

2030





Indian Meteorological Society



IMS VISION 2030

Indian Meteorological Society

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PREFACE

In last six decades since the formation of the Indian Meteorological Society, Meteorology and allied sciences have made significant progress. Meteorology has evolved as an important multi-disciplinary scientific profession. It uses state of art technologies in the field of observations, communication, data processing, high power numerical computingand provides services to a large number of the sectors. During this period many academic and research institutions have come up in this field and are contributing to the advancements of atmospheric and allied sciences in the country.

The scientific advancements and modernization of meteorological observing and forecasting systems have ledto improvement in the skill of weather forecasts. As a result of better forecasts, there isgrowing demand for improved weather and climate services. India Meteorological Department and sister institutions under Ministry of Earth Sciences and other ministries are doing their best in promoting research and providing services to a large number of users. However, government alone can not meet ever growing demands of services from a variety of users in a large diverse country like India. It requires synergy between government agencies, academic and research institutions, industry and users.

An independent professional body like Indian Meteorological Society having all key stake holders as its members, provides an ideal platform for advising government agencies on policy issues, developing collaborations among stake holders, carrying out capacity building and extending outreach to block and village levels. Over a period of sixty years, IMS has grown in to a professional meteorological society of international repute with 29 chapter and more than 3,300 members. In its Diamond Jubilee Year, the IMS is ready to play key role in promoting meteorology and improving outreach of weather and climate services. IMS Vision 2030 outlines a road map to develop such a capability. The vision document provides strategic plan with short, medium and long term implementation targets. It is aimed to galvanize IMS activities and provide continuity so as to realize stated objectives of the society.

I am personally grateful to esteemed IMS Fellows for their valuable inputs in developing the vision document. The document is intended to be dynamic in nature and subject to periodic review to keep pace with advancements in Meteorology and services. I am thankful to Dr M. Mohapatra, Vice President, IMS and Dr. Akhilesh Gupta, Past President., IMS for their inputs and support in developing the vision document.

AVM (Dr.) Ajit Tyagi President 01 August 2017

Introduction

The Indian Meteorological Society (IMS) was established in 1957 for the advancement of meteorology and allied sciences. Since the inception of the society, meteorology has evolved as multi-disciplinary subject with multi-sectoral applications. The recent advances in weather predictions have led to a growing demand in a variety of value add weather services. Climate change has added a new challenge, of providing climate services for climate mitigation and adaptation. With expected increase in extreme weather events, Disaster Risk Reduction has become an integral component of the Sustainable Development Goals (SDGs).

To meet growing scientific challenges and societal demands, the IMS needs to evolve as a professional body to provide independent expert advice for policy formulation and to act as an interface between government institutions, academia and general public. In order to achieve this, long term plans and programmes with multi-disciplinary, multi-institutional and multi- sectoral linkages would be required.

The IMS Vision - 2030 has been developed to provide a broad guideline to formulate long term plans and programmes to realize its Vision and Mission, based on objectives enshrined in the IMS constitution. The Vision document presents Vision and Mission statements, current status of the IMS, Gap Areas, Strategic Plan and short, medium and long term targets for implementation.

Values

Society and its members are driven by following core values :

- Professional Excellence
- Ethical Behaviour
- Service to Society
- Team Work





Over the period of sixty years, the IMS has grown steadily both in membership and geographical spread. The Society has 29 Local Chapters



covering most parts of the country with more than 3,200 Life Members. Since 1992 IMS has been organizing annual National Symposium on Tropical Meteorology (TROPMET) on different themes and International Symposium (INTROMET) once in four



years. To promote research in meteorology, the Society had instituted a number of awards. It also publishes quarterly general 'Vayumandal'. In addition Chapters also conduct seminars, public awareness programmes, and hold special events such as WMO Day, Earth Day, Science Day etc. Local Chapters also enthusiastically conduct Met Quiz, Painting and Essay competitions in schools and hold public lectures.





In order to achieve its Vision, shortcomings of the existing system has been analysed and gap areas identified. Based on gap analysis, a Strategic Plan has been formulated addressing each gap area with a time bound implementation plan.



