** March 2023 News from Sentinel Asia Project Office **

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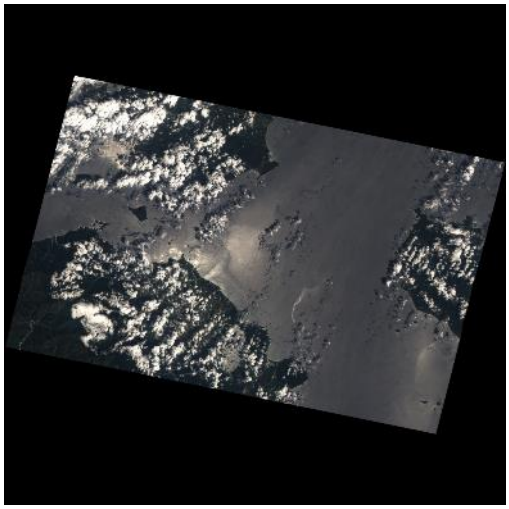
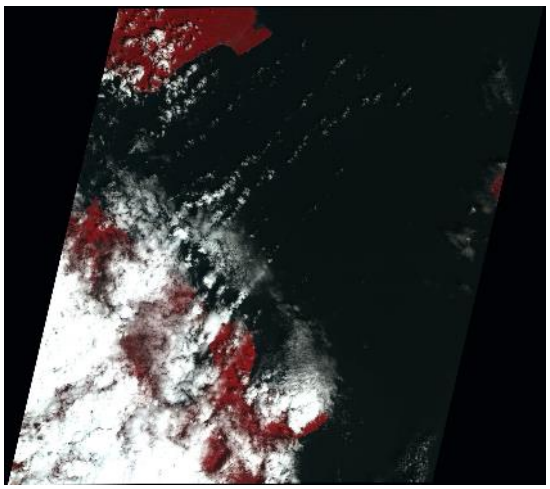
1. [News] Emergency Observation of Disasters (as of 31 March)

(1) Oil spill in the Philippines on 28 February, 2023
A tanker “MT Princess Empress” carrying 900,000 liters of industrial fuel oil sank off the northeast coast of Mindoro Island in the Philippines on 28 February, CNN reported. All 20 people onboard were rescued but the oil leaked into the ocean.
http://www.cnnphilippines.com/news/2023/3/21/mt-princess-empress-spotted.html

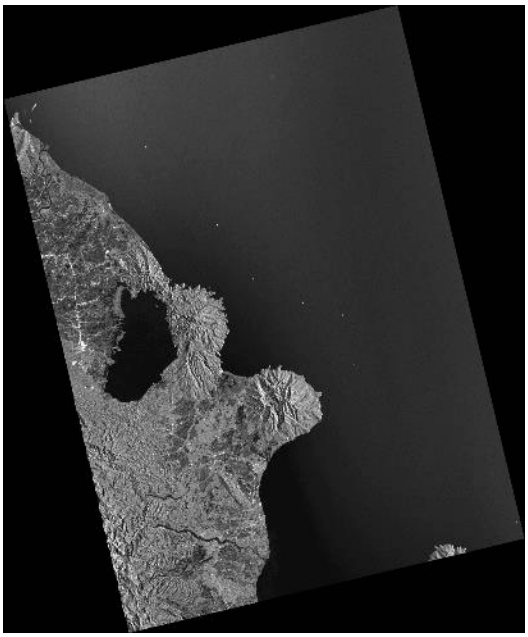
The Philippine Space Agency (PhilSA) made an Emergency Observation Request (EOR) to Sentinel Asia on 1 March, 2023. This is the PhilSA’s first EOR since it joined Sentinel Asia in January this year. This EOR was escalated to the International Disasters Charter. PhilSA assumed the role of Project Manager for this Charter activation. Among Data Provider Nodes (DPNs), GISTDA, ISRO, JAXA, and TASA provided data. Among Data Analysis Nodes (DANs), PhilSA and TASA 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/2023/article20230228PH.html



