

# LINKING SENTINEL ASIA STEP3 TO SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION



**Giriraj Amarnath**

*International Water Management Institute (IWMI), Sri Lanka*

**JPTM 2018 Awaji (02 Nov 2018)**

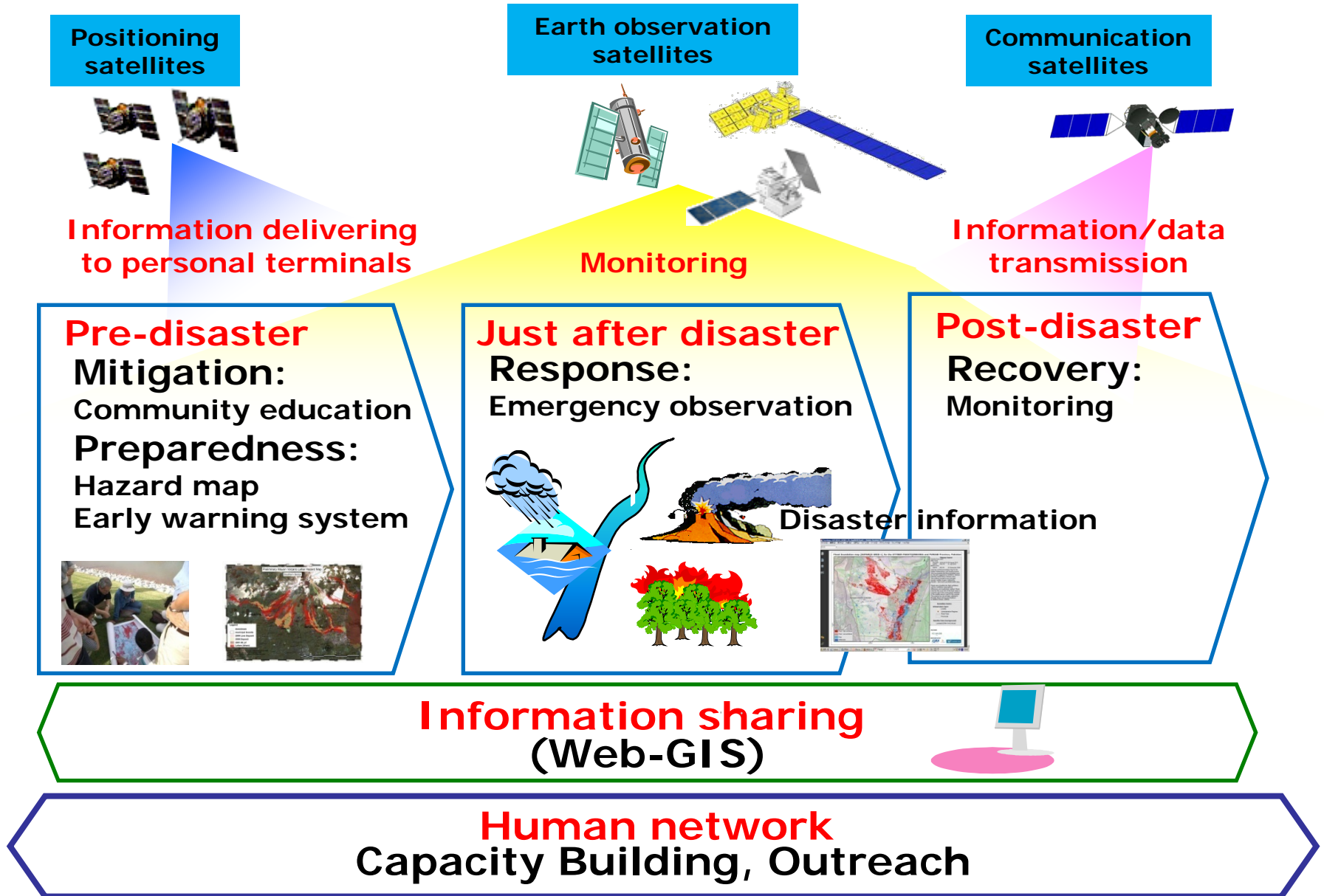
**Hyogo, Japan**

**'Space' has a lot to contribute to Sendai Framework**

# Background

- The Sentinel Asia is an initiative to share space based data and information such as earth observation satellite images through partnerships network and through a dedicated website, aiming at contributing to more practical and effective disaster management activities in the Asia-Pacific region.
- A step-by-step approach was adopted for the implementation of Sentinel Asia. In the current step, the **STEP 3**, it is expected to implement not only emergency observation but activities covering **entire disaster management cycle** including **mitigation/preparedness** and **recovery phase** after a disaster so that the space-based technology would contribute to more activities for mitigation/prevention of natural disasters in Asia and the Pacific.
- To achieve these goals of STEP 3, Steering Committee will review previous activities, identify problems, propose solutions and lead to implement those suggested ideas and **proposals to enhance the contribution of space based technology to DRR** (Disaster Risk Reduction) by closely working with technical agencies as well as end user agencies related to DRR.

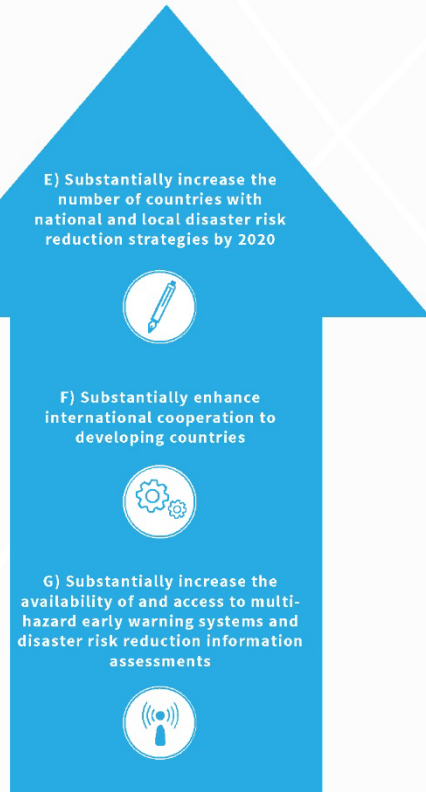
# Concept of Sentinel Asia Step 3



Strengthening cooperation among SA  
Step3 members towards  
implementation of Sendai framework  
for DRR?

