



Report of the Global Meeting #6
International Forum of Meteorological Societies

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Uniting Meteorological Societies of the World

Final Version

Organizations involved in creating a “Weather Ready Globe”

			
National Meteorological Services	National Meteorological Societies	HydroMet Equipment Industry	World’s Least Developed & Developing Nations

Hosted by the American Meteorological Society (AMS)
At the Westin Hotel, Boston

January 14 & 16, 2020

Prepared by: Dr. Harinder Ahluwalia

March 30, 2020



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Preamble

The IFMS Global Meeting #6 (**IGM-06**) was held on January 14 and 16, 2020 concurrently with the AMS Centennial Celebration. It was attended by all 11 IFMS Councilors, members of member societies and many other attendees. We were pleased to have the Secretary General of WMO Prof. Petteri Taalas present the main outcomes of the 18th World Meteorological Congress, held in June 2019, related to the WMO constituent bodies reform, the new WMO Strategy 2020-2023, and the new approach to partnerships across the Public, Private and Academic sectors (PPA). Dr. Vladimir Tsirkunov, Lead specialist, Hydromet Program/GFDRR, World Bank, stated that the latest technologies are not reaching developing countries and despite the significant increase of investments in NMHSs by the World Bank, WMO and other development partners, it's difficult to make the results of these investments sustainable: the **NMHSs are not receiving adequate government funding to retain qualified NMHSs' staff and support operations.**



The meeting also involved address by the Director of US-NWS Dr. Louis Uccellini who spoke about history of the development of NWS, outcomes of the WMO Congress cg18 related to public private engagement with a focus on the importance of partnerships. He also touched upon the importance of a volunteer-based organization like IFMS.

In its Cg18 Congress in June 2019, WMO also approved its "Global Campus" Initiative. We are preparing ourselves to assist WMO in the implementation of this Initiative and WBG (GFDRR) in their capacity building mission; hence we included the following topics in this IGM:

1. Creating a Volunteer Force to assist us in our programs – especially capacity building Initiatives - led by Dr. Walter Dabberdt.
2. Understanding the requirements of the Global Campus Initiative - led by Dr. Tim Spangler - with remote support from Dr Patrick Parrish, Head of Training Branch of WMO.

Since AMS also plans to implement these activities, we recommended to AMS to do both these activities in collaboration with IFMS which covers the whole Globe and can get the support of IFMS Member Societies.

In order to make all attendees aware of our activities and modus-operandi to implement our Value Proposition, we also reviewed the following items in this IGM:

1. The mandate of each Committee.
2. The progress of each Committee and
3. Identified Planned Activities over the next year and their schedule,

Those attendees who showed interest in making presentation about their society were given time to do so.

In addition, some important invited speakers made their presentations. The incoming President of AMS Dr. Mary Glackin, and the next President Dr. Michael Farrar as well as AMS Executive Director Dr. Keith Seitter made welcome addresses on behalf of the host society - AMS. We profusely thank AMS and in particular Dr. Keith Seitter for making excellent arrangements for the IGM-06.

Dr. Bob Riddaway, President of **EMS** (European Met Society), made a presentation on how the EMS as a society of societies was established and how it operates. His outline about the creation and maintaining the European Meteorological Society will help us in strengthening FLISMET and AfMS and, hopefully, creating an Asian Meteorological Society (AsMS).

We hope that the attendees of IGM-06 greatly benefitted from this meeting and were excited to help take this venerable organization to new heights to fulfill its mandate to help strengthen the GWE to fight Global Warming and Climate Change (**GW&CC**).

Dr. Harinder Ahluwalia - President - IFMS

Welcome Message from WMO Secretary General

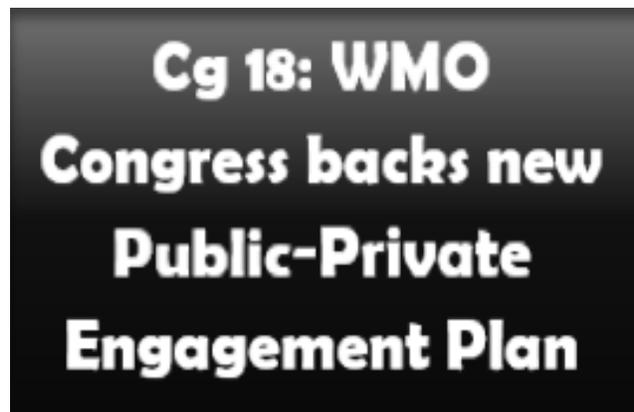
In 2020, WMO will celebrate its 70th anniversary. We are proud of our achievements during these seven decades of global leadership and coordination of the weather, climate and water related activities of our 193 Member States and Territories. Our main focus now is on the huge societal challenges related to the weather and climate related risks. To meet these challenges, WMO is undergoing a reform process that will enable efficient and effective operations and tangible outcomes for the benefit of all nations.



The new WMO strategy adopted by the 18th Congress is based on the Earth System approach which will allow the monitoring and prediction of the status atmosphere, hydrosphere and cryosphere in a holistic way, and generation of highly accurate and timely information products and services to all interested economic sectors, businesses and citizens. A major factor in achieving the goal is the enhanced partnership between the public, private and academic sectors which has been formulated by the Congress in the Geneva Declaration 2019: Building Community for Weather, Climate and Water Actions. We will work with all traditional and new partners, including those from non-governmental sector, like the **IFMS** and its member national meteorological societies, as a strong link to the communities of professionals from all sectors of the enterprise.



Prof. Petteri Taalas, Secretary General - WMO





Welcome Message from Outgoing, Incoming and Elected AMS Presidents

Dear Friends and Colleagues,

It is an honor to have the IFMS members join the AMS as we celebrate the culmination of our first century. The theme of this 2020 Boston meeting is AMS Past, Present and Future: Linking Information to Knowledge to Society. The theme reflects how far we have come in understanding the Earth system and developing services that help people make the best decisions regarding weather and climate. More importantly, it highlights how much work is needed for us to meet the challenges of a changing climate and global population growth. Many sectors of society require our support and this in turn demands that our scientists work with professionals from many diverse disciplines and work across scales from local to global. ***Meteorological societies are tremendously important in building these interdisciplinary bridges as well as bridges among the government, private, academic and philanthropic sectors.***



We look forward to lively discussions at this meeting as we share ideas and experiences and discuss ways, we can work together to meet the challenges that are before us.

Thank you for your efforts and welcome to Boston.

With best wishes:

Jenni Evans, Outgoing AMS President

Mary M. Glackin, Incoming AMS President

Mike Farrar, AMS President-Elect



IMPORTANT INFORMATION FOR IGM-06 ATTENDEES

The Westin Boston: Waterfront Hotel
425 Summer Street, Boston, Massachusetts 02210 USA
Phone: 1-617-532-4600

IFMS Global Meeting #6:

Date/Location: January 14, 2020 (Tuesday) in the **Westin Hotel - Lewis Room**
January 16, 2020 (Thursday) in **Westin Hotel - Commonwealth A**

Meeting Timing: Both days: 8:30 AM to 5:00 PM

Registration: Both days: 8:30 AM to 10:00 AM

GWE Meeting of the GFDRR of the World Bank Group:

When: January 15, 2020 (Wednesday) Timing: 9:00 AM

Location: **Westin Hotel** (Room: Commonwealth A)

Remarks: All IGM-06 Attendees are invited to attend.

Event: The International Dinner of AMS

Day and Time: Tuesday (January 14, 2020) evening 6:00-9:00 PM

Location: **Westin Hotel Grand Ballroom A and Foyer**

Remarks: All IFMS attendees are invited.

Event: Centennial Celebration of AMS

Day and Time: Wednesday (January 15, 2020) evening 6:00-9:00 PM

Location: **Convention Center Ballroom**

Remarks: All IFMS attendees are invited to this event.

However, for entrance you will require an Annual Meeting **Badge**.

Interested people are required to request a Voucher from Keith Seitter which they can use for registering without having to pay a fee.

We repeat: Please note again that you need the Registration **Badge** if you would like to attend the celebration event.



AGENDA OF IFMS Global Meeting #06 (IGM-06)

Tuesday – January 14, 2020 - 8:30 AM - 5:00 PM

Venue: Lewis Room in Westin Hotel

Time	Item Description	Participants
8:30 - 10:00	Registration at IFMS Meeting Venue	
9:00 - 10:00	Plenary Session 1	
9:00 - 9:05	Opening by President of IFMS	Dr. Harinder Ahluwalia
9:05 - 9:15	Welcome Speech by AMS President Elect	Dr. Mike Farrar
9:15 - 9:30	Keynote Speech SG-WMO	Prof. Petteri Taalas
9:30 - 9:45	Address by WBG-GFDRR	Dr. Vladimir Tsirkunov
9:45 - 10:10	Summary Presentation about IFMS: Value Proposition, Formation of Committees and Overall Progress Report	Dr. Harinder Ahluwalia
10:10 - 10:30	Tea/Coffee Break	
10:30 - 11:30	Presentation and discussion on Global Campus Initiative of WMO	Led by Dr. Tim Spangler
11:30 - 12:30	Presentation and discussion on Development of Volunteer Force	Led by Dr. Walter Dabberdt
12:30 - 13:15	Lunch	
13:15 - 13:45	Committee 7: Best Practices Coordination Committee	Dr. Michael Coughlan - Dr. Keith Seitter
13:45 - 14:15	Committee 8: Webinar & Training	Dr. Sushil Dash – Dr. Michael Coughlan, Dr. Buruhani Nyenzi and Prof. Liz Bentley
14:15 - 14:45	Committee 3: Value Proposition Implementation Committee Task 3.1: Collaboration on joint activities	Dr. Yongyun Hu/Dr. Buruhani Nyenzi - Panelists: Prof. Liz Bentley, Dr. Yongyun Hu, Dr. Harinder Ahluwalia
14:45 - 15:15	Committee 3: Task 3.2: Membership Promotion & assistance in developing new Societies	Dr. Workneh Degefu – Dr. Sushil Dash, Dr. Jack Hayes, Dr. Michael Coughlan and Prof. Liz Bentley
15:15 - 15:30	Health Break	
15:30 - 16:30	Committee 5 Task 5.1: Financing Committee Task 5.2: Individual Funding through Member Societies	Dr. Keith Seitter – Dr. Harinder Ahluwalia, Dr. Jack Hayes, Prof. Liz Bentley, Dr. Yongyun Hu and Mr. Cam Chao & Regional Council Members
16:30 - 17:00	Committee 6: ACT Committee	Prof. Liz Bentley – Dr. Keith Seitter, Mr. Cam Chao and Dr. Harinder Ahluwalia

**Thursday – 16 January 2020 - 8:30 AM - 5:00 PM**

Venue: Commonwealth A in Westin Hotel

Time	Item Description	Participants
8:30 - 10:30	Registration at IFMS Meeting Venue	
9:00 - 9:40	SESSION 2 Plenary	
9:00 - 9:10	Opening by AMS Executive Director	Dr. Keith Seitter: Speaks about AMS plans in developing IFMS
9:10 - 9:25	Welcome Speech by AMS President	Dr. Mary Glackin
9:25 - 9:35	Introduction to rest of the day Program	Dr. Harinder Ahluwalia
9:35 - 10:05	Committee 1: Access to Communications Channels – Communications Strategy	Mr. Cam Chao – Prof. Liz Bentley, Dr. Buruhani Nyenzi, Dr. Sushil Dash & Dr. Harinder Ahluwalia
10:05 - 10:35	Committee 2: Task 1: Cooperation with Regional Met Societies	Prof. Liz Bentley – Mr. Workneh Degefu, Dr. Oscar Frumento, Dr. Yongyun Hu
10:35 - 10:55	Health break	
10:55 -11:25	Committee 9: Recognition of Individual Contribution	Dr. Buruhani Nyenzi – Dr. Sushil Dash, Dr. Yongyun Hu and Prof. Liz Bentley
11:25 - 11:55	Committee 10: GWE Monitoring Committee: Assist WMO/WBG to promote PPA Sector Partnerships	Dr. Jack Hayes- Dr. Keith Seitter & Dr. Harinder Ahluwalia
11:55 - 12:20	Committee 4: Dealing with WMO, WBG and other similar organizations.	Dr. Harinder Ahluwalia, Dr. Jack Hayes, Dr. Keith Seitter, Dr. Michael Coughlan and Mr. Workneh Degefu
12:20 - 13:00	Lunch	
13:00 - 13:30	Committee 12: Promotion of Climate Change Issues with Governments & Public	Dr. Harinder Ahluwalia - All Council Members
13:30 - 14:00	Committee 13: Meetings and Conferences including WWOSC	Dr. Keith Seitter – Dr. Harinder Ahluwalia, Dr. Buruhani Nyenzi
14:00 - 14:25	Presentation on how the European Met Society (EMS) was created and how it is sustained.	Dr. Bob Riddaway, President EMS
14:25 - 15:30	Presentation by a Guest Speaker & Societies <ol style="list-style-type: none"> 1. Dr. Oscar Frumento 2. Met Graciela Salaberrí 3. Dr. Louis Uccellini 4. Dr. Buruhani Nyenzi 5. Workneh Degefu 	Speakers: (All speakers 10 minutes other than #3) <ol style="list-style-type: none"> 1. Council Member Region III (10 minutes) 2. FLISMET and Amigos del Viento 3. Director NWS (15 minutes) 4. IFMS – VP administrator 5. Council Member Region I
15:30 - 15:50	Health Break	
15:50 -16:50	Plenary Session to discuss IFMS' Future Direction and Creation of Volunteer Force	Harinder Ahluwalia, Keith Seitter, Liz Bentley, Buruhani Nyenzi and S.K. Dash
16:50 -17:00	Date and place of next meeting Closure of IGM6	Harinder Ahluwalia

Session 1: January 14, 2020

Opening by President of IFMS



Dr. Harinder Ahluwalia is the President of IFMS since 2015. He was previously the President of CMOS. He is a Fellow of IFMS and Technology Man of the Year awarded by ICCO. He is the President of a company called Info-Electronics Systems (**IES**) dealing with Environmental Sciences including Meteorology, Hydrology, Environmental Monitoring and Remote Sensing. He served on the National Round Table on Environment and Economy of Canada (Sustainable Development) which reported to the Prime Minister of Canada. He has won many accolades throughout his career.

Dr. Ahluwalia presented the introductory Summary of the Overall IGM-06 and its objective. First day's proceedings were outlined and forthcoming speakers were introduced.