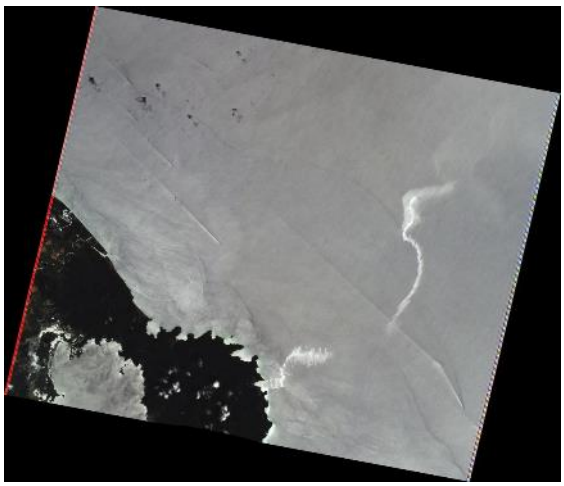
Post-disaster satellite image (THEOS-1) provided by GISTDA



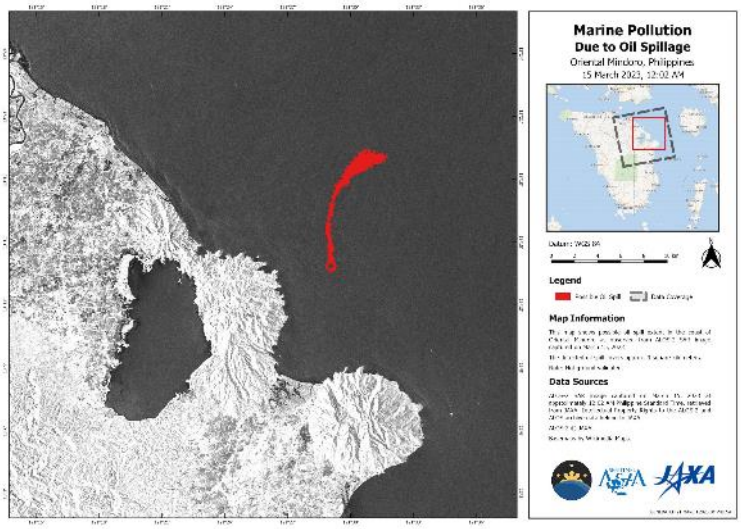
Post-disaster satellite image (Resourcesat-2A) provided by ISRO



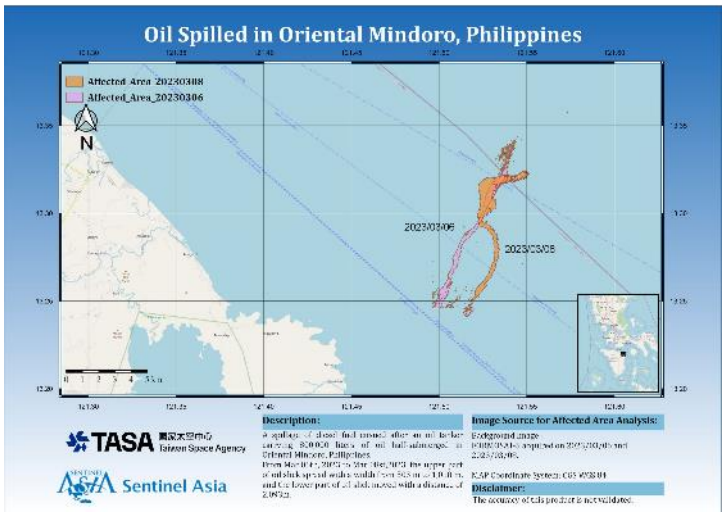
Post-disaster satellite image (ALOS-2) provided by JAXA



