



FINAL REPORT OF THE FIFTIETH MEETING OF THE CARIBBEAN METEOROLOGICAL COUNCIL



CHAIRPERSON:

Hon. Juliana O'Connor-Connolly, JP,
Deputy Premier and Minister for District
Administration, Works, Lands and
Agriculture
CAYMAN ISLANDS

VENUE AND DATE:

Marriott Hotel
West Bay Road
Grand Cayman
CAYMAN ISLANDS
22-23 November 2010

1. OPENING OF THE SESSION AND ELECTION OF CHAIRPERSON

1.1 At the kind invitation of the Government of The Cayman Islands, the Fiftieth Meeting of the Caribbean Meteorological Council (CMC) was held at the Marriott Hotel in Grand Cayman on 22-23 November 2010. The theme for the 50th meeting was “*Towards a Global Framework for Climate Services.*”

1.2 *Mr Fred Sambula*, Director-General of the National Weather Service of the Cayman Islands commenced the Opening Session of the Meeting by extending words of welcome, after a prayer was offered by Mr Rudy Myles. *Mr Tyrone Sutherland*, Coordinating Director of the Caribbean Meteorological Organization (CMO), delivered remarks that focussed on the important need for National Meteorological and Hydrometeorological Services, recognizing the advances in meteorological science, to develop a *culture of service delivery* and to take advantage of the major advances in technology to better deliver services to the widest possible cross-section of society. *Mr Garfield Barnwell*, Director of Sustainable Development in the CARICOM Secretariat, delivered remarks on behalf of the Secretary-General of CARICOM to commemorate the achievements of the Council leading to its fiftieth session. *Mr Michel Jarraud*, Secretary-General of the Geneva-based World Meteorological Organization (WMO), as the Council’s specially invited guest, referred to the well-established collaboration between the WMO and the organs of the CMO to ensure that the Meteorological and Hydrometeorological Services of CMO Member States continue to meet and can improve delivery of services in relation to severe weather, agriculture, water resources management, marine services and climate-related activities.

1.3 The feature address was delivered by the *Hon. Juliana O’Connor-Connolly*, Deputy Premier and Minister for District Administration, Works, Lands and Agriculture of the Cayman Islands. The Minister delivered a very heart-felt elaboration of the importance of adequate and timely information and warnings to the public in the events of severe weather, especially during tropical storms and warnings. The Vote of Thanks was delivered by the *Hon. Charles Kirnon*, Minister of Communications and Works of Montserrat.

1.4 The Meeting elected the *Hon. Juliana O’Connor-Connolly* as the Chair of the Caribbean Meteorological Council for its 50th session and the period until the next annual meeting of the Council.

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. A List of Delegates attending the Meeting is attached as **ANNEX II** to this Report.

3. SPECIAL WMO SESSION - Global Framework for Climate Services (GFCS)

3.1 In 2009, the *World Climate Conference-3* (WCC-3) was organized and hosted by the World Meteorological Organization (WMO) in Geneva, Switzerland. The major outcome of WCC-3 was the establishment of a ***Global Framework for Climate Services*** (GFCS). WCC-3 conceived that improved climate services will be a major contributor to the international shared effort to cope with the effects of climate variability and change. An aim of GFCS is to define the directions towards “better climate information for a better future”, in order to accelerate global action on adaptation and management of climate-related risks, while capitalizing on the associated opportunities.

3.2 *Dr Angus Friday*, a member of the High-Level Taskforce for the GFCS, along with the Secretary-General of WMO, presented the concept of the GFCS to the Caribbean Meteorological Council as part of a series of global consultations with governments and stakeholders. The Council was informed that the overarching goal of the GFCS was to “*Enable better management of the risks of climate variability and change at all levels, through development and incorporation of science-based climate information and prediction services into planning, policy and practice.*”

3.3 The aim of the consultation was to advise on the content and help shape the framework of GFCS to respond to the urgent needs of society for user-friendly climate information and services. The presentation showed that the implementation of the GFCS will be a strategic dimension of the activities of WMO and other partner organizations for several years to come and that GFCS would have a profound impact on Meteorological Services globally in their attempts to ensure that they meet the aims of GFCS in the face of changing climate conditions.

4. CMO EXECUTIVE REPORTS

4(a) Coordinating Director’s Report

4.1 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 noted that for the CMO Headquarters, 2010 was the first year in many in which the 13.2 million Euro European Union-funded CMO Radar Project was not at the centre stage of its activities as the implementation phase had concluded in June 2009. A feature of 2010 that impacted on the Headquarters activities was related to the weather itself. A severe regional drought carried over from the latter part of 2009 into the first quarter of 2010, in which all sectors of society were affected. This was complicated, to some extent, by the fall-out of the disastrous earthquake in Haiti in January 2010 that affected weather services. Then after a quiet start, a very active hurricane and rainy season kept the Meteorological Services throughout the Caribbean and the CMO engrossed in operationally-related activities. The Council discussed the impact of the very active 2010 hurricane season and commended the National Meteorological Services of those Member States affected in the timeliness and effectiveness of warnings issued.

4.2 The Council was informed that, notwithstanding the weather-related events, a primary focus for the Headquarters during the year had been to get the Meteorological Services of Member States ready to implement the increasing number of regional and international programmes and activities that must be adhered to over the next few years. These included the compulsory requirement for Meteorological Services in the Caribbean and elsewhere to implement a Quality Management System (QMS) for their operations, particularly in relations to aviation weather services. The Council also noted that the CMO Headquarters was heavily involved in the implementation of the regional components of the *WMO Integrated Global Observing System (WIGOS)* and the technical transitioning of the Meteorological Services to new forms of data exchange. The CMO was also quite heavily involved in assisting WMO with its regional activities in hydrology and in the *Enhancing Capabilities of Member in Multi-Hazard Early Warnings and Disaster Prevention.*

4.3 The Council noted that the efforts of the Headquarters to implement its activities on behalf of Member States had been made fairly difficult by the negative impact that the continuing global and regional economic situation had on the operations of the CMO Headquarters. It discussed the impact that the very slow receipt and a decline in contributions from Member States to the organs of the CMO in 2010, continuing on from 2009, had resulted in some curbing of activities on behalf of the Member States themselves. The Council also noted concerns about the impact of the previous deferrals of the filling of new staff posts were having on the programmes of the CMO Headquarters (See Agenda Item 7(b)). Nonetheless, the Council noted that the Headquarters would, among other things, be very actively involved in assisting the Government of the Cayman Islands in the implementation of its Doppler weather radar project over the next few years.

4.4 The Coordinating Director reminded the Council that, in addition to the regional role of the Caribbean Institute for Meteorology and Hydrology (CIMH) as an organ of the CMO, the CIMH also had, by agreement between the CMO and the WMO, an internationally recognized role as (i) a *WMO Regional Training Centre (RTC)*, (ii) a *WMO Regional Instrument Centre (RIC)* and (iii) a *WMO Centre of Excellence (CoE)* for Satellite Meteorology. The Council discussed and **endorsed** the proposal by the Coordinating Director to have the CIMH developed and recognized as a *WMO Regional Climate Centre (RCC)* for the English-speaking Caribbean.

4.5 The Council was concerned that matters concerning the status of the building occupied by the CMO Headquarters in Port of Spain were still ongoing and unsettled. The Council was also very concerned that CMO Headquarters had to undertake the payment of the rent during this protracted activity, resulting in an enormous budgetary burden that threatened to bring the entire operations of the Headquarters to a halt. It therefore *accepted the suggestion* that if the owner of the premises was unable to resolve the matter within a few months, the CMO Headquarters and the relevant Ministry in Trinidad and Tobago should seek a new solution, such as new premises, based on the Host Country Agreement on the CMO.

4.6 The Coordinating Director gave the Council an outline of a dispute between the CMO and the European Union over a particular contract implemented within the concluded EU-funded radar project. The Council **urged** the Secretary-General of CARIFORUM to work more diligently towards finding an amicable solution with the European Union.

4.7 The Council *paid tribute* to a few key members of the meteorological community in the Caribbean. In this regard, the Council expressed gratitude to the veteran Meteorologists **Mr Chester Layne**, who retired in 2010 as the Director of the Meteorological Services of **Barbados**, and to **Mrs Sylvia McGill**, Director of the Meteorological Services of **Jamaica**, for her outstanding contribution to her nation, the region and the wider meteorological community. It was expected that Mrs McGill would retire before the next session of the Council.

4(b) CIMH Principal's Report

4.8 The Principal informed the Council that no significant investments in infrastructure at the CIMH had been made since 1973. He noted that if the deterioration of the infrastructure remained unchecked, training within the current infrastructure may not be possible as the unsatisfactory condition, along with safety concerns, may lead to non-accreditation. The Principal noted that the current state of the infrastructure resulted in operating losses and decreased productivity.

4.9 The Council noted a suggestion by the **Representative of Barbados** that the CIMH issue a call for tender to support a property management assessment for all aspects of the property, including the roadway, as part of a three-year infrastructural upgrade. In addition, the Principal briefed the Council of various possibilities of acquiring funds from donor agencies to support infrastructural and equipment upgrades, including the climate-related fast-track financing mechanism. In its discussions on this matter, however, the Council was made aware that the use of these funds was dependant on the absorptive capacity of the Organization and at that time, the CARICOM Secretariat was in the process of creating the terms of reference to study the absorptive capacity of Member States and Organizations before any attempt was made to use monies through the fast-track financing mechanism.

4.10 The Council discussed the fact that adequate and competent staffing was important for CIMH to support the region's activities in the areas of disaster risk reduction, climate change adaptation, water resources management, agriculture/food security and international transport/tourism. However, the Principal pointed out that the Institute would lose between 150-200 years of staff experience during the period 2011-2015. The loss of training experience was a major concern, as the replacements were often recent graduates and who lack significant teaching and research experience. The Council agreed with the concern expressed by the Principal that the uncertainty in the receipt of contributions from Member States prevented the execution of a robust succession plan at the Institute; hence there was no significant overlap between outgoing and incoming staff.

