

# Innovations in Weather Service & EWS With Sufficient Framework of Public Private Engagement/Partnership

Workshop on Resilient Infrastructure for Effective Early Warning Dissemination

11 September 2025  
Tohoku University IRIDeS



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Public Private  
Partnership  
Data Strategy and  
Sustainability  
Weathernews Inc. (WNI)



# Introduction

**“I want to protect the lives of mariners.”**  
**“I want to help in time of crisis.”**



The 11,800-ton Koko Maru goes down after splitting into two in stormy Onahama Port, Fukushima Prefecture, early Saturday morning.

## Ship Hits Breakwater; 7 Men Die

IWAKI, Fukushima Pref. (Kyodo)—Seven persons were killed and eight others reported missing after an 11,400-ton Japanese freighter sank near a breakwater off stormy Onahama Port here Saturday, according to the Japanese Maritime

Safety Office.

The freighter Koko Maru of Sankei Kisen Co. in Hyogo Prefecture started sinking at around 3 a.m. after losing its anchor cable and crashing into a breakwater. The ship sank four hours later after breaking into two.

Winds up to 25 meters per second and high waves were raging at the time because of the approaching low air pressure mass.

Nine out of 24 crew members were rescued.

whom were other freighted by a part of seven other and eight ported missing. Eight other Koko Maru captain had forehand.



Founder  
Hiro Yoshi Ishibashi

January 1970, an explosive low-pressure system hit the port of Onahama, Japan, and lives of 15 crew on the vessel has lost.

**“This tragedy might have been prevented if truly useful weather information had been available”**

Weathernews Inc. was established in 1986 with a sense of responsibility and will of company founder Hiro Ishibashi.

Since then, our “Risk Communication services” have been expanded and innovated to cover all business and lives.

*We need both Early Warning for ALL & **Early Warning for YOU***



Established in 1986  
1400+ Employees  
250+ Forecasters  
250+ IT Experts  
31 Offices in 21 countries  
2,600+ BtoB Customers  
Original App 47 Million DL  
Business in 50+ Countries  
45 Targeted Markets  
+40 Years Stored Data