Welcome Speech by AMS President Elect

Dr. Michael R. "Mike" Farrar is the incoming President of AMS. He is currently the chief scientist for weather



operations for the U.S. Air Force (USAF). In this role, he serves as the primary science advisor to the USAF director of weather and coordinates science and technology activities related to weather operations with internal USAF and Department of Defense (DoD) stakeholders as well as with US interagency and international partners. Farrar served in 2017–18 as senior VP and chief operating officer of the University Corporation of Atmospheric Research (UCAR) and held several executive positions in NOAA from 2012 to 2017. He has received numerous military awards and decorations and has led two centers/ labs in the NWS to receive Department of

Commerce Gold Medals.

In his welcoming remarks, Dr. Farrar welcomed the IFMS attendees on behalf of the AMS and provided a brief historical perspective on the genesis and evolution of IFMS. He also commented on the role of the AMS and discussed the ongoing and future AMS support for the IFMS.

Keynote Speech SG-WMO

Prof. Petteri Taalas, the current WMO Secretary General since 2015, is responsible for WMO Governance and



Secretariat Reforms. He did his MSc in meteorology in 1988, PhD in 1993, both at Helsinki University Dept. of Physics. He was WMO Director of Development and Regional Activities, 2005–2007. He was responsible for establishment of Resource Mobilization and Least Developed Countries offices and for overall reform of the functions. He was WMO Executive Council Member, 2008–2015 and supported WMO reform for developing countries. He was Director-General of Finnish Meteorological Institute, 2002–2005 and 2007–2015. He was Council Chair, EUMETSAT 2011–2014, and EUMETNET 2003-2005. He has won accolades from various organizations.

In his keynote speech Prof. Taalas presented the main outcomes of the 18th World Meteorological Congress, held in June 2019, related to the WMO constituent bodies reform, the new WMO Strategy 2020-2023, and the new approach to partnerships across the public, private and academic sectors. He spoke about the Geneva Declaration 2019 adopted by the Congress as a high-level policy promoting cooperation between three sectors (Public, Private and Academic) to respond collectively to the weather and climate related risks facing the society.

Address by WBG-GFDRR

Dr. Vladimir Tsirkunov is a Lead specialist and the team leader of Hydromet Program of the Global Facility for Disaster Reduction and Recovery (**GFDRR**) of the World Bank. Since 2003 he is involved in development and implementation of investment and technical assistance projects supporting improvement of weather, climate and hydrological services and modernization of National Meteorological and Hydrological Services (**NHMS**). Dr. Tsirkunov has over 40 years of scientific, applied technical and project management experience in environmental and natural resource management. Prior to joining the World Bank in 1994, he was the Head of the Laboratory of the Supervision of the USSR System of Hydrochemical Monitoring and Water Quality Data Collection.



Presentation Summary

His presentation stressed that the growing importance of weather, climate and hydrological-meteorological (**hydromet**) information and services for decision making in the modern world is well recognized. Unfortunately, despite dramatic improvements in this area in recent decades and growing potential supported by new knowledge and technologies, a considerable capacity gap still exists in hydromet service delivery between developed and developing countries leaving the most vulnerable without the critical information and warnings that can save their lives and sustain their living standards. Recognizing this issue, the World Bank (**WB**) and the Global Facility for Disaster Reduction and Recovery (**GFDRR**) scaled up its support to strengthening NMHSs in developing countries. The WB/GFDRR hydromet portfolio of investments includes now close to 60 projects with a total worth of over USD 800 million.

Our main development partner in this area is WMO and we are proud to be one of the co-founding partners of the Alliance for Hydromet Development which was endorsed by the WMO Congress in June and launched at the COP25 with 12 development partners and multilateral development banks joining this initiative. Jointly with WMO we are also supporting the development of the global weather enterprise by facilitating engagements between public, private and academic sectors.

Overall, despite the significant increase of investments in NMHSs by the World Bank, WMO and other development partners, ***it's difficult to make the results of these investments sustainable: the NMHSs are not receiving adequate government funding to retain qualified NMHSs' staff and support operations.*** This prevents NMHSs from adequately performing their key functions providing services to communities, key economic sectors, and ensure safety of the population. Support for research and development as well as for capacity building of staff in this sector proved to be particularly challenging. Non-government institutions such as **AMS** and **IFMS** could be instrumental in helping countries build stronger understanding of the value of the hydromet services and the role that partnerships can play in it, build capacity of the NMHSs and strengthen their service delivery models. We look forward to finding ways to bring the knowledge and experience accumulated in meteorological societies into the WB hydromet projects aimed at strengthening delivery of weather, climate and hydrological services in developing countries.

Summary Presentation about IFMS

Dr. Harinder Ahluwalia made a presentation on IFMS' background and its mission. It highlighted the important steps taken by the first Council of IFMS which included officially constituting an IFMS Council, incorporation of IFMS, creation of its value Proposition and having an MOU with WMO. In order to implement the Value Proposition, under the second Council, we created Committees to work on each of the Value Proposition items. Each Committee was assigned a Chair and some Committee Members. Each Committee has a defined mandate and is expected to execute the tasks required to make strong progress. Financing remains the Achilles heel for IFMS and needs to be solved soon to make progress. Some ideas for financing were presented. Since IFMS is a volunteer-based organization, any dollar invested in it can result in proportionately much bigger return. Therefore, we urge WMO and WB to help us finance IFMS and create a small Secretariat with a couple of people to sustain this laudable mission.



The presentation also outlined how IFMS plans to assist WMO and WBG in their efforts to promote PPA Collaboration for strengthening GWE and in Capacity Building Programs. IFMS is also gearing up to assist WMO in its Global Campus Initiative (GCI). We would like to discuss how we can help WB-GFDRR in its Capacity Building Initiative.

Progress of IFMS is totally dependent upon the dedication of its Councillors and member societies and our capability to finance IFMS.

Up to now AMS remains IFMS' main benefactor. We urge other strong societies, WMO and WBG to assist IFMS in becoming a very strong volunteer-based organization.

WMO Global Campus - Open Educational Practice in Action

By **Dr. Patrick Parrish**, Chief of Training Activities Division, WMO/ETR

In the IFMS Session: Presented by **Dr. Tim Spangler**

Dr. Tim Spangler did his Ph.D. in Biometeorology from Utah State University. From 2013-2018, he was a Consultant to the World Meteorological Organization, Education and Training Program working on the WMO Global Campus. He also served as a Consultant to the Korean Meteorological Administration from 2017-2018.

After serving in various other organizations, Dr. Spangler served as the Director of the COMET Program of University Corporation for Atmospheric Research (UCAR) 1992-2013. The COMET Program is a national and international continuing education program in the geosciences. With a staff of 35 and annual budgets averaging \$5M, the program has become a national and international resource for the geosciences. Over 300,000 individual users have registered in the website and acquired 2,000,000 hours of online instruction. The program has won numerous awards including the prestigious Brandon-Hall Gold Medal, and the AGU Education Excellence award.



He has received a number of awards including American Geophysical Union Award for COMET, Fellow of the American Meteorological Society, AMS Certified Consulting Meteorologist and Honor Society of Phi Kappa Phi.



Dr. Tim Spangler provided an overview of the WMO Global Campus. The Global Campus which began in 2013 was endorsed by WMO Congress 18. Its major components were described including the WMO Learn Portal, the Events Calendar, the E-library, translations resource center, and activities to develop partnerships. The benefits of collaboration with universities were outlined along with a few thoughts about collaboration with IFMS. A brief review of upcoming activities was presented. This was followed by a discussion on how IFMS can get involved in this Program. The presentation made by Tim is available on request.

Presentation and Discussion on Development of Volunteer Force

Led by: **Dr. Walter Dabberdt**



Walter F. Dabberdt received the M.S. and Ph.D. degrees from the University of Wisconsin. He was a senior research meteorologist at Stanford Research Institute; at NCAR he was scientist, facility manager, and NCAR Associate Director. At the Vaisala Group, he was Chief Scientific Officer. He served on numerous national and international panels and committees, as: a member of the National Academy of Sciences' Board on Atmospheric Sciences and Climate; Board Chair of the Environmental Prediction in Canadian Cities (EPiCC) program; Chair of the Industrial Advisory Board of the multi-university Collaborative and Adaptive Sensing of the Atmosphere Engineering Research Center; Dr. Dabberdt received the Luke Howard Award from the International Association for Urban Climate, and in 2017 he was awarded the AMS' Helmut Landsberg Award for Urban Meteorology. In 2016 he became Knight First Class, Order of the Lion of Finland.

Dr. Dabberdt has published 200 papers including 71 peer-reviewed publications.

He discussed how we can create a Volunteer Force and what kind of tasks this force can handle.

Dr. Walter Dabberdt stated that the AMS International Academic Volunteering Program will seek to identify AMS members who are interested in providing specialized expertise and services to international professionals in academia and certain non-profit NGO institutions. Typically, these institutions will be in need of assistance in course and curriculum development, research planning, public engagement, and other not-for-profit activities. Such services would be provided on a pro bono basis except for travel, per diem, communications, and other support costs as necessary. The role of the AMS will be to function as an exchange mechanism to facilitate the matching of those in need of relevant volunteer services with those AMS members desiring to provide them. The AMS Volunteering Program role may also include an assessment of the need for pro-bono services by NGOs.

Dr. Ahluwalia suggested that it would be fruitful for both organizations if AMS and IFMS worked together on this program because then volunteers from all over the world could participate in it.

Special Council Meeting on IFMS Value Proposition – January 15, 2020

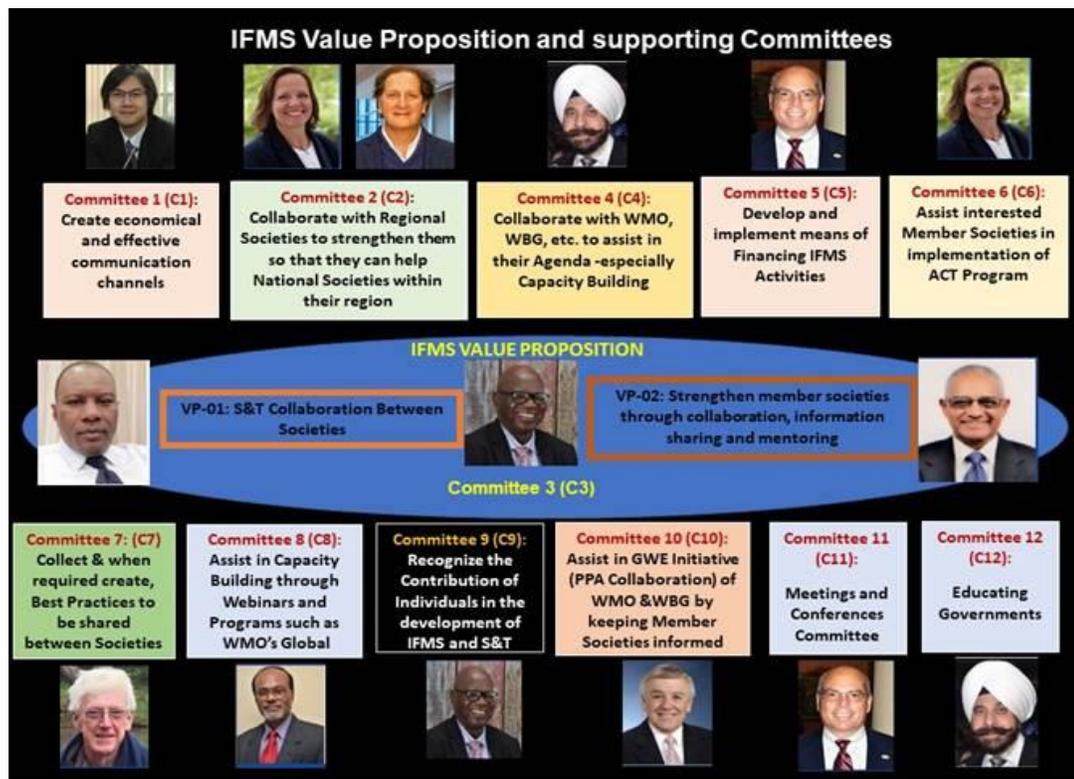
On January 15, 2020 afternoon, a special Council Meeting was held to review IFMS Value Proposition. After some discussion the following has been agreed to which does not change any modus operandi, but it gives a clearer perspective of IFMS Value Proposition.

*It was reiterated that the main objective of the International Forum of Meteorological Societies (IFMS) is to strengthen International Cooperation in S&T and help National Meteorological Societies to become stronger to help build capacity in their countries. We are also creating Met Societies in those countries where none exists. This objective is being fulfilled by **Committee 3**. We have various other activities in support of our core Value Proposition which include:*

1. Developing cost-effective communications channels – **Committee 1**.
2. Creating Collaboration with Regional Societies (like EMS, FLISMET, soon to be created Asian Met Society, etc.), if required, to strengthen them, and take their assistance in strengthening Met Societies within their Region – **Committee 2**.
3. Collaboration with WMO and WBG to assist in their Initiatives such as Global Campus Initiative (**GCI**), PPA Collaboration Initiative, etc. - **Committee 4**.
4. Assisting interested Societies in their ACT (Accreditation/Certification Training) Program – **Committee 6**.

5. Sharing Best Practices with each other e.g. Best Practice to create a Society, to run a Conference, etc. – **Committee 7.**
6. Webinars (on various capacity building subjects) and Training e.g. we are planning to help WMO in their GCI – **Committee 8.**
7. We are keeping track of PPA Collaborations Initiatives of WMO (**OCP**) and GFDRR-WBG (**GWEF**) through participation of IFMS representative taking part in their meetings and writing Reports and IFMS Newsletter Articles as well as conducting Webinars on this subject – **Committee 10.**
8. We are proposing World Weather Open Science Conference to become a regular feature assisted by WMO and IFMS and conducted by Regional Societies. This will bring the whole international community together to discuss S&T and the Future of GWE – **Committee 11.**
9. We are planning to conduct some Programs for educating Governments and Public to convince the Governments to spend more money in building infrastructure and **Capacity Committee 12.**
10. For organizing our finances for all these activities, we have a Finance Committee – **Committee 5.**
11. Finally, we would like to honor those who very strongly assist us in carrying out above activities and also excel in doing and promoting S&T collaboration internationally – **Committee 9.**

Societies and Individuals are urged to offer assistance in implementing above tasks. By doing so, you can help this cause greatly. Working together with passion for the “cause” and not personal or organizational glory, we will achieve a lot more. Following picture represents the main Value Proposition handled by Committee 3 and the supporting Committees.



Presentations on IFMS Committee Work

Committee 7: Best Practices Coordination Committee

Dr. Michael Coughlan – Dr. Keith Seitter and Oscar Frumento

Objective: Collect & when required create, Best Practices to be shared between Member Societies

Dr. Coughlan is a Climatologist and Meteorologist who has made significant contributions to Australian and Global meteorology and climate science. Beginning his career as a trainee weather forecaster for the Australian Bureau of Meteorology, Michael Coughlan went on to work on two of four World Climate Research Programme (WCRP) projects in the 1990s. He served as Program Manager for The Global Energy and Water Cycle Experiment (GEWEX) in the United States of America and as the Foundation director of the International Climate and Ocean: Variability, Predictability and Change Project (CLIVAR) in Germany. In 1997, Michael Coughlan became Director of the World Climate Change Department with the World Meteorological Organisation in Geneva Switzerland.



