

**** January 2024 News from Sentinel Asia Project Office ****

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1. [News] Emergency Observation of Disasters (as of 30 January)

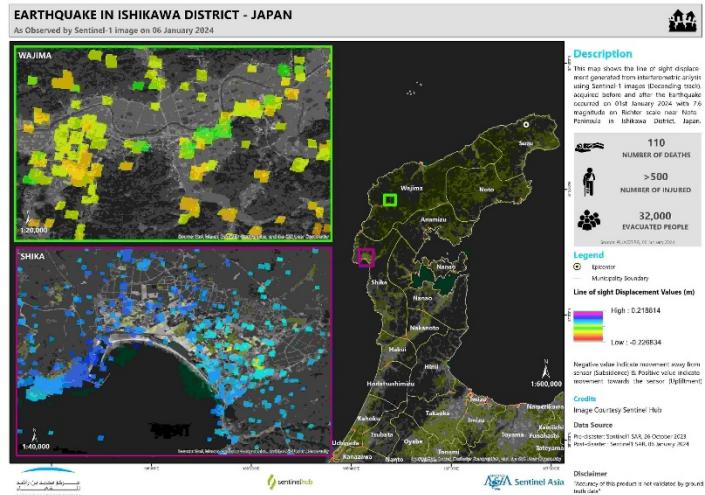
(1) Earthquake in Japan on 1 January, 2024 (GLIDE Number [EQ-2024-000001-JPN](https://www.sentinel-asia.org/EO/2024/article20240101JP.html))
A 7.6 magnitude earthquake hit western Japan and tsunami waves of up to 1.2 meters (4 feet) hit a number of areas along the country’s western coast on 1 January 2024. According to NHK WORLD, this earthquake caused the deaths of more than 200 people, with 22 others still unaccounted for. In addition, water was cut off to more than 49,000 households CNN reported power outages were also severe, with approximately 33,000 homes in Ishikawa Prefecture hit by the quake experiencing power outages.

<https://edition.cnn.com/asia/live-news/japan-ishikawa-earthquake-01-01-24/index.html>
https://www3.nhk.or.jp/nhkworld/en/news/20240122_06/

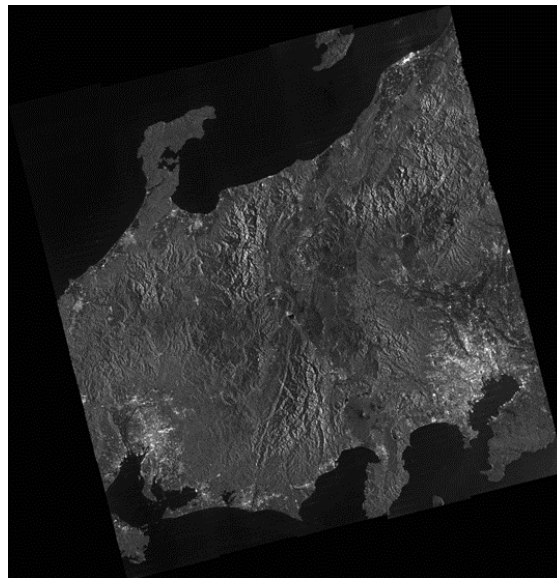
The Asian Disaster Reduction Center (ADRC) made an EOR to Sentinel Asia on 2 January and this EOR was escalated to the International Disasters Charter. Yamaguchi University assumed the role of Project Manager for this Charter activation.

Among DPNs, JAXA, TASA, ISRO, and MBRSC provided data. Among DANs, EOS, TASA, AIT, and MBRSC provided their VAPs. Information on the latest response by Sentinel Asia is available at the link below.

