 The Council was presented with the current status of the CMO Member Refundable Balances from reimbursements from the United Kingdom held by the CMO Headquarters Unit. The balance as of 25 October 2013 in TTD was as follows:

<b><u>BCT</u></b>		<b><u>CMO MEMBERS OF WMO</u></b>	
Anguilla	50,870.21	Antigua & Barbuda	10,568.83
Br. Virgin Is.	58,594.93	Barbados	32,337.44
Cayman Is.	225,226.22	Belize	9,632.79
Montserrat	15,184.07	Dominica	11,286.25
Turks & Caicos Is.	95,788.31	Guyana	1,934.10
		Jamaica	126,324.90
		Saint Lucia	6,545.21
		Trinidad & Tobago	157,490.54
	<u>\$445,663.74</u>		<u>\$356,120.06</u>
	=====		=====

St. Kitts & Nevis (funds held from BCT days \$83.74)

6.2 By Members' consent, these funds are held by the CMO Headquarters Unit to assist Members in attending important Met/Hydro Meetings, and also to purchase spares. The Coordinating Director noted that these funds have been used very effectively in pursuit of these objectives.

6.3 Council was reminded of a decision of the 47<sup>th</sup> Session of the Council (2007), which stated that each Session of the Council must be provided with the actual amount of Refundable Balance that each Member State was entitled to, based on their current situation, which was as follows:

<b><u>BCT</u></b>		<b><u>CMO MEMBERS OF WMO</u></b>	
Anguilla	50,870.21	Antigua & Barbuda	9,235.23
Br. Virgin Is.	58,594.93	Barbados	32,337.44
Cayman Is.	225,226.22	Belize	9,632.79
Montserrat	15,184.07	Dominica	893.00
Turks & Caicos Is.	95,788.31	Guyana	1,934.10
		Jamaica	500.00
		Saint Lucia	6,545.21
		Trinidad & Tobago	157,490.54
St. Kitts & Nevis	83.74		



6.4 **The Council:**

**Noted** the status of the Refundable Balances Account, as presented.

6(b) **CMO HQ Auditor's Report**

6.5 The 2012 audited accounts of the CMO Headquarters Unit were presented to Council by the Coordinating Director. The accounts for fiscal 2012 were audited by the Auditor General's Department during May-June 2012.

6.6 **The Council:**

**Noted, Reviewed and Accepted** the audited Statement of Accounts for 2012.

6(c) **Statement of Contributions and Arrears (CMO HQ & CIMH)**

6.7 The *Caribbean Meteorological Council* (CMC), as the Governing Body of the Caribbean Meteorological Organization (CMO), had been making annual appeals to Member States for the rectification of the state of arrears of contributions to both main arms of the CMO, namely the *Headquarters Unit* and the *Caribbean Institute for Meteorology and Hydrology* (CIMH). The CMO Headquarters and the CIMH continued to operate under very difficult circumstances because of the large arrears of contributions by Member States. The Council had constantly urged Member States to make regular payments to the current budget estimates and to establish a plan to pay off arrears.

6.8 The Council recalled that, for a number of years, the Auditor General of Trinidad and Tobago made reference to the state of arrears in the Report on the Financial Statements of the CMO. In general, there were some Member States that routinely make their full annual contributions in a timely manner, and there were States that also make their full contribution but in an inconsistent manner, often very late in the year. On the other hand, there were some States that fail to make their full contribution, as well as States that fail to make any contribution at all.

6.9 Notwithstanding the continuing difficult fiscal situation in the region, Council noted that the failure of Member States to contribute to this regional organization would continue to result in a further reduction in programmes and activities. Council was aware that the Headquarters continued to provide statements of arrears to the Permanent Secretaries in the relevant ministries of Member States on an annual basis. Council again noted that, as has happened since late 2008, only because of an advanced 2013 payment made by Trinidad and Tobago late in 2012 was the Headquarters able to pay salaries in the first few months of 2013, for which the CMO Headquarters again expressed its gratitude.

6.10 The Principal of the CIMH informed the Council about the level of contributions received by CIMH for 2012 up to 30 September 2012, in which the overall arrears in contributions owed to the CIMH had grown to BD \$24,100,976.44. Council was concerned that, as a result of the growing arrears, the CIMH owed the Government of Barbados the sum of BB \$4,373,166.73 for the non-payment of Pay-as-You-Earn (PAYE) taxes from April 2006.

6.11 Council joined the Coordinating Director and the Principal in commending the **Representative of Jamaica** for the significant payments received during 2013. The **Representative of Jamaica** gave the commitment to Council that Jamaica would seek to pay its contributions for 2014 and make payments to reduce its arrears. The **Representative of Trinidad and Tobago** inquired of the Principal as to whether the CIMH could set-up an account in Trinidad and Tobago to facilitate the payment of contributions. It was indicated that this would be explored during 2014, possibly in collaboration with the CMO Headquarters.

6.12 The Council:

**Reiterated** an earlier call for Member States to make every effort to pay their full contribution for the current year, while setting up an internal mechanism to pay off arrears.

## **7. CMO BUDGETS (Headquarters Unit, CRN and Radar, CIMH)**

### **7(a) CMO HQ Budget Estimates for 2014**

7.1 The Council examined the CMO Headquarters' Budget Estimates for 2014. The Council recalled that over the previous four budget presentations (2010, 2011, 2012 and 2013), it made budgetary provisions for some of its earlier decisions that had been held in abeyance because of the prevailing economic situation in the Caribbean. The aim of the Council was to ensure that the CMO Headquarters remained in a position to guide the region's involvement in the increasing number of international weather and climate activities that impact on the Member States.

7.2 Council recalled that, at its 52<sup>nd</sup> session (2012), it was presented with budget estimates for 2013 that still could not include all matters held in abeyance. As described under Agenda Item 6(c), the level of contributions from Member States in 2013 continued to be well short of the approved budget target. The economic indications from Member States suggested that 2014 could still be difficult in the region, including one or two Member States that previously had not been in too difficult an economic position. As a result, the budgetary proposals presented to Council showed that the CMO Headquarters placed its priority on first meeting the essential staff commitments and basic programmes, as was done in the 2013 budget estimates, and then attempt to cover the critical new programmes where possible.

7.3 Council noted that the detailed budget estimates presented continued to be very conservative. In the 2011, 2012 and 2013 budget estimates, a prime factor was the inclusion of a budget line for the rent of the premises occupied by the CMO Headquarters in Port of Spain. As described under Agenda Item 3(a), the Government of Trinidad and Tobago has made tremendous strides to resolve the situation with respect to the lease on the property and thus the payment of this rent. Council was very pleased that, at the beginning of November 2013, the process for the payment of all the arrears in rent up to October 2013 had almost been completed, while the line Ministry and the landlord were involved in preparing lease arrangements. It was anticipated that the lease arrangements could be completed before the start of 2014, but to satisfy the requirements of the CMO External Auditors, its inclusion in the budgetary estimates was required to enable the Headquarters to expend funds for this purpose, should payment of rent for a few months into 2014 be required. Council was reminded, however, that this amount would not be included in the contributions to the Organization by Member States so that, as was done within the Estimates at the last four CMC sessions, the Council was, in effect, again asked to approve a budget estimate with a **deficit**.

7.4 Council recalled that, at its 51<sup>st</sup> session (Dominica, 2011), it marked the retirement from the CMO Headquarters of the Administrative Officer, *Miss Lynn Nimblett*, who had then served the Organization for forty years. The Council also recalled that, under the CMO Headquarters Staff Rules and Regulations, which are based on those of the CARICOM Secretariat, *Miss Nimblett* had been retained under contract for a period of three years from November 2011 to enable the Headquarters to adequately plan its future changes in financial management and administration. As the Headquarters was expected to advertise the post in 2014, the budget estimates included a short period of overlap between the outgoing and incoming Administrative Officers., as well as a provision to pay out any residual leave at the termination of service.

7.5 Council was informed that the CMO Headquarters staff members have participated for a long time in a Group Health Plan with *Colonial Life Insurance Company (Trinidad) Limited (CLICO)*. As with all similar group health plans, every few years the insurance company conducts a review of the Plan and may periodically make minor adjustments to the applicable rates. In September 2013, as the renewal time of the Plan approached, CLICO proposed to the CMO Headquarters to renew the group coverage with a significantly increased health premium that made it prohibitive for some staff members.

7.6 To address the issue of the significant increase in health premium therefore, Council received a proposal from the Coordinating Director that the Organization share in the cost of the healthcare of all staff by paying 60 percent and the employee 40 percent of the premium.

