

**** February 2025 News from Sentinel Asia Project Office ****

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1. [News] Emergency Observation of Disasters (as of 24 February)

(1) Flood in Palawan, Philippines, on 9 February, 2025 (GLIDE Number [FL-2025-000016-PHL](#))

Island of Palawan, the Philippines, suffered from a flooding caused by heavy rain on 9 February. GMA news reported that 5 people died.

<https://www.gmanetwork.com/news/topstories/regions/935973/5-dead-amid-flooding-in-palawan-due-to-rains-from-shear-line/story/>

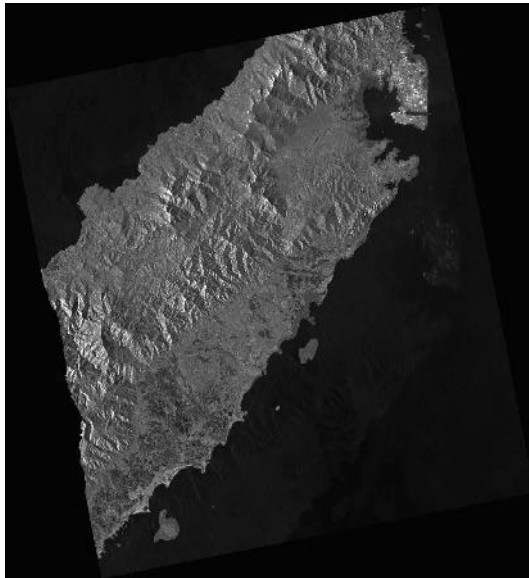
The Philippine Space Agency (PhilSA) made an Emergency Observation Request (EOR) to Sentinel Asia on 9 February. Among Data Provider Nodes (DPNs), ISRO, JAXA, and TASA provided data. Among Data Analysis Nodes (DANs), AIT and JAXA provided their Value-Added Products (VAPs).

Information on the latest response by Sentinel Asia is available at the link below.

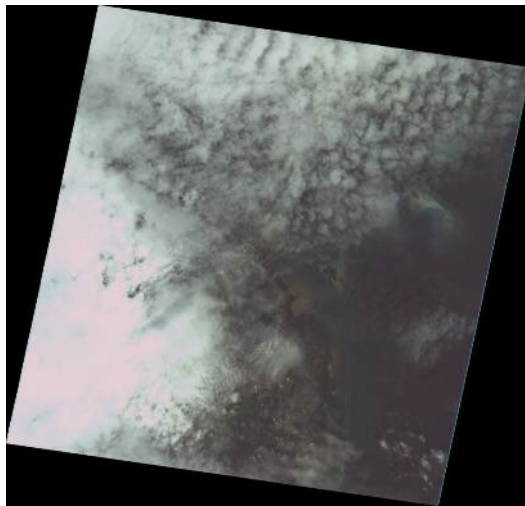
<https://sentinel-asia.org/EO/2025/article20250209PH.html>



Post-disaster satellite image (EOS-04) provided by ISRO



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



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



Value-Added Product by AIT

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2. [Interview] Mr. S M Mahbubur Rahman, Ms. Sarwat Jahan, and Mr. Imran Khan, Institute of Water Modelling (IWM), Bangladesh

The Institute of Water Modelling (IWM) in Bangladesh is a self-sustained and not-for-profit independent trust established in 1996. Its main services are Policy Support, Capacity Building, Research and Innovation, and Development Advisory and Consultancy Services in the fields of Water resources management, Water supply, Sewerage and Urban drainage management, Coast, port & estuary management, Flood Management, Irrigation Management, Survey and data, ICT and GIS, and River Engineering for improved and sustainable Water Resources Management leading to Green Climate.

The institute joined Sentinel Asia in April 2024 as a Data Analysis Node (DAN) to contribute to Sentinel Asia with its expertise in management of water-related disasters. The Sentinel Asia Secretariat interviewed Mr. S M Mahbubur Rahman, Executive Director, Ms. Sarwat Jahan, Director of River Morphology & Engineering (RME) Division, and Mr. Imran Khan, Associate Specialist, RME to introduce the institute’s domestic and international activities.