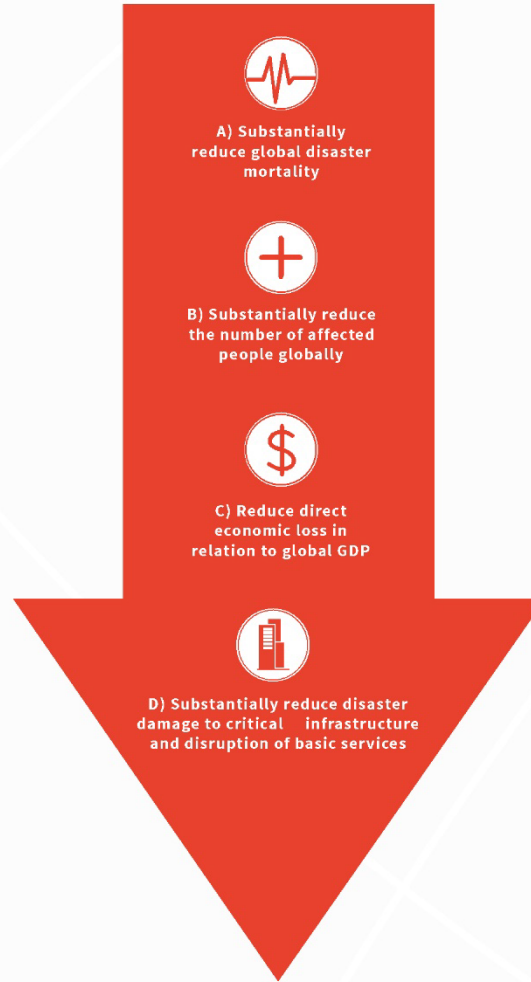
# Seven targets of the Sendai Framework

The seven global targets of the Sendai Framework will significantly contribute to the achievement of the Sustainable Development Goals.



**Substantially Increase**

**Substantially Reduce**



**UNISDR**  
The United Nations Office for Disaster Risk Reduction

In support of the Sendai Framework for Disaster Risk Reduction 2015 - 2030



# How the Sustainable Development Goals contribute to the Sendai Framework

In September 2015, more than 190 world leaders committed to the 17 Sustainable Development Goals to help end extreme poverty, fight inequality, combat climate change, and build resilience to disasters. While all the Sustainable Development Goals are relevant for building a sustainable and resilient world, a number of them have targets directly or indirectly related to disaster risk reduction. Implementing the Sustainable Development Goals also contributes to achieving the goal of the Sendai Framework to prevent new and reduce existing disaster risk, and strengthen resilience.

**TARGET 2.4** By 2030, ensure sustainable food production systems to implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

**TARGET 3.D** Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

**TARGET 1.5** By 2030, build resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

**TARGET 6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

**TARGET 4.A** Build and upgrade educational facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective environment for all.

**TARGET 9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access to all.

**TARGET 11.5** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to GDP caused by disasters, including water-related disasters, with focus on protecting the poor and people in vulnerable situations.

**TARGET 9.A** Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States.

**TARGET 11.B** By 2020 substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion resources efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

**TARGET 13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

**TARGET 13.3** Improve education, awareness raising and human and institutional capacity on climate change, mitigation, adaptation, impact reduction and early warning.

**TARGET 15.3** By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

**TARGET 14.2** By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.



# Important synergies exist between reporting on the two frameworks.

Sendai Framework  
for Disaster Risk Reduction  
2015-2030

SUSTAINABLE DEVELOPMENT GOALS

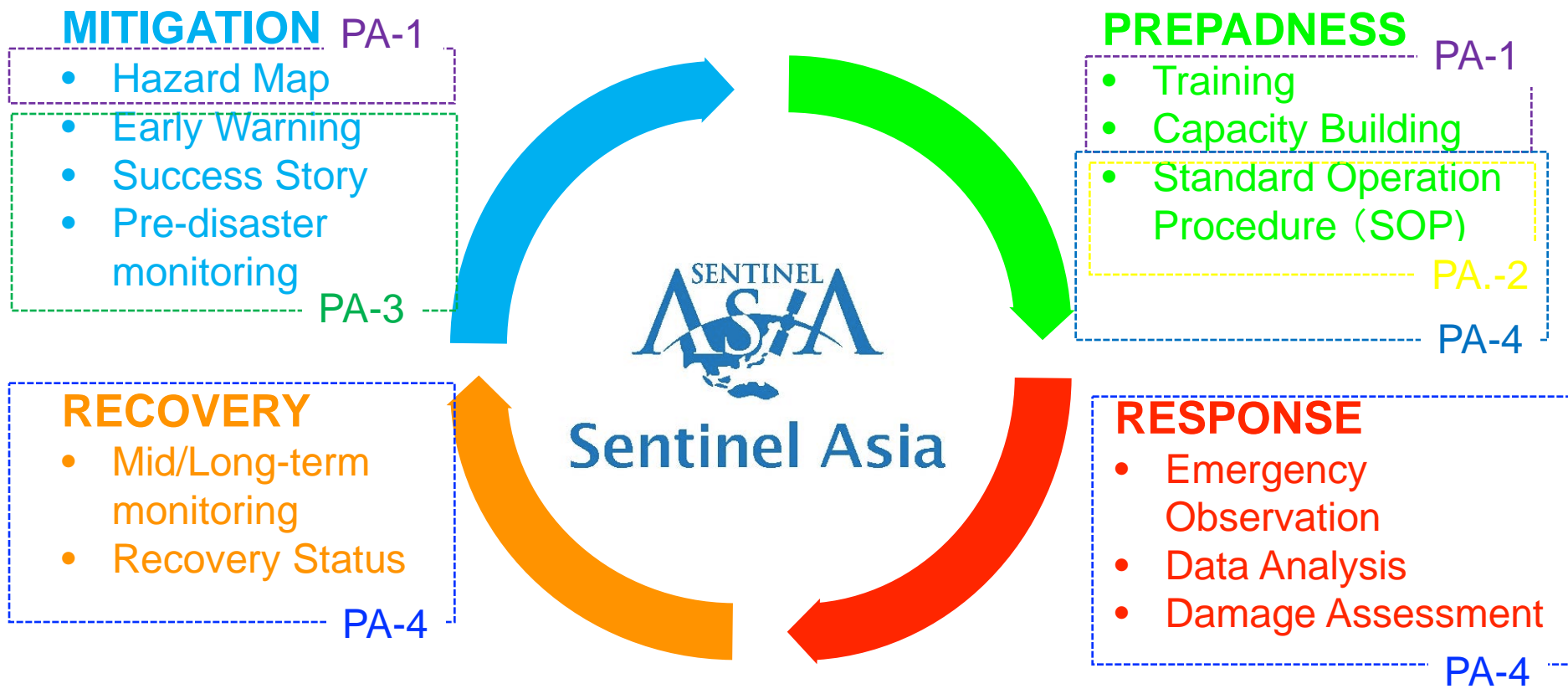


Monitoring of the Sendai Framework is intended to complement monitoring of 11 SDG indicators