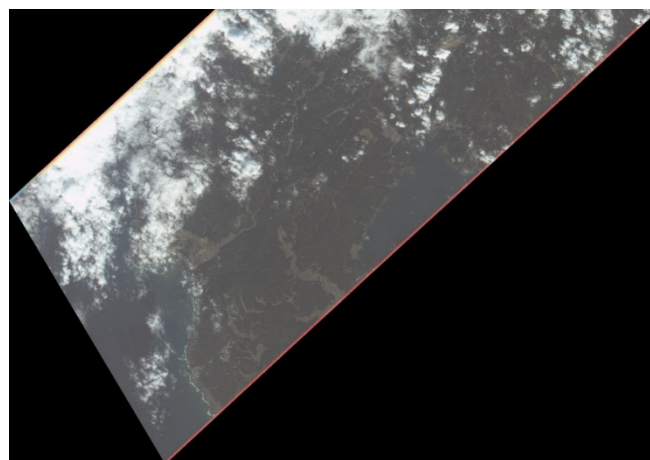
<https://sentinel-asia.org/EO/2024/article20240101JP.html>



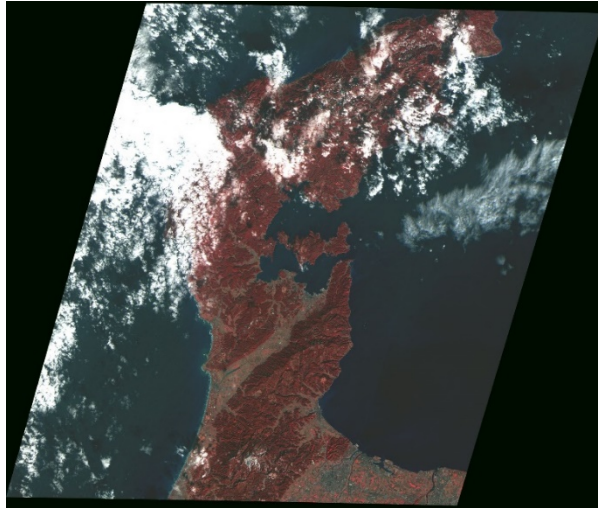
Value-Added Product by MBRSC



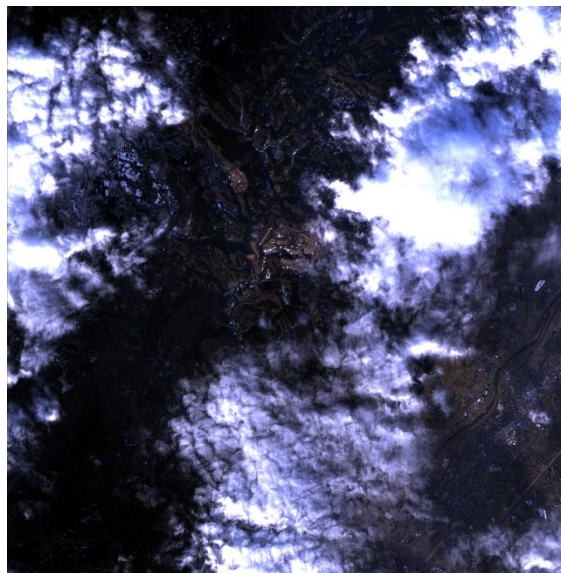
Post-disaster satellite image (ALOS-2) provided by JAXA



Post-disaster satellite image (FORMOSAT-5) provided by TASA



Post-disaster satellite image (Resourcesat-2) provided by ISRO



Post-disaster satellite image (KhalifaSat) provided by MBRSC

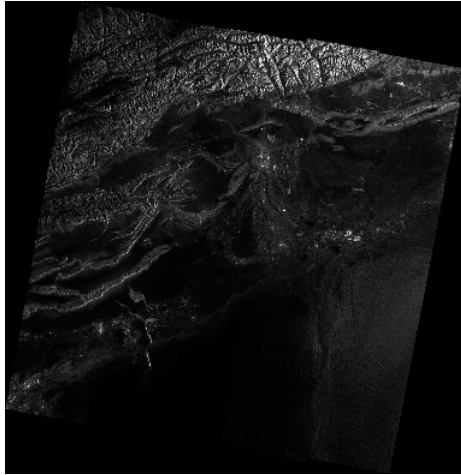
(2) Earthquake in western Xinjiang, China, on 22 January, 2024 (GLIDE Number [EQ-2024-000004-CHN](#))

CBS News reported that a magnitude 7.1 earthquake struck a sparsely populated part of China's western Xinjiang region on 22 January, injuring six people, two with serious injuries and four with minor injuries. In addition, 47 houses collapsed, 78 were damaged, and some agricultural structures collapsed.