4.11 With regards to its research and development activities, the Council was particularly pleased that the CIMH was able to deploy a high resolution (4-km) numerical weather prediction model over Haiti on January 13, 2010. Rainfall, which represents the key output variable of interest from the model, was presented over a country map which displays watersheds as previously determined by CIMH. This deployment became an integral contribution to the efforts of Member States of the region, coordinated by WMO, to the relief activities in Haiti (see Section 9(c)). The use of the model allowed the development of high resolution rainfall and flooding/landslide forecasting products after the earthquake to risk-inform search, rescue and recovery efforts. The CIMH planned to make the model output available to the Haiti effort for the 2011 rainy and hurricane season. The products and experience gained from the intervention in Haiti would be applied to all CMO Member States.

4.12 **The Council:**

Noted the Principal's Report setting out the activities and issues relating to the CIMH since the Forty-Seventh Meeting of the Board of Governors. It praised the fact that the CIMH was able to keep its critical programmes running, despite ongoing financial difficulties, and had high praises for the CIMH's contribution to the situation in Haiti.

(c) CIMH Board of Governors' Report

4.13 The Chairman of the CIMH Board of Governors briefed the Council on the significant contributions that CIMH has made to the Caribbean region in the area of disaster risk reduction, climate change and training. These activities contributed to (i) the sustainable socio-economic development of CMO Member States and region as a whole and (ii) reduction in the loss of life and property within the Caribbean.

4.14 The Chairman elaborated on three areas in which the Institute's contributions were significant, namely (i) the Institute's contributions to support various actions in Haiti; (ii) the work done on the Eastern Caribbean Donor Group for Disaster Management (ECDG-DM) *Rapid Needs Assessment Team* (RNAT) to assess the needs of Saint Lucia following the passage of Hurricane Tomas in October 2010, as well as other rapid assessments performed across the region; and (iii) the work completed to alert and inform the region of 2009-2010 drought which likely helped reduce the socio-economic losses associated with the event.

4.15 The Council once again discussed the urgent requirement of the International Civil Aviation Organization's (ICAO) that National Meteorological and Hydrological Services (NMHSs) which provide services to the aviation community must have a quality management system (QMS) in place by November 2012. In this regard, the Council recognized that the CIMH Instrument Calibration Laboratory, which would be used by Member States to calibrate their meteorological equipment, must also be certified as being compliant with the requisite ISO standards to perform such tasks. This certification did not then exist for the CIMH calibration lab. The Council was urged to provide extra-budgetary funding for this critical activity, so that it was not subject to the funding uncertainties faced by the CIMH. Based on information from international projects, the cost of certifying the lab at CIMH and developing the required operational processes was estimated to be approximately US \$75,000.00.

4.16 **The Council:**

Accepted the Draft Summary of Conclusions of the Forty-Seventh Meeting of the Board of Governors of the Caribbean Institute for Meteorology and Hydrology, concurring in the process with the view that the contributions of the CIMH demonstrated the institution's growing capabilities and value to the sustainable development of the region;

Noted the need for the calibration laboratory at the CIMH to be ISO certified before November 2012;

Approved extra-budgetary funding of **US \$75,000.00** for the CIMH to seek ISO certification;

Further Approved that the contribution of Member States to the extra-budgetary fund would be based on the present CMO contribution formula.

5. STATUS OF ACTIONS FROM THE PREVIOUS SESSION

5.1 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 CMC49 (Tortola, BVI, 2009) was prepared, giving the status of actions taken to implement these decisions of Council.

5.2 In this regard, the Council recalled that the CMO had purchased a three-year warranty on each weather radar and that the warranty started at the date of the site acceptance. During this three-year period, the radar manufacturer will replace all spares and refund (pay) all shipping costs. The 49th session of the Council agreed to the establishment of the trust fund for the purchase of spares and associated shipping costs after the warranty period, with contributions from the four recipient radar host countries, to be held and managed by the CIMH as part of its management of the central spares depot. However, the Coordinating Director informed the Council that, as 2010 was a difficult financial year for some Member States, the establishment of the Trust Fund was not considered for this year 2010, but would be revisited in 2011 in consultation with the CIMH.

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 refundable balances account, as of 01 November 2010 in TT\$, was as follows:

<u>BCT</u>		<u>CMO MEMBERS OF WMO</u>	
Anguilla	74,071.30	Antigua & Barbuda	2,355.83
Br. Virgin Is.	54,216.02	Barbados	13,517.00
Cayman Is.	181,787.11	Belize	7,033.24
Montserrat	23,882.85	Dominica	7,999.25
Turks & Caicos Is.	53,941.31	Guyana	41,022.59
		Jamaica	81,649.90
		St. Lucia	12,006.91
		T'dad & Tobago	100,353.77
	<u>\$387,898.59</u>		<u>\$265,938.49</u>
	=====		=====
	St. Kitts & Nevis \$83.74 (funds held from BCT days)		

6.2 By Member's 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 47th 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, which was as follows:

BCT

Anguilla	74,071.30
Br. Virgin Is.	54,216.02
Cayman Is.	181,787.11
Montserrat	23,882.85
Turks & Caicos Is.	53,941.31

St. Kitts & Nevis 83.74

CMO MEMBERS OF WMO

Antigua & Barbuda	2,355.83
Barbados	13,517.00
Belize	7,033.24
Dominica	3,400.00
Guyana	41,022.59
Jamaica	1,000.00
St. Lucia	12,006.91
T'dad & Tobago	100,353.77

6.4 THE COUNCIL:

Noted the status of the Refundable Balances Account as presented;

Urged the Coordinating Director to continue to ensure that the method of drawdown on the Refundable Balances by Member States was very formal and clearly auditable at the CMO HQ end and the Member's end.

6(b) CMO HQ Auditor's Report

6.5 The Coordinating Director presented the audited accounts for 2009 of the CMO Headquarters, which were audited during May 2010 by the Trinidad and Tobago Auditor General's Department.

6.6 The Council recalled that, at its 48th session in Guyana (December 2008), it requested a detailed explanation of the Accumulated Surplus shown in the Statement of Accounts. This explanation is repeated in **ANNEX III** to this Report.

6.7 THE COUNCIL:

Reviewed and Noted the audited Statements of Accounts for 2009 and also deferred further discussion on outstanding arrears and expenditure related to rent of the CMO Headquarters building to Agenda Item 6(c) and 7(a).

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

6.8. The Council carried out very extensive discussions on the situation of arrears to both Organs of the Organization. The Council recalled that for many years, both operational arms of the CMO, namely the CMO Headquarters Unit and the CIMH, had been forced to operate under very difficult circumstances because of the large arrears of contributions by Member States. The Caribbean Meteorological Council (CMC), as the Governing Body of the CMO, had constantly urged Member States to rectify the situation by making regular payments to the current budget estimates and by establishing a plan to pay off arrears.

6.9 For a number of years, the Auditor General of Trinidad and Tobago had made reference to the state of arrears in the Report on the Financial Statements of the CMO Headquarters, as referred to in Agenda Item 6(b). The Council noted that there were some Member States that routinely made their full annual contributions in a timely manner, and there were States that also made their full contribution but in an inconsistent manner, often very late in the year. On the other hand, there were some States that failed to make their full contribution, as well as States that failed to make any contribution at all.

6.10 The Council recalled that, at its 49th session, it was stated that 2009 had been one the most difficult years on record for the CMO Headquarters in terms of contributions received and the timeliness of receipt. It was clear that the financial difficulties faced by the region in 2009 continued into 2010, as there had been a further decline in contributions to the organs of the CMO, making 2010 an even more difficult year than 2009, with the resulting reduction in programmes and activities. Council expressed particular concern that, at one point in the middle of the year, there were doubts about the ability to pay staff remunerations. Following the Auditor's Report at CMC49, Council directed that the Headquarters should provide statements of arrears to the Permanent Secretaries or other such executive heads in the relevant ministries of Member States on an annual basis. This had a positive impact in some cases as a few outstanding contributions, partial or in full, had been made as a result. As of 15 October, only 68% of the 2010 contributions to the Headquarters had been received. The Council again noted that, as happened in 2008, it was only because of an advanced 2010 payment made by Trinidad and Tobago late in 2009 that the Headquarters able to pay salaries in the first few months of 2010, for which the Council and the CMO Headquarters again expressed their gratitude.

6.11 The Principal and the Senior Administrative Officer of the CIMH informed the Council about the level of contributions received by CIMH for 2010 up to 30 September. They pointed out that only 44 percent was received and this placed a huge strain on the Institute's ability to deliver services on time. Further, the Council noted that up to 30 September 2010, the overall arrears in contributions owed to the CIMH had grown to BD **\$16,107,754.72**. The Council noted that the CIMH auditors recommended that 95% of the arrears owed should be written off. However, the Council was not in agreement with this recommendation.

6.12 The Council recognized that highly uncertain financing of the Institute represented the single biggest risk to sustaining the operations of the Institute. It hindered CIMH's ability to effectively support the sustainable development agenda of its Member States through technical advisory services and the provision of training programmes.

6.13 The **Principal Representative for St. Lucia** expressed the view that in the context of the declining contributions of both CIMH and the CMO Headquarters, the attendance of representatives of Member States at Council sessions and submission of their reports on their return to the home countries was not sufficient to reverse the trend of increasing arrears. She felt strongly that the representatives of Member States needed to be advocates in their respective countries for the payment of contributions to the CIMH and CMO.

6.14 The views articulated by the **Representative for St. Lucia** were supported by many Members States at Council. The **Coordinating Director** indicated that for both Organs, it was necessary to stress that while payment of the arrears was important, it was even more important that Member States meet their current contributions and reduce their arrears over time. The payment of the current contributions would allow both CIMH and CMO to meet the demands for services from Member States.

6.15 The **Chairman of the Board of Governors** suggested that a small team comprising of the Coordinating Director, the Principal and the Chairman of the Board, draft a letter to Ministers with responsibility for Meteorological Services. The letter would emphasize the benefits of the CIMH and CMO to the region and urge the Minister to ensure that they meet their contributions to both organizations and to reduce their arrears (if any).

6.16 **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.

Agreed that the Coordinating Director, the Chairman of the CIMH Board of Governors and the Principal would prepare a joint letter as soon as possible on the arrears to each Member State in significant arrears, with the aim that it would bring the state of arrears to the highest possible level in Government. This letter should be accompanied with a document showing the benefits of the Organs of the CMO to Member States;

Also Agreed that the Coordinating Director should continue to provide statements of arrears to the Permanent Secretaries in the relevant ministries of Member States on an annual basis.