Report

The principle objective of Committee #7 is to develop a central repository of best practices for the guidance of existing societies, and to aid the development of newly created societies. In their operation, Societies need to perform various activities many of which are almost common between them. Instead of each society developing these on its own, we plan to have a central repository of best practices to help them. This activity is even more helpful for newly created societies.

A number of Best Practices are available from AMS, RMetS, EMS, etc. They need to be adjusted and put on the IFMS Website.

Key Tasks:

- Make a list of Best Practices for establishing and operating a Society.
- Identify those already available from existing national and regional Societies
- Review those Best Practices and provide them to IFMS Member Societies through IFMS Website.
- Identify and create new Best Practices as the need arises.
- **Potential Best Practice Areas**
 - Establishing a National Meteorological Society
 - Education
 - Professional, e.g. Webinars, Courses, Journal
 - Public, e.g. K-12 interactions, Open Lectures
 - Outreach
 - Newsletter – Pros & Cons / Online
 - Website
 - Use of Social Media
 - Authoritative Statements

Two of these areas have received some consideration by the Committee.

Developing the case for a National Meteorological Society

A document along the following lines is in an advanced stage of development – and is usable at this stage.

- **Rationale**
 - Enhancement of cooperative networks
 - Professional Development:
 - Broadening of knowledge in the community
 - Professional Accreditation / Certification
 - Mentoring
 - Career Advancement
- **First Steps**
 - Setting up a Founding Committee
 - Identifying the initial scope of the Society
 - Criteria for Membership(s)
- **Incorporated or Unincorporated**
 - Establishing the Legislative Framework
- **Financing**
- **Potential partnerships**
 - Local – government (incl. NMS), academic, corporate institutional
 - International – Other National and Regional Meteorological Societies
 - Related disciplines – Oceanographic, Agriculture, Geophysical

Authoritative Statements

National Meteorological Societies have the potential to represent an amalgam of authoritative views on a wide range of topics, drawing input from government, academia, corporate entities and the general public.

Some examples:

- National priorities relating to weather, water and climate
- National perspectives on IPCC Reports
- National practices concerning data sharing and distribution

Such statements have already been prepared by several National Meteorological Societies, e.g. AMS, CMOS and AMOS. These statements could be adopted and endorsed as they stand or, preferably, modified as appropriate to increase local, national relevance. Typically, they should be reviewed on a regular, e.g. every 5 years, or as developments dictate.

Committee 8: Webinar & Training

Dr. Sushil Dash – Dr. Michael Coughlan, Dr. Buruhani Nyenzi and Prof. Liz Bentley

Objective: Coordinate Webinar & any Educational Training Courses

Dr. Sushil Kumar Dash is currently the President of the Indian Meteorological Society (IMS) and Council Member for WMO Region II, in the International Forum of Met Societies (IFMS). Formerly he was Professor and Head of the Centre for Atmospheric Sciences at the Indian Institute of Technology Delhi (IITD). At present he is engaged in his R&D activities in IITD as part of the DST Centre of Excellence in Climate Modelling and three more important projects. Prof. Dash is a Fellow of the Royal Met Society and that of the IMS. In addition, he is Life Member and Member of a number of international bodies such as the American Meteorological Society and the National Academy of Sciences, India.



Report

Webinars

One webinar was conducted on Accreditation/Certification in July 2018. Webinars have been planned every two months in 2020 and monthly thereafter, if found feasible. The second webinar was planned on 'Challenges of coordinating severe weather response' towards the end of September 2019, but somehow the timings did not match and it could not be held. Following list of webinars has been prepared which will be circulated amongst all the IFMS member societies and as per their feedback webinars will be organized in future. It is strongly felt that the topics should be useful to participating member societies.

Proposed list of Webinars

- GWE
- Air Quality
- Climate services for the benefit of people
- Climate, water and energy nexus
- Role of Met societies in taking climate science to the people
- Met societies in generating citizen science
- Can projected climate information drive national policies?
- Modalities for PPA mode of working in climate change
- Can the international climate agreements be implemented in spite of economic disparities?
- Estimate of economic loss due to climate extremes
- Effective ways to build capacity and create awareness in climate change
- How to make activities of Met societies complimentary to those of national weather agencies?

Training

One project proposal entitled 'Met Society Educational and Training Programmes on Weather and Climate (MetSET)' for 3 years duration **has been** drafted and circulated amongst the IFMS Council members. This needs to be associated with the Global Campus Programme of WMO. Communication with concerned key persons has been going on for its acceptance and execution. Initially this will be implemented in Developing and Less Developed Countries to start with. Currently, Training programme of IFMS very much depends on the activities of the National Societies. COMET and other well-established educational programmes will be useful to develop suitable topics in some specific countries to start with. In this regard, the following activities of the Indian Met Society (IMS) may be useful.

- From IMS side, the news is that its local chapters have organized several workshops on Climate Services (report sent to IFMS newsletter). Media interactions, Water issues, Teachers Training etc. are some of the other activities in the recent past.
- Ministry of Earth Science (MoES) has approved IMS proposal for annual funding to have more workshops pertaining to regional weather and climate issues, especially extremes.
- Lightning kills about 3000 people in India annually. Hence IMS local chapters are organizing lightning awareness campaigns in collaboration with other institutions in affected areas.
- IMS organizes annual symposia called Tropmet/Intromet for 4 days in its different local chapters mostly for the benefit of students.

It is well accepted that Training and Workshop committee's role is curtailed due to the absence of funding and volunteers. Therefore, it is very essential to build a group of volunteers in each member society and also to arrange for adequate funds which may vary from society to society.

Committee 3: Value Proposition Implementation Committee

Committee Members: Buruhani Nyenzi, Yongyun Hu (now Ammar Gaber) and Workneh Degefu

Dr. Buruhani is the overall Chair of this committee and is expected to make sure that **this main Value Proposition Committee** operates smoothly and makes the planned progress.

Task 3.1: Collaboration on Joint Activities

Committee: Yongyun Hu (now Ammar Gaber) Buruhani Nyenzi, Jack Hayes and Harinder Ahluwalia

Objective: To create S&T Collaboration between Member Societies and between their members



Dr. Buruhani Nyenzi is the Vice-President-Administration of IFMS. He is also the President of the Tanzanian Meteorological Society. The President of the United Republic of Tanzania H. E. Dr. John Pombe Magufuli reappointed Dr. Buruhani Nyenzi to Chair the board of directors of the Tanzania Meteorological Authority (TMA) for four years with effect from 18 November 2019.

Report

Collaboration means working together or supporting one another through implementing activities jointly between IFMS, NHMSocs, RMSocs, professionals and organizations/institutions. These activities include those on advancing science and profession of hydrometeorology.

IFMS has provided a collaboration Tab on its website for interested parties to use and intends to set targets and performance measures for monitoring activities implemented jointly. It is up to the member societies and their members to use this Tab and request for Collaboration.

To make it clearer, we are in the process of preparing an outline of possible types of collaborations to be handled and define ways of monitoring them through emails and other ways etc. There is also need for contacting societies and educating them on benefits of collaborations between societies. Categories of collaborations include those at national, regional, sub-regional and global levels.

Task 3.2: Membership Promotion & Assistance in Developing new Societies

Mr. Workneh Degefu – Dr. Sushil Dash, Dr. Oscar Frumento, Dr. Jack Hayes, Dr. Michael Coughlan and Prof. Liz Bentley

Objective: Membership promotion and creation of new societies



Mr. Workneh Degefu is Region 1 representative on the Council of the International Forum of Meteorological Societies (IFMS) of the World since September 2018. He was the Member of the Steering Committee of Ethiopian Meteorological Society (EtMS) from January 2010 - December 2014.

Since April 2013, he is the Manager and Executive Secretary of the. Before that since August 2007, he was the President and Board Chairman of the EtMS. He was the WMO Regional Director for Africa in Bujumbura and in Geneva, Switzerland.

Report

Tasks to be Executed

1. Ensure that all existing societies become members of IFMS and create new societies where none-exists.
3. The Committee developed a Description of Mandates which essentially outlines the working arrangements of the Committee.
4. The idea was to get the information of:
 - a. The President of societies which already exist.
 - b. In those countries where no Society currently exists, we believe that normally the National Meteorological Service or University professors start such a society. Therefore, we need the contact information of the head of the National Meteorological Service.
5. We have been able to make Brazilian Meteorological Society as a new member.
6. Based on the working arrangements, each Regional Councilor tried to gather information on the status of meteorological societies in their respective regions. However, this was found difficult for most regions except for Region VI. In other regions there is a lack of readily available information on this matter. Region VI made available a more complete information on the status of Meteorological Societies in European countries.
7. Others were not able to fulfil their mandate satisfactorily because, in many cases, it was difficult to get the contact information for societies which existed. In other cases, where Society did not exist, we needed to contact the National Meteorological Service which itself was difficult.
8. Workneh attended the Region 1 Meeting (the Seventeenth session of the Regional Association I (RAI-17) in Cairo and found that the Heads of Regional WMO Offices can be a very useful link once they are explained the Value Proposition and the importance of IFMS and National Meteorological Societies.
9. Workneh recommends to work with Regional WMO Offices.
10. Further it is advisable to use the Document entitled “Establishing a National Meteorological Society” to create awareness on the benefits of establishing meteorological society at national level. The document can be distributed to countries through WMO Regional Offices’ channels.
11. All Regional Councilors are urged to do that.

Committee 5: Financing IFMS

Task 5.1: Financing Committee

Keith Seitter, Harinder Ahluwalia, Jack Hayes, Liz Bentley, Yongyun Hu (now Ammar Gaber) and Cam Chao

Objective: Handling Financial Matters and organizing Financial Support

Report



Keith Seitter, VP for Finance, reported on the status of IFMS finances. The IFMS account currently has \$4895.35 (US), thanks to initial funding by the American Meteorological Society (AMS), plus dues contributions from the Australian Meteorological and Oceanographic Society, the Ethiopian Meteorological Society, and the Tanzania Meteorological Society (the Argentina Meteorological Society made a payment at the meeting). AMS continues to provide financial support for IFMS by covering the costs of website hosting, conference call services for the Council meetings, bank fees, and legal fees associated with maintaining its nonprofit status in the USA.

There was discussion on the continuing need for more significant funding to allow IFMS to grow and move forward on new initiatives. Without sufficient funding to support a secretariat, it will be hard for IFMS to live up to its potential.

Seitter had been unsuccessful in obtaining grants from US agencies to support travel for IFMS participation, but AMS waived conference registration fees for participants and some modest travel support was provided by AMS through funds that had been set aside for international activities. Additional travel funds would certainly have been helpful in getting more delegates from IFMS member societies to the meeting.

There was some discussion on seeking grant funding for specific IFMS initiatives through WMO, World Bank, or US agencies that fund international capacity-building activities. It was suggested that perhaps a small well-defined project could be proposed and funded through this mechanism as a way to establish a record of success that might lead to larger project support in the future.

Task 5.2: Individual Funding through Member Societies

Cam Chao – Workneh Degefu, Sushil Dash, Oscar Frumento, Jack Hayes, Michael Coughlan and Liz Bentley



There is no fee to become a member of IFMS. However, we do recommend to Member Societies to contribute 1% of their membership fees collected from their members to IFMS. It is also recommended that member societies include a line in their membership/renewal form for donation to IFMS. This Committee under the leadership of Cam Chao and membership of all regional representatives is supposed to ensure that these funds are collected.

Committee 6: Accreditation, Certification and Training (ACT) Committee

Prof. Liz Bentley – Dr. Keith Seitter, Mr. Cam Chao and Dr. Harinder Ahluwalia

Objective: Assisting in Accreditation/Certification and Training (ACT) to help interested Societies to implement such programs or cooperate with each other to have joint ACT programs e.g. through Regional Societies.

Prof. Liz Bentley is the Chief Executive of the Royal Meteorological Society and a visiting Professor at the University of Reading.



She completed her PhD in mathematics at the University of Manchester and worked at the UK Met Office for 15 years as a research scientist, weather forecaster, forecasting instructor and Chief Instructor at the Met Office College. She has also worked at the BBC Weather Centre and the Ministry of Defence looking after their environmental research programme.

Report

Review of ACT programs or materials that already exist: American Meteorological Society and Royal Meteorological Society offer ACT programs. The Canadian Meteorological and Oceanographic Society has an accreditation program which is currently shelved.

It is noted that ACT programs are not easy to implement and requires sufficient number of professionals to participate to make it worthwhile.

Plan webinars and presentations on ACT programs at conferences and on websites.

IFMS organized a webinar with support of the American Meteorological Society and Royal Meteorological Society which is available on the IFMS website <https://ifms.org/index.cfm/ifms/resources/webinars/>.

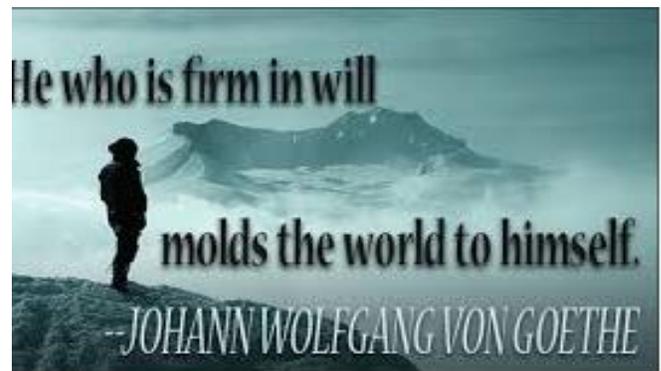
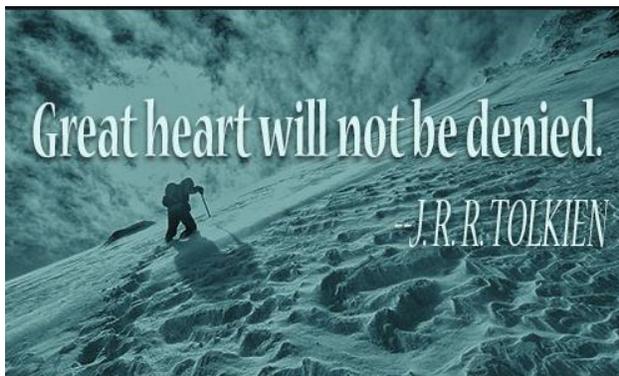
Representatives from American Meteorological Society and Royal Meteorological Society presented at the European Meteorological Society's conferences in 2018 and 2019.