<https://www.cbsnews.com/news/earthquake-china-xinjiang-region/>

The Institute of Geology, China Earthquake Administration (IGCEA) made an EOR to Sentinel Asia on 23 January. Among DPNs, JAXA, TASA, and ISRO provided data. Information on the latest response by Sentinel Asia is available at the link below.

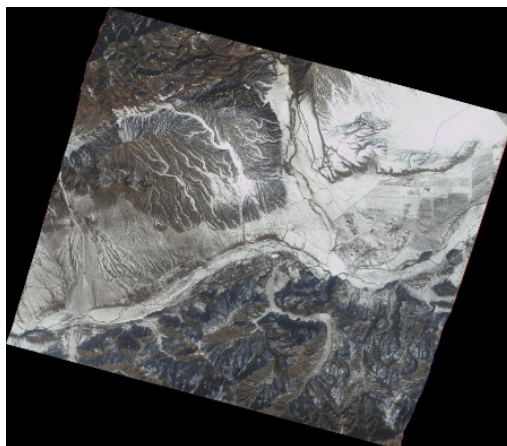
<https://sentinel-asia.org/EO/2024/article20240122CN.html>



Post-disaster satellite image (ALOS-2) provided by JAXA



Post-disaster satellite image (CARTOSAT-2E) provided by ISRO



Post-disaster satellite image (FORMOSAT-5) provided by TASA

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2. [Report] Sentinel Asia Annual Report 2022 has been published!

Sentinel Asia’s activity report for 2022 has been published. The report features, among others, (i) a detailed review on EORs conducted in 2022 including good practices; (ii) external relations such as news, publications, and reports on conferences; and (iii) an analytical survey of Sentinel Asia’s operations.

In 2022, as in previous years, the Joint Project Team Meeting (JPTM) of Sentinel Asia was forced to be called off due to the COVID-19 pandemic. In this regard, this Annual Report provided JPT members with an alternative opportunity to report their Sentinel Asia-related activities, which would have been provided as part of the JPTM. In response to the invitation by the Sentinel Asia secretariat team, 21 JPT members contributed their activity reports, which are in the Appendix of the Annual Report.

The Annual Report is available on the Sentinel Asia web page at https://sentinel-asia.org/reports/Reports/SA_Annual_Report_2022.pdf

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3. [Interview] Mr. Abdullah Muhammad Mustofa Sorwar, Bangladesh Water Development Board (BWDB)

Bangladesh Water Development Board (BWDB) is the leading water resources management organization in Bangladesh. They are responsible for Flood Forecasting and Warning, Flood Damage Assessment, etc. Its Central GIS Directorate has the responsibility to assess ex-post damage due to floods. They became a member of Sentinel Asia's Joint Project Team (JPT) in May 2023.

Sentinel Asia secretariat interviewed Mr. Abdullah Muhammad Mustofa Sorwar, Superintending Engineer at Central GIS Directorate of BWDB to introduce their activities.



Sentinel Asia Secretariat

The Bangladesh Water Development Board (BWDB) participated in Sentinel Asia in May 2023. Can you introduce your organization for our readers? In addition, please also introduce the section that is the point of contact within BWDB.

Mr. Abdullah Muhammad Mustofa Sorwar

BWDB is a government organization that promotes the sustainable development of the country's water resources through participatory water management, the improvement of people's socioeconomic conditions by ensuring food security through the development of irrigation systems, and the protection of people's lives and property through water-related disaster management.

After the independence of Bangladesh, a former Entity called WAPDA (Water and Power Development Authority) was restructured in 1972 into two different organizations to deal with water and power separately. As such BWDB was created under the Bangladesh Water and Power Development Boards Order 1972 (P.O. No. 59 of 1972) as a fully autonomous organization. As the principal agency of the government for managing water resources of the country it was given the responsibility of accomplishing the tasks of executing flood control, drainage and irrigation projects to increase productivity in agriculture and fisheries. Reformed under the BWDB Act, 2000, BWDB has since been managed by a Governing Council with 13 members headed by the Minister, Ministry of Water Resources.

