



FLOOD FREQUENCY MYANMAR

Floods are among the world's most devastating and costly natural disasters. Floods are responsible for infrastructure damage, erosion & land degradation, crop loss, food security risks and salinisation (in delta's).

Satellite technology can be leveraged to prioritize disaster response to areas most affected.

FLOOD FREQUENCY

Earth Observation technologies provide an accurate and low-cost methodology for historical- and actual mapping of flood frequency for large areas. Flood frequency monitoring can:

- contribute to a better understanding of the long-term intra-annual changes in water management risks;
- flood damage assessments;
- pinpoint areas where interventions are most needed to address floods;
- provide insights in dry and wet season water availability;
- prioritize disaster response;
- identify location and size of irrigated crop areas.



Flood Frequency, Myanmar. © Satelligence

FLOOD FREQUENCY IN MYANMAR

The Ayeyarwady river is Myanmar's largest river and most important commercial waterway. EO4SD collaborates with World Bank and Asian Development Bank 1) to improve water resources management for the whole Ayeyarwady basin and 2) to improve increase crop yields and cropping intensity in irrigation sites in the Central Dry Zone, increasing income and reducing poverty for rural populations.

CLIENT

- Engineering industry
- Governments: disaster prevention– and agricultural departments
- Insurance providers
- Emergency response institutions

CHALLENGE

- Lack of large-scale information on (seasonal) flood dynamics and trends, and water availability

SOLUTION

Seasonal maps on flood dynamics and trends, and water availability for the whole Ayeyarwady basin, fed to institutions who use this information for planning- and management purposes. The information provided will be used by the Hydro Informatics Centre and the Ministry of Agriculture, Livestock and Irrigation.

VALUE

- Large scale, cost-efficient assessment of areas with flood risk
- Flood damage assessment
- Enhanced disaster response management
- Seasonal water availability
- Pinpoints locations of irrigated crop areas

EO4SD MYANMAR PROJECTS

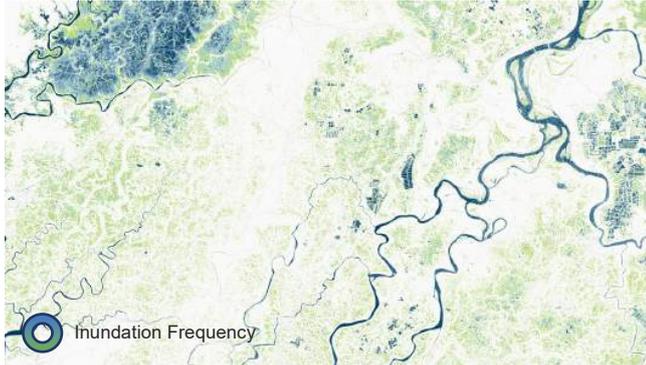
Ayeyarwady Integrated River Basin Management
Agricultural Development Support Project



Irrigated Agriculture Inclusive Development Project



Flood frequency is often high in areas close to the rivers. Significant spatial differences in flood frequency or flood area may be because of change in water dynamics and land use and/or agricultural practices, among others. With a spatial resolution of 10m (using ESA's Sentinel-1 satellite), small water bodies and cropping patterns are easily detected.



Flood Frequency in the Ayeyarwady delta, Myanmar. Agricultural patterns also become clearly visible. © Satelligence

The Figure above clearly shows the rivers' course and the crop patterns in the Ayeyarwady delta. The permanently flooded, rectangular shapes point to aquaculture practices, whereas occasionally flooded areas may point to other agricultural practices (e.g. paddy).

ABOUT EO4SD

Satellite Earth Observation (EO) technology has tremendous potential to inform and facilitate international development work. Since 2008 the European Space Agency (ESA) has worked together with the International Financing Institutions (IFIs) and their client countries to harness the benefits of EO in their operations and resources management.

EO4SD - Earth Observation for Sustainable Development - is an ESA initiative which also aims to achieve a step increase in the uptake of satellite-based information in the IFIs regional and global programs, aiming at more systematic data user approach in order to meet longer-term strategic geospatial information needs in the individual developing countries as well as international and regional development organizations.

CLIENT TESTIMONIAL



Myanmar is vulnerable to seasonal floods and water related extreme weather events, which has led to establish a National Integrated Flood Management Platform under the National Water Resources Committee (NWRC). Our finding is that seasonal information on flood dynamics and patterns are of high importance for planning- and management purposes in Myanmar. Such information is currently not available on a large geographical- and time scale, and that is where Earth Observation really adds value."

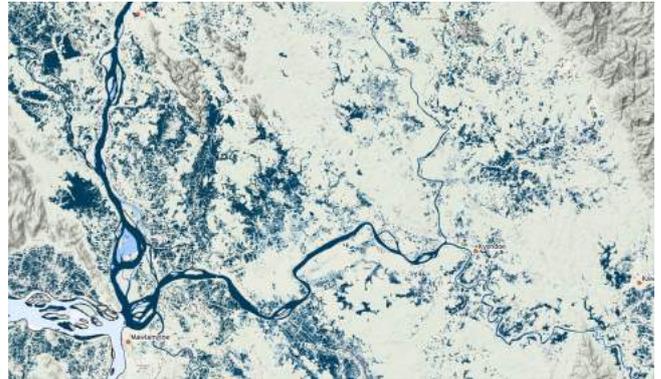
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For more information, visit: www.eo4sd-water.net

IN THE NEWS: JULY 2018 FLOODS

Satellite technology can be leveraged for prioritization of disaster response to areas most affected by floods. Flood extent monitoring over large and inaccessible areas gives important information that otherwise is very difficult to obtain.

In July 2018 more than **100,000** people were forced to flee their homes in Mon & Kayin states, in Western Myanmar. Over **85** people died and more than **300,000** acres were damaged because of devastating floods.



Flood extent in Kayin & Mon State, Myanmar, early July. © Satelligence

Flood risk analysis for specific areas can be determined based on satellite data in combination with other environmental parameters (e.g. rainfall).



Flood extent in Kayin & Mon State, Myanmar, late July. © Satelligence