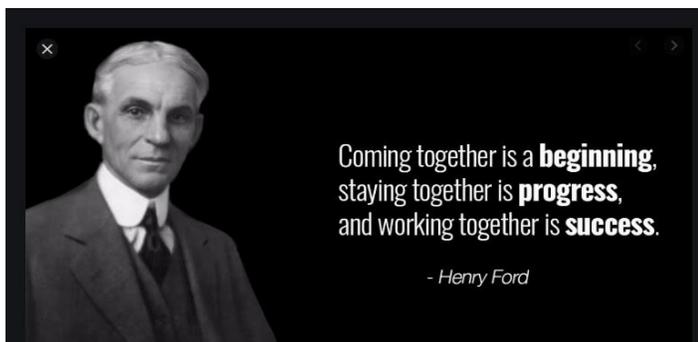
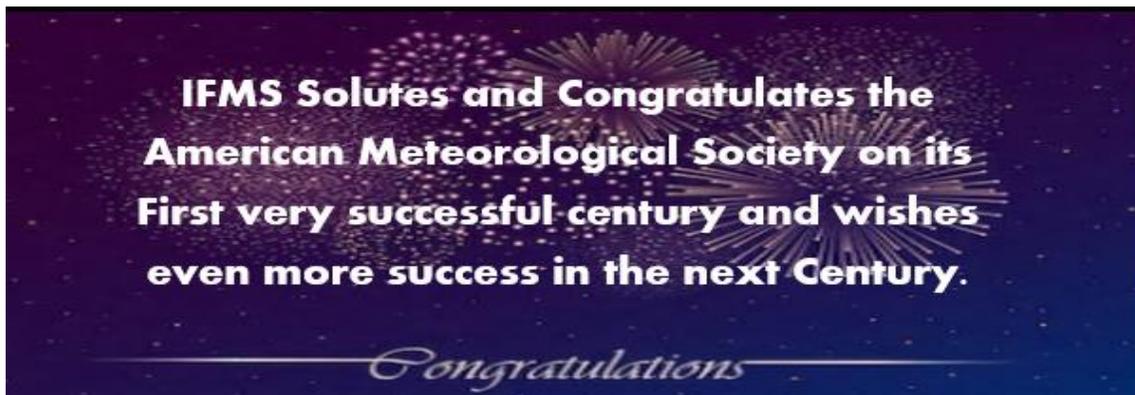
Conduct a survey of Member Societies to determine:

- a) If any other societies have ACT programs
- b) Which Societies wish to implement an ACT program and what assistant they need from IFMS.

Determine how IFMS can help with ACT activities i.e. providing support and advice to implementing ACT

Any Society wishing to start such a program in its country can request assistance through the Collaboration mechanism provided on the IFMS Website.





A Scene from IGM-06





Session 2: January 16, 2020

Opening by AMS Executive Director – Dr. Keith Seitter

Dr. Keith Seitter spoke about AMS' plans in developing IFMS.

Dr. Keith L. Seitter is the Executive Director of the American Meteorological Society since September 2004, having joined the AMS staff in 1991. He has brought in various innovations including overseeing the transition of the journals to electronic delivery in the 1990s, and continued improvements to the Society's publications following that.



Dr. Seitter is a Fellow of the AMS and Fellow of the Royal Meteorological Society. He is also a member of many other societies and organizations in the sciences and scholarly publishing and serves on a number of advisory boards. He has given numerous invited lectures and published a number of papers in AMS and other scientific and publishing journals.

Report

Scientific and professional societies have a long history of advancing the science and applications for the benefit of humanity. Societies support the scientists and practicing professionals through conferences, journals, accreditation, certifications, and various programs aimed at students, while often also promoting scientific literacy among the broader public. Societies serving the atmospheric and related societies can play a unique role in offering a neutral venue for discussions among leaders of the government, academic, and private sectors, so that the weather, water, and climate enterprise can be made more effective in serving all constituencies. Organizations like IFMS can help societies share experiences and best practices so that all are strengthened. AMS has tried to provide foundational support for IFMS while allowing all members to have an equal voice in its programs and initiatives.

Welcome Speech by AMS President: *Mary M. Glackin*

How Professional Meteorological Societies can help Advance the GWE

Dr. Mary Glackin is the President of the American Meteorological Society. She also serves as Vice-Chair of the Board of Atmospheric Sciences and Climate, National Research Council. From 2015-2019 she was the senior vice president (SVP) for science and forecast operations for The Weather Company, an IBM Business. She is a member of the convening committee for the Science for Climate Action Network and also serves on the visiting committee of the NASA Goddard Space Flight Center providing advice to the director. Ms. Glackin has had a long and distinguished career in public service, including 20 years in the National Weather Service and a five-year tenure as deputy under Secretary of Commerce for National Oceanic and Atmospheric Administration operations. Ms. Glackin has a bachelor's degree from the University of Maryland.



Abstract

It is widely recognized that both economic health and social well being are dependent on quality weather, water and climate services. The need for these services continues to grow with key drivers being a rising global population and extremes from a changing climate. Appropriately, attention has focused on what the Global Weather Enterprise (GWE) composed of the public, private and academic sectors can do to enhance services, especially to areas that have been underserved.

While the private sector has always contributed to services, there is a recognition that the private weather sector which emerged in the second half of the 20th century has become increasingly capable of making contributions

across the value chain. At the same time, the relationships between public entities and private companies has remained largely transactional with private companies providing goods and services to government organizations. And, there is at times a significant distrust among the sectors. However, there are some successful examples of cooperation and collaboration. This talk will focus on those examples and highlight roles Meteorological Societies can play in enabling these successes.

Introduction to the rest of the day's Program

Dr. Harinder Ahluwalia

The program for the second day of IGM-06 will be outlined and highlights of the first day will be summarized.

Committee 1: Access to Communications Channels – Communications Strategy

Objective: Defining cost-effective means of Communications between Societies and between Members

Mr. Cam Chao – Prof. Liz Bentley, Dr. Buruhani Nyenzi, Dr. Sushil Dash & Dr. Harinder Ahluwalia



Kung-Yueh Camyale Chao has been working in the public affairs field for 20 years and he was elected as the Treasurer of International Forum of Meteorological Societies (IFMS) in September 2018. Before this position, Camyale served as the General Secretary of IFMS from January 2016. He was Deputy Director of APEC Research Center for Typhoon and Society (ACTS) from October 2010 to July 2014. Camyale was an Invited Expert for Future Earth project which cooperated with MIT Futures Ecolab, and was an invited CSO Representative of European Bank for Reconstruction and Development (EBRD) annual Board meeting since 2017.

Camyale studied Ph.D. in Public Policy at the University of York in the UK, and also studied Ph.D. in Educational Policy and Management at the National Taipei University of Education. He is also a certified trainer of UNDRR.

Report

Cam provided the progress report of Committee 1 which focused on communication. Here is an observation regarding the FB fan page. We have discovered the new post after Boston Meeting only reached very few people. We need to try the advertisement offering of Facebook costing \$20 to reach more people. In addition, we would like to invite council members to help to promote the fan page, and more volunteer to post articles.

We edit the newsletter after collecting articles from Societies and their members as well as Council Members. The current newsletter #5 is expected to be edited by the end of March, 2020 and to be issued by mid-April.

Report of IFMS Committee 1 – Communication

The Presentation was made by Kung-Yueh Camyale Chao, Treasurer of IFMS. He has also been responsible for editing the Newsletter since 2018.

First of all, the presentation introduced the objectives of the committee:

1. To create meaningful communication channels
2. To unite the Member Societies and provide a means of distributing information and creating discussion groups, e.g. Website, Newsletter, Social Media, etc.
3. Communication tools and webinar can be used for discussion groups on S& T subjects as well as discussions on IFMS Development topics.

As per the objectives of this Committee, the presentation discussed three different communication channels: Website, Newsletter, and Social Media.

The current website of IFMS is maintained under AMS support, and the frequency of update is approximately on a monthly basis. Secondly, the other most important current communication channel –Newsletter, is planned to

be issued on a quarterly basis, although bigger effort is required to meet that goal. Articles are contributed by Member Societies and council members.

The major Social Media in the discussion is the Facebook, and the account has been created (search International Forum of Meteorological Societies). The frequency of updating should be at least weekly or even daily. In order to achieve that, we need more volunteers from Members Societies.

The presentation identified the Communication committee facing challenges from Information resources, Human resources, and Financial resources. The committee will promote communication more once the resources are fulfilled.

Committee 2: Cooperative Activities with Regional & Associate Members

Introduction

IFMS can become more effective in coordinating Activities if we work closely with Regional Meteorological Societies and help in strengthening them. Following is the status of all these Regional Societies:

1. European Meteorological Society is quite strong,
2. FLISMET is still being coordinated and strengthened,
3. African Meteorological Society has to be rebuilt,
4. Asian Meteorological Society is still to be created; however, China, Japan and South Korea have been cooperating and holding Conferences for a few years. This needs to be expanded to other Asian Societies.
5. There is no Regional Society for South East Pacific area.

Task 2.1: Cooperation with Regional Met Societies

This Committee is expected to handle two tasks: Task 2.1: Cooperation with Regional Met Societies; and Task 2.2: Regional Weather Enterprise Forums

Prof. Liz Bentley – Oscar Frumento, Workneh Degefu, Yongyun Hu (now Ammar Gaber)

Objective: To create collaboration with Regional Meteorological Societies and strengthen them.

Report

Progress Update - Completed activities are:

1. Initial review of EMS, FLISMET and AfMS has been completed
2. EMS is operational and most effective regional society and has provided an assessment of its strengths and weakness to share with others.



3. What help can EMS provide to IFMS in assisting developing Regional Societies: Details of establishment, purpose, financing, membership, activities and strengths and weaknesses provided by EMS as potential guidelines to assist developing Regional Societies. President of EMS, Dr. Bob Riddaway made a presentation in IGM-06 which is summarized in this Report.

4. Workneh had a meeting with the WMO Regional Director for Africa (whose office is now fortunately located in Addis Ababa, Ethiopia) in August to discuss ways to reactivate AfMS. Workneh has redrafted the AfMS constitution based on EMS model for discussion. The draft was presented at meetings held in November 2019 when all Directors of African Met. Services were present to ratify the constitution and decide on follow up actions. The Region 1 WMO Chair will provide the summary of that meeting related to IFMS part to Workneh.

5. In Asia, there is active collaboration between Japan, China and South Korea. They have regular meetings. Sushil (Regional Member of Region 2) is trying to work with Societies within his region to create the Asian Met Society. It was suggested that countries like Singapore, Malaysia, Indonesia, Brunei, Philippines, etc. fit better in Asian Met Society even if they are a part of WMO Region 5.
6. It may be important to lay the foundation of the Asian Meteorological Society on a similar basis as the European Meteorological Society.
7. Harinder has contacted all member societies from Asia but has not received any response yet. Sushil is supposed to follow-up.
8. Michael Coughlan is looking at creating a Met Society for South Pacific countries.

Tasks to be Achieved

1. Determine what kind of help do FLISMET and AfMS need to develop.
2. What is required to encourage starting of the Asian Meteorological Society?
3. Determine what activities of IFMS can be shared with Regional Met Societies.
4. Determine how we can assist each other in dividing the work.
5. Determine how we can work with Regional Societies in the area of promoting Government Investment.

Task 2.2: Regional Weather Enterprise Forums

Committee Members: Oscar Frumento, M. Coughlan, Liz Bentley and Workneh Degefu

Objectives: Defining and conducting Regional Weather Enterprise Forums for S&T training and Capacity Building Workshops.

Introduction



Define and conduct Regional Weather Enterprise Forums for S&T training and Capacity Building Workshops to be progressed in regions, where appropriate.

Determine what activities are required for holding Regional Weather Enterprise Forums and Capacity Building Workshops. For example, requests for education in GWE concept have been received from South America stating that they are interested in GWE and implementing the concept in some of their Societies. On-line Training appears to be the most economical means for this training.

Report

Currently, we have not done any work in this area. This Committee will need to define and implement steps to determine what kind of forums are required and what are the best ways of achieving success at a minimum cost.

1. List the activities to be performed by these forums
2. List what kind of Capacity Building Items we need to deal with.
3. Determine the best way of dealing with each of the above items.
4. Determine the best ways of educating Societies about GWE Initiative
5. Hold events as required
6. Usage of Webinars and Social Media as well as occasional well targeted joint Conferences can be looked at.

Committee 9: Recognition of Individual Contribution

Committee Members: **Buruhani Nyenzi**, Jack Hayes, Sushil Dash, Oscar Frumento, Ammar Gaber & Liz Bentley

Objective: Recognition of Individual Contribution/Promoting contributions of individuals

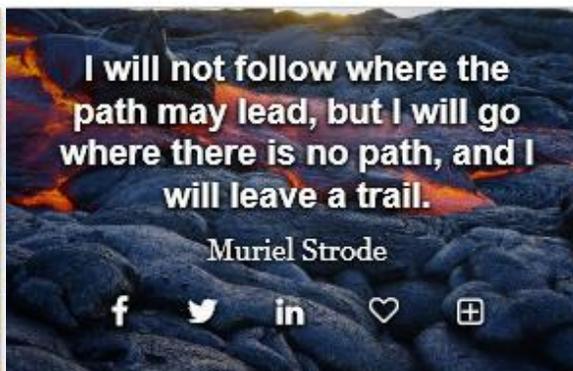
Report

The objective of this committee is to define ways and means of promoting contributions of individuals through highlighting excellence in science, technology and organizational development; and excellence in providing services and volunteerism. IFMS believes that it achieves its basic goals through the service of its volunteers and collaboration with others; hence it should recognise by awarding those who make contribution to its progress through volunteerism and have made relevant and significant Scientific, Technological contributions.



Recognition can be based on the following categories:

- Long term serving/contribution to the objectives and goals of IFMS;
- Scientists who have contributed significantly to the work of IFMS;
- Volunteers from societies who have served dedicatedly the NMSocs and IFMS;
- A society that has made an outstanding and significant contribution to the work of IFMS; and
- Volunteer students or a student who has made discovery or technological innovation which is relevant to the work of IFMS



Committee 10: GWE Monitoring Committee

Committee: **Dr. Jack Hayes** - Dr. Keith Seitter & Dr. Harinder Ahluwalia

Objective: To keep IFMS member societies informed about developments in WMO's OCP and WB's GWEF Initiatives and eventually, assist WMO and WB in implementing these programs, as requested.