[https://www.preventionweb.net/files/54970\\_techguidancefdigitalhr.pdf](https://www.preventionweb.net/files/54970_techguidancefdigitalhr.pdf)

# Concept of SA Strategic Plan

“Challenges for Disaster Risk Reduction by a Collaboration between Space and Disaster Management Agencies”



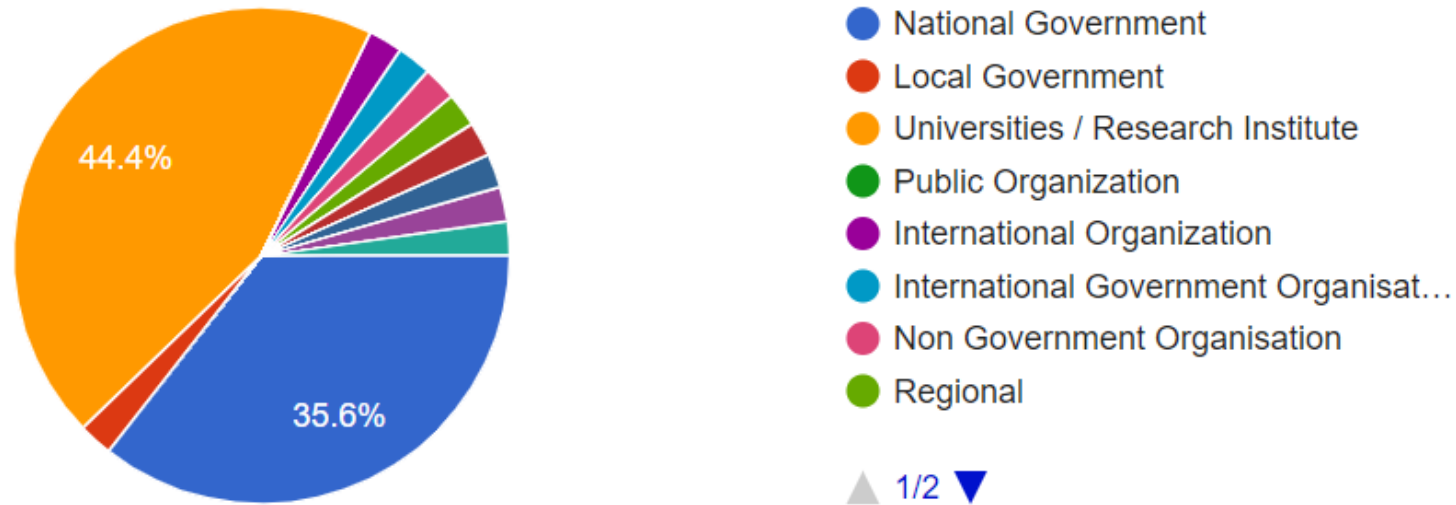


# Survey on priority actions for Sentinel Asia Step 3 data to implement the SFDRR

**Shiro kawakita, JAXA coordinated the survey activities with JPTM mem**

# Organization

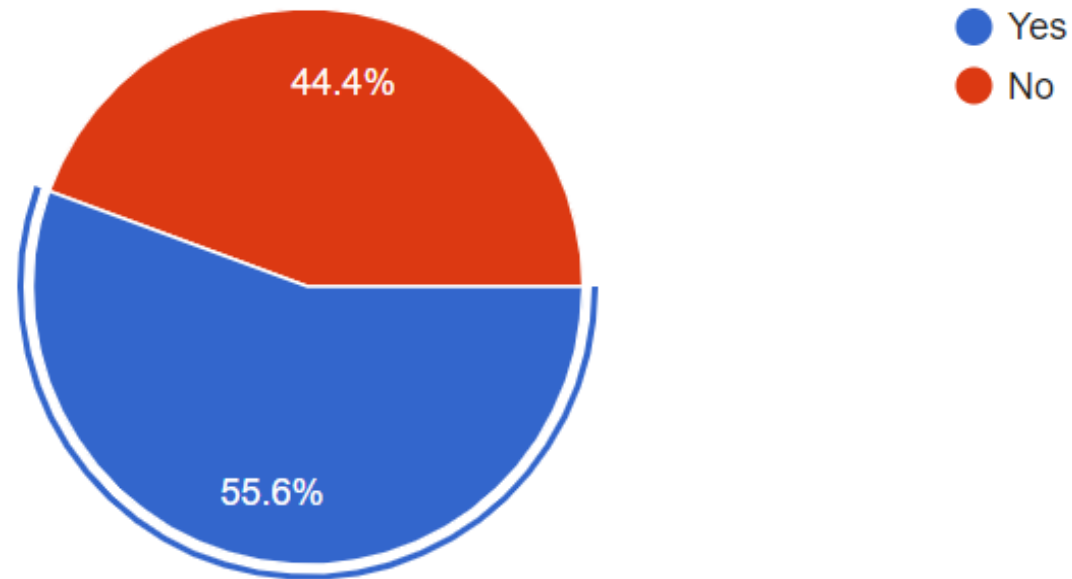
45 responses



Note: Requesting SA Secretariat to re-send the survey form with all JPTM members for those you have not responded as well as to new members. We would like to publish a summary document early next year.