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



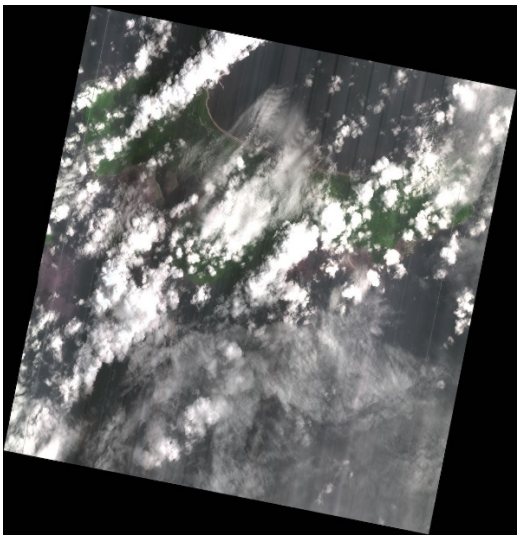
Value-Added Product by PhilSA



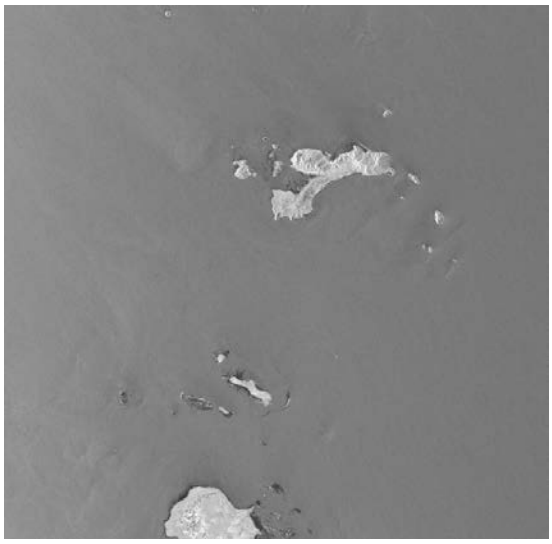
Value-Added Product by TASA

(2) Landslide in Indonesia on 06 March, 2023 (GLIDE Number LS-2023-000032-IDN)
AP reported that a massive landslide following heavy rain occurred in Natuna Regency, Riau Islands in Indonesia on 6 March and killed 32 people as of 10 March.
https://apnews.com/article/indonesia-landslide-rain-natuna-death-toll-island-11a3d7d1accf1dacbf74b00ba4014192

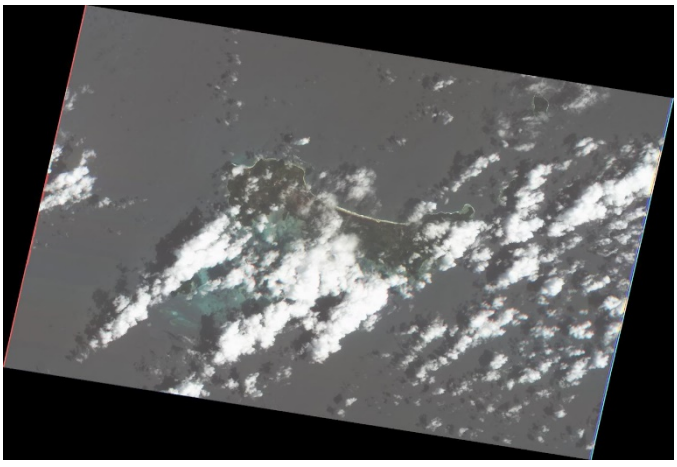
The Indonesian National Institute of Aeronautics and Space (LAPAN) made an EOR to Sentinel Asia on 7 March, 2023. This EOR was escalated to the International Disasters Charter. The Asian Institute of Technology (AIT) assumed the role of Project Manager for this Charter activation. Among DPNs, ISRO, JAXA, and TASA provided data. Among DANs, the Earth Observatory of Singapore (EOS) and LAPAN provided their VAPs. Information on the latest response by Sentinel Asia is available at the link below.
https://sentinel-asia.org/EO/2023/article20230306ID.html



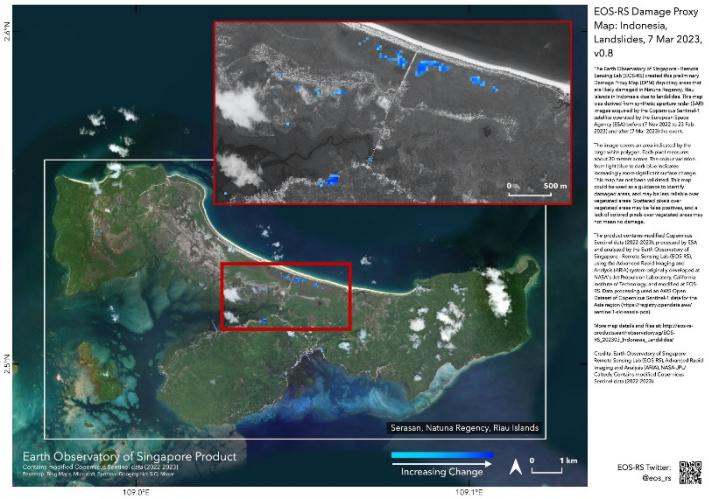
Post-disaster satellite image (CARTOSAT-3) provided by ISRO