Dr. John L. (Jack) Hayes was the director of the National Weather Service (**NWS**). In this position, he also served as permanent representative of the United States with the UN's World Meteorological Organization (WMO). Dr. Hayes also served as director of the World Weather Watch Department for the WMO in Geneva, Switzerland



Dr. Hayes culminated a distinguished U.S. Air Force career in the 1990s as the Commander of the Air Force Weather Agency. Dr. Hayes has received several awards, including Presidential Rank Award and recognition, in 2003, as one of the Top 100 IT Executives in the Federal Government. Dr. Hayes holds a Ph.D. and a Master of Science degree in meteorology from the Naval Postgraduate School in Monterey, California,

After NWS, Dr. Hayes served as the Vice President & Senior Executive Account Manager for Environmental Solutions, Harris Space and Intelligence Systems Business Segment. After retiring from the Harris Corporation, Dr. Hayes serves as a part-time consultant for Barron Weather Services, assisting the company in understanding NMHS operations, needs and priorities.

Report

Current Initiatives to Increase Cooperation across the Global Weather Enterprise

There are two complementary international initiatives created to increase cooperation and collaboration internationally across the Global Weather Enterprise: The WBG-GFDRR's Global Weather Enterprise Forum (**GWEF**) and the WMO Open Consultative Platform (**OCP**).

The Global Weather Enterprise Forum

The Global Weather Enterprise Forum was created by the World Bank's Global Facility for Disaster Risk Reduction (**GFDRR**) in the Spring of 2018 as a follow up action from a World Bank-sponsored meeting in late 2017. Among the 30+ attendees at that day-long meeting were the WMO Secretary General, Permanent Representatives from Meteorological Services with WMO, several representatives from weather industries in the US, Europe and Japan, and Research leaders from academia and labs. At the follow up meeting in Singapore, the GWEF was formed and consisted initially of 12 members, four from each of the three Weather Sectors; a core management group consisting of World Bank, WMO and other leaders from the Weather Enterprise was formed to monitor and provide overarching strategic guidance.

Four goals were established:

- **Mutually beneficial engagement:** strong trust and cooperation among WMO, NMHSs, private industry, the academic sector, international funding institutions, and the societies they all support.
- **Sustainable capacity building:** cooperation between the GWE and development partners leading to increased capabilities of the weather enterprise in low- and middle-income countries.
- **Education and training of the next generation scientists and technologists:** increased research and development, operational expertise, and the implementation of innovations that support weather and disaster readiness globally.
- **Improved access and exchange of global weather information of high quality** capable of appreciably improving the range and accuracy of weather forecasts and warnings.

Over the past two years, initial results include agreement on critical GWE challenges, a broad and constructive dialogue across the three sectors, the opening of debate on important issues related to the global observing system and filling critical data gaps, and development of strategies for educating, training and sustaining the GWE work force.



The WMO Open Consultative Platform

Seeing a broader strategic need, the WMO formed the Open Consultative Platform (OCP) at its 18th WMO Congress in June 2019. Its purpose is to create a high-level and structured dialogue among executive leaders in the Public, Private and Academic Sectors at national and international levels across the weather enterprise. Goals include:

- Strengthening the authoritative voice of NMHSs for weather warnings and other critical weather and climate information,
- Establishing legislative arrangements to enable cross-sector partnerships,
- Encouraging international data sharing,
- Making weather data available for public purposes such as disaster risk reduction.

The planned OCP way ahead will involve creating public-private-sector cooperation models and a code of ethics, organizing and conducting a WMO Global Data Conference in 2020, and hosting annual OCP high-level meetings to provide monitoring and strategic guidance to WMO and GWE initiatives.

GWEF direction following the WMO Congress

Following the creation of OCP, World Bank and WMO leaders met and decided the GWEF provides a supporting capability focused on disaster risk reduction initiatives which complements OCP. In the coming months, GWEF will take action to broaden its international participation from all sectors. In addition, WMO will support and participate in and contribute to GWEF, and the World Bank GFDRR will participate in and contribute to OCP. A GWEF meeting that included WMO and a number of leaders from the international global weather enterprise was held during the annual AMS meeting in Boston to refine the way ahead.

How Can IFMS Help?

Professional Meteorological Societies can provide a valuable working level resource to both the OCP and the GWEF. Members should:

- Become and stay informed of critical science and service issues within the GWE,
- Be open to and supportive of an active dialogue among the three sectors, including the testing of new concepts,
- Contribute to the growth of cross-sector partnerships within their countries,
- Offer ideas and support to the OCP, GWEF and other strategic initiatives to modernize, improve and sustain weather services.

As stated earlier, weather and climate pose increasing risks and impacts to society; the growing population densities worldwide, especially in environmentally vulnerable areas make action to mitigate them time critical. The OCP and GWEF initiatives described in this summary represent important actions that can succeed through cooperation and collaboration across the three sectors of the Global Weather Enterprise.

Here are some Reports on WMO-OCP and WBG-GWEF

<https://ppe-openplatform.wmo.int/en/open-consultative-platform>

https://www.gfdr.org/sites/default/files/publication/The%20Power%20of%20Partnership_WEB.pdf

Committee 4: Dealing with WMO, WBG and other Similar Organizations

Harinder Ahluwalia: Jack Hayes, Keith Seitter, Michael Coughlan, Workneh Degefu



Objective: Relationship with WMO, WBG and other similar organizations for assisting each other and creating a win-win situation.

The idea is to define possible ways in which IFMS can collaborate with WMO, WB and other organizations on a sustainable basis to strengthen GWE.

Report

The vision of World Meteorological Organization (**WMO**) is to provide world leadership in expertise and international cooperation in weather, climate, hydrology and water resources and related environmental issues and thereby contribute to the safety and well-being of people throughout the world and to the economic benefit of all nations.

Global Facility for Disaster Reduction and Recovery (**GFDRR**) is a global partnership established in 2006 to support developing countries to understand, manage, and ultimately reduce their risk from natural hazards and climate change. Both. WMO and GFDRR are employee-based organizations and hence are limited in manpower resources. IFMS being a volunteer-based organization can assist WMO and GFDRR in many different ways. On the other hand, WMO and WB can help IFMS in its development which will benefit them greatly.

The areas which have been currently selected are:

1. Prepare a Value Proposition why WMO and WBG should help IFMS both operationally and financially.
2. Assistance in the Global Campus Initiative (**GCI**) of WMO for which we arranged a presentation at IGM-06 by WMO which was actually given by Dr. Tim Spangler with the background support from Dr. Patrick Parrish of WMO who is the lead person on this Initiative.
3. Assisting the World Bank Group (WBG) in their Capacity Building Program
4. Assisting both WMO and WBG in their OCP and GWEF Initiatives.

In order to implement our Programs, we need volunteers and we are creating a **Volunteer Force**. We organized a session on Volunteerism in which Dr. Walter Dabberdt made presentation which was much appreciated.

Committee 12: Promotion of Climate Change Issues with Governments & Public

Committee: Harinder Ahluwalia - All Council Members

Objective: The objective of this Committee is to promote Climate Change Issues with Government and Public.



The impetus for creation of this Committee comes from the following:

- 1) In year 2017, the cost of losses caused by natural disasters exceeded \$330 Billion and over 3000 lives were lost. The trend of these losses over years is upwards.
- 2) It is believed that with only a reasonable part of that amount, preventive measures can be devised to reduce the loss of life and property.
- 3) However, Governments need to be convinced why they should make that investment.
- 4) With so much experience and brainpower available with many societies we need to create a Value Proposition jointly which can be adjusted by each society for its own use.
- 5) Since politicians respond to the public opinion, societies also need to educate local public. WMO seems to have a lot of material for educating public which we can get from them and provide member societies.

Required Steps

Promoting Government Investment

- 1) Prepare the mandate of this Committee in the area of promoting Government Investment.
- 2) Prepare a Value Proposition for convincing the Government to invest money in developing infrastructure and S&T. Take the assistance of WMO for this.
- 3) Provide this to all member societies to adjust/adopt it to their requirements and educate politicians and bureaucrats.

Promoting Public Education

- 1) Discuss with WMO what material they have for Public Education and request for a copy.
- 2) Review this material
- 3) Develop steps to achieve the above defined mandate

Committee 11: Organizing Meetings and Conferences including WWOSC

Committee: Keith Seitter – Harinder Ahluwalia, Buruhani Nyenzi

Objective: To plan and organize IFMS Global Meetings (IGMs) and Conferences e.g. WWOSC.

Report

In a discussion led by Keith Seitter, the group discussed how well the program worked for IGM6 and what might be recommended for the program for the next IFMS Global Meeting. There was a strong consensus that providing as much time as possible for member societies to share experiences with the rest of the group was important, and the program should therefore have large blocks devoted to presentations by members on initiatives in their society. While the committee reports were considered very important for this meeting, it may be possible for the next meeting to depend more on written committee reports provided prior to the meeting.



There was some discussion of IFMS hosting a meeting similar to the 2014 World Weather Open Science Conference (WWOSC). Such an even would fit well with the IFMS value proposition and would provide an avenue for showing success in new initiatives. It was pointed out, however, that handling the logistics of such a meeting would require one or more IFMS members societies to take the lead since there would need to be a base of operations to handle contracts associated with the venue, food, audio-visual, etc. None of the member society representatives volunteered to lead such an effort, but there was interest among a few for further conversation on this possibility at a later date.

Harinder has prepared an outline of how WWOSCs can be organized (See Annex D). He proposes that strong Regional Societies (e.g. EMS and in the future Asian Meteorological Society) and large societies like AMS can organize such a conference with strong support of WMO and IFMS.

WWOSC-2014 was organized by Meteorological Service of Canada with the assistance of WMO, National Research Council of Canada and ECMWF. AMS and EMS are going to put this idea to their Council and come back with a decision. Keith seems to like the idea and should be able to convince the AMS Council. Soon the idea will be proposed to WMO. An article related to this idea will appear in IFMS Newsletter 5 – **INL-05**

Presentation by a Guest Speaker & Societies

Creation and sustainability of the European Meteorological Society

Dr. Bob Riddaway, President, European Meteorological Society



Bob Riddaway retired from the Met Office in the UK in 2005, though he continued working part-time at ECMWF for another ten years. After gaining a BSc in Physics and PhD in Meteorology from Edinburgh University, he joined the Met Office to do research. He soon found that training and operational meteorology were more to his liking, so his career included being Head of Training, Joint Head of Forecasting and Head of Development Resourcing & Technology. Whilst at the Met Office he became involved in the education and training activities of WMO, and this still continues.

Presentation

The European Meteorological Society (EMS) was established in 1999 after a long gestation period. Since then, the number of Member Societies and Associate Members has grown. The EMS now forms an important component of the European meteorological community. An outline of the membership and activities of the Member Societies is presented below. Also, the role of the EMS is described with emphasis on the development of the EMS Annual Meeting and the action taken to ensure the financial sustainability of the EMS.

Mission and Objectives:

- Advance the science, profession and application of meteorology, and of sciences related to it, at the Europe-wide level, for the benefit of the whole population
- Foster communication, understanding and interaction between Member Societies and Associate Members
- Promote and support the activities of Member Societies and Associate Members
- Engage with providers and users of meteorological services in Europe

Membership has stabilized at 38 **Member Societies** and 29 Associate **Members**.

Some achievements

- Successful development of the Annual Meeting
- Recognising achievement
- Supporting early career scientists
- Exchanging experiences between meteorologists working in media
- Enhancing communication between EMS members and sharing experiences

Some disappointments

Little progress in:

- Establishing or supporting cooperation between EMS members in developing educational activities or resources
- Helping EMS members to establish accreditation schemes or share professional practice

EMS Governance: Consists of the following three entities:

General Assembly: All Member Societies

Council: President, Vice-President, & Treasurer & Six Councillors, Three permanent members, Executive Secretary

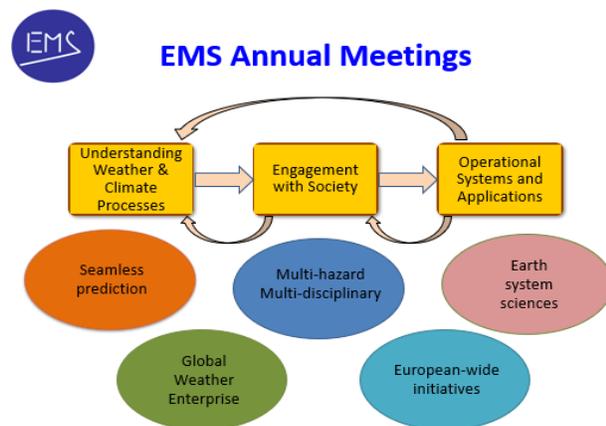
Bureau: President, Vice-President, Treasurer, Executive Secretary

They are assisted by four Committees: (1) Committee on Meetings, (2) Awards Committee. (3) Media and Communications Team and (4) Liaison Committee.

Sources of Income include: (1) Annual Meeting 58%, (2) Associate Members (25%), (3) Member societies (15.5%), (4) Other income (1.5%) for an average total of Euro 150 K

Attendance at Conferences started with around 410 and was approximately 825 in 2019 in Denmark

The theme of EMS Annual Meeting is defined as in the following slide:



The idea is to strengthen and broaden individual expertise by:

1. Encouraging the running of training workshops and side events
2. Offering opportunities for early career scientists to be mentored
3. Bringing together experts in communication, education and training
4. Supporting interaction between the public, private and academic sectors
5. Providing a high-quality forum in terms of scope, content and relevance.

EMS publishes a Journal called Advances in Science & Research.

- Advances in (a) understanding weather and climate processes and (b) the development of operational systems and applications of meteorology, climatology, and related disciplines.
- New challenges and the role of communication, education and training, and engagement with society for the profession and its practices.

Like most organization, **EMS** also has some **challenges** such as:

- How to secure financial viability?
- How to increase availability of resources and react to developments?
- How to increase the role and exposure of EMS?
- How to involve all members in EMS's activities and increase the benefits of membership?
- How to enhance the sharing of information and experiences between members?
- How to support the public understanding of weather and climate issues?
- How to support the global weather enterprise (GWE)?

Historical development of Centro Argentino de Meteorólogos (CAM) & FLISMET



Professor Oscar Andrés Frumento, is currently working for the **University of Patagonia, San Juan Bosco Puerto Madryn, Argentina** and is also Research support staff for National Council of Technical and Sciences Researches (CONICET) - Head of the Climatology Laboratory, CESIMAR. He did his Ph.D. from Department of Atmospheric Sciences, University of Buenos Aires.

His areas of Expertise are: Regional climate modelling: dust and volcanic ashes transport, Analysis of extreme precipitation events in arid and semiarid regions, and Planning and implementation of local and regional near-surface meteorological networks.

He is a Member of the Working Group to the Third National Communication to the United Nations Framework Convention on Climate Change, "Climate change in Argentina: Trends and projections; Patagonia Region", 2013-2014. He has contributed to many books related to Meteorology and Climatology.

