

STRENGTHENING HYDROMET SERVICES IN DEVELOPING COUNTRIES

Gathering, sharing, and applying Japanese knowledge on hydromet

AT A GLANCE

Region: Global

Risks:

Hurricanes, heat waves, floods, droughts and other hydromet hazards

Areas of Engagement:

Hydromet services and early warning systems

JAPANESE EXPERTISE IS DRIVING AND INFORMING HYDROMET STRENGTHENING EFFORTS ACROSS THE GLOBE.

Hydrological and meteorological (hydromet) hazards, such as hurricanes, heat waves, floods, and droughts, inflict more human and economic losses than any other disaster.¹ While hydromet services, which provide real-time weather, water, early warning, and climate information, can mitigate losses, access to these services remains sorely lacking in far too many countries. With an eye to tackling this challenge, the **Japan-World Bank Program for Mainstreaming Disaster Risk Management (DRM) in Developing Countries** has supported the development of a global knowledge program on hydromet services.

Few countries have so firmly established hydromet services at the center of their resilience and disaster risk management strategy as Japan. Accordingly, a starting point for the technical team was to systematically gather knowledge from Japan's decades-long effort toward hydromet modernization. A major finding from that [assessment](#) is that the modernization of hydromet services requires long-term step-by-step efforts, which should be anchored to well-defined medium- and

long-term strategies. Furthermore, hydromet modernization should be guided by evolving user needs, ranging from flood management to water use planning and beyond, as users of hydromet services are extremely diverse and touch every sector of the economy.

Keenly aware of the Japanese experience leveraging the private sector in hydromet modernization efforts, the team subsequently embarked on an [assessment](#) of public-private engagement on hydromet in Japan and seven other countries (Ghana, Indonesia, Myanmar, U.K., U.S., Germany, and Israel). Recognizing public-private engagements offer an entry point for strategic discussions on how to make hydromet systems and services more effective and sustainable and drawing on interviews with more than 50 stakeholders from the public, private, and academic sectors, the assessment identified several key factors for successful public-private engagement. For example, many countries are facing growing demands for different kinds of hydromet services, however they have limited human and technical resources on the public side. Public-private

¹ World Economic Forum (WEF), 2019. *The Global Risks Report 2019, 14th Edition*. Geneva.



Participants at the Technical Deep Dive. Photo: World Bank

engagements enable the discussion on what these publicly funded hydromet services would look like in each country, and how best to engage private partners on the delivery of these services.

Other key factors highlighted by the Japanese experience include open data policies, a clear division of roles and responsibilities between sectors, and appropriate national legislation and legal frameworks. For example, Japan's Meteorological Service Act clearly regulates

**40 officials from
11 countries learned
firsthand from Japanese
experience in hydromet
modernization at a
technical deep dive in
Tokyo, Japan.**

the structure of public-private engagement. Moreover, it specifies the roles and responsibilities of the Japan Meteorological Agency (JMA) and relevant government authorities, media, and private companies. Many provisions in the Meteorological Service Act also pertain to quality issues and requirements for JMA and the private sector, which helps assure service quality in

the delivery of hydromet services. Services such as Early Warning Systems, a focus of the JMA, are provided by the private sector adding value to the JMA's open data. Finally, the assessment highlighted that private and academic sector engagement is an effective vehicle to facilitate innovation.

[The Power of Partnership: Public and Private Engagements in Hydromet Services](#) paper developed during the grant is informing several operations including the West Africa Food System Resilience Program, which has a hydromet/agromet component embracing a Public Private Engagement approach.

The team also worked with counterparts in [Honduras](#) and [Nicaragua](#) to develop step-by-step modernization plans for their respective hydromet sectors. Both plans call for improvements in three key areas: institutional strengthening, modernization of the observation and forecasting infrastructure, and improvements in the provision of services.

A wide range of partners from the public sector, private sector and academia in Japan have contributed to the global knowledge program on hydromet, including the JMA, the Japan International Cooperation Agency (JICA), Japan Meteorological Business Support Center (JMBSC), Foundation of River and Basin Integrated Communications (FRICS), the International Centre for Water Hazard and Risk Management (ICCHARM), and Weathernews, Inc.

RESULTS HIGHLIGHTS

- **Japanese knowledge on hydromet strengthening distilled and disseminated.** For example, the technical team has produced a publicly available assessment of public-private engagement in hydromet comparing and contrasting Japan's experience with those of seven other countries (Ghana, Indonesia, Myanmar, U.K., U.S., Germany, and Israel).
- **Hydromet modernization efforts at the country level informed.** For instance, the team has developed step-by-step modernization plans for the hydromet sectors in both Honduras and Nicaragua. The team has also developed assessments of public-private engagement in hydromet in both Ghana and Rwanda.

KEY PUBLICATIONS

- [The Power of Partnership: Public and Private Engagement in Hydromet Services](#)
- [Technical Deep Dive on Hydromet Services for Early Warning Summary Report](#)
- [Modernization of Japan's Hydromet Services: A Report on Lessons Learned for Disaster Risk Management](#)
- [Modernization of Hydrological Services in Japan and Lessons for Developing Countries](#)
- [Modernization of Meteorological Services in Japan and Lessons for Developing Countries](#)
- [Hydrometeorological and Climate Services Modernization Plan for Nicaragua](#)
- [Hydrometeorological and Climate Services Modernization Plan for Honduras](#)

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