

Introduction to
**the National Disaster Management
Research Institute (NDMI)**

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Ministry of the Interior and Safety
**National Disaster Management
Research Institute**



NDMI's history

"Disaster Safety Leading Global Think Tank"

1997 - NOW



- 1997 • Opening of the National Institute for Disaster Prevention (NIDP) under the Ministry of the Interior
- 2004 • Transformed into the National Emergency Management Agency (NEMA)
- 2011 • Reorganized under the Ministry of Public Administration and Security (MOPAS)
- 2013 • Changed to the National Disaster Management Institute (NDMI)
Transformed into the executive agency under the Ministry of Security and Public Administration (MOSPA)
- 2014 • Transformed into the agency under the Ministry of Public Safety and Security (MPSS)
- 2015 • Moved to the Ulsan city from Seoul
- 2017 • Transformed into the agency under the Ministry of the Interior and Safety (MOIS)





Mission and roles

NDMI



-  Enactment and revision of safety and security law, system improvement, and guideline establishment
-  Research and development of disaster prevention, mitigation, and recovery techniques
-  Management and analysis of disaster information including GIS, satellite imagery, SNS, and UAV
-  Establishment of global cooperation networks for disaster management and research





Technical needs for disaster management



Promptly supporting decision making

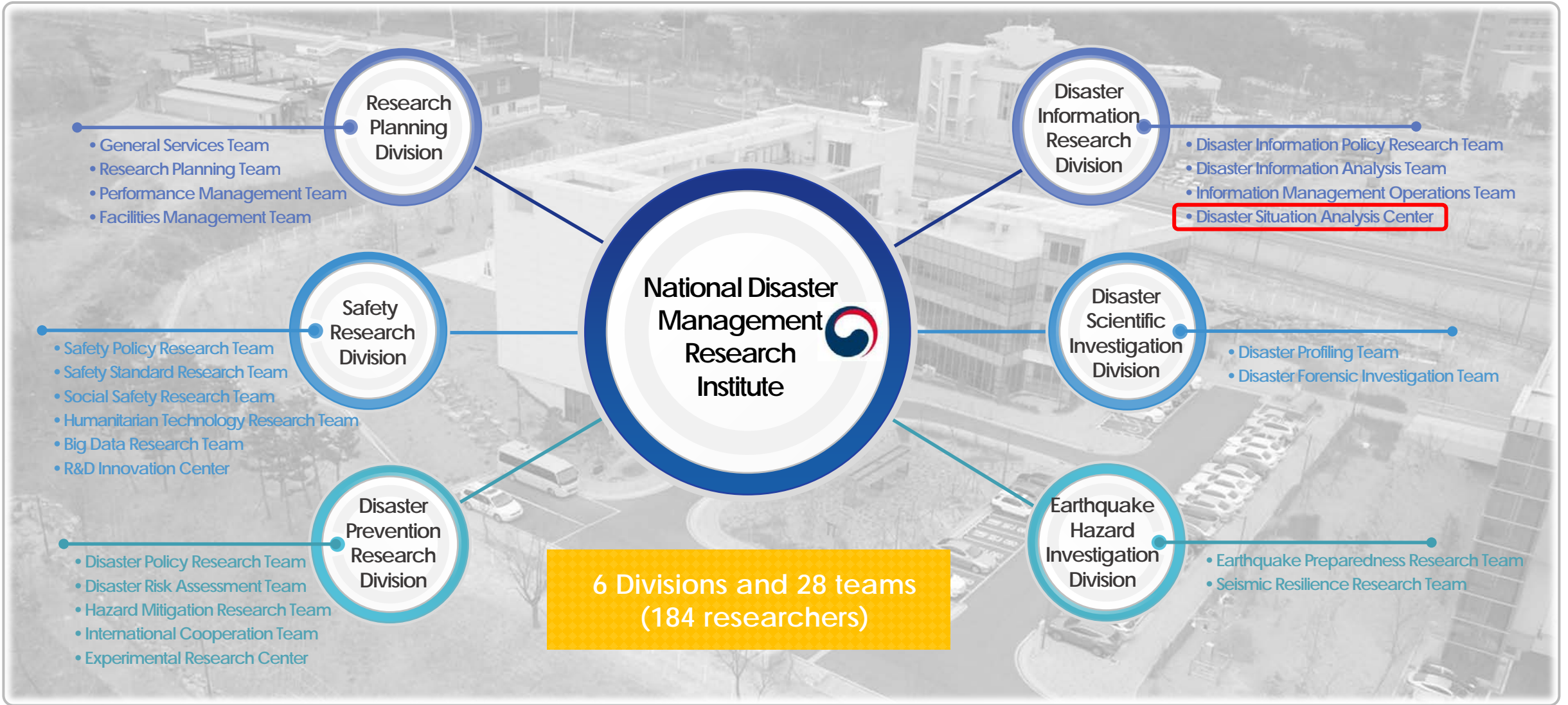
MOIS



-  Establishing, administering and controlling, total coordinating policies of safety and security
-  Tasks of fire-fighting and disaster prevention
-  Tasks of emergency preparedness and civil defense
-  Security, safety, preventing pollution in the ocean and investigating maritime incidents



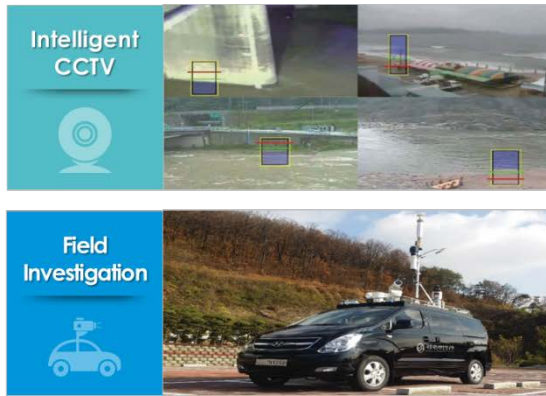
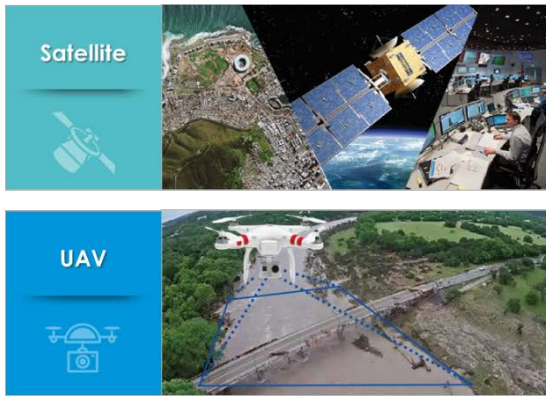
Organization chart



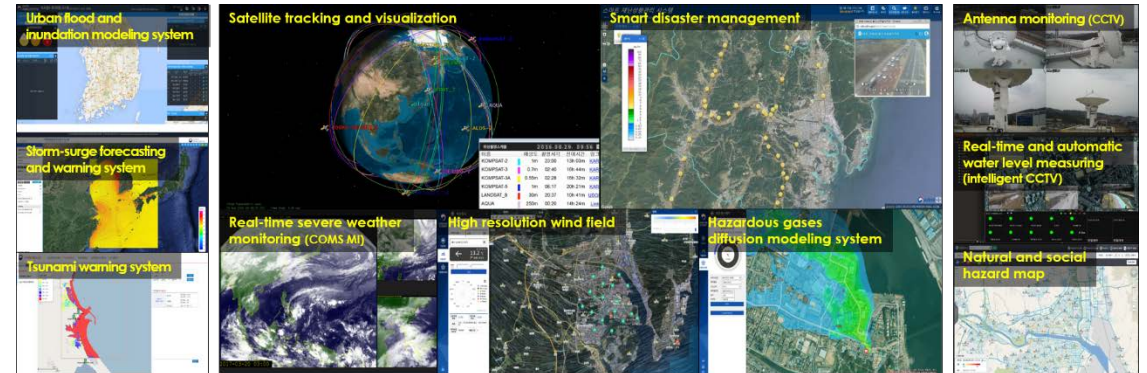


Disaster Situation Analysis Center (DSAC)

New technology development



Disaster detection and modeling



Total 34 disaster monitoring and modeling systems were developed by the NDMI's technology

Decision making support

- Participating in the daily video conference with the minister of MPSS and officers of Korean government since May 2016



Disaster inspection report on Typhoon "Chaba" (Oct 2016)

- Prompt analysis reports on different disasters including wild fire, storm-surge, heavy snow, flood and drought



Report on maximum possible sea level rise (Mar 2017)



Provision of damage prediction from storm-surge along seashore to MPSS and local governments

Simulation of hazardous gases spreading within a chemical complex in the Ulsan city



Support of establishing disaster response systems and scenarios for federal and local governments