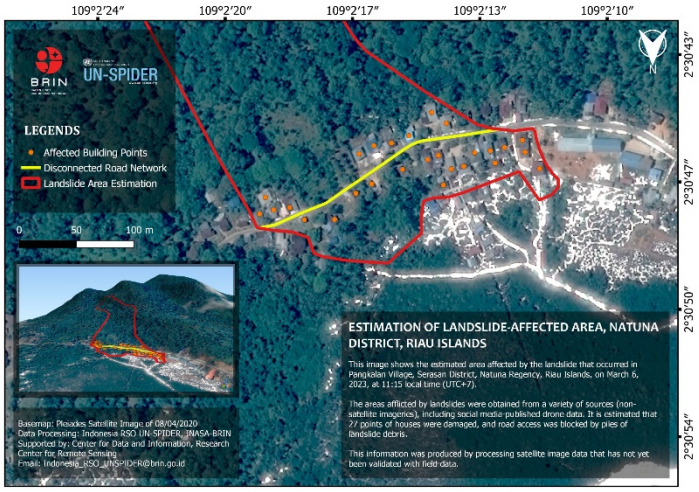
Post-disaster satellite image (ALOS-2) provided by JAXA



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



Value-Added Product by EOS



Value-Added Product by LAPAN

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2. [Interview] Mr. Koji Suzuki, Asian Disaster Reduction Center (ADRC)

The Asian Disaster Reduction Center (ADRC) was established in Kobe, Hyogo Prefecture, in 1998 with the mission of enhancing the disaster resilience of its member countries, building safe communities, and creating a society where sustainable development is attainable. They are one of the founding members of Sentinel Asia and have played crucial role.

Mr. Koji Suzuki has been serving as Executive Director of the ADRC for more than five years and promoting satellite-based technology/data/information application to disaster risk reduction and disaster management. Currently, he works with Oriental Consultants Global as Senior Advisor and with the Emergency Preparedness Working Group of APEC as Co-Chair (2020-2023). He is also a member of the National Committee for QZSS Technology Application at the Cabinet Office for

National Space Policy Secretariat. He served as one of the co-chairs of the Sentinel Asia Steering Committee from 2017 to 2023. The Sentinel Asia Secretariat interviewed Mr. Suzuki about the ADRC's activities and its cooperation with Sentinel Asia.

Sentinel Asia Secretariat
First, on behalf of the Sentinel Asia Secretariat, I would like to thank you for your great contribution to Sentinel Asia from its early days to the present, and especially for taking on the important responsibility of Co-Chair of the Steering Committee from 2017 to the present.

Mr. Koji Suzuki
During my first post at the Asian Disaster Reduction Center (ADRC), I was involved in Capacity Development for remote sensing through the ASEAN Fund of the Ministry of Foreign Affairs (MOFA). There, I was involved in activities to promote the use of earth observation through Capacity Development Programs for local civil servants in disaster management.

I first became involved with Sentinel Asia when I was working at the National Research Institute for Earth Science and Disaster Prevention (NIED), and at that time I was busy learning about remote sensing technologies and the countries involved. The second time I was involved was during my second stint at the ADRC, when I became Chair of the Steering Committee and was involved in the creation of the Strategic Plan. Initially, I was very conscious of the fact that Sentinel Asia is a voluntary-based framework, and I was doubtful whether I would be able to create a Strategic Plan capable of bringing together the members of the Steering Committee. Part of me was scared; however, I did not think too much about it and decided to implement it.

Sentinel Asia Secretariat
The frequency of emergency observations and the types of disasters vary among the participating countries and regions, and I am sure you have had a difficult time organizing the discussions as co-chairpersons amidst the diversity of expectations for Sentinel Asia. Can you talk about what has impressed you most in your role as Co-Chair of the Sentinel Asia Steering Committee?

Mr. Koji Suzuki
It is a great surprise and pleasure that the Lead Agency of the Strategic Plan has taken this activity seriously, even though it is a voluntary activity. We had prepared a Strategic Plan document but had doubts about how far we could accomplish it. I was glad that the Lead Agencies led the implementation.