7.7 Council took note of the position of the Delegations of Trinidad and Tobago and Saint Lucia, which indicated that they had a mandate from their Ministries to place a cap on the budget level from the 2013 level.

7.8 The Council examined the 2014 Budget Estimates for the CMO Headquarters Unit, the Caribbean Rawinsonde Network and the Radar Network, which represented a 3.3 percent increase on the approved estimates for 2013. Taking note of the positions of Trinidad and Tobago and Saint Lucia above, **Council:**

- (i) **Approved** the proposal for the Organization to share in the cost of the staff healthcare plan, with the Organization paying 60 percent and the employee 40 percent of the premium;
- (ii) **Approved** the deficit budget estimates of expenditure of **TTD X,XXX,XXX**, as detailed in **ANNEX V**, with Member contributions based on the figure of **TTD X,XXX,XXX.XX**, as indicated in **ANNEX VI**;
- (iii) **Urged** Members to give priority to meeting annual contributions, through quarterly, bi-annual or more frequent part-payments if necessary, and to make every effort to pay off arrears to the Organization;
- (iv) **Reminded** Members that when forwarding their contributions to CMO Headquarters by bank transfers, to deposit funds into the same currency account as the sum remitted;
- (v) **Urged** Members to inform the CMO Headquarters of their transfer of funds, including the date, amount and currency, in order to overcome difficulties in properly identifying the origin of funds within the banking system.

## **7(b) CIMH Budget Estimates for 2014**

7.9 The Chairman of the Board of Governors informed the Council that CIMH presented the Estimates of Expenditure for the financial year 2014 to the Board of Governors for endorsement. The original total amount requested was BBD 7,137,522. After considerable discussions on the prevailing financial situation in the region, prioritization was given to immediate needs. The Board therefore proposed that only one of the two technical posts, requested by the Principal of the CIMH, would be filled during 2014 due to budgetary constraints. The Board also amended the estimates to allow for the taxation of Travel and Entertainment Allowances for the Principal and the Senior Administrator Officer posts, in accordance with a new law in Barbados that took effect in 2011. The Board of Governors considered all the proposals made by the CIMH and made adjustments to the Estimates accordingly. The revised estimates represented a 4.6% increase over the estimates for 2013.

7.10 The **Chairman** of the Board presented the Council with Revised Estimates of Expenditure of the CIMH for 2014 of **BBD X,XXXXXX** for its approval.

7.11 Noting again the positions of Trinidad and Tobago and Saint Lucia mentioned in paragraph 7.7 above, **Council:**

**Approved** the Estimates of Expenditure for 2014 of **BBD X,XXX,XXX** for the CIMH as presented by the Board of Governors. Member contributions based on that figure are indicated in **ANNEX VI**.

## **8. ANNUAL MEETING OF THE DIRECTORS OF METEOROLOGICAL SERVICES**

8.1 The Caribbean Meteorological Council considered the Report of the Annual Meeting of Directors of Meteorological Services, held at the Caribbean Institute for Meteorology and Hydrology on 16 November 2013, presented by Mr Glendell De Souza, Science and Technology Officer of the CMO Headquarters. The Report provided the Council with the following summary of the deliberations and recommendations of the Directors on a wide range of technical and scientific topics, which would have an impact on future costs, policy decisions, training opportunities and service delivery.

### **1. *Aeronautical Meteorological Forecaster Competencies:***

(i) The World Meteorological Organization (WMO) and its *Commission for Aeronautical Meteorology* (CAeM) had created the top-level and second level competencies for Aeronautical Meteorological Forecasters (AMF) and Aeronautical Meteorological Observers (AMO). National Meteorological and Hydrological Services (NMHSs) were to adapt the second-level competencies to meet their national circumstances, thereby creating the third-level competencies. By 1 December 2013, all AMFs and AMOs were required to satisfy the Basic Instruction Package – Meteorologist (BIP-M) and the Basic Instruction Package – Meteorological Technicians (BIP-MT) respectively and must be able to meet the competency requirements;

(ii) The CIMH, to show the importance of the competency requirements, was changing its grading scheme for the new Senior-Level Meteorological Technician course to give equal weight to the core courses, in which failure to pass any of the core complements would result in the students receiving a Conditional Pass. Such students would be required to retake an exam for the course failed within three months. If that exam was also failed, the students would have to resit the exam within one year, and a failure after this exam would mean failure of the entire course. If such a student would still wish to become an AMF, the entire course will have to be retaken.

2. *Migration to Table Driven Code Forms for Meteorological Data Transmissions:*

WMO has indicated for some time that the binary *Table Driven Code Forms* (TDCF) are more flexible for data transmissions than the *Traditional Alphanumeric Code Forms* (TAC), allowing new types of observations or observing standards to be introduced rapidly, and overcoming other limitations of the TAC, most notably the shortage of station identifiers in some countries. The WMO *Commission for Basic Systems* (CBS) had confirmed that routine international exchange of information on its *Global Telecommunication System* (GTS), using the TAC, was scheduled to end in November 2014 for all but OPMET data (aviation METAR, TAF and SIGMET data).

3. *Quality Management System (QMS):*

Following the expiry of the deadline on 15 November 2012 (discussed in Sections 3 and 5 above), the ICAO provisions concerning the quality management of meteorological services for international air navigation had been upgraded from a *Recommended Practice* to a **Standard**. The WMO and ICAO Secretariats had an agreement in principle, that Member States not complying with the Recommended Practice of obtaining certification in accordance with the ISO 9001 Standard, should, as a minimum, provide evidence for having achieved the following milestones:

- a. Evidence of a contractual arrangement between the Meteorological Authority and Service Provider with clearly established responsibilities;
- b. Availability of quality policy, quality manual and complete set of work instructions/ process descriptions at all workplaces, and familiarity of staff with these documents;
- c. Documented evidence of user consultation and feedback (publications, questionnaires, records of user meetings, actions stemming from these);
- d. Evidence of corrective and preventive action processes; and
- e. An internal audit plan, audit reports and documented follow-up decided by a Management Review meeting.

## 9. **CMO WEATHER RADAR NETWORK/PROJECTS**

### 9(a) **Status of the CMO Radar Network Operation**

9.1 The Council discussed the operations of the weather radar network in CMO Member States and noted that 2013 had been a much improved year over 2012 for the operations of the network. The Belize, Barbados and Guyana radars continued to work quite steadily through 2013. The radar in Trinidad, which had a very prolonged period of “down-time” in 2012, was restored to normal operations with assistance from the German supplier. The radar in Jamaica had experienced technical difficulties for some time, but was returned to service in May 2013. The CMO Headquarters had been informed that Jamaica might be considering acquiring an additional radar or replacing the existing radar with a new unit. The new radar in the Cayman Islands provided some coverage over Western Jamaica.

9.2 Council noted that all six Meteorological Services operated the following Websites that provided access to the radar imagery:

Belize:	<a href="http://www.hydromet.gov.bz/">http://www.hydromet.gov.bz/</a>
Cayman Islands:	<a href="http://www.weather.gov.ky/">http://www.weather.gov.ky/</a>
Jamaica:	<a href="http://www.metservice.gov.jm/index.asp">http://www.metservice.gov.jm/index.asp</a>
Barbados:	<a href="http://www.barbadosweather.org/">http://www.barbadosweather.org/</a>
Trinidad:	<a href="http://www.metoffice.gov.tt/">http://www.metoffice.gov.tt/</a>
Guyana:	<a href="http://www.hydromet.gov.gy/">http://www.hydromet.gov.gy/</a>

9.3 The CMO Headquarters informed the Council that it routinely reviewed the websites and continued to note the lack or insufficient use of radar data by regional television networks. Television weather presenters often referred to the local weather conditions without reference to the available radar imagery and which sometimes clearly differed from the radar information. Council emphasized that the operations of the regional radars were for the use of the entire region and not just for the Member States that operated them. In other words, the radars, in almost all cases, covered several neighbouring States so that the use of radar imagery by the media should become widespread through the region and not only by media or other entities in the States where the radars are located.

9.4 In this regard, it was again strongly advised that each Meteorological and Hydrometeorological Service operating radars make use of the local print media to publicize the existence of their websites in general and the availability of the radar images, and for Services in neighbouring islands to provide their public and media with links to the websites of the radars that cover their States.

#### **9(b) Operations of the Regional Radar Composite and other Regional and International Obligations**

9.5 Council noted that with the inclusion of the Cayman Islands radar, the regional radar composite would have ten radars when completed. Additional active regional radars in Puerto Rico and at the eastern end of the Dominican Republic could be added in the future. The functioning of this composite was highly dependent on the telecommunication protocols being followed and the radar content following signed agreements. With reference to the telecommunication, Council noted that the radar data was required to be sent to WMO's *Global Telecommunications System* (GTS) Internet File Service (GIFS) server in Washington, DC. The radar data would then be pulled from the server by the Météo-France centre in Martinique for the creation of the composite. Council reminded Member States that there was also an international obligation for the regional radar data to be available at the US National Hurricane Centre (NHC) as part of the regional Hurricane Operational Plan.