Provision of natural and social hazard maps to local governments considering their locality

Public relations and training programs



Life-friendly education



Technical tour of NDMI



Experience training programs



Customized safety public relations



Disaster Situation Analysis Center (DSAC)

Ground Station



Server room



Security room



Monitoring room

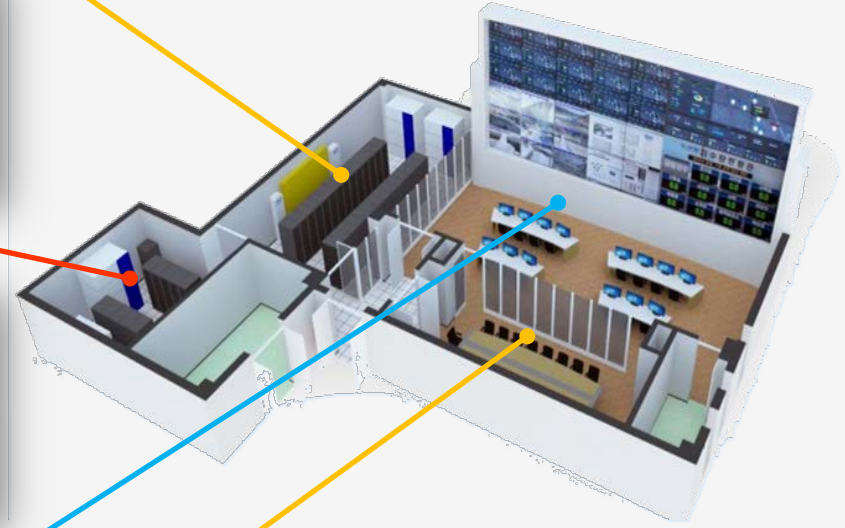


Buildings Cost

\$ 30 Million (USD)

Research Equipment

\$ 6 Million (USD)



Meeting room



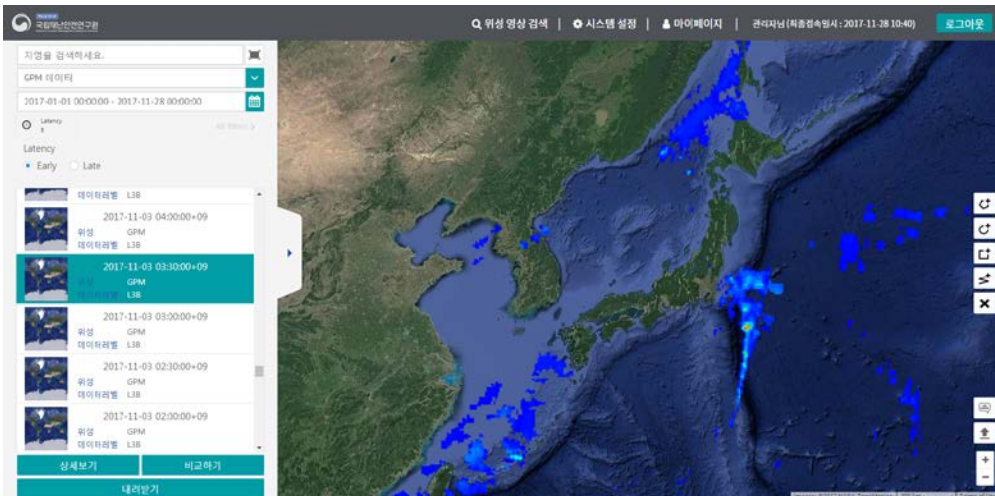
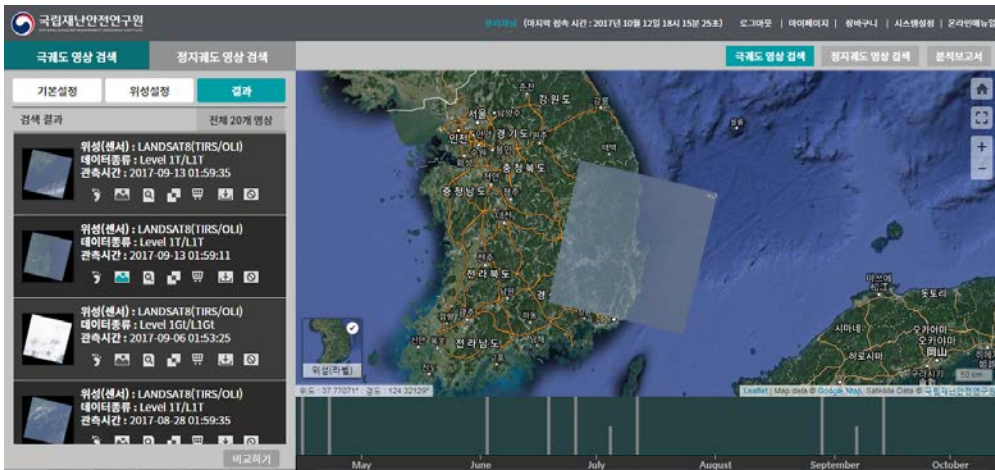
Auditorium (2F)