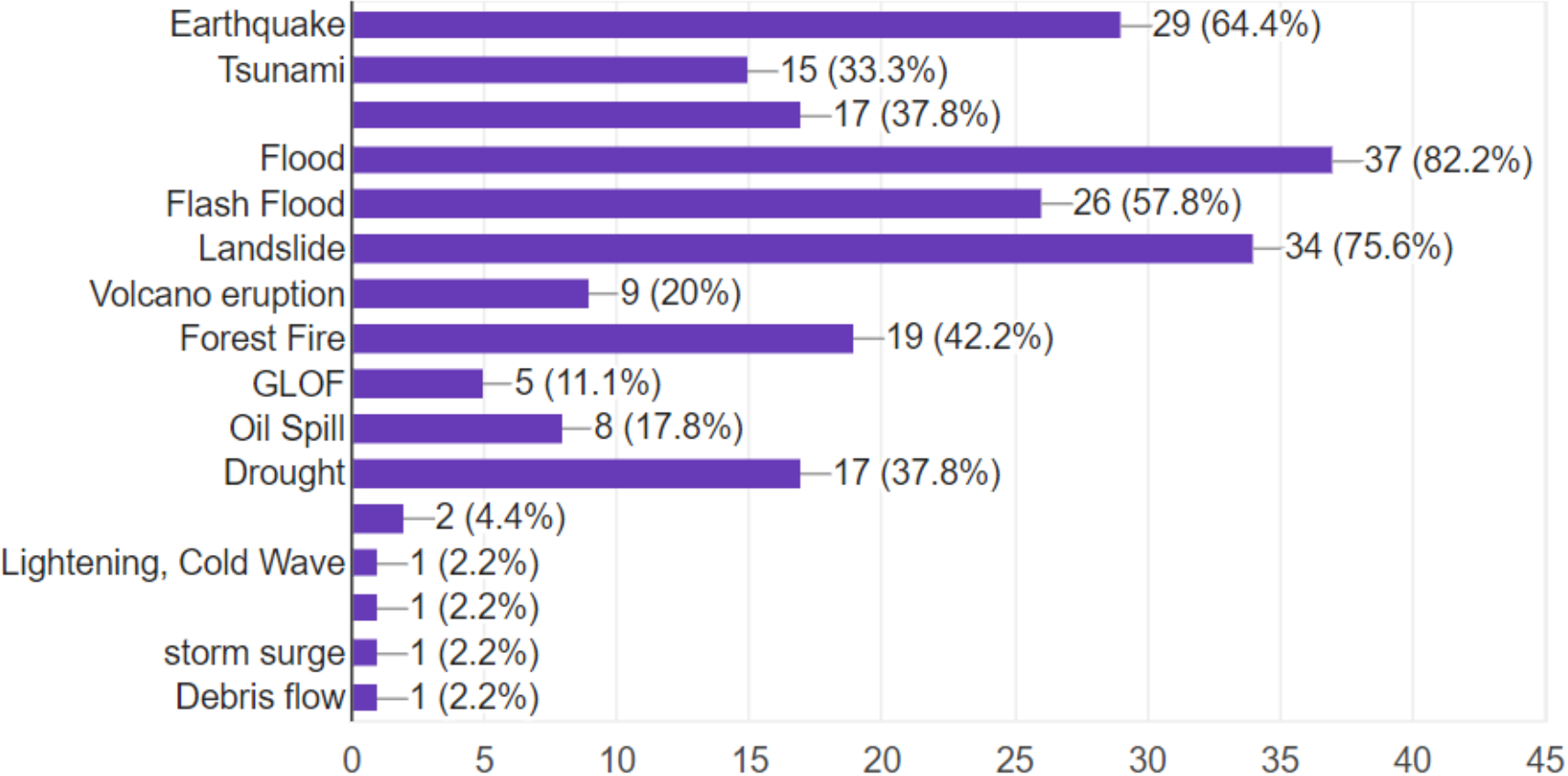
# Have you ever requested Emergency Observation Request through Sentinel Asia?