9.6 With regards to the data content, Council emphasised that the Meteorological and Hydrometeorological Services must rigorously ensure that the agreed radar scans, undertaken every 15 minutes starting on the hour, at the agreed constant pre-defined elevation at a range of 400 km, were not altered in any way by technical staff as these would create problems in the composite and could cause misinterpretation of the data. Services operating radars should ensure that, in addition to senior management, all technical staff members involved in radar issues become fully familiar with the relevant regional agreements.

9.7 The Council noted that an equally important part of regional agreements was the need for the CIMH to have access to each individual radar's real-time and archived data for the purposes of training and research. In particular, the Barbados radar configuration included a separate direct transmission to the CIMH. This transmission to the CIMH was most critical to its training programme and also served as a backup for access to the Barbados data if any technical problems occur with the main data feed to the Meteorological Service. Council reiterated that every effort must be made to ensure that the CIMH access was maintained.

9.8 The **Representative for Antigua and Barbuda** expressed his dissatisfaction with the amount of time that the radar in Guadeloupe has been out of service during 2013. It was stated that Antigua and Barbuda have been left without any early warning guidance at crucial times when severe weather was approaching. He noted that Antigua and Barbuda was covered by the scans of two radars in Guadeloupe and Sint Maarten, and the latter had not been in service for some time.

9.10 The **Head of Department** of the **Sint Maarten Meteorological Service** indicated that due to the age of the radar, repair was impossible and they were seeking funding for a new radar. The **Coordinating Director** gave the undertaking to the **Representative of Antigua and Barbuda** to liaise with the Meteorological Service of France (Météo-France) in order to revise the Memorandum of Understanding between CMO and Météo-France to try to ensure that the downtime was kept to a minimum.

9.11 The **Representative for the Cayman Islands** thanked the CMO for the assistance provided to have a dual polarized Doppler radar manufactured, tested and installed in Grand Cayman. It also stated that radar imagery was displayed nightly on the news programme in Grand Cayman.

9.12 The **Council:**

**Noted** the status of the Weather radars in the CMO Member States, including the completion and commencement of operations of the Cayman Island radar, and the extension of the regional radar composite in the Western Caribbean;

**Noted** the considerations in Jamaica for addressing its future radar configuration;

**Reiterated** its call for the Meteorological Service operating radars to fully publicize their Websites, and for all Services to work towards the greater use of live radar data by regional television stations;

**Urged** the need to urgently resolve all technical issues in the creation and availability of the regional radar composite and the access to radar data by special users, such as the US National Hurricane Center;

**Further urged** that every effort be made to ensure that the CIMH has full access to each individual radar's real-time and archived data, and that the direct transmission from the Barbados radar to the CIMH be maintained as a priority.

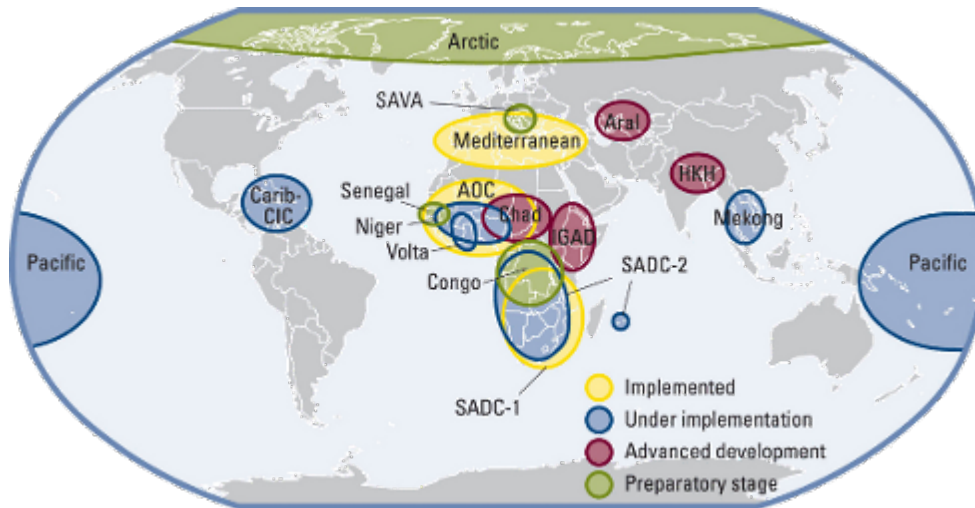
## 10. **OTHER PROJECTS AND PROPOSALS**

10.1 The Council, aware of the fact that weather, climate and water remain at the heart of the environmental issues affecting the planet, emphasized that the Meteorological and Hydrometeorological Services (NMHSs) in the Caribbean must provide accurate information, analyses and timely forecasts of hazardous weather-related conditions that affect sustainable development. At the same time, the Council discussed the role of the NMHSs in also providing the appropriate data and scientific-basis for studies on the long-term potential impacts of both natural and human-induced climate changes on the environment. In the process, it recognized that the contribution of meteorology and related sciences to these global studies was driven by the constant adaptation to and use of technological changes and opportunities.

10.2 In this regard, the Council was brought up-to-date on many of the projects being undertaken or planned and noted that most had observational and scientific data information components involving the use of new or modern technologies. Specifically, the Council discussed the progress of implementation of the following projects which involved CMO Member States and partner organizations, such as the *World Meteorological Organization* (WMO) and the *Association of Caribbean States* (ACS).

(a) **WMO CARIB-HYCOS Project - Implementation Status**

10.3 Council recalled that in 1993, the WMO launched the **World Hydrological Cycle Observation System (WHYCOS)**. Its aim had been the development of water resources information systems to assist Member countries to improve their water management, mitigate the impact of water-related disasters such as floods and droughts and contribute to regional and global studies of the impact of climate change on water resources. WHYCOS was developed through a series of 17 regional HYCOS components. **Carib-HYCOS** was one of these regional projects (see **Figure 1**). The Islands Component of **Carib-HYCOS** had been implemented between 2008 and 2012, officially closing in November 2012.



**Figure 1:** WMO HYCOS Projects around the world

10.4 Eleven Caribbean islands States participated in the Project, namely **Antigua and Barbuda, Barbados, Cuba, Dominica, the Dominican Republic, Guadeloupe, Haiti, Jamaica, Martinique, Saint Lucia and Trinidad and Tobago**. Council recalled that the project was co-financed by the Regional Council of Martinique, the General Council of Martinique and the FEDER (European Funds for Regional Development) for a total of 1,317,000 Euros with an additional 1,200,000 Euros as the IRD's in-kind contribution, and 400,000 Euros as countries' in-kind contribution.

10.5 Council noted that since the termination of the Project, consideration had been given to a possible new phase of activities, if donors could be found. A concept document would be developed by WMO and partners. In the interim, institutions such as the CIMH and INSMET would continue HYCOS-type activities in their respective countries of influence.

(b) **Finland Initiative - Strengthening Hydrometeorological Operations and Services in the Central America and the Caribbean (SHOCS)**

10.6 Council was briefed on the status of the Project entitled **"Strengthening Hydrometeorological Operations and Services in the Central America and the Caribbean (SHOCS)"**. Phase I of this Project was funded by the Ministry for Foreign Affairs of Finland (MFA) to the tune of 500,000 Euros to carry out a *needs assessment and feasibility study*. The Project was implemented by the Finnish Meteorological Institute (FMI) under the direction of the *Association of Caribbean States (ACS)*, in collaboration with WMO and CMO. The CMO was a member of the Project Board, along with the ACS, WMO, the Caribbean Emergency Management Agency (CDEMA) and FMI.



10.7. The CMO Member States that participated in the feasibility study project were Antigua & Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts & Nevis, Saint Lucia, St. Vincent & the Grenadines and Trinidad & Tobago. The other States were the Bahamas, Cuba, the Dominican Republic, Haiti and Suriname. The beneficiaries of the Project have been the Meteorological and Hydrological Services (NMHS) and Disaster Management Agencies of the above States, along with the CIMH as a regional institution.