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

7(a) **Revised CMO Headquarters Budget Estimates - 2010**

7.1 The Council recalled its directive that, whenever the CMO Headquarters incurred expenses significantly different from the approved budget estimates, the Council would be presented with a revision of the estimates for that year for its consideration and approval. This practice was also in keeping with the requirements set out by the Auditor General of Trinidad and Tobago.

7.2 The Coordinating Director provided the Council with revised CMO Headquarters Budget Estimates for 2010. The Council recalled the difficulties being experienced by the CMO Headquarters concerning the status of the premises it occupies in Port of Spain (see Agenda Item 4(a)). The primary implication of this difficulty was the fact that the CMO Headquarters had to pay the monthly rent of TT\$43,000. This was an unbudgeted amount, as occurred in 2009 and as reflected in the Audit Report (Agenda Item 6(b)). Payment of the rent will have to continue until the matter is resolved, after which it was anticipated that the funds will be refunded to the CMO.

7.3 Expenses were also undertaken for preliminary activities in connection with the Cayman Islands Radar Project, which the CMO Headquarters will be undertaking through two contracts. These expenses in the revised budget were considered a temporary measure as these would be reimbursed. The only non-reimbursable virement was for larger than anticipated expenses on furniture and equipment.

7.4 The variation to the budget was 19.1% with the rental expenses and the Cayman Islands radar expenses included and 0.84% if excluded, which was within the approved range.

7.5 THE COUNCIL:

Approved the revision of the 2010 Budget Estimates for the CMO Headquarters Unit, as presented above.

7(b) CMOHQ Budget Estimates for 2011

7.6 The Council examined the CMO Headquarters' Budget Estimates for 2011. The document was presented with two options. The Council recalled that at its 49th session in 2009, it held in abeyance its earlier decision to fill two new professional posts and some general staff posts that it had earlier agreed should have been filled in 2010. That decision to delay the implementation was made because of the financial situation that was affecting the region at the time; the Council thus decided that it would re-examine the situation at this 50th session for inclusion in the 2011 estimates. The Council accepted the view that while there had been little significant change in the overall economic situation, the continuing deferral of Council decisions within the budget estimates meant that the operations of the Headquarters would be further hindered, making it more and more difficult for the CMO Headquarters to undertake many of the programme coordination on behalf of Member States, so that the CMO will not be in a position to properly guide the region's involvement in the increasing number of international weather and climate activities that impact on the Member States.

7.7 For this 2011 budget estimate therefore, the Council decided that the *International Affairs Officer* post should be filled. Recognizing that a period of at least six (6) months might be needed for adequate budgetary contributions to be received from Member States and for the recruitment process to be undertaken, the budget estimates would be reflected accordingly. The Council also agreed that some strengthening of administrative support staff was needed and approved an upgrade of one clerical post from Clerk-Typist to Secretary.

7.8 The Council also recognized that, as a temporary measure, there was a need to include in the budget estimates, a budget line for the rent of the premises occupied by the CMO Headquarters in Port of Spain. Detailed discussions on this matter can be found under Agenda Items 4(a), 6(b) and 7(a). Inclusion in the budgetary estimates would allow the Headquarters to expend funds for this purpose. However, this amount will not be included in the contributions to the Organization by Member States so that, in effect, the Council has decided to approve a budget estimate with a *deficit*.

7.9 THE COUNCIL:

Approved a deficit budget estimates of expenditure of **TT \$4,461,257**, as detailed in **ANNEX IV**, with Member contributions based on the figure of **TT \$3,945,257**, as indicated in **ANNEX V**;

Urged Members to give priority to meet annual contributions, through quarterly, bi-annual or more frequent part-payments, if necessary;

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;

Also 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(c) CIMH Budget Estimates for 2011

7.10 The Chairman of the Board of Governors informed the Council that CIMH presented the Estimates of Expenditure for the financial year 2011 to the Board of Governors for endorsement. The total amount requested was BB \$6,198,955. It was noted that the estimates included funds to fill numerous vacant positions which had been outstanding for some time. However, due to prevailing economic circumstances, prioritization would be given to immediate needs.

7.11 The **Chairman** of the Board presented the Council with Revised Estimates of Expenditure of the CIMH for 2011 of **BB \$5,814,623.00** for its approval.

7.12 In addition to the Extra-budgetary funding shown in paragraph 4.16, **THE COUNCIL:**

Approved the Estimates of Expenditure for 2011 of **BB \$5,814,623.00** for the CIMH as presented by the Board of Governors.

8. ANNUAL MEETING OF THE DIRECTORS OF METEOROLOGICAL SERVICES

8.1 The Meeting considered the Report of the Annual Meeting of Directors of Meteorological Services held on 20 November 2010, which was presented by Mr Glendell De Souza, Science and Technology Officer of the CMO Headquarters. The Report provided the Council with a summary of the deliberations and recommendations of the Directors on a wide range of technical and scientific topics.

8.2 Mr De Souza highlighted two areas in which the Member States should concentrate their energies over the next year. These areas are:

1. **Watches and Warning Systems:** - CMO Member States would remember 2010 as a year in which they experienced disasters at both ends of the hydrological spectrum. During the dry season, most Member States experienced a drought which, in some instances, decimated agriculture, led to livestock losses and produced severe water shortages amidst the increased demand and dwindling supplies. For most Member States, the rapid onset of the rainy season produced frequent episodes of torrential rainfall, which produced widespread flooding and landslides. Tropical storms and hurricanes compounded the devastation experienced for some Member States by producing copious amounts of rainfall that was dumped on the already saturated soil. While the early warning systems worked well in 2010, they must be flexible enough to be able to produce warnings for the slow onset events such as droughts, or the fast-paced events with associated flash flooding. Further, continual work on improving coordination between all aspects of national disaster management would be necessary to be able to better warn the populace.
2. **Competence Assessment Toolkit:** - The International Civil Aviation Organization (ICAO) made a recommendation in November 2002 that all Meteorological Offices providing services to aviation, institute a quality management system which is ISO 9000 certified. That recommendation would be a requirement (standard) from November 2012. Meteorological Services must demonstrate that they have suitable qualified staff for the services provided to aviation. Through a Task Team of the WMO Commission of Aeronautical Meteorology (CAeM), a competence assessment toolkit would be developed to assist Meteorological Services to ensure that their personnel continue to qualify as WMO Meteorologists and WMO Meteorological Technicians. The Task Team on the Competency Assessment Toolkit prepared the first version of the toolkit and feedback from Member States was necessary to finalize the toolkit. Mr Shakeer Baig of the Trinidad and Tobago

Meteorological Service and Ms Kathy-Ann Caesar of the CIMH were the two persons with lead responsibility on this matter in the region for the CMO Member States. The toolkit could be accessed at <http://forum.14.caem.wmo.int/post14web/>.

3. **Migration to BUFR:** - Some years ago, WMO instituted a phased global change in the formats used for the transmission of meteorological data on the WMO *Global Telecommunication System* (GTS). Synoptic weather observational data from the Meteorological Services in the WMO Regional Basic Synoptic Network (RBSN), which are Antigua, Barbados, Belize, Cayman Islands, Grenada, Guyana, Jamaica, Saint Lucia and Trinidad and Tobago, would be transmitted in the WMO **Binary Universal Form for the Representation** (BUFR) from November 2010. Meteorological Services of these Member States have been slow to migrate to BUFR, in part because of the lack of training. The migration requires that every country develop a national migration plan which follows the WMO international plan and then implement the required actions (including national training). The CIMH also has to introduce and provide training in BUFR to the entry-level technicians.

8.3 THE COUNCIL:

Noted the need for improvements to the watch and warning system to forecast slow onset events such as droughts;

Urged Member States to improve the coordination of all aspects of their disaster management system;

Endorsed the revised Draft Report of the Meeting of Directors of Meteorological Services held on 29 November 2010.

9. **SPECIAL CMO AND WMO ISSUES**

9.1 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 2010 Executive Council of the World Meteorological Organization
- (b) Meteorological Services in the Caribbean –
 - (i) Implementation of Quality Management System
 - (ii) ICAO/WMO Staff Requirements & Standards
 - (iii) Regional Arrangements for Meteorological Forecast and Warning Services to Other States
 - (iv) Met Services' role in a regional Tsunami Warning System
- (c) Regional Meteorological Efforts in Haiti
- (d) World Meteorological Congress 2011.

9(a) Outcome/Highlights of the 2010 Executive Council of the World Meteorological Organization

9.2 The Coordinating Director of the CMO, who is a member of the WMO Executive Council and the Second Vice-President of the WMO, attended the 62nd session of the **Executive Council** in Geneva, Switzerland from 8 to 18 June 2010, accompanied by a strong team of advisers and experts, comprising *Mr Fred Sambula* (Cayman Islands-BCT), *Mr Glendell De Souza* of the CMO Headquarters and *Dr David Farrell*, Principal of the CIMH. The Coordinating Director briefed the Caribbean Meteorological Council on several issues of special Importance to CMO Member States, including progress made in the provision of critical weather, water and climate services and to optimize its programmes in the face of the global climate challenge. Some of the major issues included:

- (a) *Global Framework for Climate Services*, in line with the decision taken by World Climate Conference-3 (WCC-3);
- (b) Enhancing Capabilities of Members in Multi-Hazard Early Warnings and Disaster Prevention;
- (c) Technology Transfer and Transition from Research to Operational Forecasting.

9(b) Meteorological Services in the Caribbean –

(i) Implementation of Quality Management System

9.3 The primary focus to-date has been on a Quality Management System (QMS) for services to the aviation community. However, there is a growing push for the formulation of clear requirements for the implementation of Quality Management Systems (QMS) in the delivery of services to the marine community, as well as to hydrology and water resources, the WMO Information System (WIS) and the concepts of the WMO Integrated Global Observing System (WIGOS).