Update: Dec. 2024

# Our 45 Global Markets

## Risk communication service covering 45 markets

### Sea Planning



### Wonderland Planning



### Environment Planning



### Sky Planning



Aviation

### Mobile / Internet Planning



Mobile



Internet



Travel



Wellness

### Broadcast Planning



Broadcasting



Flower



Weather Literacy



Farm



Disaster Reduction

### Climate tech Planning



Climate tech



Star



Photo



Space Weather

### Sports Planning



Sports



Football



Motor Sports



Boat



Sports Festival



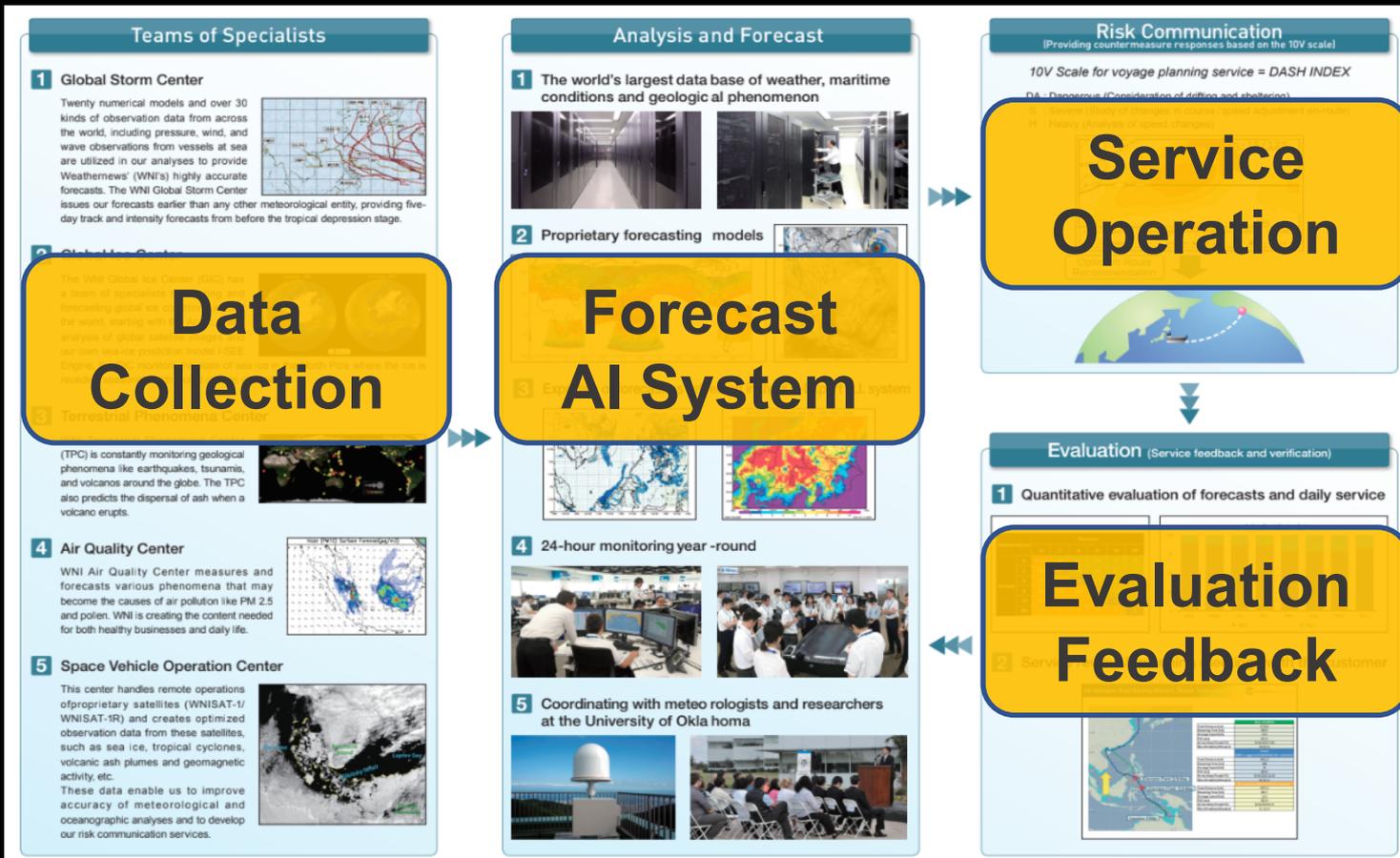
Baseball



Sky Sports



Mountain



# Our Activities for EWS in Japan

## Legal Framework for Meteorological Services in Japan - **Meteorological Service Act** - (enact 1952)

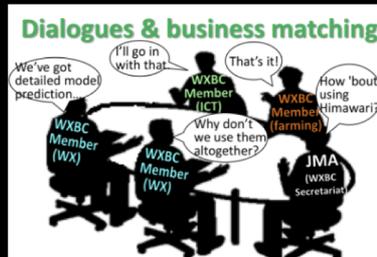
### 1993: Enhancement of Public-Private Partnership

- Establishment of an authorized organization for dissemination of meteorological data to the private sector
- Establishment of “certified meteorological forecasters” system
- Authorization of Public Weather Forecast by the Private Sector

 <b>気象庁</b> Japan Meteorological Agency	 Always <i>WITH</i> you!
<b>Public Weather Service</b>	<b>Your Weather Platform</b> (Info. Exchange Platform)
<b>Weather Forecast Warning</b>	<b>Weather Forecast Solutions for Risks</b> <b>Warning Dissem. to End-users</b>
<b>Basic Observation</b>	<b>User-oriented Obs. for Specific Services</b>



Japan Meteorological Business Support Center



# EWS: Roles & Responsibilities in Japan



Public Sector

Disaster



Early Warning

Private Sector



Lifeline company



Mobile Carrier



Weathernews

Lifeline Information

Emergency Call

Risk Communication

Service & Support

Media



Internet



Mobile

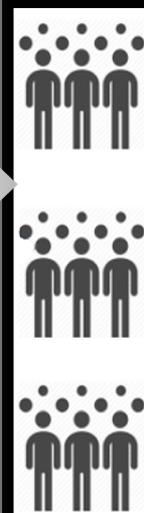


TV

Information Dissemination



Feedback Current Condition



Business Data

Transportation Companies



The Private Sector plays a key role in disseminating & collecting information on disasters to/from end-users.