10.8 Phase I of SHOCS was implemented between 2010 and 2012. From late 2012 and through much of 2013, a Phase II was formulated between the MFA of Finland, FMI and the other members of the Project Board. Four themes had been identified as priority result areas in the Work Plan for SHOCS II:

- 1: Improved operational capacity of the Caribbean SIDS weather observation network.**  
*Activities could include:*
  - 1.1 Enhancement of Automatic Weather Station (AWS) networks (including the acquisition of, or upgrade to non-corrosive AWS technology)
    - Any restoration of AWSs, or new ones, must be accompanied by the compilation of the stations' metadata; metadata must be made widely available at the local, regional and WMO levels.
  - 1.2 Enhancing tools for weather forecasting
    - SmartMet workstations: 3 Main Sites (MS) and 7 or 8 Remote Sites (RS)
      - Main Sites: Cuba, Barbados and Antigua& Barbuda
      - Remote Sites: Belize, Guyana, Grenada and Saint Lucia. Decision on other potential RS sites to be made after further analysis.
- 2: Improved capacity for communication of risk information and early warnings**
  - Coordination between NMHSs and Disaster Management Agencies (DMAs);
  - Workshop on regional coordination of Early Warning System (EWS) products, etc;
  - Introduction of relevant protocols, such as the Common Alerting Protocol (CAP), etc.
- 3: Improved capacity to provide specialized services to the society.** Activities to date include:
  - 3.1 Continue QMS training with focus on auditors, link this to certification at CIMH;
    - A QMS Auditor workshop, (Trinidad & Tobago, December 2013);
    - CMO Headquarters to seek CMC endorsement for a regional pool of QMS Auditors, including methodology and funding mechanism.
  - 3.2 Developing harmonized visualization and dissemination of early warnings.
    - Preliminary discussions at CMO/DMS (Nov 2013) then possible workshop.
  - 3.3 Support to the development of Caribbean Climate Services
    - This will be formulated based on activities and proposals emanating from WMO, CMO/CIMH and other regional organizations.
  - 3.4 Training on TV-broadcasting of severe weather information (including some software)
    - High interest by at least 10 NMHSs, including Cuba
    - Potential trainers being reviewed

#### 4: *Enhanced Climate monitoring and Services through an internet portal*

- To provide an internet portal to present temporal and spatial variability of climate data. The user interface will be open to public use;
- Demonstrate the strength and impacts (casualties, physical and economical) of extreme hydro-meteorological conditions (hurricanes, tropical storms, drought, flooding etc.) based on existing reports and climate data;
- To provide operational medium and long-term weather and climate outlooks using medium and long term NWP-prediction results (based on CIMH RCC activities).

#### 10.9 Other activities under consideration for SHOCS Phase II included:

- Weather radar training:
  - Maintenance training for technicians;
  - Meteorological staff training.
- integrating on-line lightning data with other data for severe weather forecasting;
- Acquisition of on-line lightning detection data for a pilot period (option for 1-3 new lightning detection sensors).

#### (c) **Lightning Detection System**

10.10 Council recalled that, for some years, the CMO Headquarters indicated its intention to establish a ground-based Lightning Detection System in the region. The CMO HQ had studied this system in great detail and was of the opinion that such a system was very necessary in the Caribbean. As a starting point for discussion, it had been necessary to demonstrate the value of long-range lightning detection and location systems to the National Meteorological and Hydrometeorological Services (NMHSs) in CMO Member States. In this regard, the CMO headquarters organized with the Vaisala company of Finland, a ***free real-time operational "field" trial***, lasting several months and covering the Caribbean, northern parts of South America and the Atlantic Ocean as a subset of its global system. The NMHS Forecast Offices and the CIMH were provided with the appropriate software and access to Vaisala's global network to be used in conjunction with other observing and forecasting tools. The CMO also provided links to other locations for the acquisition of lightning data.

10.11 Council discussed the options of utilizing an existing system or establishing a lightning detection system. Of primary concern was the operating cost. Council recognized the value for such a system to many special sectors and the public-at-large.

#### (d) **Other CMO Project Proposals**

##### (i) **A Caribbean initiative in the field of early warning systems, integrating Carib Risk Cluster objective**

10.12 Council was informed of an initiative by the French Meteorological Service (Météo-France), funded by the European Union's ***INTERREG*** program. The ***INTERREG IV "Caribbean"*** program fosters collaborations among several institutions in both the Francophone and non-Francophone Caribbean. The ***INTERREG*** program was funding a project entitled "***Caribbean Cluster on Natural Risks and Risks from the Sea***", which was being implemented by the ***General Council of Martinique***.

10.13 Under the **Carib Risk Cluster** project, a component was Météo-France “**SHERPA**” initiative. SHERPA’s aims were:

- Improving the availability of upfront meteorological expertise, made available to Météo-France, for an exclusive use by neighbouring Caribbean National Meteorological Services, including Haiti;
- Setting up an exchange platform, in real time, to improve coordination between neighbouring Caribbean territories, for a better management of extreme meteorological events, especially outside or on the periphery of tropical cyclones.

10.14 SHERPA was a secured WEB platform (Extranet) to share and make available products and information useful to the analysis, and to the forecasting of potentially dangerous meteorological phenomena in the Caribbean, including:

- Products to improve the use of observation data (radars, wave riders, satellite imagery...);
- Numerical Weather Products based on the French models (ARPEGE/ALADIN) and on the ECMWF models.

10.15 To provide access to and use of Météo-France’s **SHERPA**, the General Council of Martinique, Météo France, and CMO would sign a collaborative Memorandum of Understanding. Under this MoU, the CMO would, among other things:

- Promote the SHERPA initiative, within Carib Risk Cluster, to the CMO Member States;
- Help partners define and put in place support necessary to the implementation of Extranet SHERPA;
- Ensure feedback of information from NMHS in CMO Member States;
- Take measures to ensure the non-redistribution of shared Extranet data or products without prior consent from Météo France.

10.16 Council noted that the use of Météo-France’s SHERPA did not prevent the NMHSs in CMO Member States nor the Organs of the CMO from using any other platforms that may have a similar purpose, since SHERPA was simply a tool used by meteorologists in the forecast and warning process. As part of the **Carib Risk Cluster project**, Météo France conducted a workshop from 29-31 October 2013 at the CIMH in Barbados. It was attended by staff of eight NMHSs in the region.

(iii) **An Education and Training initiative – The GLOBE Program**

10.17 Council was informed that the CMO Headquarters had, for some time, been considering the development of a programme to introduce weather, climate and water to high schools in the region, in which they could run simple weather/climate stations and receive some basic instructions from the Met Services. Such meteorological instruments would be properly sited at schools with students taking readings and doing simple maintenance.

10.18 Council was made aware that, a few years ago earlier, WMO got involved with a programme entitled the “**Global Learning and Observations to Benefit the Environment (GLOBE)**”. This was a worldwide hands-on, primary and secondary school-based science and education program. GLOBE's vision promoted and supported students, teachers and scientists to collaborate on inquiry-based investigations of the environment and the Earth system, working in close partnership with the *National Aeronautics and Space Administration (NASA)*, the *National Oceanic and Atmospheric Administration (NOAA)* and the *National Science Foundation (NSF)* of the USA in the study and research about the dynamics of Earth's environment.

10.19 **WMO** and **NASA** had agreed terms of reference that allowed the GLOBE Program and WMO to collaborate on common goals. These included increasing international environmental awareness, developing scientific understanding of the global environment and supporting improved achievement in science and mathematics education around the world. To the CMO Headquarters, the GLOBE programme appeared to be a perfect platform to pursue its own ideas.

10.20 Council was informed that, through the GLOBE Program, NASA and WMO would also work together to enhance general public understanding of weather, water and issues, such as climate change. Initial plans for collaboration included involving **National Meteorological and Hydrological Services** (NMHSs) in the implementation of regional GLOBE Program activities, such as teacher training events and working with schools that lacked access to computer technology. To date, the GLOBE Program had reached over one million students in more than 19,000 schools and trained some 37,000 teachers.

10.21 In considering the non-radar project activities undertaken by the CMO Headquarters, **Council:**

- (i) **Urged** that priority be given to the radar training proposals under the **SHOCS-II** Project;
- (ii) **Also urged** the CMO Headquarters to continue exploring suitable mechanisms to install or subscribe to a lightning detection system, for consideration by Council;
- (iii) **Recommended** that Met. Services actively participate in the SHERPA initiative under the **Carib Risk Cluster** Project;
- (iv) **Encouraged** CMO Headquarters to continue developing ideas for a programme in high schools in Member States, through the WMO/GLOBE initiative or otherwise.

## **11. ANY OTHER BUSINESS**

11.1 The Council expressed its thanks to Mr Michael King of Barbados, for his dedicated service over the years as Chairman of the CIMH Board of Governors and to the CMO in general. The Council wished him well on his future endeavours.