9.4 With regards to a QMS for the aviation community, WMO and the **International Civil Aviation Organization** (ICAO) have always collaborated to ensure that the Meteorological Services provided for air navigation are of the highest quality. The last few sessions of the Caribbean Meteorological Council dealt with the major very urgent issue concerning the development of a QMS for the provision of meteorological services for the aviation community with the Caribbean. The CMO Headquarters has been working closely with the NMHSs to ensure that they meet the ICAO deadline of **November 2012** for its implementation.

9.5 The Council noted that in February 2010, recognizing that many countries around the world, particularly the developing ones, had difficulties meeting the November 2010 deadline, ICAO adopted Amendment 75 to Annex 3 to the Convention on International Civil Aviation, and declared **November 2012** as the new applicable date for the implementation of a recognized QMS in the provision of meteorological services to international civil aviation. The Caribbean Meteorological Council noted that several of its Member States had not made much progress towards the implementation of the QMS, and suggested that some government ministries and aviation authorities had not been properly engaged in the process, nor made aware of the urgency.

9.6 The CMC50 noted the progress made by the CMO Headquarters and the CIMH in the development and delivery of a verification scheme for aeronautical weather forecasts for airports, called the CIMH_TAFV. At the same time, the Council expressed concern that there were continuing deficiencies in the issuance and content of Significant Meteorological Information (**SIGMET**), which have significant impact on aviation safety.

9.7 **The Council:**

- (a) **Urged** the relevant government ministries, aviation authorities and meteorological services in all Member States to ensure that their countries take urgent steps to implement a Quality Management System (QMS) for meteorological services to the aviation community well before the new deadline of November 2012;
- (b) **Agreed to Monitor** the progress towards the QMS implementation, recognizing the dangers to the national aviation sector if States do not comply.

(ii) *ICAO/WMO Staff Requirements & Standards*

9.8 The Council recalled that, from its 47th session (2007) onwards, it had been following and addressing matters concerning the important topic of the qualification and training of personnel who provide meteorological services to aviation. It recognized this as a major component of any Quality Management System, as described in the section above. On the particular matter of the definition of a WMO Meteorologist, the Council noted that in June 2010, the 62nd session of the WMO Executive Council decided, among others:

To recommend to the 16th *World Meteorological Congress (May 2011)* to amend the definition of “Meteorologist” to read: “**Meteorologist** – a person who has successfully completed the Basic Instruction Package for Meteorologists (BIP-M) requirements”.

9.9 The Caribbean Meteorological Council expressed concern that the WMO Executive Council also considered that “*the recommended way for addressing the requisite topics [for a Meteorologist] is through the completion of a degree in mathematics or a physical science, although responsibility for defining the national or regional level of requisite academic qualification will ultimately lie with the Members concerned.*” The Caribbean Meteorological Council considered that there were serious risks to accepting this recommendation for CMO Member States, which had the CIMH, already a recognized WMO Regional Training Centre (RTC), as the competent agency to undertake this matter itself. Council was also mindful that the CMO, through the Headquarters and the CIMH, has been working very closely with the WMO on this important topic, particularly the definition of competencies and equivalencies of personnel.

9.10. **The Council:**

- (a) **Noted** that WMO deliberations on the definitions, qualification and competency requirements for aeronautical meteorological personnel were to be finally decided upon by the 16th *World Meteorological Congress*;
- (b) **Adopted Resolution 1** of CMC50, 2010, shown in **ANNEX VI** to this Report.

(iii) *Regional Arrangements for Meteorological Forecast and Warning Services to Other States*

9.11 The Council held an extensive discussion on the responsibilities of National Meteorological and Hydrometeorological Services (NMHS) of the CMO Member States. It recalled how the NMHSs developed to various scientific and technical levels over the years. When the CMO was established in 1973 to replace the Caribbean Meteorological Service (CMS) after the breakup of the West Indies Federation, there were several National Meteorological Services operating observing stations and a few Forecast and Warning Offices. In the process, the Council set in place a set of forecast and warning responsibilities, in which the larger NMHSs provide weather forecast and warning services for neighbouring smaller Services. These arrangements have been modified by the Caribbean Meteorological Council over the years.

9.12 The CMO Member States with ***Weather Forecast and Warning Offices*** are Antigua and Barbuda, Barbados, Belize, Cayman Islands, Grenada, Guyana, Jamaica, Saint Lucia, and Trinidad and Tobago. The Member States with ***Aeronautical Meteorological Offices*** are Anguilla, British Virgin Islands, Dominica, Montserrat, St. Kitts/Nevis, St. Vincent and the Grenadines, and the Turks and Caicos Islands.

9.13 In 2010, the forecast and warning responsibilities of CMO Member States had evolved to the following:

Member States with Weather Forecast and Warning Offices	States and Areas of Responsibility for Forecasts and Warnings
Antigua & Barbuda	The islands and coastal waters of Antigua & Barbuda, Anguilla, British Virgin Islands, Montserrat, St. Kitts & Nevis
Barbados	The islands and coastal waters of Barbados, Dominica, St. Vincent and the Grenadines
Belize	The islands, coastal waters and inland areas of Belize
Cayman Islands	The islands and coastal waters of the Cayman Islands
Grenada	The islands and coastal waters of Grenada and its dependencies (weather forecasts)
Guyana	The coastal waters and inland areas of Guyana
Jamaica	The island and coastal waters of Jamaica
Saint Lucia	The island and coastal waters of Saint Lucia
Trinidad and Tobago	The islands and coastal waters of Trinidad and Tobago; tropical cyclone warnings responsibility for Grenada and its dependencies
<i>By agreement between CMO and The Bahamas (non-CMO Member), the Bahamas area of responsibility for forecasts and warnings includes the islands and coastal waters of the Turks and Caicos Islands</i>	

9.14 These arrangements formed the basis for many other international arrangements or agreements, such as the WMO Caribbean-wide Early Warning System for tropical storms, hurricanes and other severe weather, as well as the basis for the provision of aeronautical meteorological forecasts and warnings under the auspices of ICAO. In recent years, questions had arisen in some quarters about the formalities involved in the entire process for forecast and warning responsibilities, since there was no single document that put all these agreements together. The Council reviewed the entire system and decided to rectify the formality of its documentation. The Council also reviewed the existing back-up arrangement for Tropical Cyclones, which were common to all these arrangements.

9.15 **The Council:**

- (a) **Adopted Resolution 2** of CMC50, given in **ANNEX VII**;
- (b) **Urged** that the existing back-up arrangement be reviewed at the next session of the WMO Hurricane Committee for North America, Central America and the Caribbean, with the outcome to be reported to the next session of the Council.

(iv) *Met Services' role in a regional Tsunami Warning System*

9.16 The Council recalled that, in the aftermath of the Indian Ocean tsunami of December 2004, the islands and countries of the Caribbean basin and other neighbouring countries, along with the Intergovernmental Oceanographic Commission (IOC) of UNESCO, decided to build on local experience with hurricanes and volcanoes to establish a regional warning system for tsunamis and other coastal hazards in the Caribbean.

9.17 The IOC, through the Intergovernmental Co-ordinating Group for the Caribbean and Adjacent Regions (ICG-CARIBE EWS), had been coordinating the establishment, in a phased manner, of a Tsunami Early Warning System (TEWS) for the Caribbean, as well as countries in Central and South America.

9.18 The Council was briefed by the Observer from Bermuda, as the WMO Hurricane Committee representative to the ICG, on the role of the ICG, and the role or possible role of several of the Meteorological Services in the region, in a Tsunami Early Warning System. Recognizing that Meteorological Services operate a 24-hour warning system with rapid communications and distribution systems, some Caribbean States therefore had named their Meteorological Service as the National Tsunami Warning Focal Point for the country's internal warning system. The CMO Member States with these Focal Points include Antigua & Barbuda, Barbados, Saint Lucia and Trinidad and Tobago. It was recognized, however, that tsunamis are non-meteorological events and that, for the most part, the real expertise lay in other agencies that did not operate 24-hours a day. Therefore, for warnings to be effective at the national levels, the involvement of all stakeholders was needed in the development of public educational and action plans for fast paced events such as tsunamis.

9(c) Regional Meteorological Efforts in Haiti

9.19 As a result of the devastating January 2010 earthquake, the already fragile infrastructure of the Haiti National Meteorological Service (CNM) and the National Water Resources Service (SNRE) were severely impacted. Both Services lost office facilities and equipment, while one staff member unfortunately perished in the quake. At the same time, the devastation left the country even more exposed to recurrent hydrometeorological hazards. As a consequence, there was an immediate and critical need to rebuild effective National Meteorological and Hydrological Services to support a multi-hazard early warning system, disaster risk management and socio-economic development in Haiti.

9.20 The Council was informed about WMO's coordination in support of capacity development of the National Meteorological Service and National Water Resources Service of Haiti. The priority activities of WMO had been to pull the available assistance from within the region to assist Haiti in whatever ways possible in the very short timeframe, particularly bearing in mind the onset of the 2010 rainy and hurricane season. Collaborative efforts centered on:

- (a) Development of Capacities for the 2010 Rainy and Hurricane Seasons;
- (b) Operational Capacities for the 2010 Rainy and Hurricane Season (June-December);
- (c) Strengthening of Observation and Monitoring Network, Forecasting and Warning Capability:
 - A satellite ground station (VSAT) was installed, linking the Emergency Managers Weather Information Network (EMWIN) system provided by the USA and connection to the WMO Global Telecommunication System (GTS);
 - Installation of a network of seven automated weather stations; cellular data transmissions for real-time data collection, funded by Martinique;
 - A remote Haiti forecast support centre, established at the Météo-France Forecast Office in Martinique, staffed on one-month rotation by French-speaking meteorologists from Martinique, Canada and the UK, dedicated to supporting the forecasting and warnings for Haiti;
 - A password protected "Extranet" operated from mid-May 2010 by Météo-France provides CNM in Haiti with specialized numerical model-based weather forecasting products and Flash Flood Guidance, **several of which are generated by the CIMH in Barbados**;
- (c) Operational capacities and Challenges from December 2010 to the next Hurricane season and Medium-term Development of CNM and SRNE;
- (d) The Way Forward for the Long-term.