Vision of BWDB is:

- Sustainable development of water resources in Bangladesh through participatory water management
- Protection of people's lives and property through water-related disaster management
- Improvement of socio-economic condition of the people by ensuring food security through irrigation system development

And its Mission is:

- Flood control under strategic planning
- Development of drainage and irrigation systems
- Food security and alleviation of poverty
- Prevention of river erosion
- Addressing salinity intrusion problem
- Land reclamation
- Management of water-related disasters
- Addressing the adverse effects of climate change in line with integrated coastal management
- Increasing public engagement through people's participation in integrated water resource management

The Central GIS Directorate of BWDB is the point of contact/focal point for Sentinel Asia within BWDB. This office made its debut in December 2020 with just one official. Now, with

four engineers and three support staff, we are continuing our journey in the field of GIS/RS and mathematical modelling. Every now and then, requests from various offices come to us for mapping service, catchment delineation, morphological planform analysis, erosion prediction, and so on. During floods, we prepare flood extent maps from freely available satellite imagery including what are received from Sentinel Asia. We have sophisticated hardware and software resources for image analysis and GIS mapping. Recently we have received water modelling software from DHI and we have implemented a license server to which BWDB Design and Planning offices connect and use this tool as a decision support system. We also set up our own GIS portal (<https://gis.bwdb.gov.bd/arcgis/home>) and website (<https://gis.bwdb.gov.bd>).

Sentinel Asia Secretariat

What is the reason of your participation to Sentinel Asia?

Mr. Abdullah Muhammad Mustofa Sorwar

Sentinel Asia is an important platform for accessing near real-time satellite data, enhancing our ability to monitor and respond to water-related disasters promptly.

The motivation behind BWDB's involvement in Sentinel Asia is to improve our capacity for disaster management by using advanced technologies and to promote global cooperation.

Several key reasons for our active engagement with Sentinel Asia are as follows:

- Sentinel Asia provides access to near real-time satellite data and imagery through Emergency Observation Requests (EORs), which help us monitor and assess water-related disasters promptly. This is crucial for timely decision-making and effective response during emergencies.
- Participation in Sentinel Asia enhances our early-warning systems by integrating satellite data for more accurate and timely disaster forecasts. This approach will allow us to better prepare and mobilize resources, minimizing the impact of disasters on communities.
- Collaborating with Sentinel Asia enables BWDB to stay up to date with technological innovation in disaster response. The platform offers cutting-edge tools and value-added products that enhance our situational awareness and decision-making capabilities.
- Participation in Sentinel Asia contributes to the continuous professional development of our team. Engaging with the platform helps our personnel to acquire new skills, stay informed about the latest advancements in satellite technology, and improve our overall disaster management capacity.

Sentinel Asia Secretariat

How is your participation in Sentinel Asia recognized within BWDB and other agencies in your government?

Mr. Abdullah Muhammad Mustofa Sorwar

The recognition of BWDB's participation in Sentinel Asia is widespread within our organization. The significance of our involvement is acknowledged through several key aspects:

- Our strategic participation in Sentinel Asia aligns with our vision of sustainable water-related disaster management, utilizing satellite technology and international collaboration to stay at the leading position of disaster response capabilities.
- Participation in Sentinel Asia offers benefits like near real-time data, early-warning systems and improved decision-making, enhancing disaster management capacities and operational effectiveness.
- Our participation in Sentinel Asia promotes collaboration with other agencies. The collaboration is appreciated within the government, as it aligns with broader efforts to promote coordination among agencies involved in disaster management, satellite technology, and related fields.

Sentinel Asia Secretariat

The BWDB's vision includes "Protection of people's lives and property through water-related disaster management". Could you tell us about your activities for this purpose?