# Our Activities for Local/Global EWS Support

# Progress of Our Global Collaboration in EWS

## Partnership with National Government (Early Warning Initiative, MOE Japan)



## COP29 (Baku, 2024)



## Innovative Collaboration with Academia (Oklahoma University, US)



## Collaboration with Local Government (Bangkok City)



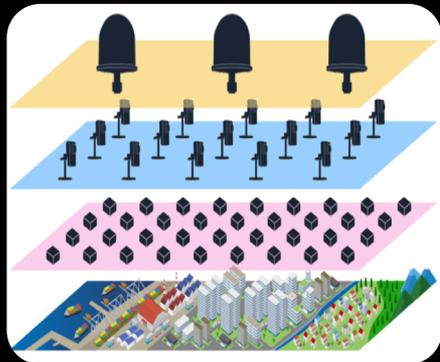
## International Conference of EW4All (World Bank)



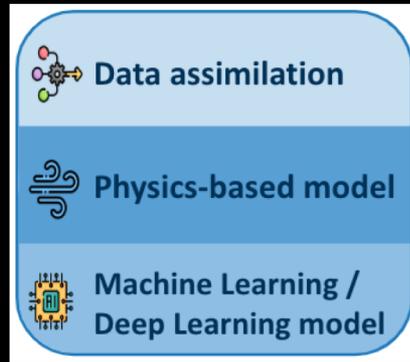
## Contribution for International Organization (IMO/WMO 2nd Symposium)



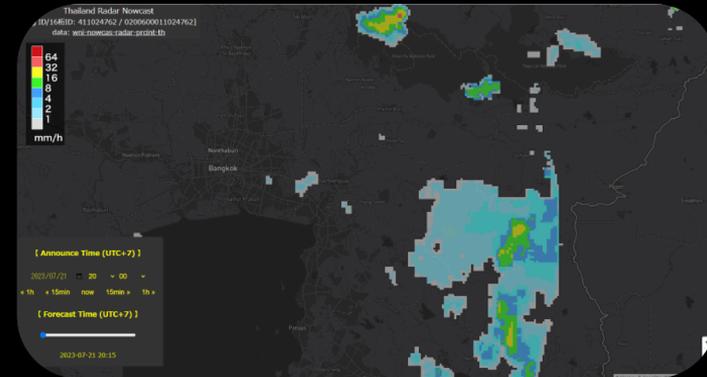
## Deploy Obs. Network



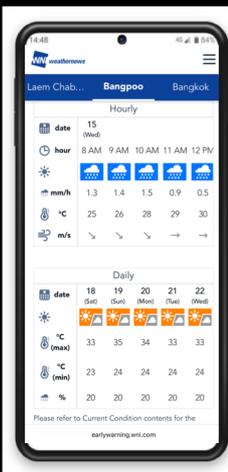
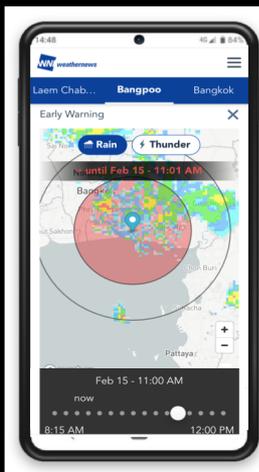
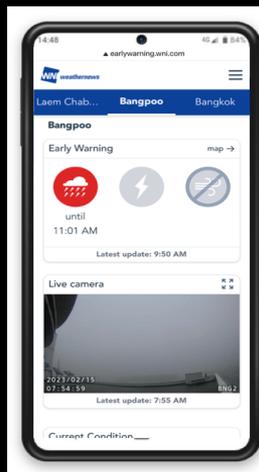
## Original Forecast Model



## WNI Radar Nowcast



## Risk Alert Notification



1. Protect the safety of workers  
→ Alert the risk of heavy rain when going / leaving work
2. Reduce the damages on facilities  
→ Alert the risk of flooding around the facilities
3. Ensure the products delivered  
→ Alert the risk of traffic jam due to rain
4. Work effectively outdoors  
→ Alert the risk of working outside

# Global Website for Individuals

Weather forecast Bangkok

25° ↑30° ↓23° Sunny

**Heavy rain** Last update: 11/8, 06:00  
Nakhon Sri Thammarat Songkhla

**Heavy rain** Last update: 11/8, 06:00  
Prachaup Khiri Kan Chumphon Narathiwat Surat Thani Yala Pattani

Today's weather

Today Hourly 10 day

Today (8 Fri) Tomorrow (9 Sat)

