

UN-SPIDER Recommended Practices

Priority for Actions 1 and 4



Application field and innovative impact: When using Space technologies for disaster risk management and emergency response, it is not only important to have access to the right data and software, it is also crucial to be aware of practices that have proven effective in a specific context. UN-SPIDER's partners and Regional Support Offices are therefore enhancing several recommended practices that provide practical insight and hands-on instructions on how to use satellite information for various hazards, in various phases of the disaster management cycle.

Workflow and key results: Currently, the UN-SPIDER knowledge portal has the following Recommended Practices available for use:

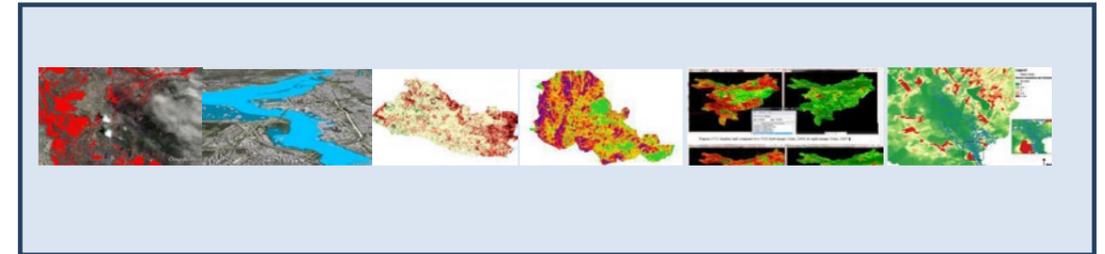
1. Flood Mapping/Flood Hazard Mapping - The objective of these practices is to determine the extent of flooded areas. The use of SAR satellite imagery for flood extent mapping constitutes a viable solution to process images quickly, providing near real-time flooding information to relief agencies.
2. Drought Monitoring (VCI/SVI) – Drought monitoring is an important component in drought early warning systems. The purpose of these recommended practices is to monitor impacts of meteorological drought on natural vegetation (rain fed, range land & forest). They have been developed in the context of the SEWS-D project.
3. Exposure Mapping - Mapping the extent of a natural hazard (e.g., assessing areas with a high risk or disaster is the first step in disaster risk management and emergency response. Subsequently, exposure mapping enables the estimation of the impact of hazards or disasters - for example, the number of affected inhabitants or infrastructure.
4. Burn Severity Mapping - This recommended practice was developed to help contribute in the assessment of areas affected by wildfires. The evaluation of these areas can be carried out using different methods; namely, on the ground and using remote sensing tools.

UN-SPIDER - Recommended Practices

Application status: Service, recommended practice

Area coverage: National to local level

Flood Mapping – Nsanje District around Chiromo, Malawi (Flood event in January 2015);
Flood Hazard Mapping – Cedar Creek Watershed/St. Joseph basin, Northeast Indiana, USA;
Drought Monitoring VCI - Five provinces in Iran: Alborz, Tehran, Semnan, Qom, Istahan;
Drought Monitoring SVI - Several countries in the dry corridor of Central America, Dominican Republic and Brazil;
Exposure Mapping – Applied in the context of the flood event in Malawi, in January 2015; Burn
Severity Mapping - Empedrado Commune, province of Talca, Maule region, Chile.



Background and Methodology

1. Flood Mapping/Flood Hazard Mapping - The practice shows the use of ESA's SNAP software for pre-processing and processing of SAR imagery using a threshold method for deriving the flood extent. Google Earth is used to visualize the results of image processing.
2. Drought Monitoring - This practice shows how to monitor the impacts of meteorological drought on natural vegetation using MODIS optical satellite imagery.
3. Exposure Mapping - This practice shows the use of Quantum GIS to analyze a disaster extent map in combination with auxiliary data such as population or land cover data.
4. Burn Severity Mapping - This methodology combines the use of Landsat 8 pre- and post-fire imagery, and the Normalized Burn Ratio (NBR) index. It was designed specifically to assess large areas that have been impacted by wildfires.

<http://www.un-spider.org/advisory-support/recommended-practices>

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