Presentation

He presented a few slides about actual status of CAM, the society of which he is an active member. He spoke about the Status and Progress made by CAM in the recent past.

CAM was founded in 1969 to promote the professional activities of meteorologists. Its main activities include holding National Congress on Meteorology every two years and to publish Scientific Journal containing articles mainly written by Argentinian Scientists. It also helped develop a draft of the National Legislation on Meteorological Activities in Argentina. It held its CONGREMET XIII – 2018 - in Rosario on Extreme weather and climate events: integration of knowledge for risk management.

Since July 1970, they have been producing two issues of their Scientific Journal per year.

In 1986, The Argentine Meteorological Society (CAM), together with the Brazilian Meteorological Society (SBMET) and the Mexican Organisation of Meteorology (OMMAC), founded the FLISMET which now has 12 member countries.

The situation about the study of Meteorology and Climatology is that only two universities produce graduates in atmospheric sciences: University of Buenos Aires and the National University of La Plata. Argentina must promote atmospheric science studies to best qualified students in math and physics.

FLISMET, institutional strengthening, collaboration and exchange



Met Graciela Salaberri, Uruguayan meteorologist, is an expert in operational synoptic meteorology, specialist in Disaster Risk Reduction, and in Local Development. Since December 2003, she has been a founding member of the Civil Society Amigos del Viento (<http://www.amigosdelviento.org/>), an organization dedicated to the promotion, dissemination and investigation of meteorological and environmental issues, in their technical, scientific and human dimensions. She is a Member of Secretariat permanent of

the FLISMET 2010.

Presentation

In 1986, the Argentine Meteorological Society (CAM) together with the Brazilian Meteorological Society (SBMET) and the Mexican Organization of Meteorology (OMMAC) founded the FLISMET (Federación Latino-ibero-americana de Sociedades Meteorológicas). Since then FLISMET has recruited 12 members:.

1. **Argentina**. Centro Argentino de Meteorólogos (CAM)
2. **Brasil** .Sociedade Brasileira de Meteorología (SBMET)
3. **Bolivia** .Sociedad Meteorológica de Santa Cruz
4. **Colombia** .Sociedad Colombiana de Meteorología (SOCOLMET)

5. **Cuba** .Sociedad Meteorológica de Cuba (SOMETCUBA)
6. **Chile** .Colegio de Meteorólogos de Chile.A.G.
7. **Ecuador** .Asociación de Meteorólogos del Ecuador (ASOMET)
8. **España** . Asociación Meteorológica Española (AME)
9. **México** . Organización Mexicana de Meteorólogos A.C. (OMMAC)
10. **Peru** .Sociedad Meteorológica de Perú (SOMET-PERU)
11. **Portugal** .Asociação Portuguesa de Meteorologia e Geofísica (APMG)
12. **Uruguay** .Sociedad Amigos del Viento (AdelV)

FLISMET has been conceived as an organ that supports and contributes to the strengthening of capacities in the meteorological societies of Ibero-Latin America and also assists in the creation of new societies. The presentation highlighted the synergies between IFMS and FLISMET and how we can use them as a bridge that contributes to having a strong relationship between the two societies.

What have been the achievements of FLISMET in these 34 years?

FLISMET has been assisting its member societies in the following manner:

1. Support and foster the spirit of union among the Societies.
2. Support conferences, meetings and congresses concerning Meteorology and Environment.
3. Develop relationships among similar entities i.e. Met Societies.
4. Advocate for Professionals in Meteorology and their activities.
5. Foster the creation of National Meteorological Societies and their membership to the Federation.
6. Establish FLISMET among the coordinators of Ibero Latin American meteorological societies in the regional and global context"
7. FLISMET biannual regional meetings lead members to collaborate on joint actions at national and regional level.
8. Global Advocacy: Mechanism of participation in the spaces of global interaction.

The IFMS and FLISMET have synergies that we can develop to assist in the development of societies in South America and other countries. FLISMET would like to see the following collaboration between the two Societies (IFMS and FLISMET)

- Increased collaboration and exchange between the two
- Synergies: that involves the Federation and the Forum - Introduce opportunities for members to participate
- COMMON points at the AGENDAS:
- Get to know each other
- Status of the situation: regional trends
- Looking back and to the future to build a common strategy.

The issues being faced by FLISMET are:

- Dilemmas of growth while guaranteeing, at the same time, financial sustainability, diversity, inclusion and equality.
- An act of balance: led by the members.
- The picture that cannot be left out: a developed framework of monitoring and assessment.
- Friends with benefits: better communication with / among members about the benefits of membership and ways to participate.
- To take better advantage of all members' knowledge and skill, so as to involve everyone.

Here is the website of FLISMET: [tp://www.amigosdelviento.org/flismet](http://www.amigosdelviento.org/flismet)

Crossroads in Weather History: The intersection of Public and Private Interests at the “Formation of What is Now National Weather Service ...150 Years Ago”.

Dr. Louis W. Uccellini is the Director of the National Weather Service. In this role, Dr. Uccellini is responsible for the day-to-day civilian weather operations for the United States, its territories, adjacent waters, and ocean areas. Previously, he held positions that include the Director of the National Centers for Environmental Prediction, the Director of the National Weather Service’s Office of Meteorology and Senior Research Scientist at NASA’s Goddard Space Flight Center.



Dr. Uccellini is a prolific author of more than 60 scientific articles on severe convective storms, snowstorms, and the use of satellite data in numerical forecast models. He also co-authored the widely acclaimed two-volume American Meteorological Society (AMS) monograph entitled *Northeast Snowstorms*.

In 2001, Dr. Uccellini received the U.S. Presidential Meritorious Executive Rank Award, and in 2006 he received the U.S. Presidential Distinguished Rank Award. In January 2012, he was elected the President of the American Meteorological Society and served from 2012 to 2013.

Dr. Uccellini has served as the US representative with the WMO since 2017.

Presentation

Dr. Louis W. Uccellini spoke about the history of the National Weather Service (NWS) of the United States— from the meteorology pioneers prior to the US Civil War to today’s efforts to build a Weather Ready Nation. A focus was drawn upon the partnership between public and private sectors. He concluded his talk with an update on the view of public-private partnership in the World Meteorological Organization (WMO).

Dr. Uccellini set the stage by discussing the meteorology pioneers prior to the Civil War and the conversations about weather forecasts for the public good vs. commercial support for the “enterprise” after the Civil War. **He provided a few quotes from Increase Lapham (1811-1875) and Cleveland Abbe (1838-1916).** Increase Lapham, a self-taught naturalist and scientist in Wisconsin stated on July 1836, when he was 25: *“Very little argument is needed to prove that our comfort and convenience and not infrequently our lives and property are dependent upon meteorological phenomena.”*

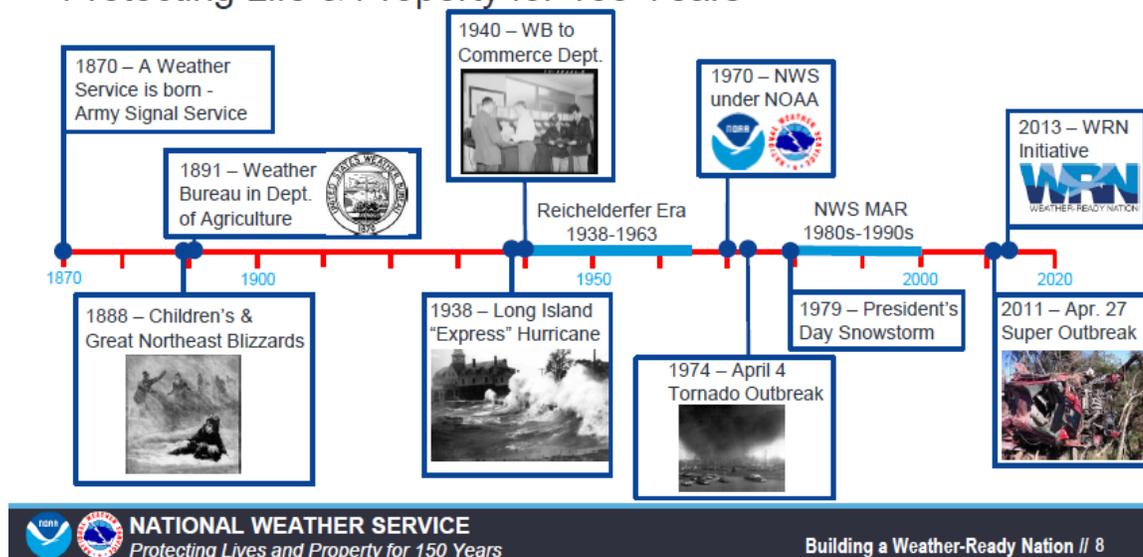
Cleveland Abbe, wrote to Increase Lapham in a letter dated December 4, 1869, the following quote prior to when Lapham was appointed the first ‘Assistant to the Chief Signal Officer of the Signal Service’ in 1870: *“Although not professing to know much of meteorology yet, I have undertaken the preparation of our daily weather bulletin as a means of starting what I esteem to be a highly important enterprise.”* Abbe also wrote: *“Your list of disasters on the Lakes is a sad picture and it should be the earnest endeavor of all scientists so to obtain that knowledge as to avert such calamities.”*

On November 8th, 1870, Increase A. Lapham issued the first official forecast and Storm Warning from the Signal Service: *“High wind all day yesterday at Cheyenne and Omaha; a very high wind this morning at Omaha; barometer falling with high winds at Chicago and Milwaukee today; barometer falling and thermometer rising at Chicago, Detroit, Toledo, Cleveland, Buffalo and Rochester; high winds probable along the Lakes.”*

Fast-forwarding to the 1930’s when a major break point was made as meteorologists began transitioning away from analog techniques and towards newer technologies and improved dynamic forecasting. 1938 was especially pivotal with the hurricane that became known as the “Long Island Express” hitting Long Island and New England with no warning; leading to the appointment of Dr. Francis W. Reichelderfer as Chief of the US Weather Bureau for which he served for 25 years.

NWS Heritage

Protecting Life & Property for 150 Years



Dr. Uccellini then discussed the **1945: Post-War Tech Boom** and how the end of World War II brought expanded meteorological capabilities such as:

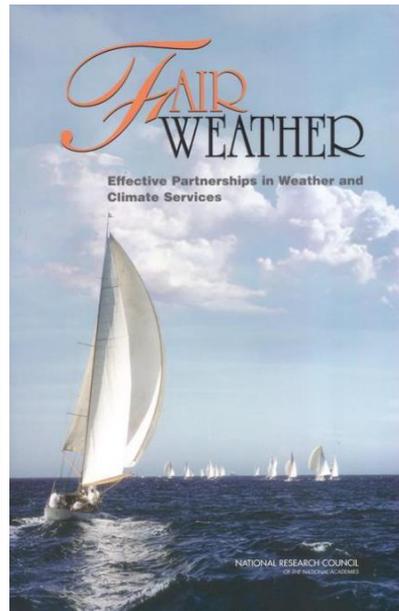
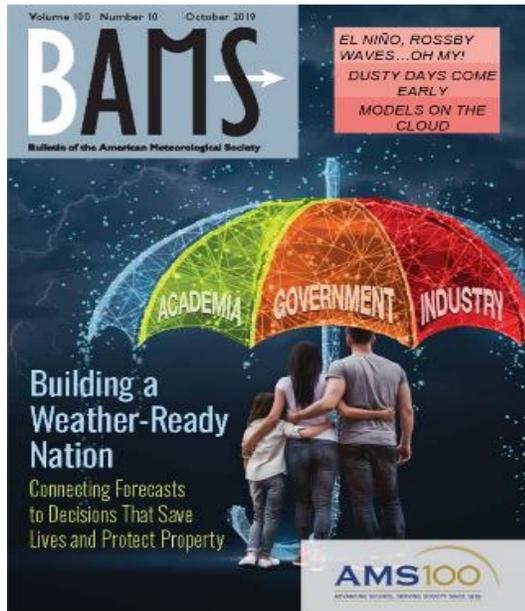


- National RAOB Network, Operational NWP, Radar Network, Satellites imagery
- Radio/Television, improved dissemination capabilities
- The World Meteorological Organization; focus on international collaboration and data sharing (e.g. global RAOB and surface data).
- New opportunities for the private sector.

Despite numerous advancements through the late 1900's and early 2000's, a vital conversation had to take place in the US meteorological community after the loss of life from the April 27-28, 2011 Super Tornado Outbreak. A workshop was held in December 2011 in which the foundational basis for "Building a Weather Ready Nation" (recently published in BAMS 2019; see cover below) was discussed. The following items were recommended at the workshop:

- Focus on the "last mile": delivery of warnings of warnings that connect to required actions
- Assess and update warning dissemination strategy
 - Integrate social and physical science to effectively connect forecasters to decision makers
 - Is the message delivered equal to the message received?
- Impact-based forecast and warnings for a wide range of decision makers (from 'organized' to 'loosely coupled' to 'individuals') and across the entire spectrum of government agencies from national, to state, to local governments.
- Improved outreach and education.

Dr. Uccellini then introduced the *Fair Weather Report* (2003) which was created to address effective partnerships in the Weather and Climate Services. As a result, the American Meteorological Society created a new commission for public-private "neutral ground". Today, this is the **Commission on Weather, Water, and Climate Enterprise**. It brought the private academic and public sectors together and accelerated the growth of the entire enterprise within the United States.



Dr. Uccellini also stated that since this report helped set up the ground rules for the interactions between the public and private sector in the United States, the enterprise has grown tremendously and with the public and private sectors now serving the entire value chain to serve commerce and public safety.

Lastly, Dr. Uccellini showed how the view of public-private partnership by the WMO has evolved and become more supportive over the past 20 years: which is readily

apparent when contrasting the WMO statement from 1999 with the Declaration passed by the Cg in June, 2019:

Cg-18: Geneva Declaration 2019

1999:

We EXPRESS deep concern

about the potential impacts on the provision of meteorological services worldwide of any development which endangers the unique and integrated international system for obtaining and exchanging meteorological and related data and products, a system which has benefited the global community for over 100 years. **These developments can adversely affect the effective and efficient provision of appropriate meteorological data, information, products and services, as well as the role and operation of National Meteorological and Hydrometeorological Services,** resulting in unfavourable impacts on national economies, the environment, the well being of peoples and the whole world community.