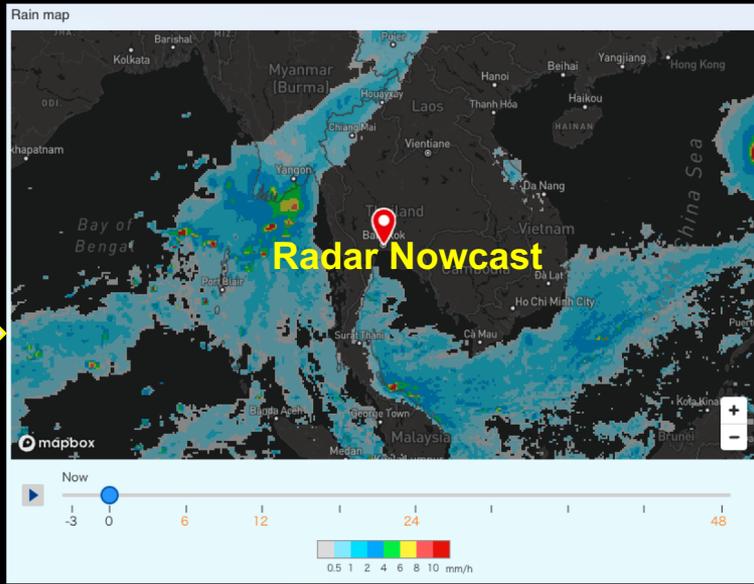
Wind 2.2 m/s Humidity 78%

Rain map

Temperatur Pressure Wind Satellite

Latest weather information for free

Warning Information issued by The National Gov. (Supporting Warning Distribution)

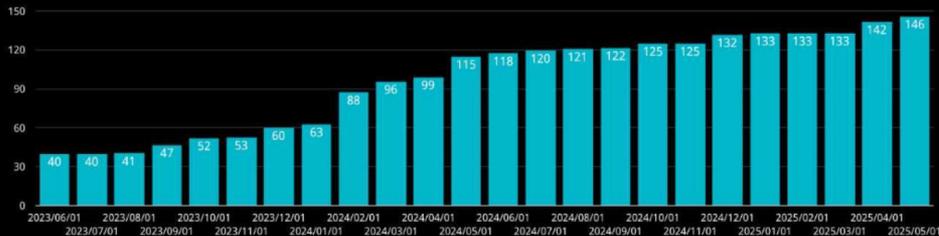


# Global Weather Warning Monitoring

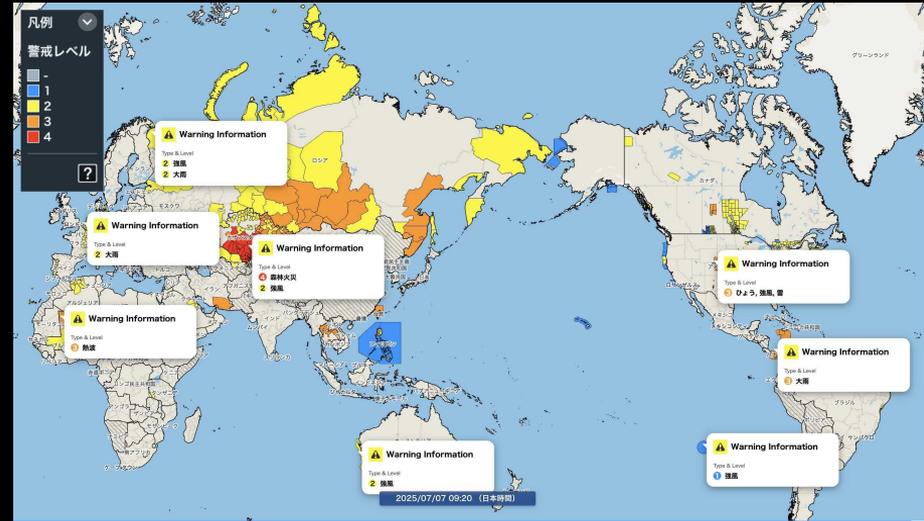
Weathernews is currently building a monitoring platform that collects warning information globally from meteorological service / disaster management agencies, SNS, and opened data from each country. This platform of course can be accessed by all people around the world.