11.2 There was no specific other business for discussion at the session.

## **12. DATE AND VENUE OF CMC54 (2014)**

12.1 The Council was informed by the *Delegate of Anguilla* that, regrettably, the Government of Anguilla would be unable to host the 54<sup>th</sup> Session of the Council and related meetings in 2014. Council was informed that this withdrawal was due to unforeseen circumstances. The CMO Headquarters indicated that it would liaise with various Governments in the region to seek a host for the session and encouraged Member States to give consideration to hosting in 2014.

12.2 **The Council:**

**Thanked** the Government of Barbados for hosting this 53<sup>rd</sup> session and related meetings and for the warm hospitality extended and the excellent arrangements put in place for the conduct of the business of CMC53;

**Expressed** its thanks to the Chairs for their excellent conduct of the session.

**Close of Meeting**

12.3 There being no other business, the Meeting ended with an exchange of courtesies.

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## AGENDA

### PROVISIONAL AGENDA

1. OPENING OF SESSION AND ELECTION OF CHAIRMAN
2. ADOPTION OF AGENDA AND PROCEDURAL MATTERS
3. CMO EXECUTIVE REPORTS
  - (a) Coordinating Director's Report
  - (b) CIMH Principal's Report
  - (c) CIMH Board of Governors' Report
4. STATUS OF ACTIONS FROM PREVIOUS SESSION
5. SPECIAL CMO AND WMO ISSUES
  - I. Outcome/Highlights of the 65<sup>th</sup> Executive Council (EC) of the World Meteorological Organization
  - J. Outcome/Highlights of the 2013 WMO Regional Association IV – North America, Central America and the Caribbean
  - K. Implementation of the *Global Framework for Climate Services (GFCS)*
    - *Intergovernmental Board for Climate Services (IBCS)*
    - RCC in demonstration phase
    - Canadian-funded GFCS Project
  - L. Aeronautical Meteorological Services – Current and Future Activities
    1. Status of regional readiness - Certifiable Quality Management System (QMS)
    2. Undertaking Competency Assessments
    3. QMS Auditing – developing a system among CMO Member States
  - M. Network of WMO Regional Training Centres
  - N. Meteorology and Services to Special Sectors – Hydrology, Agriculture, Fisheries etc
  - O. The IPCC 5th Assessment Report – A synthesis

6. FINANCIAL REPORTS
    - (a) Status of Refundable Balances
    - (b) CMO HQ - Auditor's Report
    - (c) Statement of Contributions and Arrears (CMO HQ & CIMH)
  7. CMO BUDGETS (Headquarters Unit, CRN and Radar, CIMH)
    - (a) CMOHQ Budget Estimates for 2014
    - (b) CIMH Budget Estimates for 2014
  8. ANNUAL MEETING OF THE DIRECTORS OF METEOROLOGICAL SERVICES
  9. CMO WEATHER RADAR NETWORK/PROJECTS
    - (a) Status of CMO Radar Network Operations, including Cayman Islands Radar
    - (b) Operations of the Regional Radar Mosaic and other International obligations
  10. OTHER PROJECT UPDATES AND PROPOSALS
    - (a) Finland Initiative - Strengthening Hydrometeorological Operations and Services in the Central America and the Caribbean (SHOCS II)
    - (b) Lightning Detection Systems
    - (c) Other CMO Projects/Proposals
  11. OTHER MATTERS
  12. DATE AND VENUE OF CMC54 (2014)
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**ANNUAL MEETING OF THE CARIBBEAN METEOROLOGICAL COUNCIL**

**BRIDGETOWN, BARBADOS**

**18-19<sup>TH</sup> NOVEMBER 2013**

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# WORLD METEOROLOGICAL ORGANIZATION

The World Meteorological Organization (WMO) is a specialized agency of the **United Nations**. It is the UN system's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources.

WMO has a membership of 191 Member States and Territories (on 1 January 2013). It originated from the *International Meteorological Organization* (IMO), which was founded in 1873. Established in 1950, WMO became the specialized agency of the United Nations in 1951 for meteorology (weather and climate), operational hydrology and related geophysical sciences.

As weather, climate and the water cycle know no national boundaries, international cooperation at a global scale is essential for the development of meteorology and operational hydrology as well as to reap the benefits from their application. WMO provides the framework for such international cooperation.

Since its establishment, WMO has played a unique and powerful role in contributing to the safety and welfare of humanity. Under WMO leadership and within the framework of WMO programmes, *National Meteorological and Hydrological Services* contribute substantially to the protection of life and property against natural disasters, to safeguarding the environment and to enhancing the economic and social well-being of all sectors of society in areas such as food security, water resources and transport.

WMO promotes cooperation in the establishment of networks for making meteorological, climatological, hydrological and geophysical observations, as well as the exchange, processing and standardization of related data, and assists technology transfer, training and research. It also fosters collaboration between the National Meteorological and Hydrological Services of its Members and furthers the application of meteorology to public weather services, agriculture, aviation, shipping, the environment, water issues and the mitigation of the impacts of natural disasters.

WMO facilitates the free and unrestricted exchange of data and information, products and services in real- or near-real time on matters relating to safety and security of society, economic welfare and the protection of the environment. It contributes to policy formulation in these areas at national and international levels.

In the specific case of weather-, climate and water-related hazards, which account for nearly 90% of all natural disasters, WMO's programmes provide vital information for the advance warnings that save lives and reduce damage to property and the environment. WMO also contributes to reducing the impacts of human-induced disasters, such as those associated with chemical and nuclear accidents, forest fire and volcanic ash. Studies have shown that, apart from the incalculable benefit to human well-being, every dollar invested in meteorological and hydrological services produces an economic return many times greater, often ten times or more.

WMO plays a leading role in international efforts to monitor and protect the environment through its Programmes. In collaboration with other UN agencies and the National Meteorological and Hydrological Services, WMO supports the implementation of a number of environmental conventions and is instrumental in providing advice and assessments to governments on related matters. These activities contribute towards ensuring the sustainable development and well-being of nations.

## STRUCTURE OF THE ORGANIZATION

The **World Meteorological Congress** is the *supreme body* of the Organization. It brings together the delegates of Members once every four years to determine general policies for the fulfilment of the purposes of the Organization, to approve long-term plans, to authorize maximum expenditure for the following financial period, to adopt Technical Regulations relating to international meteorological and operational hydrological practice, to elect the President and Vice-Presidents of the Organization and members of the Executive Council and to appoint the Secretary-General.

The **Executive Council**, the *executive body* of the Organization, is responsible to Congress for the coordination of the programmes of the Organization and the utilization of its budgetary resources in accordance with the decision of Congress. Composed of 37 directors of National Meteorological or Hydrometeorological Services, it meets at least once a year to implement the programmes approved by Congress and review the activities of the Organization.

The **six regional associations** are each composed of Members whose task it is to coordinate meteorological, hydrological and related activities within their respective Regions (Region I - Africa; Region II - Asia; Region III - South America; Region IV - North America, Central America and the Caribbean; Region V - South-West Pacific; and Region VI - Europe).

The **eight technical commissions**, composed of experts designated by Members, study matters within their specific areas of competence (technical commissions have been established for basic systems, instruments and methods of observation, atmospheric sciences, aeronautical meteorology, agricultural meteorology, oceanography and marine meteorology (jointly with IOC of UNESCO), hydrology and climatology).

The **Secretariat**, based in Geneva, Switzerland, is headed by the Secretary-General.



# **WORLD METEOROLOGICAL ORGANIZATION**

## **International exchange of data and products**

WMO facilitates the free and unrestricted exchange of data and information, products and services in real- or near-real time on matters relating to safety and security of society, economic welfare and the protection of the environment.

### **WMO DATA POLICY AND EXCHANGE**

#### **WMO Resolutions 40 and 25**

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#### **Summary and Purpose of Document**

The document provides:

- the WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities (Resolution 40) approved at Cg-XII (1995); and
  - the WMO policy and practice for the exchange of hydrological data and products (Resolution 25) approved at Cg-XIII (1999)
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**Preamble to Resolution 40:**

The Twelfth World Meteorological Congress (1995) adopted Resolution 40 "**WMO Policy and Practice for the Exchange of Meteorological and Related data and products including Guidelines on Relationships in Commercial Meteorological Activities**" to facilitate worldwide co-operation in the establishment of observing networks and to promote the exchange of meteorological and related information in the interest of all nations.

When adopting the Resolution, Congress reminded Members of their obligations, under Article 2 of the WMO Convention, to facilitate world-wide co-operation in the establishment of observing networks and to promote the exchange of meteorological and related information in the interest of all nations, and urged Members to implement the practice on the international exchange of meteorological and related data and products.