Disaster Situation Analysis Center (DSAC)

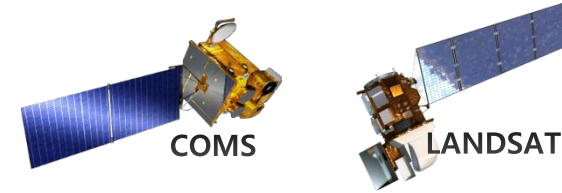
Catalog Systems



For receiving via antennas

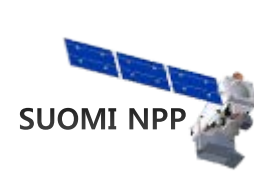


For receiving via networks



COMS

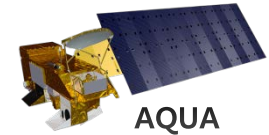
LANDSAT-8



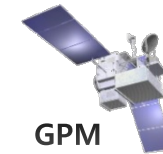
SUOMI NPP



TERRA



AQUA



GPM



Sentinel-1A/B



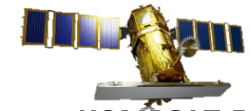
Sentinel-2A/B



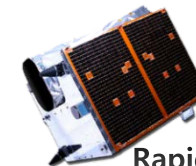
KOMPSAT 3



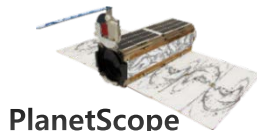
KOMPSAT 3A



KOMPSAT 5



RapidEye



PlanetScope

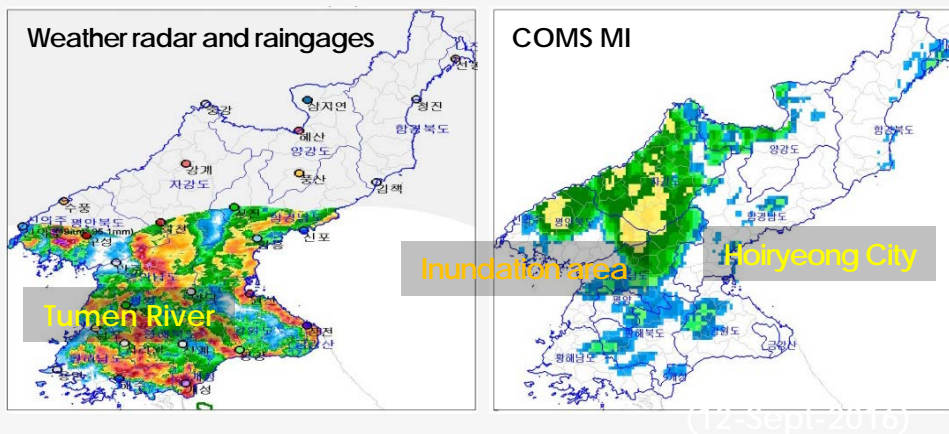


Satellite applications

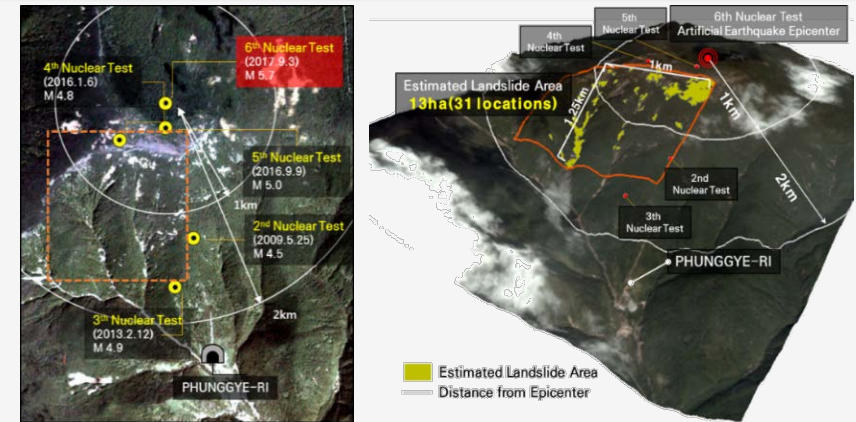
Flood inundation estimation in North Korea (COMS)