(From left to right: Mr. S M Mahbubur Rahman, Executive Director, Ms. Sarwat Jahan, Director of River Morphology & Engineering Division, and Mr. Imran Khan, Associate Specialist)

Sentinel Asia Secretariat:

IWM participated in Sentinel Asia in 2024. Could you introduce your organization to our readers?

Mr. S M Mahbubur Rahman:

IWM is a self-sustained, not-for-profit independent trust established in 1996 by the Government

of Bangladesh. Operating under the guidance of its Board of Trustees (BOT), IWM provides world-class services in various sectors, including water resources management, water supply, sewerage and urban drainage management, coast, port, and estuary management, flood and irrigation management, survey and data analysis, ICT and GIS solutions, and river engineering. The Secretary of the Ministry of Water Resources serves as the Chairperson of the BOT. IWM's offerings include policy support, capacity building, research and innovation, development advisory, and consultancy services. It has completed hundreds of projects in Bangladesh and expanded its reach to countries such as Malaysia, India, Nepal, Sri Lanka, Tajikistan, Turkey, the Philippines, and the United States, working with approximately 57 users on 112 projects.

The roots of IWM trace back to the early 1990s with the Surface Water Simulation Modelling Program for Bangladesh, a project initiated under the Water Resources Planning Organization (WARPO). This program aimed to develop mathematical modeling tools to support Bangladesh's Flood Action Plan (FAP). Bangladesh had experienced two devastating floods, in 1987 and 1988, which inundated over 60% of the country and caused widespread devastation. In response, an international initiative brought together experts from around the world, including Japan, China, India, Europe, and the Americas. Approximately 150 specialists collaborated on formulating 26 components of the FAP. During the six years of the FAP, advanced modeling tools were developed, and significant expertise was built within the program. Recognizing the importance of retaining these tools and expertise, the government decided to institutionalize the initiative, ensuring that the technology and knowledge were preserved and continuously updated. In 1995–1996, the government experimented with making IWM independent. They tested whether it could sustain itself through project-based income and cost recovery without generating profits. These experiments demonstrated that such a model was viable. In December 1996, IWM was officially established as an independent institution. To attract and retain highly skilled experts, IWM was given unique policies, procedures, and pay scales that differed from typical government organizations. Starting with 40 experts, IWM has since grown significantly, expanding its expertise and services domestically and internationally.

Initially focused on flood management, IWM broadened its scope to include a variety of sectors. Over time, it became a trusted partner for both government and private-sector organizations. Notable achievements include supporting advanced planning and design for water resource management, expanding into international markets, and gaining global demand for its services. Today, IWM is at the forefront of addressing climate change impacts in Bangladesh, providing critical support to the government in planning and mitigation.

The BOT, comprising 15 members from the government, private sector, academia, and international organizations, provides policy guidance and oversees IWM's financial health and

strategic direction. IWM stands as a unique model of an independent, not-for-profit organization. It has successfully transitioned from a government project to a global player in water resource management, demonstrating the effectiveness of a self-sustaining, cost-recovery-based institution.

Sentinel Asia Secretariat:

We appreciate your first participation at Sentinel Asia's Joint Project Team Meeting (JPTM) last year. What are your impressions of the meeting? And did you find anything useful or new to you, including any new methods, communications with other participants, etc.?

Mr. Imran Khan:

First of all, I would like to express my gratitude to Sentinel Asia for providing me with the opportunity to participate in last year's JPTM. It was a wonderful experience meeting some of the brightest minds from space agencies and disaster management organizations across the region. The sessions were highly informative, offering insights into the diverse approaches employed by different organizations operating under varying circumstances. The role of Earth observation in disaster management was emphasized throughout the event. I found the training sessions particularly useful, especially those focused on assessing building damage caused by earthquakes using observation data. At IWM, we have expertise in flood map generation using ALOS-2 and Sentinel-1 SAR imagery and have been providing evaluated products as a Data Analysis Node (DAN) for Sentinel Asia. However, building damage assessment was something entirely new for me. I had a productive discussion with Dr. Arnob, who conducted the session on building damage assessment. He provided valuable insights into the methodology, which clarified many aspects for me. Additionally, I had enriching conversations with representatives from various organizations, including the Philippine Space Agency (PhilSA), JAXA, the Indian Space Research Organisation (ISRO), the International Centre for Integrated Mountain Development (ICIMOD, Nepal), and the National Center for Hydrology and Meteorology (NCHM) of Bhutan, about potential collaborations and innovative initiatives. There are ongoing discussions about IWM joining the Humanitarian Data Exchange platform under United Nations Office for the Coordination of Humanitarian Affairs (OCHA). Overall, the JPTM was highly productive for us, and I look forward to participating in future sessions as well.