Limited role in Governmental Policy and Planning

Limited role in Education and Research in Meteorology

Limited Public Outreach Though the IMS is a premier professional organization, it virtually plays no role in policy and planning of the Government and other organizations for development and application of meteorology in the country.

The Society has limited role in upgrading education and promoting research in meteorology in Academic institutions, despite growing demand from different sectors; availability of knowledge; experience and expertise and considerations such as placement of trained personnel.

The Society has limited contribution to the outreach activities to create public appreciation for the socio-economic value and benefits of meteorological information as well as to communicate inherent limitations of such inputs. There is no structured activity planned by the society for meteorological awareness among legislatures, media, NGOs, and the general public.

Quality of Annual Meetings and Publications

Membership and Local Chapters of IMS:

The quality of annual symposia and other meetings organized by IMS can fetch much more dividend that what they presently do by involving more much sectoral participation and offering more incentives. The participation of the corporate sector is also limited. There is no structured mechanism to initiate follow up actions on the recommendations of the events. The quality of publications brought out by IMS is also not up to the mark and need considerable improvement. The only journal published by the IMS, Vayumandal lacks (i) time schedule, (ii) regularity, (iii) wide circulation and outreach

The membership is very limited with only about 3,200 members in 2017. The spatial spread of the society is also limited with only 29 chapters in the country. International membership is very few and limited to 2 to 3 countries and there are no international chapters. Membership is also not representative of different sections of the society like, students, academic and research institutes, industry and professionals related with meteorology and allied sciences Partnership with other Professional Societies, Academia and Private Sector

Physical Infrastructure, Funding and Governance

Meteorology has evolved as a multidisciplinary science covering atmosphere, hydrosphere, ocean. cryosphere with wide ranging applications. There are professional societies in most of the disciplines allied to meteorology and working with these societies will be mutually beneficial. Similarly, engagement of the IMS with academia and industry is also minimal.

The IMS at present has no permanent office and staff of its own. Because of frequent shifting of the IMS office, many old records and files have been lost. There is no regular funding available to society to lan and undertake major long term activities. The Society does not have Administration Manual and Standard Operating Procedures resulting in sub optimal governance in terms of lack of continuity from one National Council to next, poor communication with local chapters and poor maintenance of documents. It is unlikely that the IMS can achieve the kind of international status that it deserves without having its own office infrastructure, adequate funding and full-time staff to manage IMS.

The IMS Strategic Plan

The IMS has chalked following strategic plan to address each existing gap area and to realize its vision. The IMS strategic plan consists of seven strategic objectives:



(i) Professional Excellence

Being the premier professional society for Meteorology in the country, Meteorological Indian the Society will continuously work towards professional excellence and strive to be recognised by Academia the Government, other organisations and as an independent expert body for consultation and objective advice regarding Weather, Environmental and Climate Policies. Plans and Projects. The IMS will enhance and diversify its activities continuously to meet changing needs and emerge as a professional society of excellence in the field of meteorology and allied sciences and technology.

This will be achieved by

"Professor P. R. Pisharoty Distinguished Lecture Series"



List of Eminent Speakers

Lecture No	Name of the Speaker (Titale of the Lecture	Year
4	Prof. Jagadish Shukla * Climate Change . Science and Politics*	2010
2	Prof. Mike Wallace * Climate Change : Science and Politics*	2010
3	Dr. Raghu Murtugudde * Earth, Life and Sustainability*	2011
4	Dr. Kamal Puri * Modelling Weather and Climate - current status and further directions*	2011
5	Dr. Toshio Yamagata * Using outing Edge science to Understand Climate Yanation and its Impact on Society*	2012
6	Prof. Sir Brian Hoskins * The potential for Skill across the range of the Seamless Weather Climate Prediction Problem a Simultan for our Science!	2013
ž	Dr. Madhav Gadgli * Climete Change: A socia - Ecological perspective*	2015
8	Dr. Mitchell W. Monorieff * Organized Convection in a new era for Global Modals*	2016
9	Prof. C. K. Shum ' Improved estimates of 20th and early 21st century global sealevel rise'	2016