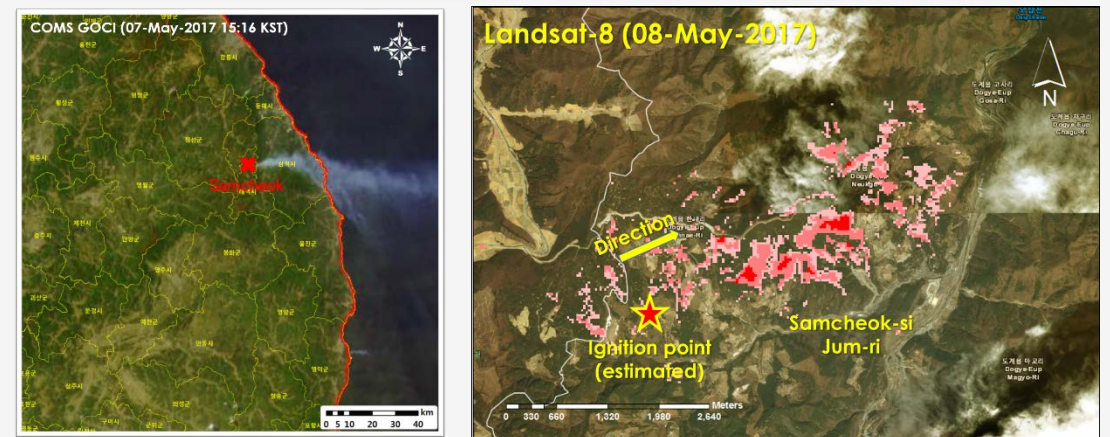
Daily rainfall monitoring in North Korea (COMS)



Vertical displacement by the 6th Nuclear test in North Korea (SAR)



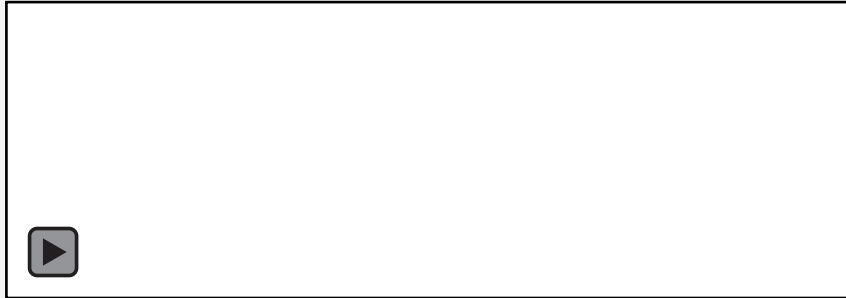
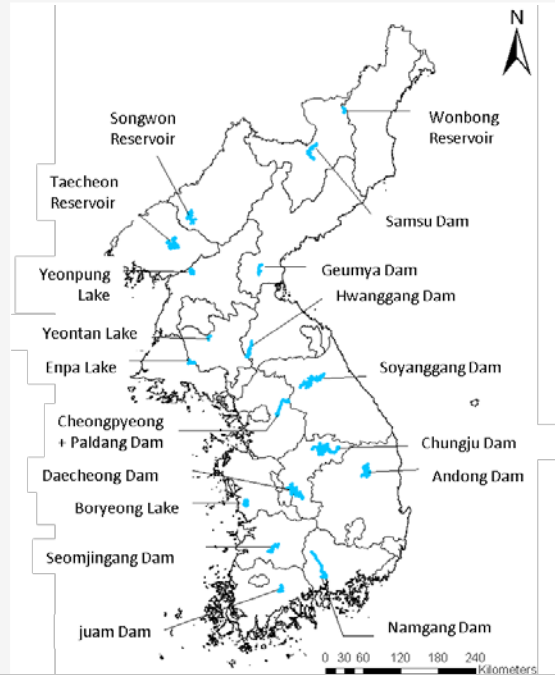
Estimation of burnt area by wild fire in South Korea (Landsat-8)