During the event, I presented on river erosion monitoring using satellite data, highlighting the severe damage caused by flooding. I raised a point about the need to expedite the process of transitioning from user calls to the generation of evaluated products. Additionally, I emphasized the importance of acquiring both pre-disaster and post-disaster imagery for successful value-added products. Currently, we often only receive post-disaster images, which limits the scope of our analysis. These points received positive feedback from the Sentinel Asia Secretariat, which

was encouraging.

Overall, the JPTM provided an excellent platform for learning, networking, and exploring new possibilities for collaboration in the region.

Sentinel Asia Secretariat:

What is your motivation to participate in Sentinel Asia; how do you benefit from Sentinel Asia?

Mr. Imran Khan:

As Bangladesh is highly vulnerable to water-related disasters, innovation is essential to address every step of the disaster management cycle. The challenges we face are becoming increasingly complex due to the changing climate. Sentinel Asia, with its near real-time observation data and access to a fast network of expertise, provides an ideal platform for addressing the intricate challenges in our region.

As a member of Sentinel Asia, we benefit from access to diverse observation datasets from regional space agencies. This significantly enhances the accuracy of our models, enabling us to improve platforms for riverbank erosion and storm prediction. The integration of near real-time observation data with local expertise and our developed models leads to more efficient solutions for disaster risk management and water resource management as a whole. While we gain valuable data and global partnerships to tackle our challenges, we also bring our expertise in computational hydraulics and water modeling to the table. Our experience in managing one of the world's largest and most complex deltas provides us with valuable insights that allow us to contribute meaningfully to Sentinel Asia's mission.

We have a workforce that understands the critical importance of quick disaster response. Even within our first few months of our membership in Sentinel Asia, we have been actively responding to Emergency Observation Requests (EORs) and delivering accurate products as soon as the observational data becomes available.

In summary, joining Sentinel Asia enables us to better fulfill our commitment to disaster risk management while advancing the shared goal of minimizing disaster impacts through data-driven solutions.

Mr. S M Mahbubur Rahman:

Imran has highlighted the potential benefits of Sentinel Asia very well. The data we obtain from Sentinel Asia will be extremely valuable for various applications in Bangladesh. For instance, it

can be instrumental in monitoring river erosion and the development of new landforms in offshore areas, where significant sedimentation is occurring, and new lands are emerging. This kind of monitoring can open new avenues for research and development. Moreover, Sentinel Asia's data can play a crucial role in assessing the after-effects of disasters such as floods or droughts, which are critical issues for Bangladesh. Having access to this data will greatly support our disaster response and recovery efforts. It is indeed a privilege for Bangladesh to be part of the Sentinel Asia initiative, which aligns well with our national priorities and goals.

Ms. Sarwat Jahan:

Sentinel Asia offers much more than just data access—it is a platform for promoting our resources, building knowledge, and working in diverse environments as part of our capacity development program. However, beyond capacity building, the platform addresses a critical need for us: obtaining more data to validate our work and ensure the accuracy of our modeling results.

As you know, data forms the foundation of our work. Today, users are increasingly sophisticated and demand more than a single solution. They expect a range of solutions and want to identify the most accurate one, grounded in actual measurements and reliable data. Sentinel Asia enables us to meet these expectations by providing access to comprehensive datasets that improve the accuracy of our solutions. This collaboration with Sentinel Asia is not only about leveraging data but also about enhancing our ability to deliver more precise, diverse, and impactful results. It aligns with our motivation to continually develop our expertise and adapt to different working environments while ensuring that the solutions we provide are cutting-edge and reliable.

Sentinel Asia Secretariat:

How is your participation in Sentinel Asia recognized by other agencies or stakeholders in Bangladesh?