According to the practice adopted by Congress, all meteorological and related data and products required to fulfil Members' obligations under WMO Programmes would be encompassed by the combination of **essential** and **additional** data and products exchanged by Members.

In **Annex 1 to Resolution 40** (Cg-XII), Congress urged Members to make known to all Members, through the WMO Secretariat, those additional meteorological and related data and products on which Members placed conditions related to their re-export for commercial purposes outside the receiving country (or group of countries forming a single economic group). Congress believed that, as a result of the implementation of the practice by all Members, the volume of data and products exchanged internationally will increase.

Notifications to "additional" data and products and the conditions some Members have attached to these data are available and via the *Operational Newsletter of the World Weather Watch*.

Note: In WMO terminology, the word "**Member**", with a capital M, refers to a Member State. The word "member" with a small m, refers to individuals, such as members of a committee.

**DATA POLICY AND EXCHANGE****1. WMO Resolution 40 (Cg-XII)****WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities****THE CONGRESS,***Noting:*

(1) Resolution 23 (EC-XLII) — Guidelines on international aspects of provision of basic and special meteorological services,

(2) Resolution 20 (EC-XLVI) — WMO policy on the exchange of meteorological and related data and products,

(3) Resolution 21 (EC-XLVI) — Proposed new practice for the exchange of meteorological and related data and products,

(4) Resolution 22 (EC-XLVI) — WMO guidelines on commercial activities,

(5) The report to Twelfth Congress of the chairman of the Executive Council Working Group on the Commercialization of Meteorological and Hydrological Services, established at the request of Eleventh Congress by the Executive Council in Resolution 2 (EC-XLIII) — Working Group on the Commercialization of Meteorological and Hydrological Services,

*Recalling:*

(1) The general policies of the Organization, as set down in the Third WMO Long-term Plan (1992–2001) adopted by Eleventh Congress, which include, inter alia, that Members should reaffirm their commitment to the free and unrestricted international exchange of basic meteorological data and products, as defined in WMO Programmes (Third WMO Long-term Plan, Part I, Chapter 4, paragraph 127),

(2) The concern expressed by Eleventh Congress that commercial meteorological activities had the potential to undermine the free exchange of meteorological data and products between national Meteorological Services,

*Considering:*

(1) The continuing fundamental importance, for the provision of meteorological services in all countries, of the exchange of meteorological data and products between WMO Members' national Meteorological or Hydrometeorological Services (NMSs), WMCs, and RSMCs of the WWW Programme,

(2) Other programmes of world importance such as GCOS, GOOS, WCRP, and IGOSS, which are sponsored and implemented in cooperation with other international organizations,

(3) The basic role of WMO Members' NMSs in furthering applications of meteorology to all human activities,

(4) The call by the world leaders at UNCED (Brazil, 1992) for increasing global commitment to exchange scientific data and analysis and for promoting access to strengthened systematic observations,

(5) The provision in the UN/FCCC committing all Parties to the Convention to promote and cooperate in the full, open, and prompt exchange of information related to the climate system and climate change,

*Recognizing:*

(1) The increasing requirement for the global exchange of all types of environmental data in addition to the established ongoing exchange of meteorological data and products under the auspices of the WWW,

(2) The basic responsibility of Members and their NMSs to provide universal services in support of safety, security and economic benefits for the peoples of their countries,

(3) The dependence of Members and their NMSs on the stable, cooperative international exchange of meteorological and related data and products for discharging their responsibilities,

(4) The continuing requirement for Governments to provide for the meteorological infrastructure of their countries,

(5) The continuing need for, and benefits from, strengthening the capabilities of NMSs, in particular in developing countries, to improve the provision of services,

(6) The dependence of the research and education communities on access to meteorological and related data and products,

(7) The right of Governments to choose the manner by, and the extent to, which they make data and products available domestically or for international exchange,

*Recognizing further:*

(1) The existence of a trend towards the commercialization of many meteorological and hydrological activities,

(2) The requirement by some Members that their NMSs initiate or increase their commercial activities,

(3) The risk arising from commercialization to the established system of free and unrestricted exchange of data and products, which forms the basis for the WWW, and to global cooperation in meteorology,

(4) Both positive and negative impacts on the capacities, expertise and development of NMSs, and particularly those of developing countries, from commercial operations within their territories by the commercial sector including the commercial activities of other NMSs,

Reminds Members of their obligations under Article 2 of the WMO Convention to facilitate worldwide cooperation in the establishment of observing networks and to promote the exchange of meteorological and related information; and of the need to ensure stable ongoing commitment of resources to meet this obligation in the common interest of all nations;

**Adopts the following policy on the international exchange of meteorological and related data and products:**

As a fundamental principle of the World Meteorological Organization (WMO), and in consonance with the expanding requirements for its scientific and technical expertise, WMO commits itself to broadening and enhancing the free and unrestricted<sup>1</sup> international exchange of meteorological and related data and products;



**Adopts the following practice on the international exchange of meteorological and related data and products<sup>2</sup>:**

(1) Members shall provide on a free and unrestricted basis essential data and products which are necessary for the provision of services in support of the protection of life and property and the well-being of all nations, particularly those basic data and products, as, at a minimum, described in Annex 1 to this resolution, required to describe and forecast accurately weather and climate, and support WMO Programmes;

(2) Members should also provide the additional data and products which are required to sustain WMO Programmes at the global, regional, and national levels and, further, as agreed, to assist other Members in the provision of meteorological services in their countries. While increasing the volume of data and products available to all Members by providing these additional data and products, it is understood that WMO Members may be justified in placing conditions on their re-export for commercial purposes outside of the receiving country or group of countries forming a single economic group, for reasons such as national laws or costs of production;

(3) Members should provide to the research and education communities, for their non-commercial activities, free and unrestricted access to all data and products exchanged under the auspices of WMO with the understanding that their commercial activities are subject to the same conditions identified in Adopts (2) above;

Stresses that all meteorological and related data and products required to fulfil Members' obligations under WMO Programmes will be encompassed by the combination of essential and additional data and products exchanged by Members;

**Urges Members to:**

(1) Strengthen their commitment to the free and unrestricted exchange of meteorological and related data and products;

(2) Increase the volume of data and products exchanged to meet the needs of WMO Programmes;

(3) Assist other Members, to the extent possible, and as agreed, by providing additional data and products in support of time-sensitive operations regarding severe weather warnings;

(4) Strengthen their commitments to the WMO and ICSU WDCs in their collection and supply of meteorological and related data and products on a free and unrestricted basis;

(5) Implement the practice on the international exchange of meteorological and related data and products, as described in Adopts (1) to (3) above;

(6) Make known to all Members, through the WMO Secretariat, those meteorological and related data and products which have conditions related to their re-export for commercial purposes outside of the receiving country or group of countries forming a single economic group;

(7) Make their best efforts to ensure that the conditions which have been applied by the originator of additional data and products are made known to initial and subsequent recipients;

**Further urges Members to comply with:**

- (1) The Guidelines for Relations among National Meteorological or Hydrometeorological Services Regarding Commercial Activities as given in Annex 2 to this resolution;
- (2) The Guidelines for Relations between National Meteorological or Hydrometeorological Services and the Commercial Sector as given in Annex 3 to this resolution;

Invites Members to provide explanation of the WMO policy, practice, and guidelines to the commercial sector and other appropriate agencies and organizations;

**Requests the Executive Council to:**

- (1) Invite the president of CBS, in collaboration with the other technical commissions as appropriate, to provide advice and assistance on the technical aspects of implementation of the practice;
- (2) Invite the president of CHy to continue his work on the issue of commercialization and the international exchange of hydrological data and products;
- (3) Keep the implementation of this resolution under review and report to Thirteenth Congress;

**Requests the Secretary-General to:**

- (1) Keep Members informed on the impacts of commercialization on WMO Programmes and to facilitate the exchange of relevant information on commercialization among NMSs;
- (2) Report on a timely basis to all Members on those meteorological and related data and products on which Members have placed conditions related to their re-export for commercial purposes;
- (3) Maintain effective coordination with IOC and other involved international organizations in respect of joint programmes during WMO's implementation of the practice;

**Decides** to review the implementation of this resolution at Thirteenth Congress (1999).

<sup>1</sup> "Free and unrestricted" means non-discriminatory and without charge [Resolution 23 (EC-XLII) — Guidelines on international aspects of provision of basic and special meteorological services]. "Without charge", in the context of this resolution means at no more than the cost of reproduction and delivery, without charge for the data and products themselves.

<sup>2</sup> See Annex IV to this resolution for definitions.