45 responses



# Which of the following natural hazard have you experienced in your country of residence? (Multiple choice)

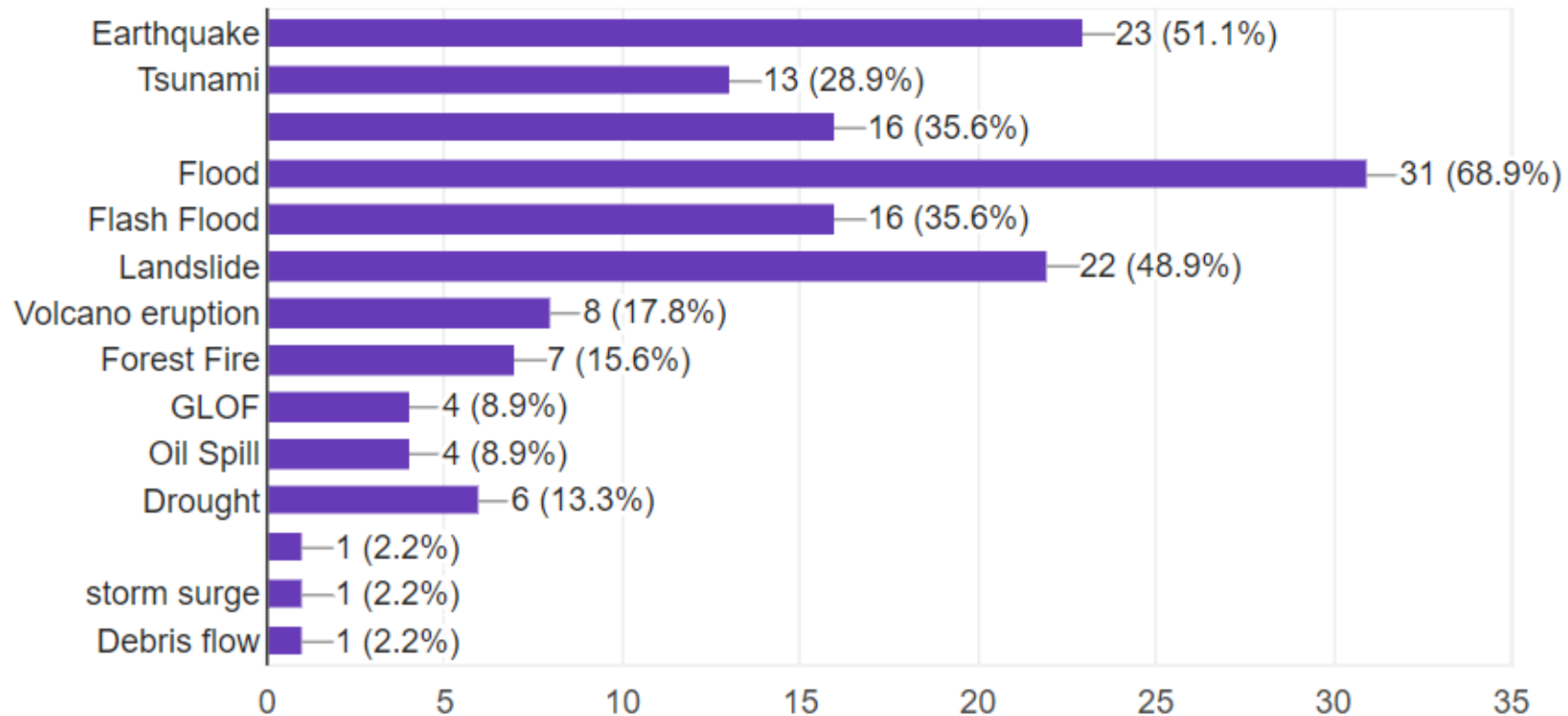
45 responses





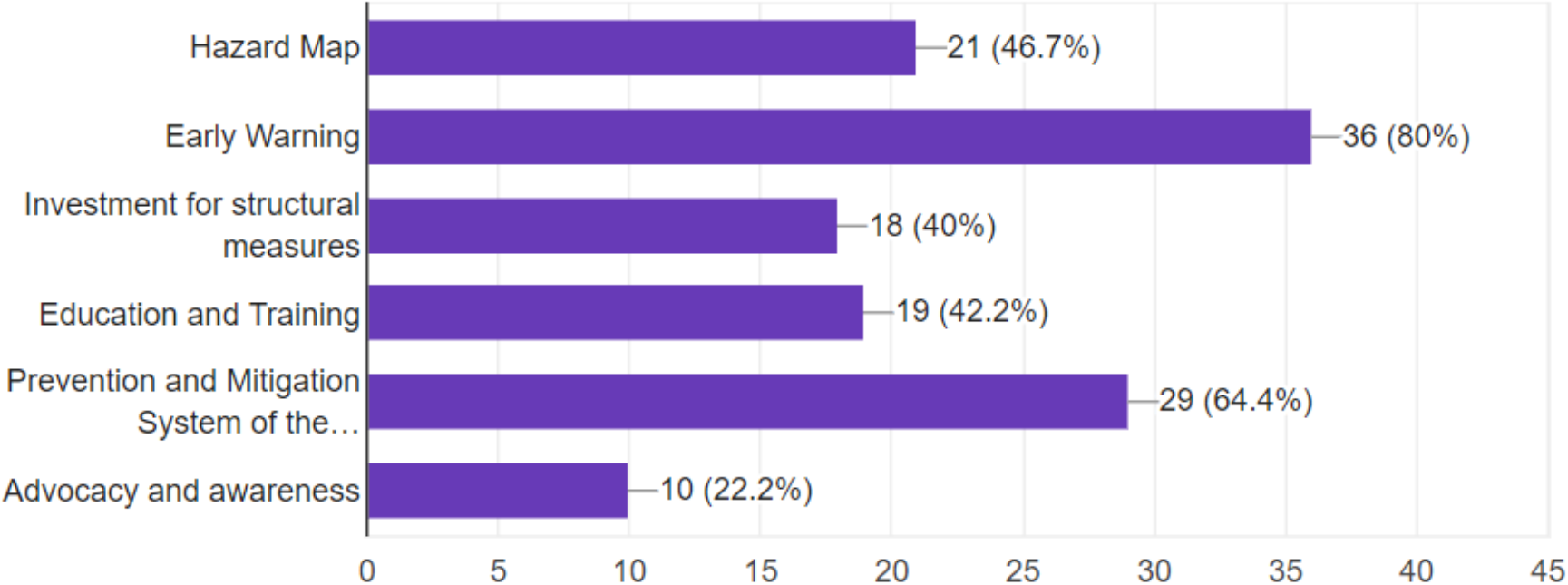
# Which of the following natural hazard caused the most severe loss and damage in your country of residence? (Multiple choice)

45 responses



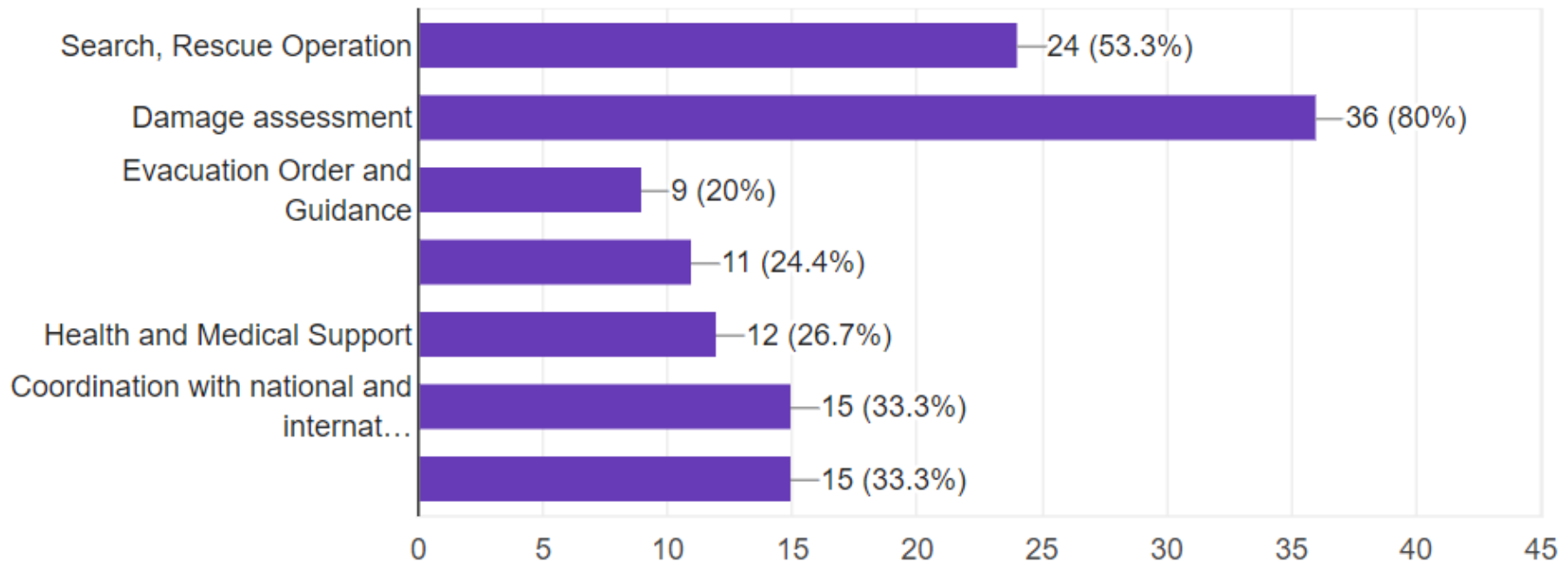
# Which of the following activities were most challenging during the pre-disaster phase ? (Multiple choice)