Sentinel Asia Secretariat
You have been a long-term supporter of Sentinel Asia, even before you became co-chair. What do you consider Sentinel Asia to be in the disaster management community?

Mr. Koji Suzuki
Many of those involved in the disaster management community are not scientists, especially not space-related scientists, so space technology was distant to them. It was a major task to make them aware that space technology could be used for emergency response to disasters. To this end, satellite technology was introduced through Capacity Development and other programs to broaden the scope and build a foundation. At that time, we were asking institutions in various countries to join Sentinel Asia. Some, including some in Japan, wondered what Sentinel Asia could do for them. Recently, institutions wishing to become members have been contacting us on their own. I think this indicates that Sentinel Asia's visibility is spreading and people's views on satellite technology are changing.

We are currently helping to strengthen the disaster management agencies in Nepal and Fiji. One of the items necessary to strengthen as a national disaster management organization is satellite technology, which I believe has now become the standard technology in disaster management. I feel that the times are changing. I was happy to be involved with Sentinel Asia during this transitional period.

Sentinel Asia Secretariat
What was the reaction of initial ADRC member countries when the collaboration between Sentinel Asia and the ADRC started and ADRC member countries were also able to access Sentinel Asia?

Mr. Koji Suzuki
At the beginning of Sentinel Asia's establishment, the ADRC was also in the process of publicizing

the use of satellites to its member countries. At that time, there was almost no knowledge of satellites, and the mere mention of the word “satellite” was enough to make the other country stop thinking. When the ADRC did not have much content to publicize, the idea of disaster prevention using satellites was easy to promote. We were very happy to receive the support of JAXA for this. In the meantime, some of the national disaster management organizations in ADRC member countries, such as Turkey and Nepal, have expressed interest in joining Sentinel Asia. Furthermore, the fact that some agencies have expressed interest in becoming Data Analysis Nodes (DANs) leads us to believe that satellite technology is becoming more common. When I think of the time of the inauguration of Sentinel Asia., I feel I am living in a completely different age.

Sentinel Asia Secretariat
Disasters occur day and night, and it is often difficult to verify what is happening. What impact has the addition of space-based observation in collaboration with Sentinel Asia had on the activities of disaster management agencies, including the ADRC?

Mr. Koji Suzuki
I don’t think we have reached the point where satellite technology is indispensable yet. Although it has become an indispensable item for emergency response, there is still room to improve its use for risk assessment and other purposes. There are still countries where surveying on the ground is not possible. In such countries, it may be possible to generalize the surveying to include even a rough assessment of water flow. However, there is a high hurdle when it comes to buying data. If there is data that can be used in everyday operations, and if there is analytical technology that can be used to perform risk assessment, I think the scope of the project will expand. In this sense, the Cabinet Office plans to provide free communications service for Early Warning using the Quasi-Zenith Satellite System (QZSS), which is currently being worked on. The QZSS signal receiver is also small and inexpensive, so no large investment is required. Especially in countries with remote islands, currently there is no way to broadcast early warnings directly, but the use of QZSS would be highly feasible, as no loudspeakers or network would be needed.

I think the core of space technology utilization in disaster management is risk assessment and risk monitoring. I think we need to respond here and now, but the challenge is how and what data we can provide to do so.

Sentinel Asia Secretariat
I believe that there have been cases in which ADRC member countries have actually requested emergency observations and obtained satellite data from Sentinel Asia in the event of a disaster. Can you tell us about a memorable case where satellite data was used in an actual disaster response?

Mr. Koji Suzuki

The most memorable one was the explosion in Beirut, Lebanon, where Sentinel Asia was activated by the Turkish Disaster and Emergency Management Presidency (AFAD).
https://sentinel-asia.org/EO/2020/article20200808LB.html
It made an impression on me because it was a non-natural disaster and because we were trying to strengthen cooperation with Turkey at the time.

In addition, satellite observations were essential to grasp the overall picture of the Great East Japan Earthquake of 2011.
https://sentinel-asia.org/EO/2011/article20110311JP.html
https://disasterscharter.org/web/guest/activations/-/article/earthquake-in-japan

These two cases were particularly memorable.