Sir Gilbert Walker Award to Distinguished Scientists



creating a experts groups/ divisions within IMS, each headed by a mentor/ achiever, who can guide members to prepare state of the art S&T status papers in each of the area for the consideration of policy makers. The Society will pay special attention to priority areas such as climate variability, climate extremes, climate change, climate projections and climate services. There are so many multidisciplinary areas where IMS can play an important role. It includes the role of Meteorology in space, Meteorology vis-à-vis aeronautical science, Meteorology and defence technology, Meteorology and environment, Meteorology and ecosystem and socio-economic benefits of Meteorological information. The society will actively promote inter-disciplinary research and services in the field of agriculture, water, health, energy, disaster management. The society will also promote regional and specialized studies in area such as Mountain Meteorology, Desert Meteorology, Forest Meteorology, Bio-meteorology and Urban Meteorology.

Though there are many scientific Associations/ Societies like the Institution of Engrs, IETE, Institute of Metals, IGU, ISRS CSI, etc. only six are National Academies like INSA, IASc, NASc, INAE, NAAS, INMed Academy, representing Fellows of eminence. The IMS should strive to become a professional body like these six Academies through its merit by 2030.

(ii) Research



Annual Monsoon Workshop

The IMS will assist R&D in topics relevant to the society. The Society will use services of its expert members to provide consultancy and take up R&D projects. The IMS will promote and recognize research being carried out by its members by continuing existing awards and recognition schemes like Fellows and Honorary Fellows and institute additional awards in underrepresented areas and Fellowships to students/researchers.

Annual meetings and events like TROPMET and INTROMET provide excellent opportunity to a large numbers of members to meet, listen, and interact with each other. The IMS will work towards improving the quality of these meetings so as to make them more meaningful and productive. The Society will make an effort to conduct Annual meetings and Seminars convenient and attractive for members by holding side events and special sessions. The IMS will create corpus to support travel of young scientists and Ph.D. students to the annual meetings and events.

The IMS will pay special attention to improve quality of its publications. The Society will urge its distinguished members to submit papers and articles to IMS publications, especially Vayumandal. Vayumandal will include in addition to research papers review papers, significant weather events, report on field experiments and new initiatives, summary of important seminars/workshops and activities of local chapters. Vayumandal will also cover historical development of meteorology in India and personal experiences and reflections of eminent meteorologists. The IMS will ensure timely and regular publication of Vayumandal and will be made monthly by 2030. The Vayumandal publication, circulation and reviewing process will be made online and its circulation will be increased by making it open access journal. The Bulletin of American Meteorological Society (BAMS) can be a benchmark for up gradation of Vayumandal.

The society will increase the number of publications from existing one (Vayumandal) to at least two publications by 2030. In addition, it will publish or support publication of popular books by eminent scientists in the field

(iii) Capacity Building



The Society to take the lead in trying to upgrade Education and Research in Meteorology in Academic institutions keeping in view practical considerations such as placement of trained personnel. The Society will work towards including meteorology in school and college curriculum. The IMS will act as an Academy with shortterm certified courses, which others do not offer. The IMS will conduct familiarization courses on Meteorology and develop special training modules in applied fields such as Aviation Meteorology, Marine Meteorology, Hydro-meteorology, Agro-meteorology, Biometeorology, Environmental Meteorology, Broadcast Meteorology, Space Meteorology, Meteorology for Renewable energy

(iv) Collaboration



The IMS proposes to engage with other professional societies by offering reciprocal memberships and organizing joint seminars and workshops. IMS is also poised to collaborate with National science academies (INSA, IASc, NASI and NAAR), National level Scientific Societies like Indian Geophysical Union, Ocean Society of India, Association of Agro-Meteogrogists, Indian Society of Remote Sensing, etc., and also state level science academies.

IMS will involve academic institutions by starting University/ College chapters of the IMS at campuses. The IMS will enter MoUs with national and international societies similar to existing MoU with American Meteorological Society and Canadian Meteorological Society. The association with other societies within and outside the country will be increased from existing two to 20 by 2030. The procedure to become a foreign member, especially to pay the membership dues will be simplified and made online. The IMS will promote Indian industry by encouraging them to participate in IMS events and become corporate members. The IMS will promote Indian industry by organizing

Public-Private Sector meetings and 'Make in India' events.