2019:

We WELCOME

- **The opportunities for all stakeholders** and the broader user community that will result from a closer collaboration among public, private and academic sectors;
- **The engagement of all sectors in addressing the societal needs** through weather, climate, water and other environmental information and services;
- **The contributions of Members and partner international organizations** to sustaining and developing the global meteorological infrastructure coordinated by WMO through its programmes;
- **The evolving role of WMO as a facilitator in establishing and expanding partnerships among stakeholders, from public, private and academic sectors ...**



Progress Report of Tanzanian Meteorological Society since IFMS GM 5

Dr. Buruhani Nyenzi - President TMS – VP Administration IFMS

Abstract:



Dr. Buruhani Nyenzi made a presentation on the Progress Report on activities carried out by the Tanzania Meteorological Society (TMS) since IGM-05. During this period two meetings were organized which were the TMS Annual General Meeting and a national workshop to present results to various stakeholders on Weather and Climate Information Services for Africa (WISER) Phase II project. Efforts to prepare a TMS Strategic Plan for TMS were initiated with its draft currently undergoing review. Efforts were also made to recruit more members and encourage all members to pay their annual membership fees on time as per the requirement.

More significantly, TMS supported Tanzania Meteorological Authority (TMA) in implementing one of its components on the WISER Phase II project in Tanzania. The component implemented by TMS was on Enhancing Capacity of Tanzania Meteorological Authority (TMA) in Provision of Climate Services in Agriculture, Energy, Marine transport, Disaster and Water Sectors under Weather and Climate Information Services for Africa (WISER) Phase II project.

This project was built on the achievements from previous projects implemented by TMA such as GFCS phase I and II, WISER phase I, MHEWS and CAROT. These projects revealed: (1) high demand of improved climate information products and services in Agriculture, Energy, Marine transport, Disaster and Water Sectors, (2) high demand of sector and location specific climate information and products, and (3) inadequate capacity of the users to understand and apply climate information and products in planning and decision making. These challenges were addressed in WISER phase II project by: strengthening communication channels and providing improved and integrated climate information products to (Agriculture, Energy, Marine transport; Disaster and Water Sectors), Improved dissemination of weather and climate information products through registration of users in the TMA FarmSMS system, which is basically providing weather information through SMS messages to targeted registered users; identification of intermediaries and recruitment of community radios from all targeted regions; and by training journalists and stakeholders from the targeted sectors on how to interpret, communicate and utilize climate information products in planning and decision making to the last mile.

Progress Report of Ethiopian Meteorological Society since IFMS GM 5

Mr. Workneh Degefu

Presentation



- The Report addressed activities carried out, events EtMS participated in and planned activities
- Activities carried out include awarding of scholarships, strengthen cooperation with stake holders, establishment of Female Research Award, Preparation of Guide for Users of Meteorological Information, preparation of a new website, organization of the 12th EtMS General Assembly and the revision of EtMS Regulation.
- Participation in events include attendance in several civil society organizations arranged meetings, other meetings EtMS was invited to, EtMS members excursion, etc.
- The report also informed participants on EtMS planned activities.

Plenary Session: Discuss IFMS' Future Direction & Creation of Volunteer Force

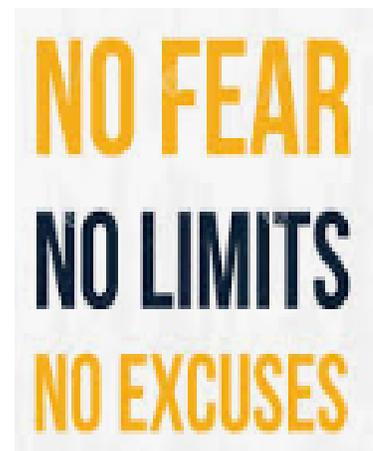
Harinder Ahluwalia, Keith Seitter, Liz Bentley, Buruhani Nyenzi and S.K. Dash

The topic was discussed on January 15, 2020 at 3:00 PM at the Marriott Hotel

Date and place of next meeting: Dr. Harinder Ahluwalia

The parameters for hosting IFMS Global Meeting are presented in Annex E. Some interest has been shown by Ethiopian Meteorological Society and India Meteorological Society. We still have to invite Proposals and select the host Society.

CLOSURE OF IGM6







Let's Reminisce our Past IGMs



First Row (L to R) Graciela Salaberri, Workneh Degefu, Harinder Ahluwalia, Paolina Valova, Edina Fejes, Zoltan Dunkel, Ákos Németh
 Second Row: Keith Seitter, Rumulo Paz, Kung-Yueh Camyale Chao, SK Dash, Bruhani Nyenzi, Hilda Carr, Liz Bentley, Mary Voice, Pavol Nejedlik,
 Third Row: Ruben Caffera, Dimitar Ivanov, Olavo Rasquinho, Tafesse Gurmu, Pablo Hernáez, Fritz Neuwirt, Tomas Halenka



Yongyun Hu, Judit Bartholy, Martina Junge, Makoto Suwa, Martha Anderson, Mark Schwartz, Harinder Ahluwalia, Tai-Jen George Chen, Kung-Yueh Camyale Chao, Mary Voice, Eduardo Agosta, Esperanza Cayanan, Teruyuki Nakajima, Mary Glackin, Fredrick Carr, Keith Seitter, Michel Jean, Lan Yi, Shaoping Hu, Gordon McBean, Fei Chan, Elizabeth Bentley, Shuyi Chen, John Mungai
Other Attendees not in the photograph: Alexander MacDonald, William Gail, Louis Uccellini, Walter Dabberdt, Jack Hayes, Lord Julian Hunt





ANNEX A: Acronyms/Abbreviations

ACT	Accreditation/Certification and Training
ACM	Asian Conference on Meteorology
AfMS	African Meteorological Society (Regional Society of Africa)
AGU	American Geophysical Union
AMOS	Australian Meteorological & Oceanographic Society
AMS	American Meteorological Society
AsMS	Asian Meteorological Society (Regional Society of Asia)
CAM	Centro Argentino de Meteorólogos
CAROT	Climate Adaptation to Risks and for Opportunities in Tanzania
CCR	Canadian Consortium for Research
CEO	Chief Executive Officer
CG18	WMO Congress #18 (held in Geneva in June 2019)
CGU	Canadian Geophysical Union
CMOS	Canadian Meteorological and Oceanographic Society
CMS	Chinese Meteorological Society
COMET	Program established by UCAR and NOAA's NWS to promote a better understanding of mesoscale meteorology
CWRA	Canadian Water Resources Association
EAC	East African Community
EMS	European Meteorological Society
FLISMET	Latino American Federation of Meteorological Societies
GCI	Global Campus Initiative of WMO
GFDRR	Global Facility for Disaster Reduction and Recovery
GW&CC	Global Warming and Climate Change
GWE	Global Weather Enterprise
GWEF	Global Weather Enterprise Forum (a body to promote PPA Collaboration)
HMEI	HydroMet Equipment Industry
Hydromet	Hydrology and Meteorology
IAMAS	International Association of Meteorology and Atmospheric Sciences
ICSU	International Council for Science
IFMS	International Forum of Meteorological Society
IGM	IFMS Global Meeting
IPCC	Intergovernmental Panel on Climate Change
ISB	International Society of Biometeorology
IUGG	International Union of Geodesy and Geophysics
KMS	Korean Meteorological Society

LDC	Least Developed Countries
Met	Meteorology
MHEWS	Multi-Hazard Early Warning System
MMT	Hungarian (Magyar) Meteorological Society
MOU	Memorandum of Understanding
MSCT	Meteorological Society of Chinese Taipei
MSJ	Meteorological Society of Japan
NGO	Non-Government Organization
NL	Newsletter
NMHS	National Meteorological and Hydrological Services
NMSoc	National Meteorological Society
NWS	National Weather Service
OCP	Open Consultative Platform (to advise WMO Secretary General)
PAGSE	Partnership Group for Science and Engineering
PPA	Public Private and Academic (Sectors)
PPT	Power Point
QMS	Quality Management System
REC	Regional Economic Cooperation (s) groupings in Africa USA
RMetS	Royal Meteorological Society
RMSoc	Regional Meteorological Society
SG	Secretary General
SPMS	South Pacific Meteorological Society
S&T	Science and Technology
STA	Science and Technology Australia
TMA	Tanzania Meteorological Authority
TMS	Tanzanian Meteorological Society
USA	United States of America
VP	Vice President
WB	World Bank
WBG	World Bank Group
WebEx	Web Conferencing Software (Proprietary)
WISER	Weather and Climate Information Services for Africa
WMO	World Meteorological Organization
WRN	Weather Ready Nation
WWOSC	World Weather Open Science Conference



ANNEX B: Summary of Current Committees

#	Committee	Chairperson & Committee Members
1.	Committee 1: Access to Communications Channels	Cam Chao - Liz Bentley, Harinder Ahluwalia, Buruhani Nyenzi & Sushil Dash
2	Committee 2: Task 1: Cooperation with Regional Met Societies	Liz Bentley - Oscar Frumento, Workneh Degefu, Ammar Gaber
	Task 2: Regional Weather Enterprise Forums	Oscar Frumento - Michael Coughlan, Liz Bentley and Workneh Degefu
3.	Committee 3: Value Proposition Implementation Committee	Buruhani Nyenzi – Ammar Gaber and Workneh Degefu
3.1	Task 3.1: Collaboration on joint activities	Ammar Gaber - Buruhani Nyenzi, Jack Hayes and Harinder Ahluwalia
3.2	Task 3.2: Membership Promotion & Outreach to developing Societies	Workneh Degefu - Sushil Dash, Oscar Frumento, Jack Hayes, Michael Coughlan and Liz Bentley
4	Committee 4: Collaboration between IFMS and WMO, etc.	Harinder Ahluwalia , Jack Hayes, Keith Seitter, Michael Coughlan, Workneh Degefu
	Task 4.1: Gain support from WMO, WBG and HMEI, etc.	
	Task 4.2: Assist WMO/WBG to promote PPA Sector Partnerships	
	Task 4.3: Aligning IFMS Plans with WMO strategic plans/ priorities to increase cooperation	
5.	Committee 5	Keith Seitter - Harinder Ahluwalia, Jack Hayes, Liz Bentley, Ammar Gaber and Cam Chao
	Task 5.1: Financing Committee:	
	Task 5.2: Individual Funding through Member Societies	Cam Chao - Workneh Degefu, Sushil Dash, Oscar Frumento, Jack Hayes, Michael Coughlan and Liz Bentley
6	Committee 6: ACT Committee	Liz Bentley - Keith Seitter, Cam Chao and Harinder Ahluwalia
7	Committee 7: Best Practices Coordination Committee	Michael Coughlan - Oscar Frumento, Keith Seitter
8	Committee 8: Webinar & Training	Sushil Dash - Michael Coughlan, Buruhani Nyenzi and Liz Bentley (especially for T part of ACT)
9.	Committee 9: Recognition of Individual Contribution	Buruhani Nyenzi - Sushil Dash, Oscar Frumento, Ammar Gaber and Liz Bentley
10.	Committee 10: GWE Monitoring Committee:	Jack Hayes - Keith Seitter and Harinder Ahluwalia
11	Committee 11: Meetings and Conference Committee	Keith Seitter - Harinder Ahluwalia, Buruhani Nyenzi
12.	Committee 12: Promotion of Climate Change Issues with Governments & Public	Harinder Ahluwalia - All Council Members
13.	Committee 11: Industry Committee	Pending - To be planned once other Committees are operational

ANNEX C: Modus Operandi of WWOSC

Dr. Harinder Ahluwalia

1. Background

In 2014, a WMO Open Science Conference (**WWOSC-2014**) was held in Palais des Congrès Montréal which was organized with the assistance of Environment Canada, the National Research Council of Canada and European Centre for Medium Weather Forecast (**ECMWF**). It was co-chaired by Alan Thorpe of ECMWF and Michel Beland of Environment Canada. In addition to scientific presentations and discussions, the future of Global Weather Enterprise (**GWE**) was also discussed in three panels consisting of some of the top experts from Public, Private and Academic (**PPA**) Sectors.

By all accounts, it was considered to be a very successful Conference sponsored by WMO because it brought scientists from around the world together to discuss the scientific issues as well as, it resulted in formal discussions on the concept of the GWE. However, it has been over 5 years since that Conference was held and to the best of our knowledge, no new such conference has been held or even currently planned.

2. Introduction

One of the major activities of Meteorological Societies is organizing conferences which can be leveraged to hold International Conferences such as WWOSC with the assistance of WMO, WBG, IFMS and Regional Meteorological Societies. We would like to make the following Proposal to WMO after discussing it with the Regional Meteorological Societies. Therefore, this article must be construed as only a Proposal to hold WWOSC.

3. Objective

To hold an International Meteorology Open Science Conference of the type (WWOSC) regularly. With the experience gained in the WWOSC-2014 Conference, a detailed road map can be developed. This conference can discuss not only S&T but also provide a forum for coordinating various activities being undertaken by various leading organizations such as WMO, WBG (World Bank Group), etc. For example, we can discuss progress of GWE, collaboration between Public, Private and Academic sectors.

4. Proposal to hold a World Weather Open Science Conference (WWOSC)

The Proposal is to organize a WWOSC every third year with the assistance of WMO, WBG, IFMS and Regional Met Societies. The idea of PPA (Public, Private and Academic) Collaboration was also solidified in WWOSC-2014 (please see those very interesting GWE Reports on IFMS Website www.ifms.org. These Reports provide unabashed views of various leaders of the Global Weather Enterprise).

To facilitate its organization, societies like, AMS, EMS, and other Regional Societies such as the Asia Meteorology Society (AsMS) currently being developed are requested to collaborate on this idea. Although AsMS does not yet exist, there is an ongoing collaboration between strong players like Japan, Korea and China – India is still to be included. We understand that AMS is not a Regional Society – it is a National Society – but we believe that strong collaboration can be created between Region IV (North & Central America) members with the active leadership of the American Meteorological Society (AMS) – especially, for implementing the idea of WWOSC.

5. Modus Operandi & Frequency

Every third year with one of the following societies in lead: AMS/CMOS, EMS and AsMS, we can organize the WWOSC type Conference with very active support of WMO, WBG, IFMS, etc. Once other Regional Societies such as FLISMET (The Federation of Latin American and Iberian Meteorological Societies) and AfMS (African Meteorological Society) become strong enough to hold it, we can hold a Conference every other year at 5 potential locations. The Conference will be in lieu of the Annual Conference of that society for the selected year. For example, currently AMS, EMS, etc. hold annual conferences. We can request AMS to make its 2022 Conference WWOSC-2022 with full support of above organizations. Similarly, EMS-2025 Conference can be converted to WWOSC-2025 and so on.