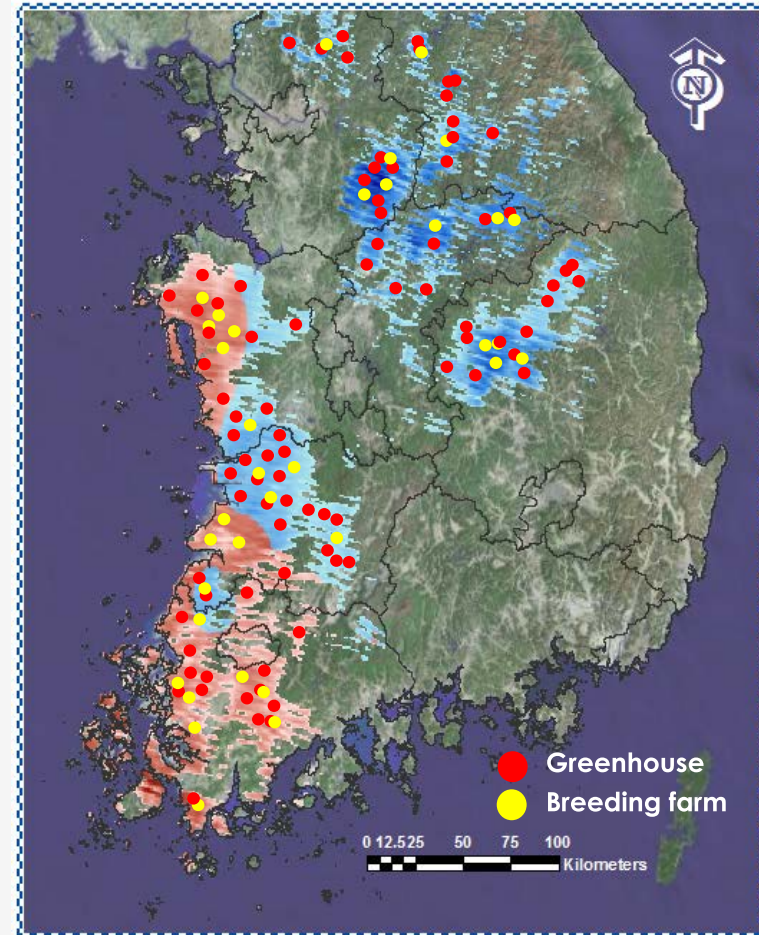


Satellite applications

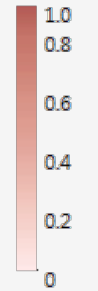
Change monitoring in water surface area (Landsat-8 & Sentinel-1)



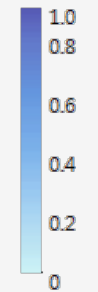
Risk analysis of temporary buildings against heavy snow (MODIS)



Wet snow index



Dry snow index



● Greenhouse
● Breeding farm



Satellite applications

Earthquake in Pohang

Emergency Observation Request (EOR)



(joined in 2017)



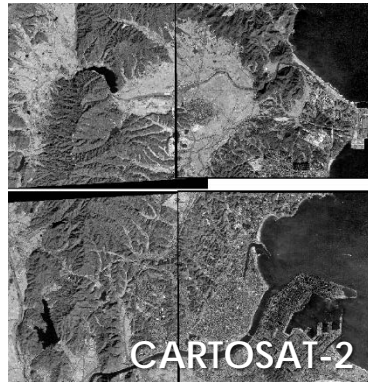
(joined in 2011)



science for a changing world
(MOU in 2017)