45 responses



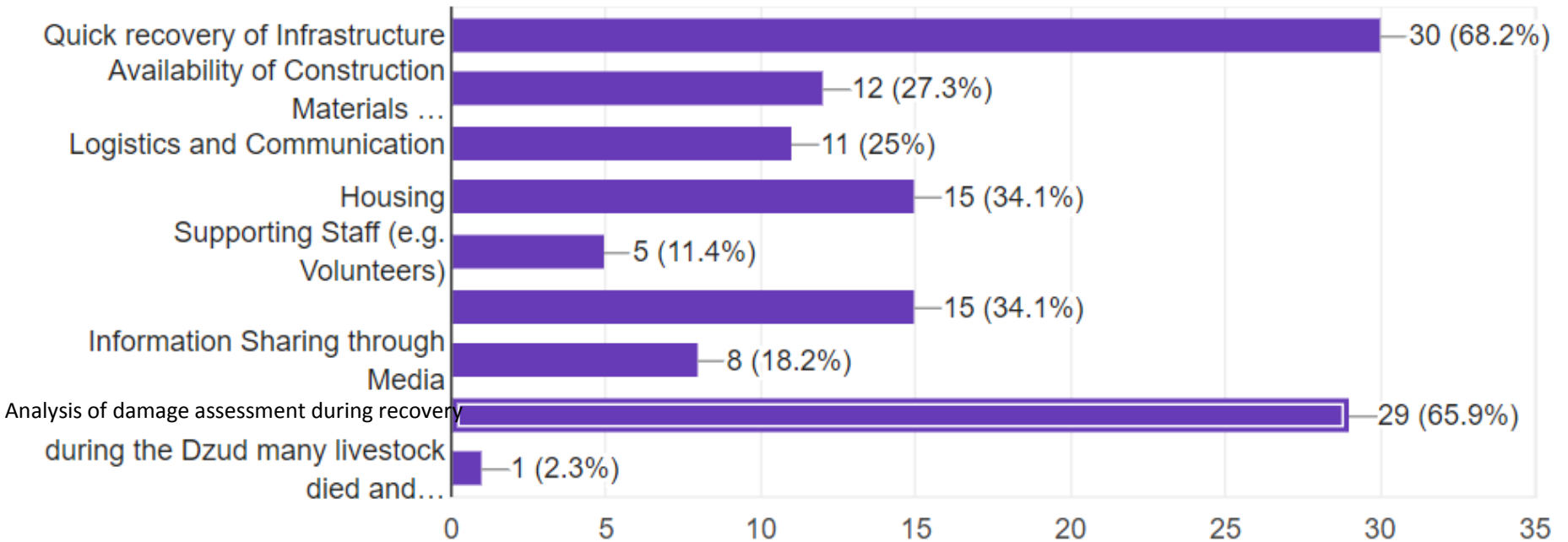
# Which of the following emergency response activities were most challenging? (Multiple choice)

45 responses



# Which of the following activities were most challenging in recovery and reconstruction phase? (Multiple choice)

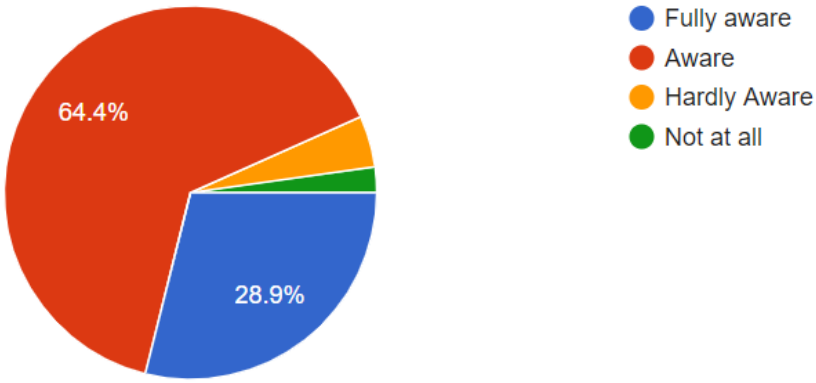
44 responses





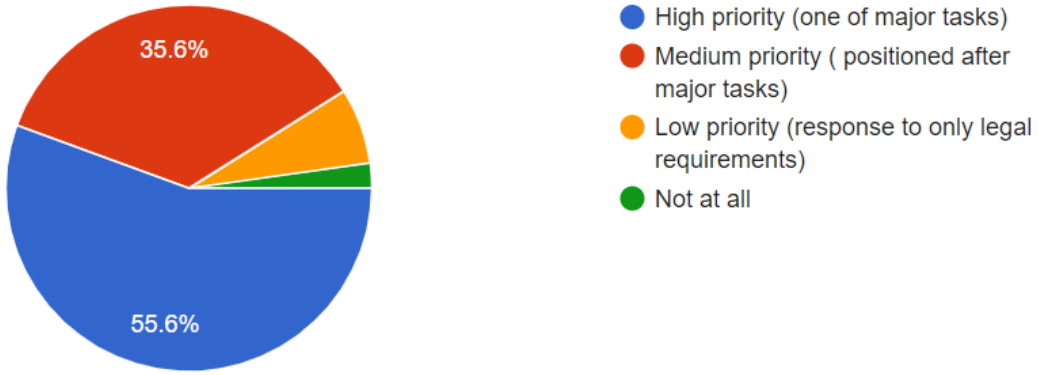
# Are you aware of Sentinel Asia Step3 for Disaster Risk Reduction?

45 responses



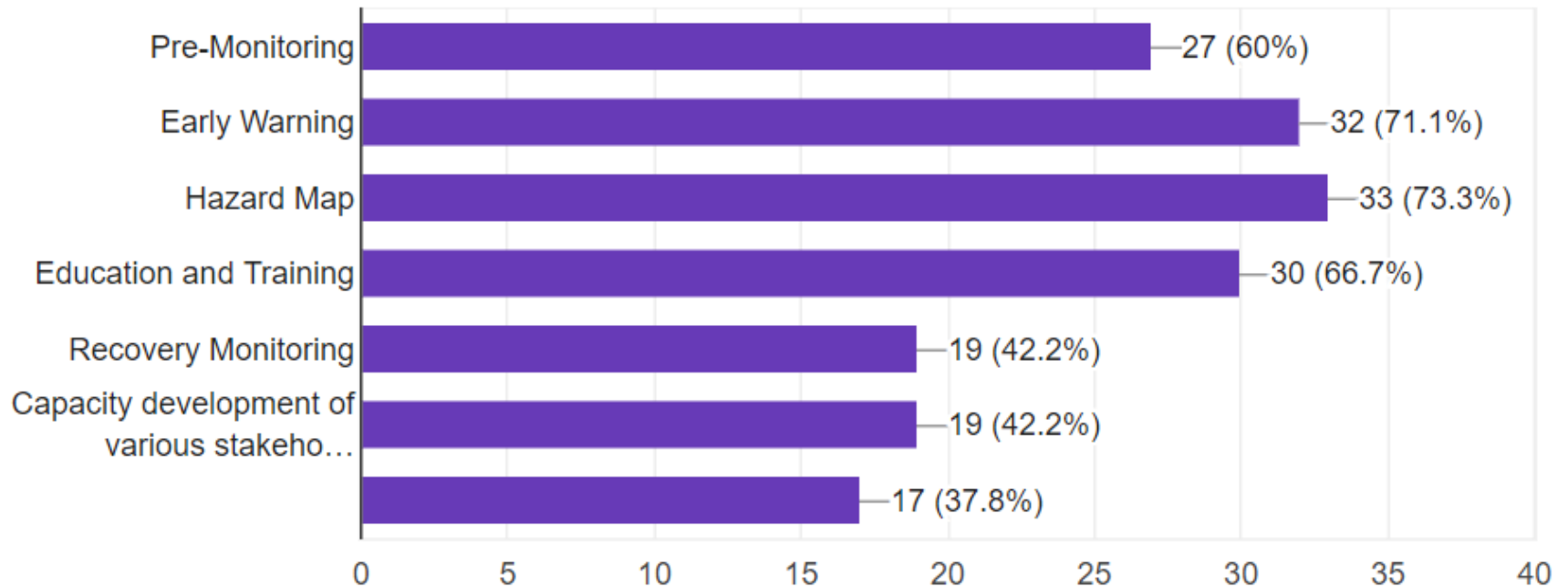
# How do you position disaster risk reduction in your organization?