Agenda item 9 (d): World Meteorological Congress 2011

9.21 At its 49th session (Tortola, 2009), the Council discussed certain aspects of its strategies and positions for the 16th **World Meteorological Congress**, to be held in Geneva, Switzerland in May 2011. At this 50th session, the Council reviewed and further developed its position on existing and emerging issues. Discussion on this Agenda item was carried out in camera; however, some background to a few topics is provided here.

9.22 The Council noted that the Congress would need to approval an appropriate budget to service an ever increasing programme of activities required by the global community. It was noted that during the period from 1996 to 2011, WMO had operated on a *Zero Nominal Growth* (ZNG) budget. This has had major implications for governance, programme delivery and support activities. The Council was informed that a proposal for a new budget concept was likely to emerge, using a combination of assessed and targeted voluntary contributions, as a way to move forward for resourcing the core and priority activities in a more sustainable manner. The WMO Executive Council agreed that the core and priority activities should be (i) the Global Framework for Climate Services (GFCS), (ii) Capacity-building, (iii) WMO Integrated Observations and Information Systems, (iv) Disaster Risk Reduction, and (v) Aviation Meteorology.

9.23 The Council noted that the WMO Congress will decide on all the global programmes, including those of particular importance of CMO Member States, so that participation at the Congress would ensure regional input. Among the many areas of vital importance to the region were:

- (i) Science and Technology Development and Implementation, such as application to climate programmes;
- (ii) Service Delivery
 - a. Public Weather Services
 - b. Agricultural Meteorology
 - c. Tropical Cyclones
 - d. Marine Meteorology and Oceanography
- (iii) Capacity-Building.

9.24 A very critical activity of the Congress would be the election and appointments of the Officers of the Organization. The Congress will elect the President and three Vice-Presidents, along with 27 other members of the Executive Council; it will then appoint the Secretary-General. Of particular relevance to this activity was the fact that the Coordinating Director of the CMO would be completing his second four-year term as the Second Vice-president of the World Meteorological Organization as the representative of the British Caribbean Territories and will be seeking higher office at the Congress in 2011. Officers of the WMO are elected by the Congress to serve in their personal capacity for the benefit of the entire Organization.

9.25 The Council:

- (i) **Urged** all Member States to be represented at the 16th World Meteorological Congress;
- (ii) **Also urged** the CARICOM Secretariat to publicize the candidature of the Coordinating Director.

10. CMO WEATHER RADAR PROJECTS

(a) CARIFORUM/EU PROJECT – Post Implementation Activities

10.1 The Council was briefed on the status of the “*Regional Weather Radar Warning System Project*, which was administered by the Caribbean Forum of ACP States (CARIFORUM) and implemented by the CMO. The European Union approved 13.2 million Euros for this Project initially, to construct and install four new digital Doppler weather radars in the Caribbean. Implementation commenced in July 2004 and ended in June 2009.

10.2 The Council recounted that the Governments of Barbados, Belize, Guyana and Trinidad and Tobago signed **Memoranda of Understanding** with CARIFORUM, which defined the deliverables by each party to the Radar Project during and post implementation. Article 4.1 of each MOU stated, in part, that the Government agrees to “***operate the Radar Station through the Meteorological/Hydrometeorological Service under the general auspices of the CMO***”.

10.3 Three technicians each from Belize, Guyana and Trinidad & Tobago and two each from Barbados and the CIMH were trained under the Project. The CMO Headquarters already had concerns that not all the personnel trained in radar maintenance by the radar manufacturer, SELEX-Gematronik, were in fact working with the radar in that capacity. Although the radars were new, there was evidence of movement of these trained personnel from this task. The longevity of the weather radars was predicated on maintenance by trained technicians and the CMO had indicated to the States concerned that it was highly advisable that all such personnel spend an adequate amount of time with the radars. The Council noted that the CMO Headquarters believed that there was a need for ***periodic refresher maintenance training*** or training of new maintenance personnel.

10.4 The Council recalled the circumstances which led to the elimination from the EU-funded Radar Project of the entire ***Radar Meteorology Training Programme***, which was designed to provide training in the interpretation of the data from the radars to the meteorological staff that would operate and utilize the radars. CMO explored the use of residual funds from another regional project which was administered by the World Meteorological Organization, to undertake a scaled-down training programme. However, it was discovered that a scaled-down programme may not adequately meet the needs of the region. As with the refresher maintenance training, further funding for the training programme was under consideration within project proposals being pursued by the CIMH.

10.5 The **Representative of Grenada** requested further information about the status of the transfer of radar data to Martinique since the switching to the International Satellite Communication System (ISCS) from a two-way system to receive-only via satellite. Council was informed that the CMO Headquarters had been working with the radar manufacturer for the amendment of a script to include the WMO header in the creation of the radar data. At the time of the Council session, the script had been rewritten and it was under test in Trinidad and Tobago before being adapted for all radar host countries.

(b) **Operations of the Central Radar Spare Depot and Maintenance Support Facility at CIMH**

10.6 Historically, the CIMH has played a critical role in providing training in radar meteorology and in operating a central maintenance support facility and these roles were critical to the long-term sustainability of the new weather radars. A new **Central Spares Depot and Maintenance Support Facility** had been established at the CIMH. Each radar site was provided with two sets of radar spares, while a further set was supplied to the CIMH as central spares for the region. The radar training to the two members of staff of the CIMH was to enable them to manage the Central Spares Depot and to provide maintenance support to any of the four radar sites, if needed.

10.7 Council recalled that it had decided that the Central Spares Depot/Facility would operate on a **supply and replace basis**. CIMH would supply any spares needed by radar host country provided it was in stock, while the spares would either be replaced by the country or the country would pay CIMH for the spares. Therefore, Council encouraged the CIMH to establish a properly **computerized management system** for the inventory of spares and access to and replacement of spares. Council also noted that, on completion of the set up of the *Central Spares Depot and Maintenance Support Facility*, the CIMH would circulate to the relevant Member States, the Rules and Procedures of the Facility.

10.8 At the same time, Council recalled that CMO purchased a three-year warranty on the radars from the manufacturer SELEX. Since two years had essentially passed by the end of 2010, Council stressed that each site and the CIMH Depot must be fully ready to manage their maintenance issues on their own in the near future.

10.9 Council also recalled that it had agreed to a proposal from Barbados for the establishment of the Trust Fund for the purchase of spares and associated shipping costs. The proposal from Barbados was that the four radar host countries, Barbados, Belize, Guyana and Trinidad and Tobago would contribute the sum of BD\$10,000.00 per year to a Trust Fund to be held by the CIMH for the purchase of spares and associated shipping costs. The Council **urged** that the establishment of the Trust Fund be actively pursued.

(c) Cayman Islands Weather Radar Project – Commencement

10.10 The Council recalled the proposal made a few years earlier by the CMO Headquarters to the Government of the Cayman Islands to close that gap that exists in the radar coverage from the Guianas, along the Eastern Caribbean through Puerto Rico to Jamaica and then to Belize.

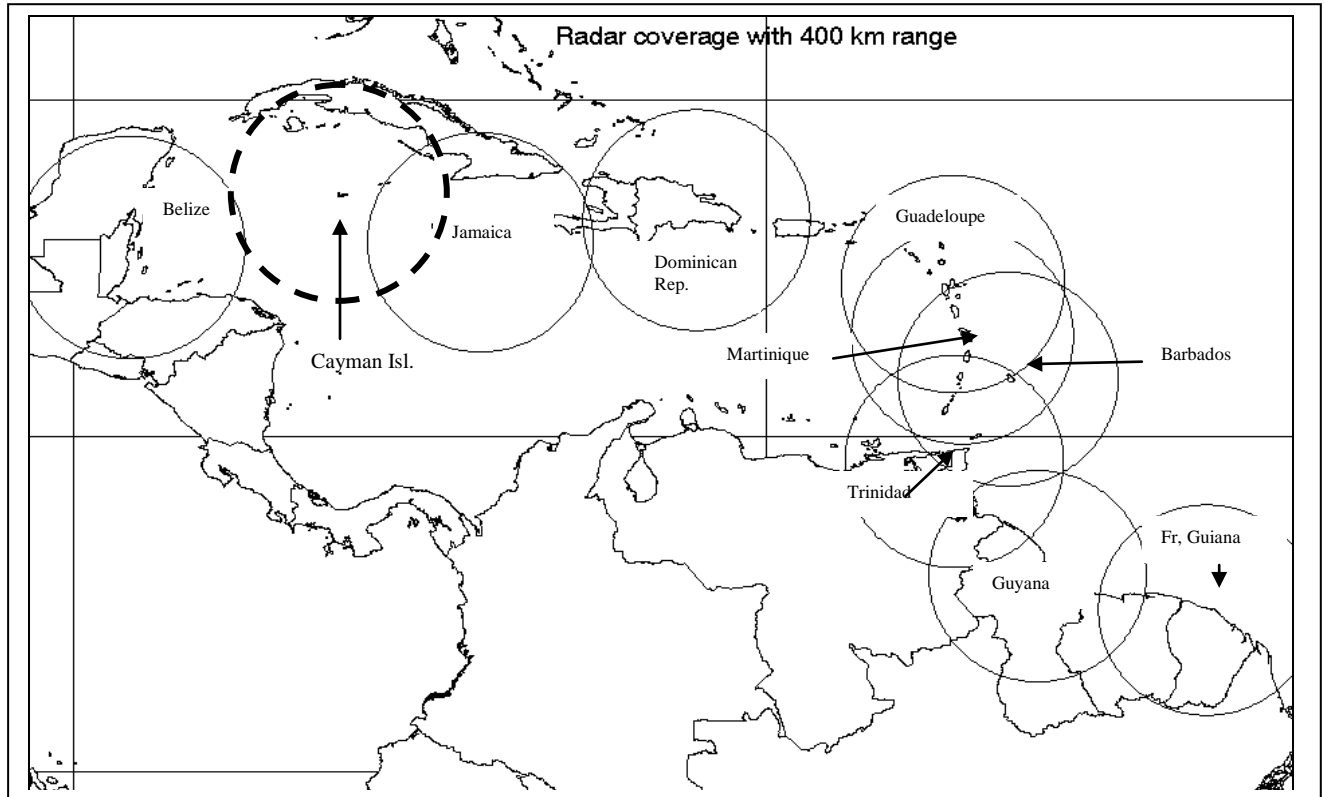


Figure 1: Proposed Radar for the Cayman Islands to provide complete Caribbean radar coverage

10.11 The Cayman Islands Government had since developed the Cayman Islands Weather Radar Project to install a Doppler weather radar on Grand Cayman. The Project, estimated to cost Euro 4.6 million, would be jointly funded by the European Union and the Government of the Cayman Islands. Once implemented, the new Doppler weather radar would form the centrepiece of the Cayman Islands early warning system and would be integrated into the full CMO network.