(v) Services



Weather and climate affect all walks of life and therefore, it is essential that socio-economic benefits of new advancements in the meteorological profession reach all sections of society. As the forecast skill improves, the demand for weather and climate services will grow manifold. The IMS will organize user interaction and field survey to know about user requirements and collect feedback about the quality of services being provided by various governmental agencies. The society will advocate and promote the development of basic and value added services both in the governmental and private sectors to meet new requirements.

(vi) Outreach



National Workshop on State level Heat Wave Preparedness

The society will have well-structured awareness programme for decision-makers, media, users and the public to create correct public appreciation of the value and socio-economic benefits of meteorological information as well as limitations. The IMS will educate users about the usage of meteorological data, forecast and products to meet their requirements. Awareness programmes will cover various topics such as weather forecasts, climate variability and climate change, cyclone/flood/drought incidence and trends, temperature and rainfall trends, weather modification etc.

Special attention will be paid to bring awareness about weather among children. The IMS will promote meteorology in existing science clubs in the schools and start Eco Weather Clubs in eco-sensitive regions. The society will develop network of trained volunteers for its outreach activities in villages. The IMS will upgrade its website in line with that of leading professional bodies and academies. The Society will use social media and other communication means to reach the remotest part of the country. IMS will also solicit co-operation of other national and international Meteorological Societies/ Associations and allied associations to improve outreach through joint programmes and strategy.

(vii) Organisation

A sound and efficient organisation is a must for the successful implementation of strategic objectives. The IMS will focus on the following three key components to improve and strengthen its organization :



1. Membership and Local Chapters

The strength of a professional society is derived from the quality and number of its members. The IMS will make concerted efforts to increase its membership. It will be achieved through expanding the membership to students and allied professionals, corporate members. The spatial spread of the society will be expanded to cover the entire country with increase in local chapters to 50 by 2030. The

Increase in Local Chapters to **50** by 2030



also has plans to start 50 College chapters by 2030.

International membership will be increased substantially by impressing upon the scientists working on common aspects of Meteorology like Asian Monsoon, Tropical Cyclones and Meso-scale convective activity. There are a large number of scientists in the world who are interested in the monsoon problem and IMS should be able to reach out to them for membership. There are also a large number of Indian scientists scattered around the world, and efforts should be made to encourage them to join the IMS. Special emphasis may be given to SAARC and BIMSTEC countries and developing countries under bilateral arrangement with government bodies like IMD. Steps will be taken to open local chapters of IMS in such countries like USA, UK, Japan and Australia by 2030. IMD will solicit co-operation of other International Meteorological Societies/Associations. A larger membership of IMS would guarantee a larger membership fee, which will help promote the mission of IMS. Thus the membership will be representative of different sections of the society like, students, academic and research institutes, industry and professionals related with meteorology and allied sciences within the country and abroad by 2030.

2. Infrastructure

IMS will ensure its own physical infrastructure for its HQ and major local chapters by 2030. IMS will approach government bodies for providing the physical infrastructure like land and building. Major funding would be required for the building, associated infrastructure, and endowment funds. To begin with IMS will approach MoES to provide adequate office space to carry out IMS activities efficiently. In due course the IMS will construct its own building at Delhi with Lecture Halls, a Library, a Guest House and more.

3. Governance

The IMS will prepare Administration Manual and Standard Operating Procedures, data base of IMS members, online correspondence and processing of proposals for efficient and effective governance of the society.





Implementation Plan



Implementation Plan

Above strategic objectives will be achieved by well laid out implementation plan. Implement plans under each objective will have short (2020), medium (2025) and long term (2030) goals. Broad areas are listed below. These will be translated in to actionable points by National Councils through five year rolling plan.



(i) Professional Excellence

Short Term

- Identification of Mentors to prepare Status Papers on emerging areas of basic research, atmospheric technologies, meteorological applications and services.
- Advocacy with MoES, DST, MoEF, ISRO, CSIR and other institutions to initiate research programmes in emerging areas.
- Providing linkages between academic and research institutions.
- Collaborate with National Science Academies (INSA, IASc and NASI) and National level Scientific Societies like Indian

Geophysical Union, Ocean Society of India, Indian Society of Remote Sensing etc.