**Annex I** Data and products to be exchanged without charge and with no conditions on use

**Annex II** Guidelines for relations among National Meteorological or Hydrometeorological Services (NMSs) regarding commercial activities

**Annex III** Guidelines for relations between National Meteorological or Hydrometeorological Services (NMSs) and the commercial sector

**Annex IV** Definitions of terms in the practice and guidelines

## **Annex I to Resolution 40 (Cg-XII)**

### **Data and products to be exchanged without charge and with no conditions on use**

#### **Purpose**

The purpose of this listing of meteorological and related data and products is to identify a minimum set of data and products which are essential to support WMO Programmes and which Members shall exchange without charge and with no conditions on use. The meteorological and related data and products which are essential to support WMO Programmes include, in general, the data from the RBSNs and as many data as possible that will assist in defining the state of the atmosphere at least on a scale of the order of 200 km in the horizontal and six to 12 hours in time.

#### **Contents**

- (1) Six-hourly surface synoptic data from RBSNs, e.g. data in SYNOP, BUFR or other general purpose WMO Code;
- (2) All available in situ observations from the marine environment, e.g. data in SHIP, BUOY, BATHY, TESAC codes, etc.;
- (3) All available aircraft reports, e.g. data in AMDAR, AIREP codes, etc.;
- (4) All available data from upper air sounding networks, e.g. data in TEMP, PILOT, TEMP SHIP, PILOT SHIP codes etc.;
- (5) All reports from the network of stations recommended by the regional associations as necessary to provide a good representation of climate, e.g. data in CLIMAT/CLIMAT TEMP and CLIMAT SHIP/CLIMAT TEMP SHIP codes, etc.;
- (6) Products distributed by WMCs and RSMCs to meet their WMO obligations;
- (7) Severe weather warnings and advisories for the protection of life and property targeted upon end-users;
- (8) Those data and products from operational meteorological satellites that are agreed between WMO and satellite operators. (These should include data and products necessary for operations regarding severe weather warnings and tropical cyclone warnings).

## Annex II to Resolution 40 (Cg-XII)

### Guidelines for relations among National Meteorological or Hydrometeorological Services (NMSs) regarding commercial activities

#### Purpose

The purpose of these guidelines is to maintain and strengthen in the public interest the cooperative and supportive relations among NMSs in the face of differing national approaches to the growth of commercial meteorological activities.

#### Guidelines

In order to ensure the maintenance of the international exchange of data and products among WMO Members, and to develop the applications of meteorology, while adapting to the new challenge from the growth of commercial meteorological activities:

1. NMSs should provide the first point of receipt within a country for WWW data and products, in order to have complete and timely access to all the information necessary for the production of weather forecasts and warnings and other meteorological/climatological services necessary for the protection of life and property and other public interest responsibilities entrusted to the NMSs and without prejudice to the national laws of their territory of location;
2. NMSs should make their best efforts to ensure that the conditions which have been applied by the originator of *additional data and products*<sup>3</sup> are made known to initial and subsequent recipients;
3. In the case where conditions accompanying the exchange of additional data and products are not honoured, the originating NMS may take appropriate actions including denial of access of these additional data and products to the receiving Member;
4. NMSs may export NWP regional model products employing additional data and products for commercial purposes outside the country of the Member running the model, unless objected to by an affected Member. Every effort should be made to coordinate the provision of such services prior to implementation to avoid possible harm to other Members;
5. NMSs may distribute and export products from global NWP models without regard to conditions which were attached to the original data used in the models;
6. Services or products whose construction would suffer significant degradation by removal of the additional data or products and from which the additional data and/or products can be retrieved easily, or their use can be identified unambiguously, should carry the same conditions on their re-export for commercial purposes as those additional data or products;
7. An NMS receiving a request from a local client for service that it cannot fulfil may seek assistance from another NMS with the capacity to provide it. Where appropriate to enhance the free and unrestricted exchange of data and products among WMO Members, the service should as far as possible be made available through the offices of the NMS of the country within which the client is located;
8. Similarly, unless other arrangements have been agreed to, an NMS receiving a request to provide service in another country should refer the request back to the NMS in that country, i.e. to the local NMS. In the event that the local NMS is unable to provide the service for lack of facilities or other legitimate reasons, the external NMS may seek to establish a collaborative arrangement with the local NMS to provide the service;
9. Where the service originated by one NMS is likely to affect other Members (e.g. in the provision of regional broadcasts of meteorological information or the wide distribution of seasonal or climate forecasts), the NMS originating the service should seek, well in advance, and take into account the response of the NMSs of the affected Members, to the extent possible;

10. NMSs should, to the extent possible, refrain from using basic WWW data and products received from other countries in ways which jeopardize the performance of the public interest responsibilities of the originating NMSs within their own countries. If an NMS finds that, in the undertaking of its public interest responsibilities it is affected adversely by a public or private organization in another country, it may warn the NMS in the country from which the organization is deriving the data and products. The latter NMS should consider measures to mitigate these adverse effects and take those actions appropriate under its national laws;

11. NMSs with experience in commercial activities should make their expertise available, on request, to other NMSs, especially NMSs of developing countries, through the WMO Secretariat and bilaterally, and provide relevant documentation, seminars and training programmes to developing countries, on request, on the same financial basis as other WMO education and training courses are provided.

In implementing these guidelines, NMSs should take into account and, as far as possible, respect the different legal, administrative, and funding frameworks which govern the practices of NMSs in other countries or group of countries forming a single economic group. NMSs should, in particular, note that other NMSs will be bound by their own national laws and regulations regarding any trade restrictive practices. Furthermore, where a group of countries form a single economic group, the internal laws and regulations appropriate to that group shall, for all internal group activities, take precedence over any conflicting guidelines.

<sup>3</sup> “Additional data and products” means data and products additional to those with no conditions on their use.

## **Annex III to Resolution 40 (Cg-XII)**

### **Guidelines for relations between national meteorological or hydrometeorological services (NMSs) and the commercial sector**

#### **Purpose**

The purpose of these guidelines is to further improve the relationship between NMSs and the commercial sector. The development of the exchange of meteorological and related information depends greatly upon sound, fair, transparent, and stable relations between these two sectors.

#### **Guidelines**

These guidelines apply to the commercial sector engaged in meteorological activities, which includes government organizations engaged in commercial meteorological activities.

In order to enhance the relationship between the two sectors:

1. In the common interest, the commercial sector is urged to respect the international data exchange principles of the WWW and other WMO Programmes;
2. The commercial sector is urged to recognize and acknowledge the essential contribution of NMSs and of WMO to the activities of the commercial sector. NMSs and the commercial sector are urged to recognize the interdependence and mutual benefit possible from cooperative interaction;
3. In the case where the NMS of a country, particularly of a developing country, were to consider itself affected by the commercial sector's commercial use of data originated in its own country, all parties involved shall undertake negotiations to achieve appropriate and satisfactory agreements;
4. Unless authorized to do so by the relevant Member, commercial sector providers of meteorological services should not publicly issue warnings and forecasts relevant to the safety of life and property in the country or maritime area where they operate. Warnings and forecasts relevant to the safety of life and property publicly issued by the commercial sector should be consistent with those originated by NMSs or by other official originators in the course of the performance of their public service responsibilities;
5. In providing services, the commercial sector should be encouraged to employ meteorological terminology consistent with established national and international practice;
6. Commercial sector providers of meteorological services should respect the sovereignty and rules and regulations of the countries in which they deliver services;
7. NMSs are encouraged to discuss with their countries' meteorological community and professional societies the issues associated with the international activities of the commercial sector;
8. NMSs are encouraged to collaborate with their countries' commercial sector and their professional societies to maximize the use of meteorological information within their country.

## Annex IV to Resolution 40 (Cg-XII)

### Definitions of terms in the practice and guidelines

Term	Definition
Practice	Specifications for the classification of, and the conditions attached to, the use of data and products exchanged among WMO Members.
Re-export	Redistribute, physically or electronically, outside the receiving country or group of countries forming a single economic group, directly or through a third party.
For commercial purposes	For recompense beyond the incremental cost of reproduction and delivery.
Commercial sector	Governmental or non-governmental organizations or individuals operating for commercial purposes.
Meteorological and related data and products	Geophysical (meteorological, oceanographic, etc.) observational data and products developed from these data acquired and/or produced by Members to support WMO Programme requirements.
Free and unrestricted	<p>NOTES:</p> <ol style="list-style-type: none"> <li>1. Meteorological and related data and products are considered to include climatological data and products.</li> <li>2. Hydrological data and products, at this stage, are not included in the application of the practice.</li> <li>3. Aeronautical information generated specifically to serve the needs of aviation and controlled under the Convention on International Civil Aviation (Chicago, 1944) is not included in the application of the practice.</li> </ol> <p>Non-discriminatory and without charge (Resolution 23 (EC-XLII)) — Guidelines on international aspects of provision of basic and special meteorological services. “Without charge”, in the context of this resolution means at no more than the cost of reproduction and delivery, without charge for the data and products themselves.</p>
Research and education communities	Researchers, teachers and students in academic and research institutions, in other research institutions within governmental and non-governmental organizations, and these institutions themselves, as provided for in national laws and regulations.