10.12 The Council was provided with details on the modality of implementation, in which the CMO would provide scientific and technical support to the Project through the following two separate contracts, valued at Euro 99,040.00 and CI\$546,000, between the CMO and the CIAA:

- (i) Contract for the procurement, testing and commissioning of Radar and telecommunication systems, including the integration of the new radar in the existing Regional Radar Network and for internal distribution system;
- (ii) Civil Works planning and supervision, including site selection, associated surveys and studies, and a meteorological training component.

10.13 **The Council**

Urged the radar host countries to give priority to complete all operational matters that impact on the proper operations of the new weather radars, as agreed to by their respective Governments;

Noted the establishment of the Central Spares Depot and Maintenance Support Facility at CIMH;

Also Noted the implementation of the new Radar Project in the Cayman Islands.

11. **OTHER PROJECTS AND PROPOSALS**

11.1 The Council, aware of the fact that weather, climate and water are 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.

11.2. 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**

11.3 The Council recalled that WMO launched the ***World Hydrological Cycle Observation System*** (WHYCOS) in 1993. The aim of WHYCOS was the development of water resources information systems to assist WMO 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. A series of HYCOS components would be used to develop WHYCOS. Carib-HYCOS, a component of WHYCOS, had been organized into two components, one addressing the needs of the Caribbean Island countries (CIC) and the other, the needs of the mainland countries of the Caribbean Basin. The implementation of the Islands component of Carib-HYCOS started in 2008, with CMO being a member of the Project's Steering Committee (PSC).

11.4 The specific aims of Carib-HYCOS Project were the reinforcement of national capabilities in water resources management and the promotion of international cooperation (exchange of data, technology and expertise). The Island Component of the Carib-HYCOS project would therefore help develop the technical skills of the National Hydrological Services of the participating States regarding the collection, maintenance, analysis and application of reliable and high-quality water resources data, in order to promote a more sustainable development and management of freshwater resources.

11.5 Eleven Caribbean islands States were participating in the Project, namely **Antigua and Barbuda, Barbados**, Cuba, **Dominica**, the Dominican Republic, Guadeloupe, Haiti, **Jamaica**, Martinique, **Saint Lucia** and **Trinidad and Tobago**. The following agencies were involved in Project execution:

Supervising Agency	WMO
Executing Agency	Institut de Recherche pour le Développement (IRD)

11.6 The Project Regional Centre (PRC) was being hosted by IRD in Martinique, and included the Project Management Unit (PMU) and a server for a regional database. The PMU was being assisted by the **Caribbean Institute for Meteorology and Hydrology** (CIMH) and the *Instituto de Meteorologia* (INSMET, Institute of Meteorology) of Cuba for the English- and Spanish-speaking countries respectively

11.7 The Council was informed that the Project had thus far:

- (a) Installed the main server, launching of the Geographical, Hydrological and Environmental Information Systems (**Intranet**) and the Carib-HYCOS **Web portal** at the PRC;
- (b) Determined the type and number of standard sets of **Hydrological Equipment** for each country, following technical visits to participating States;
- (c) Determined the outline of a **Training Programme** to improve human capacity in the National Hydrological Services.
- (d) Launched the Tender for the Purchase of the **Data Base Software** in mid-2010. Tender evaluation took place on October 5th 2010 at the IRD headquarters in France.

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

11.8 Most countries, such as Finland, recognize that the NMHSs have a vital impact on the national economy and safety by providing data and products for the benefit of all sectors of society and the mitigation of impacts of natural disasters. Hence, the Ministry for Foreign Affairs (MFA) of Finland decided to provide 500,000 Euros for a *needs assessment and feasibility study project* in the Caribbean Small Island Developing States (SIDS). It proposed that this new project, entitled **“Strengthening Hydrometeorological Operations and Services in the Central America and the Caribbean (SHOCS)”**, would be implemented by FMI under the direction of the ACS and in collaboration with WMO and CMO.

11.9 The study under SHOCS would cover, as applicable, the following main topic areas:

- (1) **Adaptation to climate change**, with special focus on the impact of sea level rise, potential intensification of tropical storms with expected higher frequency of torrential rains, floods and wind damage;
- (2) **Disaster mitigation and risk reduction**, with focus on multi hazard early warning systems, co-operation of NMHSs with civil protection agencies and dissemination of information between agencies and to the general public;
- (3) **Improving legal status and governance of NMHS’s;**

- (4) **Improving service processes** through quality management systems, with special focus on aeronautical meteorology;
- (5) **Enhancing services** for different sectors of the community;
- (6) **Assessing socioeconomic impacts** of the services;
- (7) **Improving observation networks.**

11.10 The following CMO Member States were been included as a part of the feasibility study project:

- Antigua & Barbuda
- Barbados
- Belize
- Dominica
- Grenada
- Guyana
- Jamaica
- St. Kitts & Nevis
- St. Lucia
- St. Vincent & the Grenadines
- Trinidad & Tobago

11.11 The project proposal was presented to the **ACS Special Committee on Disaster Risk Reduction** in the Dominican Republic on September 9-10, 2010. At the ACS meeting, all ACS Member States endorsed the Project, with the exception of Venezuela, which expressed its reservations about ACS' involvement in the Project. The position of Venezuela could pose difficulties for the current methodology proposed by Finland and the ACS for the Project's implementation.

11.12 In addition to the main aims of SHOCS, three related projects were being undertaken by Finland, through the FMI. These were separate follow-up projects to the 2001-2004 WMO/Finland SIDS-Caribbean Project, as follows:

- A: Project for Increasing the Capacity of CIMH as a Regional Instrument Centre for CMO Member States of the Caribbean (CARIC);
- B: Increasing Capacity of Trinidad & Tobago Meteorological Service to Supply Weather Services (TTSWS);
- C: Increasing Capacity of the Jamaica Meteorological Service to Supply Weather Services (JAMSWS)

The specific objectives of B and C were to develop human capacity by upgrading skills of the forecasters and IT staff in the use and maintenance of **Automated Weather Service Production System (SmartMet)** provided under the SIDS-Caribbean Project.

(c) **Other CMO Project Proposals**

11.13 At several of the previous sessions, the CMO Headquarters brought to the attention of the Council, its proposal to organize or participate in several projects in the near future aimed at reviewing, updating, improving and even widening the observational networks and data collection in the Caribbean, to ensure the constant availability of the highest quality data. These were:

1. **Lightning Detection System:** - CMO indicated its intention to establish a Ground-based Lightning Detection System in the region in partnership with the Meteorological Service of France [Météo-France (MF)].
2. **Radar Calibration:** - Since the new weather radars in the English-speaking Caribbean were fully operational, a project involving the Meteorological Services of the radar countries and the CIMH would be needed to undertake the calibration of each radar, in collaboration with local hydrological and agrometeorological agencies that also operate rainfall networks.
3. **Radar Emission Survey:** - Recognizing that the term “radiation” has certain connotations for the public, the CMO Headquarters has been seeking funding to commission a survey by an independent and reputable institution to test and verify the conformity of the radar emissions to international health and safety standards.
4. **Marine Meteorology Improvements:** - Over the last few years, the CMO Headquarters held discussions with the WMO and the *Intergovernmental Oceanographic Commission* (IOC) of UNESCO with a view to exploring methods of improving this service in the Caribbean. The CIMH has taken over this effort towards the introduction of new training methodologies into its regular training programmes specifically for marine meteorology.
5. **Coordination of CMO Automatic Weather Station data collection:** - There have been many Automatic Weather Stations (AWS) operated by the NMHSs in CMO Member States. However, some may not be in an operational mode, or are data may not be shared through the WMO Global Telecommunication System (GTS). The AWS data needed proper quality control including providing data to all users & proper archiving for operational and climate use.
6. **Metadata Collection Project:** - Metadata gives all levels of detail of data collected, of the instruments used, methods of storage, ownership, etc. Metadata existed on most of the conventional weather observing stations at NMHSs in CMO Member States. But there needed to be an assessment to check the completeness of this metadata. In recent years, there had been a large number of Automatic Weather Stations (AWS), hydrological stations, sea level monitoring stations, which had been installed in the Caribbean. Metadata on these stations had not been properly documented, if at all. In some cases, stations, or parts thereof, had been moved to nearby locations, without any documentation of the move being recorded.

11.14 **The Council**

Noted the updated information (i) WMO Carib-HYCOS Project, (ii) The Finland Initiative for the Strengthening Hydrometeorological Operations and Services in the Central America and the Caribbean (SHOCS) and (iii) Other CMO Projects Proposals.

12. **SECOND WMO SPECIAL SESSION**

- WMO Disaster Risk Reduction Activities in the Caribbean

12.1 The World Meteorological Organization was invited by the Council to exchange views with the CMO Member States on WMO Disaster Risk Reduction Activities in the Caribbean. Chief of the WMO Disaster Risk Reduction Programme, Dr Maryam Golnaraghi, led the presentation and exchange, in collaboration with the Secretary-General of WMO.

12.2 The presentation highlighted that in the Caribbean region, between 1980 and 2007, nearly 98% of disasters, 99% of casualties and 99% of economic losses related to natural hazards were caused by recurrent meteorological-, hydrological- and climate-related events, such as tropical cyclones and storm surges, floods, droughts, and extreme temperature. Even with over 30 years of regional cooperation in tropical cyclone forecasting and warnings, efforts were underway to further strengthen the regional coordination in Multi-Hazard Early Warning Systems with national development components. This was being undertaken through a number of training workshops, assessment and national visits, consultations and technical workshops engaging senior management and experts from National Meteorological and Hydrometeorological Services (NMHSs), Disaster Risk Management (DRM) agencies and regional and international partners and centres, and building on the capacities and various activities already underway in the Caribbean.