Medium Term

- Formation of Expert Groups to develop programmes and project proposals
- Assist Universities to establish Centre of Excellence in Meteorology
- Provide inputs for policy formulation to different ministries in matters related to weather and climate
- Collaborate with State level Science Academies/Societies.

Long Term

• Formation of National Academy of Meteorological Sciences

(ii) Research

Short Term

- The IMS to get recognition by DSIR as a non-commercial scientific organization for carrying out research and undertaking research projects.
- Facilitate participation of research scholars and postgraduate students in Scientific Seminars, Workshops and Conferences through creation of corpus for travel grants. IMS to create initial corpus of Rs 10 Lakh by 2020 for travel grant for research scholars.
- Improve the quality of Vayumandal and to be made quarterly.
- Encourage IMS members to write popular books, monographs and text books on Meteorology.

Medium Term

• Establish Research Division at Headquarters and facilitate its members to write project proposals and take up research.



- In addition to Annual TROPMET/INTROMET, IMS to hold conferences in NWP, Radar, Satellite, Urban Meteorology and other specialized areas.
- IMS to work with other professional institutions to take up joint multi-disciplinary research
- Vayumandal to be made monthly like Bulletin for American Met Society (BAMS)

Long Term

- The IMS to start a new journal covering topics related to Weather, Climate and Society.
- Promote professional excellence by introducing awards in new areas.
- Engage the industry to establish and support Chairs of Excellence in Meteorology in Universities.
- Provide research grant and fellowship

(iii) Services

Short Term

- IMS to work closely with MoES/IMD/INCOIS to disseminate services offered by MoES institutions.
- IMS to carry out surveys to provide feedback to MoES and other organization about their services
- Identify emerging needs of specific meteorological services from different sectors
- Raise awareness about natural hazards
- Work with State Climate Change Cells.

Medium Term

- Provide consultancy services
- Assist state governments in formulating plans and programmes in weather and climate sensitive sectors







- Provide knowledge inputs for climate change mitigation and adaptation.
- Assist private sector to develop value added services

Long Term

- Use district and block level IMS organization for the delivery of various services
- Actively work with states in application of weather and climate information.

(iv) Capacity Building

Short Term

- Introduce Distance Learning Programme in Basic Meteorology
- Organise Summer Schools for Geography and Science Teachers in Meteorology
- Conduct Capsule Programmes on Weather and Climate such as Weather, Environment and Climate In School Education (WISE) Awareness about Climate Change and Environment in Schools, Colleges and Society (ACCESS)
- Link meteorology with existing Science and Eco Clubs in school
- Organise Training Programmes for state officials, media, NGOs and civil society on Extreme Weather Events, Climate Change and other topics of general interest.

Medium Term

- Introduce meteorology in school curriculum as a part of Geography, Science and Social Sciences subjects
- Develop elective meteorology programmes at Graduate and Post Graduate Level
- Organise Special Training Programmes in Aviation Meteorology, Marine Meteorology, Bio-meteorology,





Broadcast Meteorology etc.

• Work with the Indian Industry to develop human resources in operation and maintenance of instruments.

Long Term

- National Academy of Meteorological Sciences to offer regular courses in meteorology and applied sciences.
- Local Chapters to offer training programmes in vernacular languages.
- Introduce Certificate Programmes in Aviation Meteorology, BroadcastMeteorology, NaturalHazards, BasicandAdvance Meteorology

(v) Outreach

Short Term

- Local chapters to strengthen linkages and provide assistance to state governments in their weather and climate related programmes.
- Promote "Adopt/Support A School" Programme.
- Participate in Exhibitions, Trade Fairs etc.
- Create network of Met Volunteers known as Mausam Mitra;
- Use of Social Media to enhance outreach.

Medium Term

- IMS to have presence in all Districts of the country by forming IMS District Cells.
- IMS to have dedicated Communication Division for designing and implementing effective outreach programmes.
- Use social media and crowd sourcing for dissemination and collection of data and services.

Long Term

- IMS to have designated Mausam Mitra (Met Volunteers) in each block of the country
- Promote local observations of rainfall and temperature in each village and at farm level
- Promote use of local data and IMD advisories for farm level operations.