## 2. WMO Resolution 25 (Cg-XIII)

### Exchange of hydrological data and products

#### THE CONGRESS,

##### *Noting:*

- (1) Resolution 40 (Cg-XII) — WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities,
- (2) The inclusion of dedicated observations of the climate system, including hydrological phenomena, as one of the four main thrusts of The Climate Agenda, which was endorsed by Twelfth Congress,
- (3) That Technical Regulation [D.1.1] 8.3.1(k), states that, in general, the routine functions of national Hydrological Services (NHSs) should include, inter alia, “making the data accessible to users, when, where and in the form they require” and that the Technical Regulations also contain a consolidated list of data and product requirements to support all WMO Programmes,
- (4) That the nineteenth Special Session of the United Nations General Assembly agreed, in its overall review and appraisal of the implementation of Agenda 21, that there is an urgent need to “... foster regional and international cooperation for information dissemination and exchange through cooperative approaches among United Nations institutions, ...” (A/RES/S-19/2, paragraph 34(f)),
- (5) That the fifty-first session of the United Nations General Assembly adopted, by resolution 51/229, the Convention on the Law of the Non-navigational Uses of International Watercourses, Article 9 of which provides for “regular exchange of data and information”,
- (6) That the Intergovernmental Council of the International Hydrological Programme of the United Nations Educational, Scientific and Cultural Organization (UNESCO) adopted at its twelfth session Resolution XII-4 which dealt with the exchange of hydrological data and information needed for research at the regional and international levels,

##### *Considering:*

- (1) The significance attached by the International Conference on Water and the Environment (ICWE) (Dublin, 1992) to extending the knowledge base on water and enhancing the capacity of water sector specialists to implement all aspects of integrated water resources management,
- (2) The call of world leaders at the United Nations Conference on Environment and Development (UNCED) (Rio de Janeiro, 1992) for a significant strengthening of, and capacity building in, water resources assessment, for increasing global commitment to exchange scientific data and analyses and for promoting access to strengthened systematic observations,
- (3) That the United Nations Commission on Sustainable Development (CSD) in its Decision 6/1 “Strategic Approaches to Freshwater Management” has strongly encouraged States to promote the exchange and dissemination of water-related data and information, and has recognized “the need for periodic assessments ... for a global picture of the state of freshwater resources and potential problems”,



(4) The call by the nineteenth Special Session of the United Nations General Assembly “for the highest priority to be given to the serious freshwater problems facing many regions, especially in the developing world” and the “urgent need ... to strengthen the capability of Governments and international institutions to collect and manage information ... and environmental data, in order to facilitate the integrated assessment and management of water resources”,

(5) The requirements for full, open and prompt exchange of hydrological data and products in support of various international conventions, such as the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the Convention to Combat Desertification,

(6) The requirement for the global exchange of hydrological information in support of scientific investigations of world importance such as those on global change and the global hydrological cycle, and as a contribution to relevant programmes and projects of WMO, other United Nations agencies, the International Council for Science (ICSU) and other organizations of equivalent status,

(7) The opportunities for more efficient management of water resources and the need for cooperation in mitigating water-related hazards in transboundary river basins and their water bodies which depend on the international exchange of hydrological data and information,

(8) The increasing recognition through scientific and technical endeavours, such as the Global Energy and Water Cycle Experiment (GEWEX), of the importance of hydrological data and products in improving the understanding of meteorological processes and subsequently the accuracy of meteorological products,

*Recognizing:*

(1) The responsibility of Members and their NHSs to provide for the security and well-being of the people of their countries, through mitigation of water-related hazards and sustainable management of water resources,

(2) The potential benefits of enhanced exchange of hydrological data and information within shared river basins and aquifers, based on agreements between the Members concerned,

(3) The continuing need for strengthening the capabilities of NHSs, particularly in developing countries,

(4) The right of Governments to choose the manner by which, and the extent to which, they make hydrological data and products available domestically and internationally,

(5) The right of Governments also to choose the extent to which they make available internationally data which are vital to national defence and security. Nevertheless, Members shall cooperate in good faith with other Members with a view to providing as much data as possible under the circumstances,

(6) The requirement by some Members that their NHSs earn revenue from users, and/or adopt commercial practices in managing their businesses,

(7) The long-established provision of some hydrological products and services on a commercial basis and in a competitive environment, and the impacts, both positive and negative, associated with such arrangements,

**Adopts** a stand of committing to broadening and enhancing, whenever possible, the free and unrestricted<sup>1</sup> international exchange<sup>2</sup> of hydrological data and products, in consonance with the requirements for WMO’s scientific and technical programmes;

**Further adopts** the following practice on the international exchange of hydrological information:

(1) Members shall provide on a free and unrestricted basis those hydrological data and products which are necessary for the provision of services in support of the protection of life and property and for the well-being of all peoples;

(2) Members should also provide additional hydrological data and products, where available, which are required to sustain programmes and projects of WMO, other United Nations agencies, ICSU and other organizations of equivalent status, related to operational hydrology and water resources research at the global, regional and national levels and, furthermore, to assist other Members in the provision of hydrological services in their countries;

(3) Members should provide to the research and education communities, for their non-commercial activities, free and unrestricted access to all hydrological data and products exchanged under the auspices of WMO;

(4) Respecting (2) and (3) above, Members may place conditions on the re-export<sup>3</sup>, for commercial purposes, of these hydrological data and products, outside the receiving country or group of countries forming a single economic group;

(5) Members should make known to all Members, through the WMO Secretariat, those hydrological data and products which have such conditions as in (4) above;

(6) Members should make their best efforts to ensure that the conditions placed by the originator on the additional hydrological data and products are made known to initial and subsequent recipients;

(7) Members shall ensure that the exchange of hydrological data and products under this resolution is consistent with the application of Resolution 40 (Cg-XII) — WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities;

**Urges Members**, in respect of the operational and scientific use of hydrological data and products, to:

(1) Make their best efforts to implement the practice on the international exchange of hydrological data and products, as described in Further adopts (1) to (7);

(2) Assist other Members, to the extent possible, and as agreed upon, in developing their capacity to implement the practice described in Further adopts (1) to (7);

**Requests the Executive Council to:**

(1) Invite the Commission for Hydrology to provide advice and assistance on technical aspects of the implementation of the practice on the international exchange of hydrological data and products;

(2) Keep the implementation of this resolution under review and report to Fourteenth Congress;

**Decides** to review the implementation of this resolution at Fourteenth Congress.

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1 "Free and unrestricted" means non-discriminatory and without charge. "Without charge", in the context of this resolution means at no more than the cost of reproduction and delivery, without charge for the data and products themselves.

2 "Exchange", in the context of this resolution, means the movement of data and products between countries or, as is more likely the case in the field of hydrology, the movement of data and products from one country to another.

3 "Re-export", in the context of this resolution, means to redistribute, physically or electronically, outside the receiving country, group of countries forming a single economic group, or regional and global data centres, directly or through a third party.



Extract from the Report of the  
**Forty-Third Meeting of the Caribbean Meteorological Council (CMC)**

Radisson Fort George Hotel  
Belize City, Belize

18-19 December 2003

**4(c) Provision of Meteorological and Hydrological Data and Products by CIMH**

**THE COUNCIL:**

**Noted** the contents of the WMO Resolution 40 of the Twelfth Congress;

**Agreed** that the CIMH could provide climate data and products for (i) research and educational purposes, (ii) non-commercial use by clients, (iii) commercial use by clients, in exactly the same way undertaken by Member countries and consistent with the WMO Resolution 40;

**Also agreed** that the CIMH can supply meteorological and climate data directly to other Meteorological Services, climate services, research and educational institutions or other clients, without seeking permission of each of the Member countries whose data are utilized, provided that it respects the conditions set out by Members regarding the provision of such data;

**Further agreed** that the CIMH can place conditions on the redistribution by third parties of data and products it provides to them, in exactly the same way that Member countries can do under Resolution 40.

**Decided** the CIMH shall include acknowledgements of the CMO Member countries as the originating source of the data used for the products generated and delivered to third parties.

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