2023/06

2025/05



■ Not acquired yet ■ Acquisition completed ■ No Data Open



Service Image

# Innovation in Weather/Climate Change Services & EWS

# Collaboration in AI Technologies

Jun 19, 2024

## Weathernews Co-Develops Cutting-Edge AI-Powered Weather Forecasting Technology "Google Nowcast" with Google

Weathernews Inc. (Headquarters: Mihama-Ku, Chiba, Japan; President and Representative Director: Tomohiro Ishibashi) has co-developed with Google the "Google Nowcast" weather forecasting technology utilizing Google's AI. Starting in July 2024, rainfall predictions will be displayed in five-minute increments up to 12 hours in advance on weather search results. The company's proprietary rainfall amount analysis data was utilized to develop the rainfall prediction, reflecting observation data from approximately 13,000 locations and weather reports contributed by users of the "Weathernews" app. By training Google's AI prediction model (MetNet-3) with past analyzed rainfall data and analyzed rainfall data in timely five-minute intervals from Weathernews, highly accurate forecasts have been made possible.



Tomohiro Ishibashi (Left) - President, Representative Director at Weathernews Inc.

Isalo Montacute (Center) - Program Manager, Research at Google

Maya Ekron (Right) - Product Manager, Search at Google

WNI has jointly developed "Google Nowcast" a new weather forecasting technology that uses Google's AI. Starting in July 2024, rainfall forecasts will be displayed in weather search results every 5 minutes for up to 12 hours ahead.

In July 2025, WNI has signed a MoU regarding mutual cooperation in the meteorological field with NCHMF and HMSTS of the Vietnam met service VNMHA. Through the project, AI-based forecast for typhoons and heavy rain, utilizing the highly accurate weather forecast it has cultivated over many years, as well as Google's flood and cyclone prediction models will be provided by WNI.



# Innovation: Mobile App & AI Weather Agent

The weather forecasts provided by Weathernews aim to be more accurate than other weather information by not only providing high-quality predictive data, but also by allowing users (supporters, 45 million MAU) to participate as a crowdsource in the “weather community” and share the latest weather information. 1,000 million Weather Reports have been posted from supporters since Nov. 2005.

"Weather Agent" released in May 2025 is a new function in which AI/Natural Language Processing refers to Weathernews' meteorological, disaster prevention, and seasonal information to answer users' weather-related questions and provide easy-to-understand answers in text chat format.



# Innovation: CO2 Emission Monitor & Support Service (SEA)



Maritime service is our foundation, but it is still in the process of our innovation. There are millions of voices from including captains, shipowners, charterers, operation managers, engineers, and pool managers for new issues to solve, and they are not only for their safety operations.

In recent years, the company has been particularly interested in monitoring environmental impact data in line with the need to reduce **CO2 emissions and optimize their fuel consumption** in the face of climate change mitigation-related concerns.

And with the latest technology, the company is providing services around the world to analyze and support the risk of ship sway as well as weather, and to support the **navigation of autonomous vessels**.



Optimum Ship Routing



Performance Status Monitoring



Safety Status Monitoring



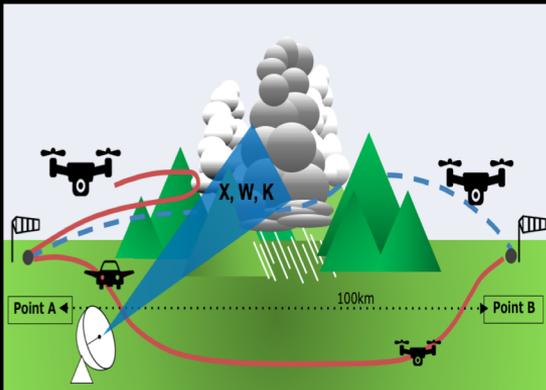
Emission Status Monitoring

# Innovation: Drone Operation Services (SKY)



Drones are expected to be utilized in various markets such as disaster response, aerial photography, aerial inspections, and logistics. WNI employs the use of drones to make observations of low-level airspace. These drones are equipped with proprietary observational instruments which can make visualizations and observations to be used in **improving our forecast accuracy of local weather**.

Although drones can fly in drizzle or light rain, it is difficult to fly in strong rain. For this reason, a detailed understanding of the clouds along the flight route is **necessary to determine the intensity of the rain and to ensure arrival at the destination**. However, it is difficult to observe the interior of clouds at high resolution using conventional technologies such as existing weather radar, live cameras, and satellite images.



Therefore, in order to support the safe operation of next-generation air mobility vehicles and the selection of optimal routes, WNI has begun development of **a new multi-frequency weather radar that can more finely observe weather condition and visibility at low altitudes where drones fly safely**.

# Innovation: Climate Risk Analysis & Countermeasure (LAND)

Understanding the risk and setting countermeasure correctly reduces social loss & damage from climate change.