Mr. Abdullah Muhammad Mustofa Sorwar

The Bangladesh Water Development Board (BWDB) is dedicated to fulfilling its vision of "Protection of people's lives and property through water-related disaster management" through structural and non-structural interventions. Some key activities include:

- For non-structural interventions, BWDB operates and maintains early-warning systems to provide timely alerts to communities at risk of water-related disasters such as floods and cyclones. These systems incorporate near real-time data, including information from satellite sources, to ensure swift and accurate notifications to vulnerable populations.
- For structural interventions, BWDB is involved in the construction of embankments, river bank protection works, and drainage systems to control water flow, prevent flooding, and protect communities and agricultural lands from the adverse effects of excessive water.
- The BWDB conducts training programs to enhance the preparedness of BWDB officials. This includes the development of response plans, coordination mechanisms, and the pre-positioning of resources to ensure swift and effective responses during emergencies.
- The BWDB is actively involved in research and innovation to stay ahead of emerging challenges in water-related disaster management. This includes exploring new technologies, such as satellite remote sensing and geographic information systems (GIS) to improve the accuracy of risk assessments and response strategies.
- Collaboration with international organizations, including participation in initiatives like Sentinel Asia, allows BWDB to access global expertise, share best practices, and benefit from advanced technologies. This collaborative approach strengthens the organization's capacity to manage water-related disasters effectively.

Sentinel Asia Secretariat

To realize this vision, what do you expect from satellite remote sensing?

Mr. Abdullah Muhammad Mustofa Sorwar

Satellite remote sensing plays a crucial role in helping BWDB realize its vision of “Protection of people’s lives and property through water-related disaster management.” The expectations from satellite remote sensing include the following key aspects:

- Satellite remote sensing provides near real-time and high-resolution data on weather patterns, precipitation, and so on. This information is vital for early-warning systems, enabling BWDB to anticipate and respond to potential water-related disasters such as floods and cyclones. Timely and accurate forecasts contribute to effective disaster preparedness and evacuation planning.
- After a disaster event, satellite imagery facilitates rapid damage assessment. This information is crucial for understanding the extent of the impact, identifying affected areas, and prioritizing response efforts.
- Satellite and remote sensing data helps to create detailed maps, including flood extent mapping and identification of areas prone to erosion. This information helps in land-use planning, infrastructure development, and the identification of high-risk vulnerable areas, which contributes to long-term disaster risk reduction.
- Satellite remote sensing data serves as a valuable resource for research and modelling activities such as hydrological modelling, flood forecasting. By integrating satellite data into these models, BWDB can enhance its understanding of water-related processes and improve the accuracy of predictions.
- Integration of satellite remote sensing into disaster management efforts facilitates international collaboration. Participating in Sentinel Asia allows BWDB to share information, access data from neighboring regions, and collaborate with other countries facing similar challenges. This approach enhances the effectiveness of disaster response strategies.

Sentinel Asia Secretariat

In addition to BWDB, the Bangladesh Space Research and Remote Sensing Organization (SPARSSO) is another member of Sentinel Asia. Do you have any cooperation with them? If so, could you introduce some cases?

Mr. Abdullah Muhammad Mustofa Sorwar

There is always a scope of exchange of views between BWDB and SPARRSO, as both are government organizations. BWDB officials sometimes participate in the workshops of research projects carried out by SPARRSO that are in line with BWDB interests. Previously, BWDB and SPARRSO officials jointly participated in some capacity-building mini projects with collaboration from Sentinel Asia and JAXA. With the help of the membership in Sentinel Asia, a collaboration between BWDB and SPARSSO is possible in processing satellite imagery provided by Sentinel Asia for disaster management.

Sentinel Asia Secretariat

You sent an Emergency Observation Request (EOR) to Sentinel Asia for Cyclone MOCHA last May. How were data and Value Added Products (VAPs) provided by Sentinel Asia used by the agencies in Bangladesh? If you have any lessons learned, could you share them?

Mr. Abdullah Muhammad Mustofa Sorwar

The high-resolution satellite imagery provided by Sentinel Asia was important in conducting damage assessment in the aftermath of Cyclone MOCHA. The imagery facilitated a quick and comprehensive overview of the affected areas, helping us to identify the extent of damage to infrastructure, residential areas, and agricultural land. The satellite imagery and Value Added Products (VAPs) were used to identify priority areas that required immediate attention and intervention.

Lessons Learned is that EOR to Sentinel Asia for Cyclone MOCHA shows the value of satellite data in disaster response. One lesson learned was the importance of timely data delivery. While the data received from Sentinel Asia was invaluable, there were instances such as during a flash flood in the city of Sylhet, Bangladesh in 2022 where even faster access to information could have further improved the initial response. The experience also aids in ongoing capacity building for more effective and efficient disaster management.