Mr. Imran Khan:

Our participation in Sentinel Asia has undoubtedly had a positive impact. Gradually, it is gaining recognition, particularly among the local JPT members of Sentinel Asia. As the first DAN in Bangladesh, we have access to near real-time data, enabling us to provide advanced geospatial analyses to the relevant agencies. These agencies increasingly recognize the importance of our contribution in leveraging observation data to tackle water-related disasters. However, this recognition comes with added responsibilities. During the two major flood events in Bangladesh in 2024, for which EORs were called, we responded as quickly as the data was made available. There was significant pressure from other JPT members in Bangladesh, as they were constantly connecting with us to check whether the data was ready. We worked to provide the analyses

promptly and shared them with the authorized agencies responsible for disaster response. I believe the JPT members in Bangladesh now trust us to deliver accurate value-added products in the shortest possible time.

While this progress is encouraging, the level of awareness about Sentinel Asia among other government agencies and the private sector is still developing. It has not yet reached a significant stage. We believe that as we continue to respond to more EORs and deliver increasingly accurate products, more stakeholders will recognize the benefits of the Sentinel Asia initiative. Looking ahead, our long-term goal should be to demonstrate the full potential of near real-time observation data to more agencies and stakeholders. This includes engaging non-governmental organizations already active in the field during disasters so that they, too, can respond effectively using our value-added products.

Mr. S M Mahbubur Rahman:

Several agencies in Bangladesh, such as the Department of Disaster Management, the Water Resources Planning Organization, the Water Development Board, and the Local Government Engineering Department, are very keen to receive these products from Sentinel Asia. These agencies see the potential for applying this data to their respective needs, including disaster preparedness, hazard exposure analysis, and damage assessment from events like floods and storm surges. This collaboration with Sentinel Asia is essential and will play an increasingly critical role in supporting the activities and future development of these agencies.

Sentinel Asia Secretariat:

In Bangladesh, the Bangladesh Space Research and Remote Sensing Organization (SPARRSO) and the Bangladesh Water Development Board (BWDB) are members of Sentinel Asia. What do you think about cooperation with these Sentinel Asia members?

Ms. Sarwat Jahan:

While progress has been made, IWM needs to strengthen its cooperation with organizations like BWDB and SPARRSO. By doing so, IWM can better convey the urgency and value of Sentinel data and its applicability. The focus should be on showcasing how these datasets can enrich the products and services provided to stakeholders. Strengthening these relationships and collaborations will be crucial for moving forward effectively.

Mr. Imran Khan:

Since joining Sentinel Asia, IWM has worked to build and strengthen relationships with other key agencies in Bangladesh, particularly the BWDB. As both organizations operate under the

Ministry of Water Resources, our collaboration has been strong from the start. After receiving our Sentinel Asia membership, we, along with BWDB, held a coordination meeting at the Japan International Cooperation Agency (JICA) office in Bangladesh in June 2024. The meeting focused on developing a standard operating procedure (SOP), ensuring that all members understood their responsibilities, such as who would handle EOR calls and who would manage the DAN tasks. While we planned for regular follow-up coordination meetings, none have taken place since June. I hope we can resume these in the future to maintain momentum and address evolving needs. During the EOR events in 2024, we did our best to respond quickly to inquiries about the status and availability of data, providing analyses as promptly as possible.

At the JPTM, I had a great discussion with Mr. Abdullah Muhammad Mustofa Sorwar, the point of contact at BWDB. Our coordination with BWDB has been excellent, and there is strong mutual cooperation between our organizations within Sentinel Asia. However, I believe our coordination with SPARRSO is not yet as developed. This is something we need to work on, and I'm optimistic that we will improve this collaboration in the near future. Dr. Morimasa Tsuda, then advisor of JICA, deserves special mention for his enthusiasm and commitment to fostering this partnership. He was instrumental in facilitating our membership in Sentinel Asia. Not only did he work tirelessly during the June coordination meeting, but he also personally visited IWM to ensure that we completed all the necessary steps for membership. Dr. Tsuda's dedication and encouragement were key factors in IWM's decision to join Sentinel Asia, and I deeply respect and appreciate his efforts. Being part of Sentinel Asia has been a meaningful journey so far. We are committed to building stronger partnerships with our local and regional stakeholders to maximize the impact of this collaboration.

Sentinel Asia Secretariat:

IWM has broad cooperation with other countries. Do you think IWM's international cooperation will be enhanced through Sentinel Asia as a member?

