

Title: Developing International Co-operation in the Global Weather Enterprise

Seminar Host: Global Facility for Disaster Reduction and Recovery (GFDRR) and Social, Urban, Rural and Resilience Global Practice (GSURR)

Location: World Bank, Washington DC

Timing: Within the next 6 months. Seminar to be a single day event.

Participants: By invitation of the seminar host only. Participants will be expected to finance their participation to minimize the costs of hosting the seminar. It is anticipated that there will be up to at most 50 invited participants who hold key responsible and strategic positions within the public, private and academic sectors of the Global Weather Enterprise (GWE). Participants will not be invited to specifically represent specific organisations or countries; however it is anticipated that key individuals from the following organisations/groups will be invited: high income country National Meteorological and Hydrological Services' (NMHSs); World Bank Group (WBG) clients and selected developing country NMHSs'; international NWP providers such as ECMWF; weather service companies such as IBM, WeatherNews, Panasonic, AccuWeather, MeteoGroup; meteorological technology companies such as Harris, Spire, Vaisala, Cray; large learned societies such as the American Meteorological Society (AMS) and the European Meteorological Society (EMS); the trade organisation Hydro-Meteorological Equipment Industry association (HMEI); World Meteorological Organization's Commission for Basic Systems (WMO/CBS) and WMO Secretary-General; professors of meteorology; major forecast users such as Willis/Swiss Re re-insurance, renewable energy providers; etc. Clearly the number of participants from any particular organisation or group would be (deliberately) very limited.

Seminar methodology: Scoping documents will be prepared and circulated to participants prior to the meeting by the GFDRR to set the scene for the discussion. Most of the meeting will be in discussion mode with a minimum of pre-prepared presentations from participants. GFDRR staff and consultants from the WB will chair the seminar and facilitate the discussions.

Scope of the Seminar: The GWE is undergoing major structural change. Private sector actors now have the capability to carry out far more than in the past. Public-sector funding sources are under some pressure because of the consequences of the economic crisis over the past decade. The societal need for more accurate and reliable weather information is growing fast as population density increases and climate change is taking place; nowhere is this need more acutely felt than in low- and middle-income countries. The science and technology of the GWE is also advancing rapidly providing the opportunity to satisfy societal needs. The GWE has for decades been one of intertwined contributions from the public and private sectors. All of these factors suggest that greater engagement between the public and private sectors of the GWE is essential with the shared prize being the opportunity to enable the GWE to grow substantially over coming decades and for this growth to be managed for the benefit of all contributors and users. Failure to manage these changes to the GWE may have detrimental consequences as competition between the public and private sector could become the norm instead of the mutual co-operation that would allow growth to take place and for society to benefit from the anticipated growth.

The avenues likely to generate this growth in the GWE include: greatly increased societal need for more accurate and reliable forecasts, mobilisation of private capital, economic growth in many countries, sustained increased funding for research and development, stronger cohesive engagement between the public and private sectors, and scaling-up via operationalisation of scientific and technological advances. A vision for this growth calls for the GWE to grow by a factor

of ten over the next decade to increase its effectiveness and maximize its benefits to society. The basis for a “10 x 10” growth (factor of ten in size over the next ten years) arises from a variety of quantitative and qualitative projections of recent growth trends in the GWE and in the avenues enabling the growth as previously listed.

The scope of this Seminar will be to discuss these issues in an environment where participants can talk freely and real problems (and opportunities) can be brought to the table for discussion and potential resolution. Specific issues that could be discussed include: What is the optimum investment in the public sector NMHSs particularly in low- and middle-income countries? Are there socio-economic advantages if the private sector assumes a greater operational role? What business models of private sector engagement in the sector can be sustainable? How could more clearly defined and agreed roles and responsibilities for the public and private sectors be used to enhance the capacity of the GWE to deliver on the sustainable development goals? Is the GWE utilizing the available innovative technologies effectively? What are the opportunities and potential threats of private sector provision and sharing of global data?