Sentinel Asia Secretariat

What do you think of the benefits of Sentinel Asia?

Mr. Abdullah Muhammad Mustofa Sorwar

The benefits of Sentinel Asia for BWDB and other agencies involved in disaster management in Bangladesh are substantial. Some key benefits of Sentinel Asia are:

- Sentinel Asia provides timely access to satellite data and imagery through EORs, enabling rapid response to natural disasters. This information is crucial for identifying the extent of damage to infrastructure, residential areas, and agricultural land and effective decision-making during emergencies.
- By leveraging Sentinel Asia, BWDB can enhance its disaster preparedness efforts. The platform provides valuable insights into potential risks, allowing for proactive measures such as pre-positioning of resources, evacuation planning, and the implementation of preventive measures.
- Sentinel Asia offers access to high-resolution satellite imagery, which is essential for detailed damage assessment and identification of high-risk prone vulnerable areas for intervention.
- Participation in Sentinel Asia provides BWDB with exposure to global best practices in satellite-based disaster management. Knowledge sharing and collaboration with other member countries contribute to the adoption of innovative approaches, enhancing continuous improvement in disaster response strategies.
- Sentinel Asia offers opportunities for capacity building through training programs, workshops, and collaborative projects. This enables BWDB personnel to enhance their skills in satellite image interpretation, data analysis, and the utilization of advanced technologies for disaster.
- Sentinel Asia encourages the adoption of innovative technologies for disaster management. BWDB can continuously improve its capabilities by keeping in touch with Sentinel Asia, ensuring a more resilient and adaptive approach to water-related disasters.

Sentinel Asia Secretariat

Are there any challenges such as water-related disaster management or socio-economic conditions in your country that could be solved by Sentinel Asia or other satellite technologies?

Mr. Abdullah Muhammad Mustofa Sorwar

Bangladesh faces several challenges related to water-related disaster management and socio-economic conditions. And obviously satellite technologies offered by Sentinel Asia can contribute significantly to addressing these challenges. Some of the key challenges and how satellite technologies can help are as follows:

- Bangladesh is prone to monsoon flooding and flash flooding, which poses a significant threat to lives, property, and agriculture. Satellite technologies provide near real-time data on rainfall, river levels, and flood extent. This information aids in early warning, flood monitoring, and the development of flood models for better preparedness and response.
- Cyclones and storm surges are common in the southern part of Bangladesh, posing a serious risk to coastal areas. Satellite data assists in tracking cyclones, predicting their paths, and assessing storm surge potential. This information supports evacuation planning, resource allocation, and early warning dissemination to vulnerable coastal communities.
- Riverbank erosion is a recurring issue, impacting communities and agricultural land. Satellite imagery helps monitor morphological changes in river courses, identify erosion-prone areas, etc. This information aids in land-use planning and the development of strategies to mitigate the impacts of erosion.
- Agriculture is a key sector, and ensuring food security is a priority. Satellite imagery data aids in crop monitoring, yield prediction, and early detection of issues affecting agricultural productivity.
- Ensuring the conservation of natural resources is crucial. Satellite technologies contribute to environmental monitoring, allowing for the assessment of deforestation, changes in land cover, and the impact of climate change.

Sentinel Asia Secretariat

What are your expectations of and how do you cooperate with Sentinel Asia?

Mr. Abdullah Muhammad Mustofa Sorwar

As a member of Sentinel Asia, we have specific expectations and a cooperative approach:

- We expect Sentinel Asia to continue providing timely and reliable satellite data, especially during emergency situations such as cyclones, floods, and other water-related disasters. We will actively participate in the data-sharing network and promptly submit EORs when necessary.
- We look forward to the continued development and availability of advanced technologies and VAPs that enhance the usefulness of satellite data for disaster management. We will actively engage in testing and providing feedback on new technologies and VAPs. This includes participating in training programs and workshops organized by Sentinel Asia to build the capacity of our personnel in utilizing these tools effectively.
- We anticipate opportunities for collaborative research and development projects that

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