Sentinel Asia Secretariat
Through your experience working with disaster management agencies around the world and as a disaster management-related organization at ADRC, MLIT, and NIED, can you tell us how satellite data can be processed and when it would be useful to provide it to the affected countries' areas? We would also like to hear your thoughts on obtaining local disaster information to improve the accuracy of the information being provided, and on effective and sustainable ways to receive feedback from disaster management agencies.

Mr. Koji Suzuki
A major issue is the timing of when information is received during emergencies. Even if there is good analysis, if it is not received when it is needed, its value will be small. This is a major problem. Seamless timing of observations and seamless timing of analysis would be ideal. It would be nice if there were observations and analysis outside of Sentinel Asia that could fulfill our requirements at the required time, but that is not the case. It would be nice if we could get to that point. I think it is important to be able to provide at the time of emergencies what is most wanted, when it is most wanted. However, responding to emergencies is part of satellite technology, and we still really need to think about what we can offer for risk assessment and monitoring before a disaster occurs. Sentinel Asia is still focused on responding to emergencies, but I think the challenge is to be able to provide data in other phases, including historical data provision. Regarding timing, how to respond to requests from the field is also important. I was on-site during the Great East Japan Earthquake, and on-site there is no room to demand what you want. Ideally, it would be nice if a third-party function could deliver what you want, but I don't think that is possible in a small country. It would be good if, for example, Japan International Cooperation Agency (JICA) or the Asian Disaster Preparedness Center (ADPC) could provide such a function, based on their understanding of the on-site situation.

Sentinel Asia Secretariat

We would also like to hear your thoughts on what kind of capacity building is needed to make effective use of satellite information in the affected countries.

Mr. Koji Suzuki

While capacity building is necessary, it is also important to identify requests for new analytical techniques and data, for example, through capacity development. I think it is important for the participants to develop their capacity, and for the implementers to conduct a survey of their demands and provide feedback to their own organizations.

Sentinel Asia Secretariat

Sentinel Asia is mainly providing remote sensing data after a disaster from participating space agencies, but we would like to hear your opinion on the role of satellite data in disaster management in general. Please let us know if you have any requests for the data provider to contribute to this role.

Mr. Koji Suzuki

For example, risk monitoring in routine operations, such as monitoring land subsidence and water levels in glacial lakes by creating topographies, is mainstream in terms of promoting the use of space technology, especially in areas that are difficult to monitor from the ground. To achieve this, collaboration with the local community is essential. Validation of the analysis results also requires collaboration with the local community.

Sentinel Asia Secretariat

I would like to hear any opinions you may have about the future expansion and development of Sentinel Asia's activities. In particular, we would be happy to hear your outlook on your efforts to realize STEP 3.

Mr. Koji Suzuki

We hope to put people at the site who will agitate space utilization in a positive way. Senior volunteers could serve in such a role. I believe that this will broaden the scope of space utilization and stimulate demand. I think it is very important to be close to the site.

Sentinel Asia Secretariat

With recent climate change, the scale and frequency of pre-disasters are said to be increasing. What are your expectations for Sentinel Asia in the future?

Mr. Koji Suzuki

We are currently collaborating with Kyoto University, ICHARM, the Meteorological Research

Institute, and others under the Ministry of Education, Culture, Sports, Science and Technology's "Advanced Research Program for Climate Change Prediction". This is a downscaled projection of the effects of climate change and a disaster response based on this projection. We are wondering if satellite technology could be utilized here. I think there are two ways to think about climate change: studying trends and creating dynamic models. There is interest in using satellite technology for modeling, but no conclusion has been reached. We are also interested in developing dynamic risk and hazard maps with several flexible parameters, and we believe that satellite technology can be used for this purpose. We are considering the possibility of not only modeling the current situation, but also varying patterns of different situations.

Sentinel Asia Secretariat
Can you share with us some of the most memorable moments of Sentinel Asia's activities?

Mr. Koji Suzuki
Sentinel Asia is now a mainstay of the ADRC's activities, for which we are grateful. I appreciate that they gave me an opportunity to make myself involved in Sentinel Asia, which has allowed the ADRC to expand its activities to the use of Quasi-Zenith Satellites. Even though I am not a satellite expert myself, the National Space Policy Secretariat's QZSS Strategy Office asked me to help. This would not have been possible had I not been involved with Sentinel Asia. Sentinel Asia's activities are a great asset to me.