Mr. Imran Khan:

Becoming a member of Sentinel Asia has been an incredible opportunity for IWM to expand our collaboration and strengthen our presence on the international stage. While we already have footprints in multiple countries through partnerships with various international organizations, Sentinel Asia provides a unique platform to enhance these collaborations further. Through Sentinel Asia, we are not only gaining access to near real-time data from data providers but also engaging in regular JPTMs, which are expanding our horizons in technical capacity building and networking. Disasters might occur in different locations, but the problems they create are remarkably similar everywhere. By participating in collective learning and collaboration, we can

better prepare ourselves to address these challenges effectively. Moreover, I believe Sentinel Asia's impact extends far beyond disaster management. Interacting with experts and organizations from different countries provides us with valuable insights and opportunities to share our own experiences. These interactions can be applied to other critical areas such as water resource management, climate adaptation, and sustainable development. Through this collaboration, we hope to initiate new research projects, workshops, and training programs that benefit not just Bangladesh but also the entire region. Sentinel Asia has the potential to act as a bridge, connecting IWM with a global community of like-minded organizations. This connection solidifies our position as a key player in international cooperation on disaster risk reduction, sustainable development, and climate change adaptation.

Ms. Sarwat Jahan:

Being a member of Sentinel Asia highlights the versatility of our work and demonstrates our ability to advance with new technologies. She pointed out that this membership opens new avenues for research and innovation, offering IWM opportunities to explore and contribute further in diverse areas. Ultimately, IWM's membership in Sentinel Asia represents more than just a partnership; it is a platform for growth, innovation, and collaboration. It allows us to showcase our expertise, engage with cutting-edge technologies, and strengthen our position as a leader in addressing regional challenges. Together with the support of Sentinel Asia, we are not only enhancing our technical capacity but also paving the way for impactful contributions to the region's sustainable future.

Sentinel Asia Secretariat:

How do you cooperate with other Sentinel Asia members through Sentinel Asia activities? If you have any specific interests and knowledge to share within the Sentinel Asia community, please briefly share them.

Mr. Imran Khan:

At IWM, we are always open to collaboration and cooperation. Our expertise in computational hydraulics and water modeling, including flood forecasting, sediment transport, morphological modeling, storm surge modeling, and assessing the impacts of climate change, positions us as a valuable resource within Sentinel Asia. As Mr. Sarwat highlighted, these areas of specialization are critical for addressing water-related hazards not only in Bangladesh but also in other regions where Sentinel Asia members operate.

While we bring these capabilities to the table, we are also eager to learn from other members. Incorporating more advanced techniques into our process-based modeling could lead to exciting

possibilities, including collaborative research projects. By working closely with other Sentinel Asia members—whether through EORs, joint workshops, or capacity-building initiatives—we aim to strengthen our partnerships within the framework.

I believe there is also an opportunity to establish a small working group focused on active disasters. While many DANs are part of Sentinel Asia, only a few respond consistently to EORs. A working group could create a more collaborative and cooperative environment, encouraging broader participation among DANs.

Cross-country collaboration on research and innovation in water resource management is another area where IWM is keen to contribute. Such initiatives would not only advance regional understanding of shared challenges but also strengthen the Sentinel Asia community as a whole. We look forward to actively participating in Sentinel Asia's activities, sharing our expertise, and learning from the diverse and talented community within the framework.

Ms. Sarwat Jahan:

Representing the River Morphology and Engineering (RME) Division, we are deeply interested in exploring sediment dynamics within the Ganges Basin, the Meghna Estuary, and the major river systems of Bangladesh. Understanding these dynamics is critical for effective water resource management, and we are eager to collaborate on projects that address these challenges.

Mr. S M Mahbubur Rahman:

The importance of leveraging Sentinel Asia is data provision for disaster preparedness and response in Bangladesh. Mr. Khan highlighted the government's keen interest in using data for forecasting and preparing for events such as storm surges, floods, and riverbank erosion. The government is also looking to enhance its response to ongoing disasters, and Sentinel Asia data could play a significant role in this area. By providing timely and actionable information, we can help position Bangladesh to better prepare for and respond to disasters, supporting both short-term needs and long-term resilience strategies.

Ultimately, our involvement with Sentinel Asia represents an opportunity to both contribute our expertise and expand our capabilities through collaboration. Together, we can address shared challenges more effectively and build a stronger, more cooperative regional framework for disaster risk reduction and sustainable water management.