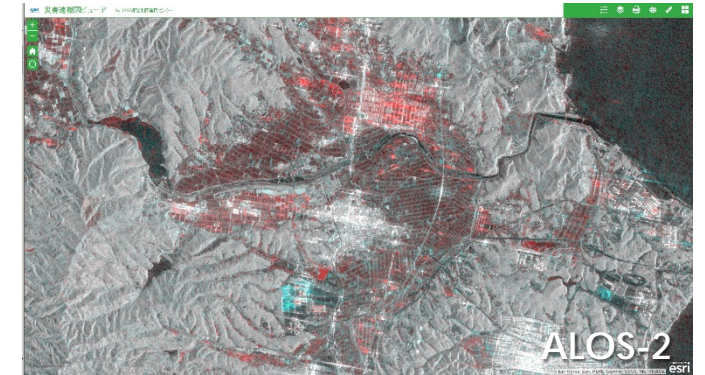
KOMPSAT-3



CARTOSAT-2



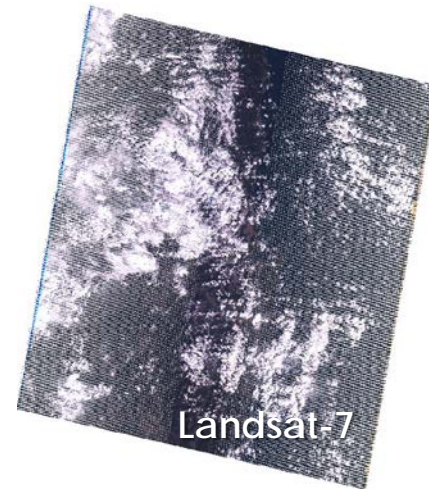
Pleiades



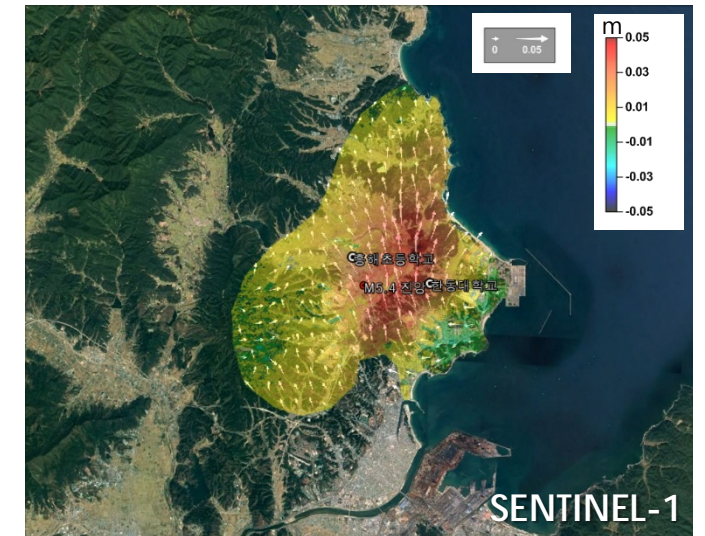
ALOS-2



ResureP



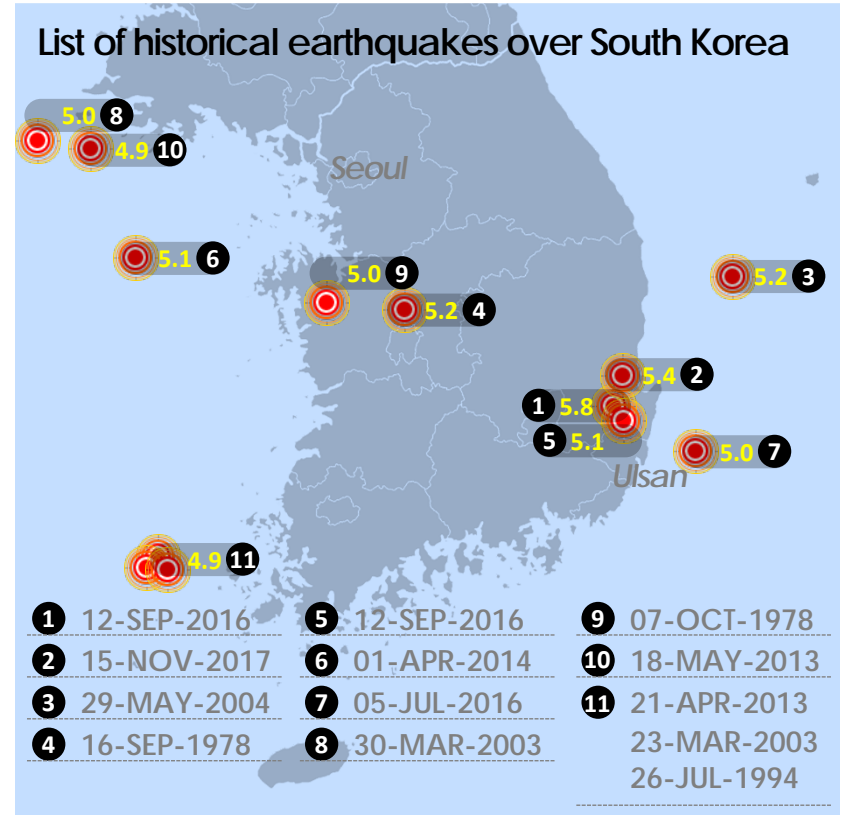
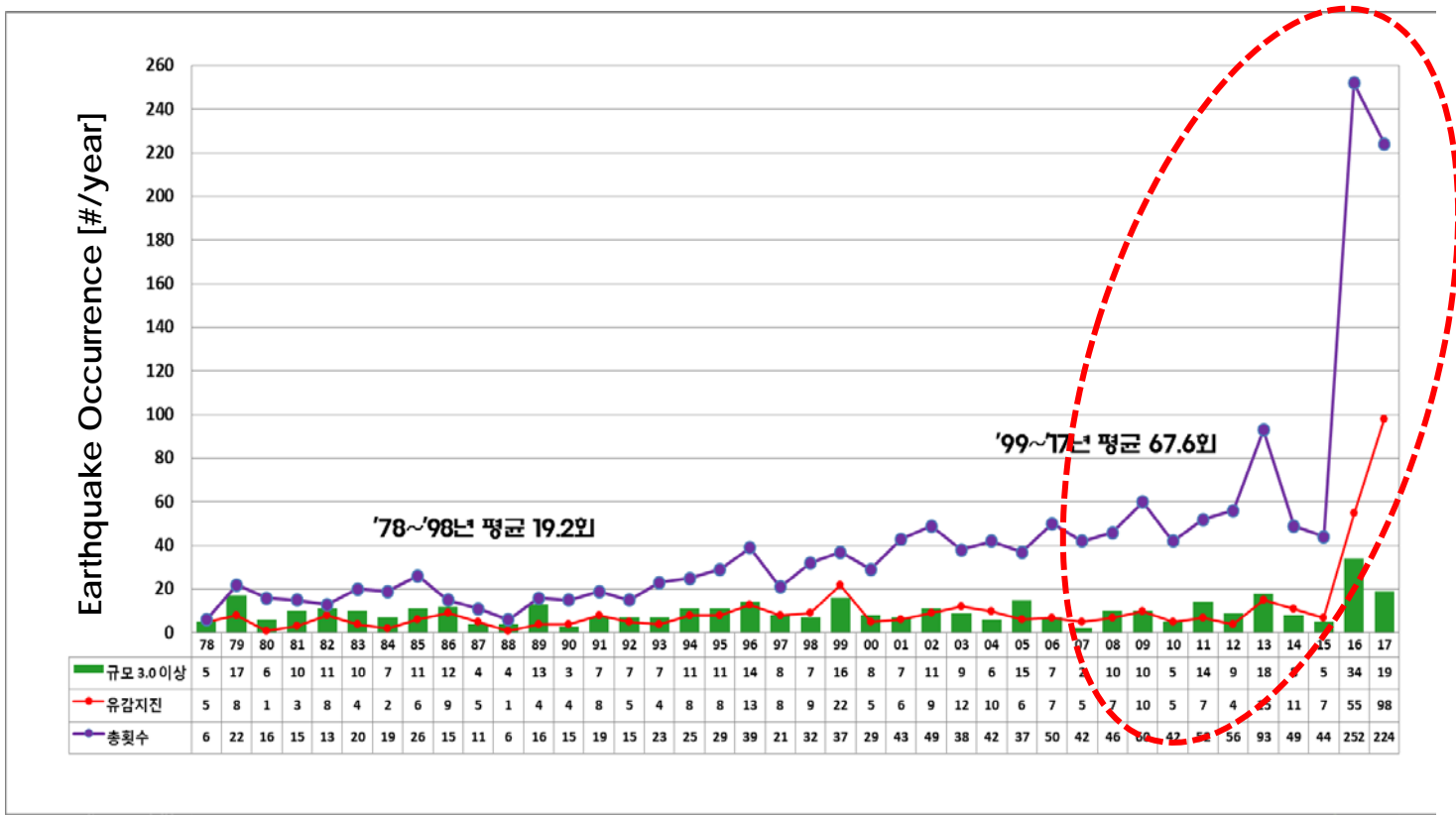
Landsat-7



SENTINEL-1



Historical earthquakes over South Korea



(Source: KMA & NEWSIS)



Future plans

- » Strengthen our international cooperation system through active involvement in different international organizations including SA and IC.
- » Excavate and conduct international joint research programs to share information and technology in disaster management.
- » Strengthen our professionalism and international cooperation system by participating in different human resources training programs.
- » Follow the prescribed procedures for joining the data analysis node (DAN) of SA in the near future.

Thank you for your attention!



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