45 responses



# What do you expect Sentinel Asia Step3 for your work? (Multiple Choice)

45 responses



## Summary (1)

- Better coordination with space agencies and emergency response agencies to utilize maps in relief operations. Require additional efforts to promote knowledge products and customization;
- Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction and Capacity Development for disaster risk reduction.
- Need to explore new approach/tools and technologies to understand the risks and also various ways of enhancing disaster preparedness to build back better and also in quick recovery and rehabilitation.
- To develop proof-of-concept (all phases of disaster cycle) on listed priority of Sendai DRR framework and ensure government can use a successful case study for wider implementation in achieving the targets by 2030.

## Summary (1)

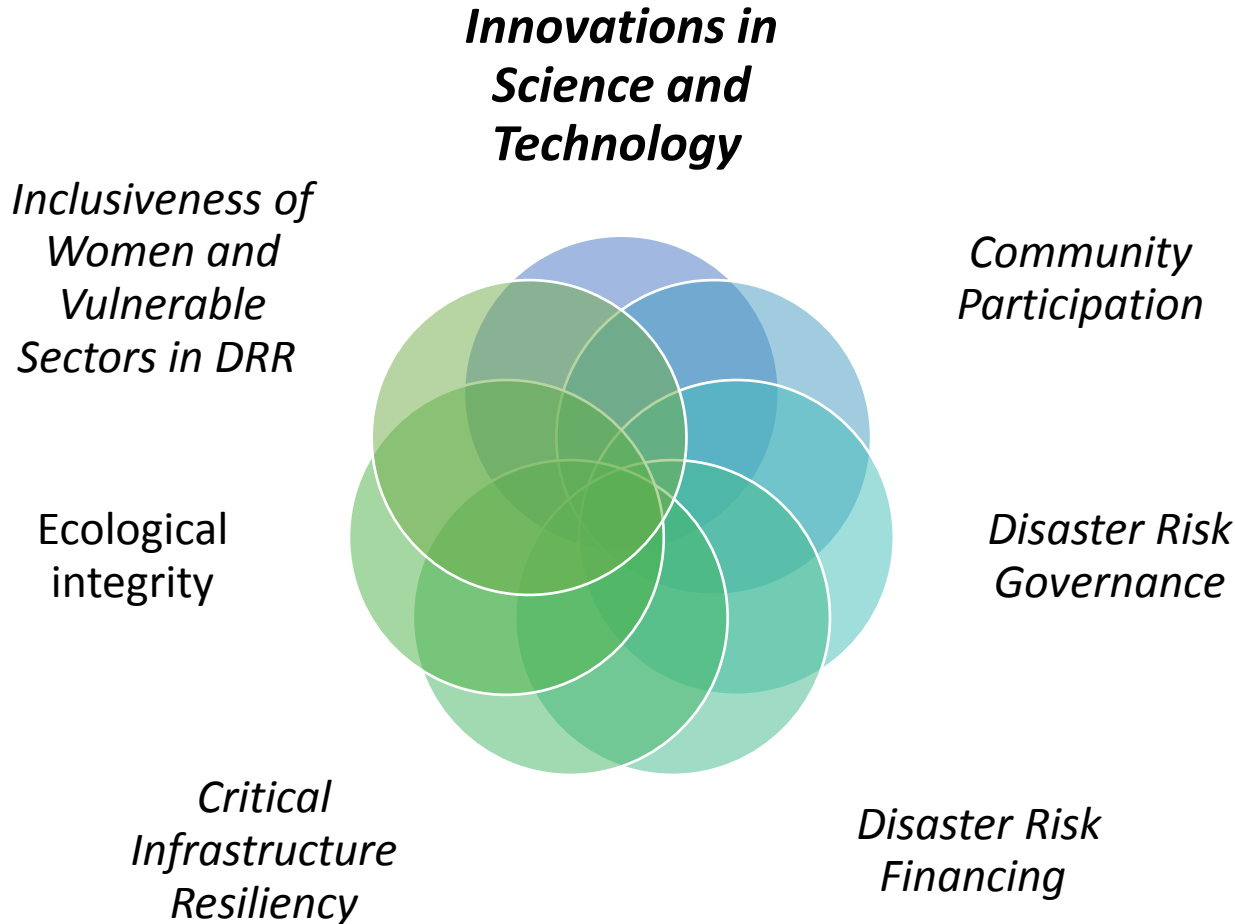
- Need to ensure countries in Asian region are well aware of Step3 to develop partnership and network for disaster risk reduction measures to minimize losses and protect livelihood.
- Implementation of a Knowledge Management System, to enable users of data to share best practices on the use and application of space-based data and services provided by Sentinel Asia.
- Share more data and information, as well as good experiences and research results for all members.
- Capacity building and awareness on topics ranging from disaster risk governance, innovative early recovery phase assessment, enhance preparedness for effective emergency response phase



# How to engage with SAS Step3 SFDRR

*Next 10 years priority*

Priorities that could help Sentinel Asia Step 3 bridge the gap between space and disaster management agencies



**ENABLING ENVIRONMENT FOR DISASTER RISK REDUCTION**

**Community Participation.** DRR interventions are most effective when the affected communities and economic actors are actively engaged in each phase of DRR by improving **collaboration** between employers and employees and producers and consumers. They should be empowered by **providing them with the necessary information to reduce the risk, prepare, cope and recover from disasters** and by actively involving them in planning and program design and implementation. Fostering action at the local level should also help ensure the inclusivity and sustainability of DRR.