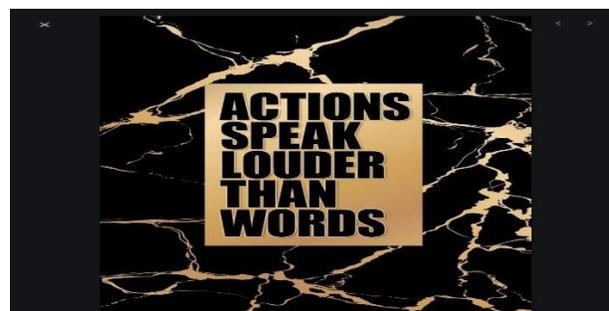
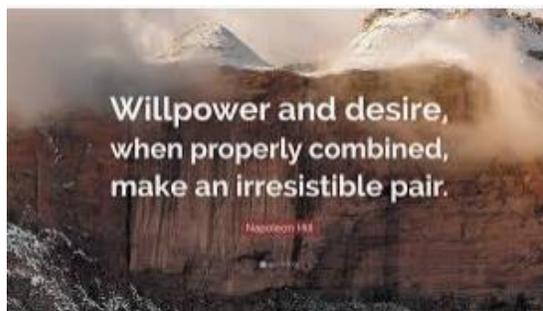
6. Organizers

Selected society with the assistance of WMO, WBG and IFMS and other Regional Societies in that Region.

7. Conclusion

It is feasible to hold regular World Weather Open Science Conference (WWOSC) if the Regional Meteorological Societies and WMO are prepared to accept this Proposal and WBG is ready to support it. IFMS could play a strong coordination role.

The purpose of this article is to seek the opinion of all the players proposed in this article.





ANNEX D: Requirements for holding IFMS Global Meeting (IGM)

Dr. Harinder Ahluwalia

1. Introduction

IFMS holds its Global Meeting (**IGM**) approximately every two years. The meeting lasts 2 full days. Usually, societies try to hold it concurrently with their Conference/ Congress. In these meetings we present the progress of various Committees which have been defined to implement IFMS Value Proposition, we make plans for the future, discuss any new plans, successes, failures, remedies, etc. In future, we will also be honoring people with various types of awards which we have defined and are in the process of finalizing.

These meetings are attended by IFMS Council Members as well as senior members of member societies. In addition, we also welcome any other members from any society which is interested in the discussions and outcome of the IGM.

2. Objective of this Document

The objective of this document is to outline the list of requirements for holding an IGM. Any National Meteorological Society (NMSoc), which is a bonafide member of IFMS, can bid for holding an IGM in its country as long as it can fulfill the mandatory requirements stated in the following section. Depending on the strength of the society, there might be a need to have some form of guarantee that the society can fulfill these requirements e, g. guarantee by the National Meteorological Service or some National Body stating that they will support the Society if it wins the opportunity to hold such a meeting.

3. Mandatory Requirements

Following are the mandatory requirements for the bidding society to fulfill:

- 1) Demonstrated capability to organize similar Meetings or Conferences.
- 2) Capability to assist in preparing and finalizing Meeting Program with the assistance of the IFMS Council.
- 3) Capability to provide a **quality Conference Room** in a Hotel, Conference Centre or university/education establishment or any Government Facility such as facilities of National Meteorological Service.
- 4) The proposed location must be easily reachable from International locations from where attendees will be coming.

- 5) Following meals must be arranged:
 - a) Two lunches
 - b) One formal dinner – on the first day of the meeting – so that we can also have a classy Recognition Ceremony.
 - c) 6 tea/coffee breaks – (includes morning Coffee on two days, two mid-morning breaks and two mid-afternoon breaks)
- 6) Printing sufficient number of color copies of the Program Book and any other documents e.g. Progress Reports, latest Newsletter; etc.
- 7) Registration Facility/Capability.
- 8) Volunteers to staff the Registration Desk.

4. Non-Mandatory Requirements

The following requirements are desirable but not mandatory:

- 1) Live streaming option for members of those societies who are not able to attend in person.
- 2) Some funding to support the travel of staff of needy societies. This can be arranged through any organization local or international.
- 3) If the IGM is being held concurrently with a Conference and Exhibition, a free booth with furnishing and display system.
- 4) If possible, the material for Awards.

5. Proposal Review Process

Your Proposal will be reviewed by the Council Members for its quality and fulfillment of all the stated requirements.

We will make a scoring grid to score the Proposals and declare the winner.





ANNEX E: IFMS Membership

American Geophysical Union
American Meteorological Society §
Argentina Meteorological Society
Asociación Meteorológica Española
Association of Disaster Risk Management Professionals
Australian Meteorological and Oceanographic Society §
Brazilian Meteorological Society
Canadian Meteorological and Oceanographic Society
Chinese Meteorological Society §
Czech Meteorological Society
East African Meteorological Society
Ethiopian Meteorological Society
European Meteorological Society
FRIENDS OF THE WIND Meteorology Environment Development
Geophysical Society of Finland
Hong Kong Meteorological Society
Hungarian Meteorological Society (Magyar Meteorológiai Társaság)
Indian Meteorological Society §
International Association for Urban Climate
International Association of Broadcast Meteorology
International Association of Meteorology and Atmospheric Sciences
International Society of Biometeorology
Italian Meteorological Society
Kenya Meteorological Society
Korean Meteorological Society
Latin American and Iberian Federation of Meteorological Societies
Meteorological Society of Chinese Taipei
Meteorological Society of Japan
Meteorological Society of New Zealand
Mexican Organization of Meteorologists
National Council of Industrial Meteorologists
Philippine Meteorological Society
Portuguese Association of Meteorology and Geophysics
Royal Meteorological Society
Sociedad Meteorológica de Cuba
Society of Hydrologists and Meteorologists-Nepal
South African Society for Atmospheric Sciences
Sudanese Meteorological Society
Tanzanian Meteorological Society
World Meteorological Organization



ANNEX F: IFMS Council Members 2018-2021



SECOND IFMS COUNCIL 2018-2021



 <p data-bbox="346 852 651 901">Dr. Harinder Ahluwalia (CMOS) President</p>	 <p data-bbox="672 852 913 901">Dr. Keith Seitter (AMS) Vice-President - Finance</p>	 <p data-bbox="945 852 1249 901">Dr. Buruhani Nyenzi (TMS) Vice-President - Administration</p>	 <p data-bbox="1281 836 1501 885">Dr. Yongyun Hu (CMS) General Secretary</p>	 <p data-bbox="1543 836 1774 885">Mr. K.Y.C. Chao (MSCT) Treasurer</p>
 <p data-bbox="556 1079 829 1128">Mr. Workneh Degefu (EtMS) Council Member Region I</p>	 <p data-bbox="934 1079 1228 1128">Prof. Sushil Kumar Dash (IMS) Council Member Region II</p>	 <p data-bbox="1312 1079 1627 1128">Dr. Oscar Andrés Frumento (CAM) Council Member Region III</p>		
 <p data-bbox="567 1339 829 1388">Dr. John (Jack) Hayes (AMS) Council Member Region IV</p>	 <p data-bbox="934 1339 1228 1388">Dr. Michael Coughlan (AMOS) Council Member Region V</p>	 <p data-bbox="1333 1339 1596 1388">Prof. Liz Bentley (RMets) Council Member Region VI</p>		



ANNEX G: IFMS Council Members 2018-2021 (Updated)



SECOND IFMS COUNCIL 2018-2021



 <p data-bbox="342 854 644 901">Dr. Harinder Ahluwalia (CMOS) President</p>	 <p data-bbox="667 854 905 901">Dr. Keith Seitter (AMS) Vice-President - Finance</p>	 <p data-bbox="940 854 1247 901">Dr. Buruhani Nyenzi (TMS) Vice-President - Administration</p>	 <p data-bbox="1266 854 1522 901">Mr. Ammar Gaber (SUMS) General Secretary</p>	 <p data-bbox="1543 854 1772 901">Mr. K.Y.C. Chao (MSCT) Treasurer</p>
 <p data-bbox="552 1089 827 1136">Mr. Workneh Degefu (EtMS) Council Member Region I</p>	 <p data-bbox="924 1089 1215 1136">Prof. Sushil Kumar Dash (IMS) Council Member Region II</p>	 <p data-bbox="1304 1089 1623 1136">Dr. Oscar Andrés Frumento (CAM) Council Member Region III</p>		
 <p data-bbox="558 1349 831 1396">Dr. John (Jack) Hayes (AMS) Council Member Region IV</p>	 <p data-bbox="928 1349 1222 1396">Dr. Michael Coughlan (AMOS) Council Member Region V</p>	 <p data-bbox="1329 1349 1591 1396">Prof. Liz Bentley (RMetS) Council Member Region VI</p>		

ANNEX H: Assisting WMO/WBG in Strengthening GWE

FACTS:

- Climate Change has intensified the frequency and severity of weather-related disasters requiring more accurate and reliable weather information
- Related S&T is advancing rapidly providing the opportunity to satisfy societal needs
- Implementation of new technology is sometimes slow
- Benefits of this rapid progress not reaching LDCs
- Currently there are contributions from the public and private sectors but not in an organized and conscious manner – with some exceptions.

ACTION:

WMO/GFDRR-WBG believe that the Global Weather Enterprise Forum (**GWE**) can only be strengthened by strong Collaboration between PPA Sectors. They have taken the lead for achieving this by creating two complementary initiatives to increase cooperation and collaboration internationally across the GWE: The WBG-GFDRR's (**GWEF**) and the WMO Open Consultative Platform (**OCP**).

The Global Weather Enterprise Forum (GWEF)

Four goals were established by GWEF:

- **Mutually beneficial engagement:** strong trust and cooperation among WMO, NMHSs, private industry, the academic sector, international funding institutions, and the societies they all support.
- **Sustainable capacity building:** cooperation between the GWE and development partners leading to increased capabilities of the weather enterprise in low- and middle-income countries.
- **Education and training of the next generation scientists and technologists:** increased research and development, operational expertise, and the implementation of innovations that support weather and disaster readiness globally.
- **Improved access and exchange of global weather information of high quality** capable of appreciably improving the range and accuracy of weather forecasts and warnings.

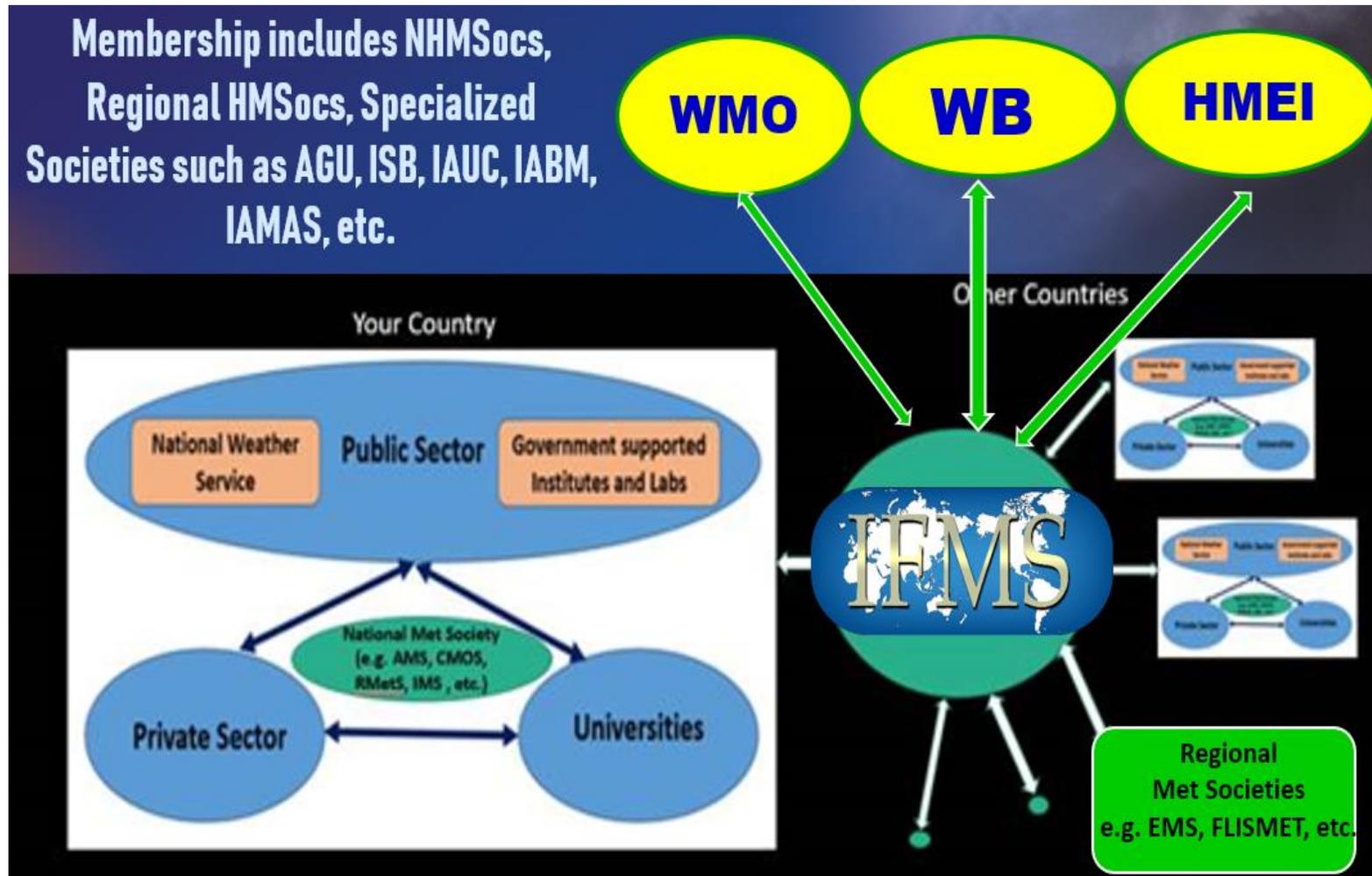
The WMO Open Consultative Platform

Seeing a broader strategic need, the WMO formed the Open Consultative Platform (OCP) at its 18th WMO Congress in June 2019. Its purpose is to create a high-level and structured dialogue among executive leaders in the Public, Private and Academic Sectors at national and international levels across the weather enterprise. Goals include:

- Strengthening the authoritative voice of NMHSs for weather warnings and other critical weather and climate information,
- Establishing legislative arrangements to enable cross-sector partnerships,
- Encouraging international data sharing,
- Making weather data available for public purposes such as disaster risk reduction.

IFMS plans to assist both of these initiatives by keeping its members informed of the progress through its Website, Newsletter and Webinars and also assist WMO and GFDRR, if requested.

STRUCTURE OF IFMS



**A Volunteer-based Organization
Uniting World's Meteorological
Societies & Associate Societies for
Collaboration in S&T and to
strengthen each other (especially
developing Societies)**



**Assisting World Meteorological
Organization (WMO) &
World Bank Group (WBG)
In Strengthening Global Weather
Enterprise (GWE) in Creating
“Weather Ready Globe”**