Some of our client company had very high risk of their train inundation risk due to flood, and they had succeeded to avoid damages (approx. 170M USD) by utilizing our Train Evacuation Countermeasure Service for flooding. After the disaster, they also had succeeded to reduce their insurance cost effectively.

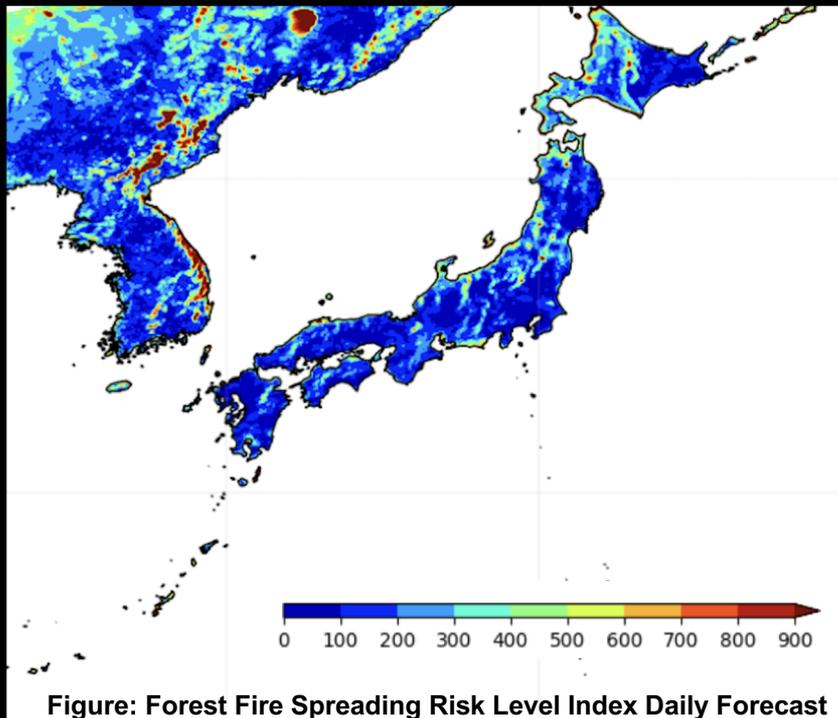
We provide a service that analyzes the financial impact of the **physical risk to the asset** that a company will be exposed to in the event of climate change in different Representative Concentration Pathways (RCP) scenarios. It enables company's managements and investors to understand the company's **business risk from the perspective of climate change**. Of course, these data will be utilized for disclosure (e.g. **CSRD & TCFD**) actions.



	RCP2.6	RCP8.5
Risk of loss	Middle	High
Inundation risk	High	High
Logistics Disruption Risk	Middle	High

# Innovation: Forest Fire Risk Index Forecast

Heatwave in Asia, Africa, Europe, the Middle East, and North America has already caused significant damage, claiming hundreds of lives, reducing labor productivity and crop yields, disrupting education and energy supplies, and increasing the risk of wildfires.



WNI has been developing the Forest Fire Forecasting System with the [Forestry Agency of Japan](#). Forest Fire Risk Index is calculated by meteorological data, remote sensing forest condition data, topography, and population density.\* (\*90% of forest fires are caused by human factors)

Using these technologies, WNI is trying to collaborate with local government agencies in the Balkans to build a forest fire information system, and is aiming to use this system to strengthen disaster prevention and mitigation.

# Conclusion

## 1. Collaboration with Mutual Trust

As the first step, a place/opportunity for communication among public, academic, and private sectors would be needed to establish the mutual trust and efficient PPE/PPP framework.

## 2. Effective Data/Tech Sharing

Advanced local observation & effective data and technology sharing / utilization are required for innovation & enhancement of the new value-creation in weather & climate services for EWS.

## 3. Community Management for Sustainability

We believe it is important to maintain the platform that brings all kinds of technology, interest, information, and people together in the same community, not just in times of crisis, but also in peacetime.

Our dream is to be the Weather Information Platform  
to reduce the weather / climate risks & damages  
for 8 billion people living in the world.

I hope, it will be a great first step from here  
to establish an efficient Public-Academic-Private  
Engagement/Partnership which innovates  
the weather & climate change services  
& people centered Early Warning System.

*Thank you*  
& Always **WITH** you!

<https://global.weathernews.com/>  
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