(vi) Collaboration

Short Term

- MoUs with Central Ministries for promoting research and capacity building in meteorology and allied sciences
- Working with professional societies like Association of Agro Meteorologists (AAM), Indian Geophysical Union (IGU), Indian Institute of Remote Sensing (IIRS) and others to hold joint Seminars/Workshop and take up inter-disciplinary research
- Participate actively in International Federation of Meteorological Societies
- Promote Public Private Partnership

Medium Term

- MoUs with State Governments for capacity building services and outreach.
- MoUs with academic and research institutions

Long Term

 Work towards long term partnership with UNICEF, UNDP, UNEP, Indian Red Cross Society, national and international development agencies and civil society organisations working in the areas of Disaster Risk Reduction and sustainable development.

(vii) Organisation

Membership. It is proposed to increase membership to 10,000 by 2030 by special campaign by starting new categories of membership, opening of new local chapters, District Cells and making arrangement of reciprocal membership with professional bodies within the country and abroad.

Short Term : Membership: 5000 **College Chapters : 10 International Chapter: 1 Medium Term :** Membership: 7500 Local Chapters: 42 **College Chapters : 25** Establish District IMS Cells **International Chapters : 2** Starting SAARC Chapter Long Term : Membership: 10000 Local Chapters: 50 College Chapters : 50 Met Volunteers at Block Level **International Chapters : 5**



Infrastructure

No national level society can functioned 2017 2020 2025 2030 proper infrastructure. The IMS has been functioning in a single room make shift accommodation provided by kind courtesy of IMD. This is not a satisfactory state. The IMS needs to make concerted effort to have its own accommodation. It can only be achieved with the support of the government. The IMS to approach MoES to help in developing infrastructure for the society.

Governance

IMS Vision National Council

Organisation

Members Chapters Standing Committees

Collaboration Government

Agencies Professional Societies Academic Institutions Industry, NGOs

Technical

Research Policy Papers Technical Reports Publications

Services

Consultancy Awareness Training Outreach

Short Term

- The IMS to have assured adequate office accommodation of minimum of four rooms to start with. The IMS to approach MoES/IMD for the allotment of accommodation.
- The IMS to approach MoES for the allotment of land for Society office.

Medium Term

- Building plan to be developed for phase wise construction.
 In the first phase accommodation consisting of four office rooms, Library, Store and Meeting room to be constructed
- The IMS to apply for the grant for the first phase of construction.
- Planning for the second phase consisting of rooms for visiting scientists, research staff and guest house to commence to commence.

Long Term

• First phase of construction to be completed.

Apply for the grant for the second phase of construction.

• Commence construction of the second phase.

Governance

At present there is no regular staff at the IMS Headquarters. Also, there is no continuity because of two year tenure of the National Council. These shortcomings need to be addressed for efficient governance.

Short Term

- Employment of regular one middle level staff, one IT staff andonestafffor Publication for a period of five years. Retired IMS member will be preferred for mid-level assignment
- Formation of Standing Committees for the duration of four years to provide continuity

- Development of Standard Operating Procedures/Guidelines
- Electronic ballot for election of National Council and Local chapters
- Seek 80 G certification for Donation to IMS

Medium Term

- Appointment of full time Executive Director
- Appointment of Director for Research Coordination*
- Appointment of Director for Communication and Outreach*
- Appointment of Director for Academics^{*}

(* Initially part time assignments)+

Long Term

• Staffing for National Academy of Meteorological Sciences



IMS Vision-2030 shows pathway for the Society to become premier professional society in the field of meteorology and allied sciences, technologies and services for the societal good. It will work for professional excellence and evolve as a body of professionals to provide independent objective advice to government in formulation

of policies, plans and programmes and work as a partner for the promotion of meteorology and in the delivery of services. The Society will upgrade itself similar to six existing academies of the country by implementing strategic plan. It has well laid out short, medium and long term implementation plans to increase membership and spatial spread, improve R&D and quality of publications, expand outreach, develop infrastructure to carry out the activity and to have definite role in policy and planning of the government and other organizations by 2030.

Advancement of Meteorology and Allied Sciences for Sustainable Development