*Disaster Risk Governance.* Disaster risk governance anchored in a whole-of-society and ecosystem-based approach provides the foundation for the effective implementation of a DRR framework. This approach entails streamlining and fostering collaboration and mutual reinforcement across mechanisms and institutions, not only domestically but in the whole Asia-Pacific community. It is important to encourage collaboration between public and private sectors in creating incentives and supporting policies and actions that encourage risk reduction.





**Disaster Risk Financing.** Strong financial systems and tools provide a stable backbone for a DRR framework. These systems should help community prevention, mitigation, preparedness, and recovery to disasters by providing access to resources that supports management of impacts on people, the economy, and ecological systems. Disaster risk financing, such as insurance, should incentivize DRR actions and policies.



## ***Innovations in Science and Technology.***

Science and technology offer innovative solutions and approaches that are indispensable in responding to the complex challenges of the new normal. Science and Technology can now be used to identify the level of disaster risk which is a consideration for economic investment in infrastructure, production, and distribution by both the public and the private sector. **Harnessing scientific and technological innovations** through an enabling, **science-based policy environment** can lead to more timely, accurate, and responsive weather forecasts, hazard mapping, disaster mitigating and resilient technologies, and continuing development of new food technologies as well as developing solutions to changing climate patterns affecting agricultural production, health conditions, and the strength of critical infrastructure and lifelines.



**Critical Infrastructure Resiliency.** The resiliency of critical infrastructure is vital to ensuring the successful implementation of this DRR framework. Critical infrastructure includes water, energy, transportation, road networks, communication, public health, and financial services. Together, this infrastructure ensures the continuity of supply chains which empower the Asia-pacific region.



**Ecological Integrity.** Preserving ecological integrity through conscious environmental management, conservation, rehabilitation, and protection is expected to minimize the vulnerability and risks that Asia-Pacific communities are exposed to in the Asia-Pacific region. It also helps to ensure the resiliency of communities, which would reduce the potential disruptions caused by disasters.



***Inclusiveness of Women and Vulnerable Sectors in DRR.*** DRR should take a holistic, proactive, multi-stakeholder, whole-of-society based approach inclusive of the different concerns and perspectives of **women, youth**, the elderly, persons with disabilities (PWDs) and other sectors. Addressing the needs of women and vulnerable groups in DRR is critical to ensuring resiliency of communities. It is thus imperative that the vulnerabilities, needs, and capacities of women, youth, elderly, PWDs and other vulnerable sectors be assessed to address their specific needs. Platforms for their engagement in planning process, and policy- and decision-making activities should also be established and sustained.





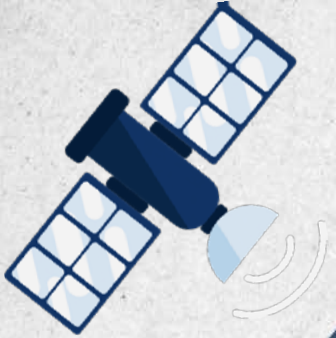
# Strategic focus

- **Engage with SAS initiative of APRSAF** that contributes to Step3 implementation in Sendai Framework of DRR and aligned global agenda on SDGs, and Climate Change Agreement
- **Plan national, regional and international activities** to promote use of Earth observation in risk mapping, early warning, preparing for emergencies etc.
- **Seek Sentinel Asia cooperation** to get support at national level for capacity building on all phases of disaster risk management
- **Develop pilot projects with Sentinel Asia** to achieve specific actions of linking space agencies and NDMO
- **Support Global Partnership on Earth Observation** to promote space in implementation of Sendai Framework

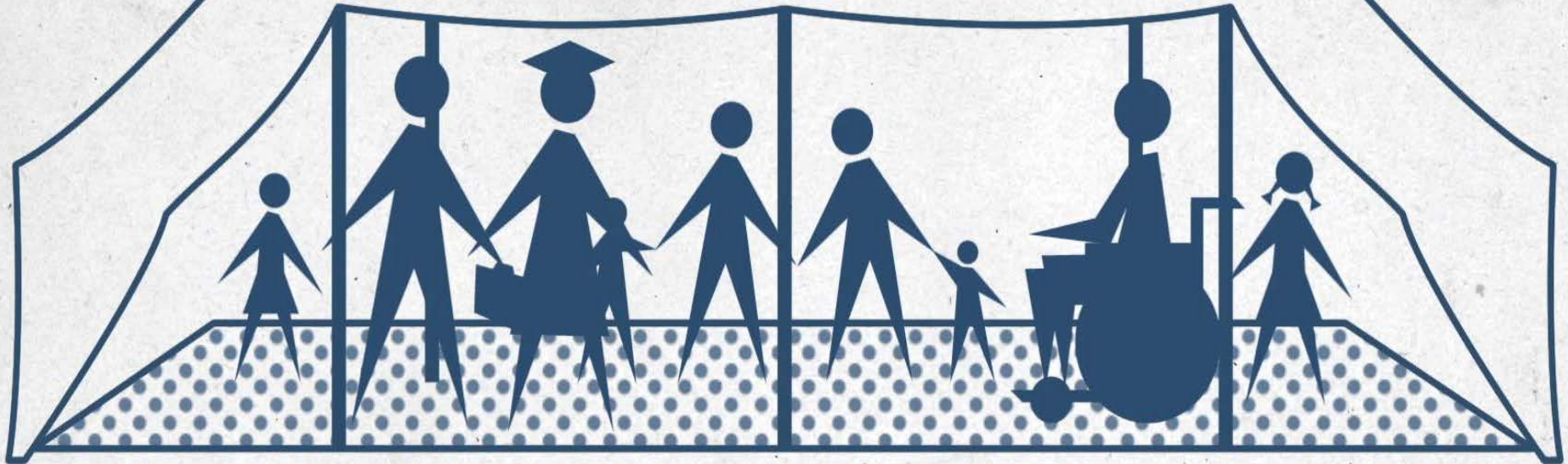
## Proposal / Suggestion to SA Secretariat and JPTM Members

- IWMI and AIT discussed on developing a major capacity building program among JPTM members in regard to promotion of advance earth observation data, ICT, Modeling tools and thematic applications in DRR, CCA and Development initiatives. Scope the initiative includes:
  - To promote advanced science and technology to manage disaster risks
  - Theme Areas : All Stages of Disaster Management
  - Improve existing curriculum on DRR, RS/GIS including MOOCs
  - Project case studies with public-private sector
- The capacity building efforts will be key in promoting disaster sciences and development in regard to SFDRR and SDG;
- Ideally, a consortium with partners in SA/JPTM, government and development partners could develop the proposal.





ENSURING THAT **KNOWLEDGE,**  
**SCIENCE** AND **DATA** ARE AVAILABLE TO ALL



Thank You