12.3 Specific Goals were to: (1) strengthen national and regional institutional capacities and cooperation among the NMHS and DRM agencies through development/strengthening of components of early warning systems with a multi-hazard approach for hydro-meteorological and marine hazards; and, (2) to enhance coordination among hydro-meteorological warning systems (building on the existing regional coordination for tropical cyclones) and other hazards (e.g., tsunamis). The Strengthening of these capacities involved a phased approach engaging consultations with countries/territories and the regional mechanisms and agencies and other stakeholder including:

- 2010 - early 2011: Development of programmatic and technical aspects based on extensive consultations with the stakeholders in the countries/territories, regional agencies and institutions, and other stakeholders;
- 2011: Identification of institutional partnerships, resource mobilization strategy and development of implementation, monitoring and evaluation processes founded in the regional processes in the Caribbean;
- 2011-2012: Launch of the Programme and phase I project upon confirmation of available resources and funding; and
- 2012 – Onwards: Implementation and systematic coordination for monitoring progress and evaluation and expansion planning.

12.4 In this presentation, identification of gap and needs and an implementation plan for strengthening of capacities in support of risk assessment and early warning systems in the region were presented for consideration of the Caribbean Meteorological Council. It was expected that the outcomes of this special WMO Session would feed into a “*National Disaster Coordinators and Meteorologists Dialogue: Advancing Multi-Hazard Early Warning Systems in the Caribbean*” at the 5th Caribbean Conference on Comprehensive Disaster Management, scheduled to take place in Jamaica in December of 2010. This cooperation framework was expected to be presented to the WMO Congress in 2011 as a model that could be expanded to other regions, such as the Pacific-

13. ANY OTHER BUSINESS

13.1 The Council bade farewell to *Mr Hugo Hidalgo*, Programme Officer at WMO's Sub-regional Office in San José, Costa Rica, and to *Mr Enrique Camarillo*, ICAO's Regional Officer for Aeronautical Meteorology at its Office in Mexico City, both of whom were scheduled to retire in December 2010 and April 2011 respectively. The Council thanked both experts for their excellent collaboration and relationship with the CMO and all its Member States over the years and expressed the hope that their successors would continue to reflect the strong support given to the region by their Organizations. The Council expressed its deep appreciation to the Secretary-General of WMO for accepting its invitation to attend the session and for organizing the two important special sessions for the benefit of the region.

14. DATE AND VENUE OF CMC51 (2011)

14.1 The Council received a tentative offer from the Delegate of Dominica to host the 51st session of the Council and related meetings in 2011. This would be subject to later confirmation by that Government.

14.2 THE COUNCIL:

Thanked Dominica for considering the hosting of these meetings and hoped that it would be able to host the next session;

Expressed its thanks to the Chair for the excellent conduct of the session and to the Government of the Cayman Islands for the warm hospitality extended and the excellent arrangements put in place for the conduct of the business of CMC50.

Close of Meeting

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

AGENDA

1. OPENING OF SESSION AND ELECTION OF CHAIRMAN
2. ADOPTION OF AGENDA AND PROCEDURAL MATTERS
3. SPECIAL WMO SESSION
 - Global Framework for Climate Services (GFCS)
4. CMO EXECUTIVE REPORTS
 - (a) Coordinating Director's Report
 - (b) CIMH Principal's Report
 - (c) CIMH Board of Governors' Report
5. STATUS OF ACTIONS FROM PREVIOUS SESSION
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) Revised HQ 2010 Estimates
 - (b) CMOHQ Budget Estimates for 2011
 - (c) CIMH Budget Estimates for 2011
8. ANNUAL MEETING OF THE DIRECTORS OF METEOROLOGICAL SERVICES
9. SPECIAL CMO AND WMO ISSUES
 - (e) Outcome/Highlights of the 2010 Executive Council of the World Meteorological Organization
 - (f) Meteorological Services in the Caribbean –
 - (i) Implementation of Quality Management Standards
 - (ii) ICAO/WMO Staff Requirements & Standards [
 - (iii) Regional Arrangements for Meteorological Forecast and Warning Services to Other States
 - (iv) Met Services' role in a regional Tsunami Warning System
 - (g) Regional Meteorological Efforts in Haiti
 - (h) World Meteorological Congress 2011

10. CMO WEATHER RADAR PROJECTS
 - (a) CARIFORUM/EU Project – Post Implementation Activities
 - (b) Operations of the Central Radar Spares Facility
 - (c) Cayman Islands Radar Project
 11. OTHER PROJECTS UPDATES AND PROPOSALS
 - (a) CARIB-HYCOS Project – Implementation Status
 - (b) Finland Initiative - Strengthening Hydrometeorological Operations and Services in the Central America and the Caribbean (SHOCS)
 - (c) Other CMO Project Proposals
 12. SECOND WMO SPECIAL SESSION
 - WMO Disaster Risk Reduction Activities in the Caribbean
 13. OTHER MATTERS
 14. DATE AND VENUE OF CMC51 (2011)
-

50TH MEETING OF THE CARIBBEAN METEOROLOGICAL COUNCIL
GEORGE TOWN, CAYMAN ISLANDS
22-23RD NOVEMBER, 2010

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Tip on reading/ understanding the Surplus/ Accumulated Surplus on the financial statements

The ***Income and Expenditure Statement/Income Statement*** is prepared under the accrual basis of accounting and **NOT** the Cash Basis. This means that the revenues are recorded as they are due, but they may not have been collected. Similarly, the expenses reported on the Income Statement might not have been paid.

Therefore, a ***Surplus/Accumulated Surplus*** on the Income Statement does not represent actual cash that the Organization has at that point in time. A Surplus/Accumulated Surplus on the income statement includes non-cash items such as depreciation and revaluation of non-current assets, as well as the computed surplus for the year that would have been achieved if all revenues were received and all expenses were paid. It also includes brought-forward balances of similar surpluses since the inception of the Organization.

Therefore, the ***Cash Flow Statement/Statement of Cash Flows*** is distinct from the ***Balance Sheet and the Income Statement*** as it does not include the amount of future incoming and outgoing cash that have been recorded. This statement identifies the actual cash that is flowing in and out of the Organization. The item Cash and Cash Equivalents at year-end on the Statement of Cash Flows and Cash in Hand and at Bank on the Balance Sheet represents **actual cash** that the Organization has at year-end for future operations. The ***Statement of Cash Flows*** gives a clearer picture of how well an organization is functioning and its ability to repay debt or fund projects.

Therefore, a Surplus/Accumulated Surplus as at year-end on the Income Statement is not the same as actual cash which the Organization has on hand for future operations.

Prepared in consultation with and approved by the Auditor-General's Department

HEADQUARTERS UNIT ESTIMATES 2011 – OPTION 1

DETAILS OF EXPENDITURE	2011 EST.	2010 APP. EST.	2009 ACTUAL	INC. 2011/10	DEC. 2011/10
<u>1. PERSONAL EMOLUMENTS</u>					
Coordinating Director	869,733.00	855,475.00	848,706.00	14,258.00	-
Science & Technology Officer	377,836.00	357,343.00	327,476.00	20,493.00	-
International Affairs Officer	151,992.00	-	-	151,992.00	-
Administrative Officer	186,074.00	175,997.00	161,176.00	10,077.00	-
Accounts Clerk	84,473.00	86,918.00	82,431.00	-	(2,445.00)
Secretary	84,473.00	70,416.00	66,771.00	14,057.00	-
Messenger	51,094.00	49,440.00	42,192.00	1,654.00	-
Office Cleaner	52,177.00	50,573.00	48,659.00	1,604.00	-
Post Adjustment	330,000.00	320,000.00	286,908.00	5,000.00	-
Superannuation & NIS	400,000.00	355,000.00	327,361.00	10,000.00	-
Total Personal Emoluments	2,587,852.00	2,321,162.00	2,191,680.00	269,135.00	(2,445.00)
<u>2. OTHER CHARGES</u>					
Travel	445,000.00	405,000.00	286,275.36	40,000.00	-
WMO Contribution	75,000.00	75,000.00	73,702.99	-	-
Incidentals	115,000.00	105,000.00	86,212.33	10,000.00	-
Furniture & Equipment	20,000.00	12,000.00	8,704.00	8,000.00	-
Audit Fees (include Prior Year Adj.)	35,000.00	52,936.00	29,650.00	-	(17,936.00)
Rent	516,000.00	-	-	516,000.00	-
WMO elections - Presidency	70,000.00	-	-	70,000.00	-
Total Other Charges	1,276,000.00	649,936.00	484,544.68	644,000.00	(17,936.00)
GRAND TOTAL	3,863,852.00	2,971,098.00	2,676,224.68	913,135.00	(20,381.00)

HEADQUARTERS UNIT ESTIMATES 2011 – OPTION 1 NOTES

VOTE	DETAILS OF EXPENDITURE	AMOUNT	VOTE	DETAILS OF EXPENDITURE	AMOUNT
	<u>1. PERSONAL EMOLUMENTS</u>			<u>2. OTHER CHARGES</u>	
1 (9)	Post Adjustment (Ag/Housing / and CCS Allowances)		2	<u>Travel (Coordinating Dir.)</u>	
	Responsibility (Coordinating Dir.)	57,740.00		<u>WMO Congress</u>	
	Housing (Coordinating Dir.)	130,460.00		Airfare	12,000.00
	Housing (STO, IAO & Admin. Off.)	16,882.00		Hotel	17,315.00
	Education Grant (Coordinating Dir.)	39,528.00		Per Diem	29,670.00
	Education Grant (STO.)	31,622.00		<u>RA IV HC Meeting</u>	
	Life Ins. (Coordinating Dir.)	6,360.00		Per-Diem	6,500.00
	Life Ins. (STO.)	15,087.00		<u>Regional Travel (Coor. Dir.)</u>	
	Health (Coordinating Dir.)	2,113.00		3 Trips	
	Health (STO.)	1,056.00		Airfare	12,000.00
	Leave Relief (4 Clerical Positions)	25,000.00		Hotel	9,216.00
				Per-Diem	6,797.00
		325,848.00		<u>Travel (STO)</u>	
	Estimate	330,000.00		<u>WMO Congress</u>	
				Airfare	12,000.00
				Hotel	14,000.00
				Per-Diem	22,010.00
1 (10)	Superannuation & NIS			<u>RA IV Hurricane Committee</u>	
	Coordinating Director	173,946.00		Airfare	7,500.00
	Technical Officer	75,567.20		Hotel	7,500.00
	International Affairs Officer	30,398.40		Per-Diem	5,000.00
	Administrative Officer	37,214.00		<u>Regional Travel (STO)</u>	
	Other Staff	40,832.55		Airfare	12,000.00
	NIS	35,000.00		Hotel	9,216.00
				Per-Diem	6,797.00
		392,959.55			
	Estimate	400,000.00			
				Balance Carried Forward	189,521.00