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3. [Interview] Mr. Mr. Hideaki Matsumoto, Japan International Cooperation Agency (JICA)

Japan International Cooperation Agency (JICA), an incorporated administrative agency in charge of administering Japan's Official Development Assistance (ODA), is one of the world's largest bilateral aid agencies supporting socioeconomic development in developing countries in different regions of the world. JICA supports the resolution of issues in developing countries through a flexible combination of various types of cooperation methods. They became a member of Sentinel Asia in in 2019 to support disaster management in those countries.

Mr. Matsumoto is the Director of Disaster Risk Reduction Team 2, (Disaster Risk Reduction Group), Global Environment Department of JICA, and has been involved in DRR-related projects with JICA for more than 10 years, including his current position. DRR Team 2 is in charge of disaster risk reduction projects in developing countries, including earthquake disaster, coastal disaster, and meteorological, seismic and volcanic observation projects.

For the cases of post-disaster recovery and reconstruction projects in which the Sentinel Asia framework has been used most commonly, He has been involved such as the 2003 Bam earthquake in Iran, the 2004 Sumatra Earthquake and Tsunami, the 2005 Pakistan Earthquake, the 2011 Thailand Floods, the 2013 Typhoon in the Philippines, the 2022 Volcanic eruption and Tsunami disaster in Tonga, and the 2023 Earthquake disaster in Turkey.

Sentinel Asia Secretariat interviewed Mr. Matsumoto to hear JICA's disaster management activities relating Sentinel Asia.

Sentinel Asia Secretariat
Thank you for joining Sentinel Asia as a member in March 2019. If I may ask, how did you become a member of Sentinel Asia?

Mr. Hideaki Matsumoto
JICA joined Sentinel Asia triggered by our support activities for the September 2018 earthquake in Sulawesi, Indonesia (https://sentinel-asia.org/EO/2018/article20180928ID.html). JICA used data provided by Sentinel Asia when considering our reconstruction assistance.

After the Sulawesi earthquake, the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre), which was a member of Sentinel Asia, requested that Sentinel Asia be activated. Using the satellite information obtained from Sentinel Asia, the situation was analyzed by JICA's Japanese expert who was dispatched to Indonesia at the time, and this information was then used for subsequent support planning.

This experience led JICA to become a member of Sentinel Asia so that JICA could directly request the activation of Sentinel Asia.

Euronews introducing the Sulawesi earthquake and Sentinel Asia's effort:
https://www.youtube.com/watch?v=7Jtj8uwbB3c

Sentinel Asia Secretariat
If you have had any particularly useful emergency observation cases since you became a member, please tell us about them and why.

Mr. Hideaki Matsumoto
In the response after the eruption of Indonesia's Mount Semeru Volcano in December 2021 (https://sentinel-asia.org/EO/2021/article20211204ID.html), we were able to use the results of satellite image analysis by Sentinel Asia to get an overview of the situation and extent of the disaster, which enabled us to consider disaster surveillance plans while we were unable to approach the site after the disaster occurred. Especially, the pyroclastic flow extent map as well as the damage proxy maps provided by the Earth Observatory of Singapore - Remote Sensing Lab (EOS-RS), Nanyang Technological University, and the optical satellite image provided by Fromosat-5 were useful.
In addition, since volcanic eruption disasters affect a wide area and their characteristics change continuously, satellite images were very effective in quickly obtaining the situation over a wide area.

Furthermore, JICA made a presentation titled “the Practical utilization of Value added products (VAPs) for JICA operations” at the 28th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-28) held in Hanoi, Vietnam in November 2022. I think her presentation material may deepen your understanding.
https://sentinel-asia.org/meetings/APRSAF/pdf/03-15Nov_JAXA_AyaGOHO%20(002)_for%20public.pdf

Sentinel Asia Secretariat
JICA’s Global Agenda 20 states “Disaster Risk Reduction through Disaster Prevention and Reconstruction.” Could you briefly introduce your specific activities?