Reasons for World Bank involvement: Weather, climate and hydrological information is used to warn and protect the public and economic sectors from the adverse impact of hydro-meteorological and related environmental hazards (such as air pollution), to improve economic performance and to increase societies resilience to the impacts of climate change. Protecting society from hydro-meteorological and related hazards is a core element of achieving the World Bank’s twin goals of ending extreme poverty and building shared prosperity, and contributes to achieving eleven of the seventeen Sustainable Development Goals; each of which depend in some measure on weather, climate, hydrological and related information. This environmental hazard information is produced by the GWE using science and technology applied to the global atmosphere, oceans and land surface; weather is a common feature of the many environmental hazards within the purview of the GWE. This is a shared responsibility of the three principal sectors of the GWE – publicly-supported NMHSs, private weather services and academia. However, while the GWE sectors can work well together their individual roles and responsibilities are sometimes blurred leading to tension and inefficiencies, particularly between the public and private service providers at a time when society needs the GWE to grow to address the increasing threats from these hazards.

GFDRR has established its role as an impartial intermediary through several events such as InterMET Asia. There is also an informal agreement with all the main players – WMO, leading NMHSs and the private sector that such informal event in Washington could be very beneficial.

Despite a very significant global investment in the GWE, the benefits of investments in advanced economies are often ineffectively or inefficiently transferred to developing countries, least developed countries (LDCs) and small island developing states (SIDS). This severely limits their ability to meet their national requirements for meteorological and hydrological services; especially severe weather impact forecasts and warnings. The WBG, the GFDRR and other development partners continue to address this issue through technical assistance and major modernization projects, which aim to improve the capacity and ability of WBG clients’ NMHSs to provide high quality public weather, climate and hydrological services. This has been achieved through large-scale investment in NMHSs’ infrastructure, and by strengthening their operational capabilities; in the short term, by pairing with more advanced NMHSs. WB investments in this sector are approaching US 800 million and increasing.

Research and development drives innovation in the GWE. This results in continuous progress in the ability to provide timely, accurate and useful forecasts and warnings of extreme events, which

improves safety and enhance economic efficiency. Private sector innovation in the GWE is also changing the way observations are made and forecasting services are produced and delivered. This affects how the entire GWE operates and it is critical for all parties, including development partners to stay abreast of these changes. In the case of the WB, this is so that new and more efficient skills can be rapidly transferred from the most advanced to less developed societies to share prosperity, ensuring that the latter are not left behind and that delivery of the SDG's are not put at risk.

Several issues need to be addressed within the GWE to increase its contribution to strengthening national resilience, improving public safety and increasing efficiency of weather-dependent sectors, which could impact current and future WB investments. These include the 1) need to better define the roles and responsibilities of the public and private sector service providers to avoid undermining the value of the GWE in low and middle income countries; 2) the impact of private sector observational data services on the global production of numerical weather predictions, which are critical to the operations of all forecasting service providers, both public and private; and 3) a better understanding of the appropriate level of investment, and its optimal targets, in the GWE to achieve the sustainable development goals of all countries. These developments should be considered in designing and implementing future WBG operations in the sector.

Given the WBG's wide remit to support both the public sector through the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), and the private sector through the International Finance Corporation (IFC), the group is uniquely situated to play a pivotal role in convening the sectors of the GWE and developing knowledge products to make full use of the GWE's collective resources. The WBG Strategy highlights the need for expanded partnerships with the private sector, which is central to bringing necessary resources and expertise to achieving the twin goals, while the WBG Climate Change Action Plan further focuses on helping to shape national investment plans and policies and leveraging the private sector. Bringing key actors together from within the GWE at this Seminar will be a major step in helping the WBG fulfil this pivotal role.

Expected Results will include, but not be limited to, a better understanding of, and potential financing models for access to, private sector data services in support of global NWP; guidance on future strategic investments of WBG in GWE; better understanding of how the GWE is linked to SDGs at the national level; a framework for potential investment in global centres to support common global, regional and national public goods; a better understanding of the roles and responsibilities of the public sector and private sector in the delivery of services. It is expected that facilitated open dialogue between the main parties will lead to improved working arrangements that will benefit the entire GWE and help increase opportunities for collaboration and cooperation. It is expected that the participants will agree priority activities, which would lead to the development of a more efficient and equitable GWE.