HEADQUARTERS UNIT ESTIMATES 2011 – OPTION 1 NOTES

VOTE	DETAILS OF EXPENDITURE	AMOUNT	VOTE	DETAILS OF EXPENDITURE	AMOUNT
2	Balance Brought Forward	189,521.00	2	Balance b/forward	359,001.00
	CMC			<u>Travel Grant</u>	
	Coordinating Dir &STO				
	Airfare	12,000.00		Coordinating Dir	10,000.00
	Hotel	17,640.00		STO	10,000.00
	Per-Diem	7,600.00		General Staff	19,000.00
	CMO Support Staff				
	Airfare	12,000.00		<u>Vehicle Maintenance</u>	
	Hotel	17,640.00		Car Insurance	12,000.00
	Per-Diem	7,600.00		Maintenance	26,000.00
				Fuel	5,000.00
	CMC - DMS			Travel - Messenger	3,000.00
	Hotel	45,000.00			
	Per-Diem	30,000.00		Grand Total	444,001.00
				Estimate	445,000.00
	<u>IAO</u>			<u>Incidentals</u>	
	Travel	20,000.00	4	Postage	5,000.00
				Security (Coordinating Director)	5,000.00
	Total Overseas Travel	359,001.00		Imprest	1,000.00
				Maintenance & Contracts (Office Machines)	6,000.00
				Office Supplies/Requisites	20,000.00
				Bank Charges	500.00
				Electricity (Coordinating Director)	6,000.00
				Telephone (Office & Internet)	45,000.00
				Telephone (C/D residence)	9,000.00
				Miscellaneous	5,000.00
				Insurance – All Office Furniture	2,619.00
				Insurance – Employer's Liability	6,043.28
				Insurance – Computer/Electronic Equipment – On Premises	1,060.00
					112,222.54
				Estimate	115,000.00
	Balance c/forward	359,001.00			

REGIONAL CONTRIBUTION TO CMO BUDGETS - 2011 – OPTION 1

UNITS	COUNTRY	HQ	CRN					TOTAL CRN	RADAR	TOTAL HQ/CRN/ RADAR	CIMH
			B'DOS	BELIZE	CAY IS.	J'CA	T & T				
		TT\$	TT\$	TT\$	TT\$	TT\$	TT\$	TT\$	TT\$	TT\$	
3	ANGUILLA	15,066	369	227	95	717	828	2,236	228	17,530	
25	ANTIGUA	125,551	3,076	1,889	791	5,976	6,899	18,631	1,897	146,079	
70	BARBADOS	351,542	30,709	5,290	2,214	16,732	19,316	74,261	5,312	431,115	
43	BELIZE	215,947	5,291	25,347	1,360	10,279	11,866	54,143	3,263	273,353	
3	BR. VIRGIN IS.	15,066	369	227	95	717	828	2,236	228	17,530	
18	CAYMAN IS	90,397	2,215	1,361	22,666	4,303	4,967	35,512	1,366	127,275	
10	DOMINICA	50,221	1,230	756	317	2,391	2,760	7,454	759	58,434	
25	GRENADA	125,551	3,076	1,889	791	5,976	6,899	18,631	1,897	146,079	
52	GUYANA	261,146	6,398	3,930	1,645	12,430	14,349	38,752	3,946	303,844	
136	JAMAICA	682,996	16,733	10,278	4,302	54,604	37,528	123,445	10,320	816,761	
3	MONTserrat	15,066	369	227	95	717	828	2,236	228	17,530	
10	ST. KITTS/NEVIS	50,221	1,230	756	317	2,391	2,760	7,454	759	58,434	
25	ST. LUCIA	125,551	3,076	1,889	791	5,976	6,899	18,631	1,897	146,079	
10	ST. VINCENT	50,221	1,230	756	317	2,391	2,760	7,454	759	58,434	
157	T'DAD & TOBAGO	1,158,244	19,316	11,865	4,966	37,528	65,418	139,093	11,913	1,309,250	
3	TURKS & CAICOS	15,066	369	227	95	717	828	2,236	228	17,530	
593	TOTAL	3,347,852	95,056	66,914	40,857	163,845	185,733	552,405	45,000	3,945,257	

CARIBBEAN METEOROLOGICAL COUNCIL

RESOLUTION 1, CMC50, 2010 - QUALIFICATION AND COMPETENCY REQUIREMENTS FOR AERONAUTICAL METEOROLOGICAL PERSONNEL IN CMO MEMBER STATES

THE CARIBBEAN METEOROLOGICAL COUNCIL,

Noting the discussion of the 62nd session of the Executive Council (2010) of the World Meteorological Organization (WMO) on the qualification and competency requirements for aeronautical meteorological personnel and its resulting Resolution 6 - Recommendation 1 on **Competence standards** and Resolution 18 - **Definition of a WMO Meteorologist**,

Recognizing:

- (1) The particular relevance of the CMO's own organ, the Caribbean Institute for Meteorology and Hydrology (CIMH), to the education and training activities of the CMO Member States,
- (2) The international role of the CIMH as a:
 - (i) a *WMO Regional Training Centre* (RTC);
 - (ii) a *WMO Regional Instrument Centre* (RIC); and,
 - (iii) a *WMO Centre of Excellence* (CoE) for Satellite Meteorology;

Also Noting the implementation date of November 2013 for competency compliance required by the International Civil Aviation Organization (ICAO);

Decides:

- (1) that the decisions of the 16th *World Meteorological Congress in 2011 on the definitions, qualification and competency requirements for aeronautical meteorological personnel* shall become the requirements for CMO Member States immediately after the Congress;
- (2) that the determination and definition of the requisite academic qualifications for meteorological personnel in CMO Member States shall be the responsibility of the **Caribbean Institute for Meteorology and Hydrology (CIMH)**.

Further Decides that this Resolution will be reviewed by Council if significant and relevant departures from the decisions of the 16th World Meteorological Congress become evident.

CARIBBEAN METEOROLOGICAL COUNCIL

RESOLUTION 2, CMC50, 2010 - REGIONAL ARRANGEMENTS FOR METEOROLOGICAL FORECAST AND WARNING SERVICES AMONG CMO MEMBER STATES

THE CARIBBEAN METEOROLOGICAL COUNCIL,

Noting that the National Meteorological and Hydrometeorological Services (NMHS) of the CMO Member States have developed to various scientific and technical levels over the years,

Considering that the *Weather Forecast and Warning Offices* of Member States, with the higher scientific and technical levels and functions, operate round-the-clock and year-round and that the *Aeronautical Meteorological Offices* of Member States operate according to aeronautical requirements,

Taking into account the existing arrangements made under the auspices of the Caribbean Meteorological Organization in which the Member States with the Weather Forecast and Warning Offices provide the same weather forecast and warning services to those States without such offices, as well as the back-up arrangements between Services,

Noting further that these arrangements form the basis for many other international arrangements or agreements, such as the responsibilities of Member States for forecasts and warnings within the Regional Hurricane Warning System of the *World Meteorological Organization (WMO)* and the provision of aeronautical meteorological forecasts and warnings under the auspices of the *International Civil Aviation Organization (ICAO)*,

Recognizing the major importance of these arrangements and **having reviewed** the scientific and technical capacities of the NMHSs of Member States,

Decides that the following arrangements shall apply:

Member States with Weather Forecast and Warning Offices	States and Areas of Responsibility for Forecasts and Warnings
Antigua & Barbuda	The islands and coastal waters of Antigua & Barbuda, Anguilla, British Virgin Islands, Montserrat, St. Kitts & Nevis
Barbados	The islands and coastal waters of Barbados, Dominica, St. Vincent and the Grenadines
Belize	The islands, coastal waters and inland areas of Belize
Cayman Islands	The islands and coastal waters of the Cayman Islands
Grenada	The islands and coastal waters of Grenada and its dependencies (weather forecasts)
Guyana	The coastal waters and inland areas of Guyana
Jamaica	The island and coastal waters of Jamaica

Saint Lucia	The island and coastal waters of Saint Lucia
Trinidad and Tobago	The islands and coastal waters of Trinidad and Tobago; tropical cyclone warnings responsibility for Grenada and its dependencies
<i>By agreement between CMO and The Bahamas (non-CMO Member), the Bahamas area of responsibility for forecasts and warnings includes the islands and coastal waters of the Turks and Caicos Islands</i>	

Also decides that the following backup arrangements for tropical cyclone watches and warnings, Aerodrome Forecasts (TAF) for main airports and agreed upon essential products, as determined under the auspices of the WMO and ICAO, shall apply:

- (a) Antigua will take over the responsibility of Barbados with respect to the island and coastal waters of Dominica;
- (b) Barbados will take over the responsibility of Antigua and/or Saint Lucia;
- (b) Barbados will take over the responsibility of Trinidad and Tobago;
- (c) Jamaica will take over the responsibility of the Cayman Islands;
- (d) Trinidad and Tobago will take over the responsibility of Barbados with respect to the islands and coastal waters of Barbados and St. Vincent and the Grenadines;
- (e) The USA will take over the responsibility of Jamaica.

Further decides

- (i) that the NMHSs of all Member States should ensure that all stakeholders at the national level are aware of these arrangements and that the CMO Headquarters should make this Resolution permanently available on its Website;
- (ii) that variations in the international arrangements or agreements emanating from the above should be made in collaboration with and coordinated by the Headquarters of the Caribbean Meteorological Organization,
- (iii) to review this Resolution whenever significant changes in the arrangements are proposed.