Mr. Hideaki Matsumoto
The Global Agenda outlines a policy of support for the disaster management field. First, we believe that the role of disaster reduction in society is not only to contribute to human security by protecting human lives from disasters, but also to contribute to sustainable development by reducing social and economic damage from disasters, in other words, by building the foundation for a stable society. To this end, we believe that efforts to promote disaster risk reduction through pre-disaster investment are most necessary, and this is our first priority. However, disaster risk reduction through pre-disaster investment takes time, and some disasters occur on a scale beyond our expectations. We believe that it is necessary not only to encourage disaster risk reduction efforts, but also to combine efforts to promote comprehensive disaster reduction measures throughout the country and the region. In reality, these two efforts take a considerable amount of time in some countries, during which time disaster damage often occurs. The third initiative is “Build Back Better,” which is not to reconstruct a city that will suffer the same kind of damage from a disaster, but to make it a more disaster-resistant region; and review the national and social systems to reconstruct a country and society that are resilient to natural disasters.

Sentinel Asia Secretariat
Regarding disaster risk reduction, it seems essential that all parts of the disaster cycle function in a sound manner. Please tell us how space technology can potentially contribute to this when you consider the collaboration with Sentinel Asia.

Mr. Hideaki Matsumoto
First, what we expect from Sentinel Asia are efforts from disaster emergency response to recovery, which are already taking place even now. If the disaster is widespread or in an area that is difficult to access, the availability of information by satellite would be very useful. I believe that as technology continues to develop and we can more accurately assess the extent of such damage in the future, it will lead to faster and more efficient disaster response and subsequent restoration and reconstruction discussions. In terms of the disaster cycle, in addition to emergency response and recovery/reconstruction as described above, there is also disaster prevention/mitigation and preparation. In disaster mitigation and prevention, it is necessary to understand the mechanisms of disasters and natural phenomena when planning disaster countermeasures, and for this purpose, it is necessary to track changes in topography and other factors from the past. Also, in preparations, if information can be obtained by satellite in a timely manner, it can be used effectively.

Sentinel Asia Secretariat
Disaster management is also a major part of the SDGs, and we would like to hear about any plans you have for the use of space technology in disaster management from the perspective of promoting

the SDGs.

Mr. Hideaki Matsumoto
As I mentioned when I explained about the Global Agenda, I believe that disaster management is the foundation and basis for sustainable development, and similarly, space technology can be the basis for promoting the SDGs. Relative to disaster management and disaster prevention, information on disaster hazards is necessary for disaster prevention and development considerations. I believe that we can contribute to the SDGs by providing society with information on disaster hazards through space technology and in combination with other technologies and knowledge.

Sentinel Asia Secretariat
In closing, please tell us about your aspirations as a Sentinel Asia member and your hopes and expectations for Sentinel Asia in the future.

Mr. Hideaki Matsumoto
The impetus for joining Sentinel Asia was the thought that satellite images would be very useful in considering reconstruction assistance, etc. In reality, however, I believe that most requests to activate Sentinel Asia are made by individual countries, which is the standard practice. Of course, JICA could also make a contribution by sending a request if a member authority of the affected country is unable to do so.

I think the biggest change since we joined is that we have become more actively involved in satellite and space technology in the field of disaster management, although this may have been driven by the times and society. I feel that this has led to a better understanding of space technology and, as a result, more opportunities to utilize it.

In order to make the best use of this information, we still do not have enough knowledge, and there are gaps in knowledge within the disaster management group, so we need to improve our level of knowledge within JICA. We have also heard that communicating needs from the user side and providing feedback on the results of use are effective in improving satellite technology. I also believe that the use of space technology in JICA will promote its use. We hope to make even a small contribution with the awareness that we are not just users of space technology, but also stakeholders in it.

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4. How to send an Emergency Observation Request

JPT member organizations are entitled to send an Emergency Observation Request (EOR) for disasters in the Asia-Pacific region. Please refer to https://sentinel-asia.org/e-learning/Emergency_Observation_Request.html.

EOR Order Desk:
Asian Disaster Reduction Center (ADRC)
HP: http://www.adrc.asia/
E-mail: sarequest@adrc.asia
FAX: +81-78-262-5546,
TEL: +81-78-262-5540

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5. Using Sentinel Asia Operation System, OPTEMIS

Sentinel Asia launched a new operation system, OPTEMIS. Please refer to the website on how to create an account for OPTEMIS. https://sentinel-asia.org/e-learning/Emergency_Observation_Request.html

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