

Why is it so important to monitor floods?

Floods are one of the most costly natural hazards, disrupting \$96 billion USD in economic activity each year, and potentially increasing to \$521 billion by 2030.

Economy
Fiscally sound

Environment
Environmentally conscious

People
Socially progressive



Climate impacts on the hydrological cycle are changing the timing and intensity of rainfall, directly affecting the quantity and quality of water resources for different users.

Flooding impacts are widespread, affecting many economic sectors and people at the same time.

Flood risks to the economy

Damage to communication links, power plants, roads, bridges and other infrastructure can impact economic activity.

Reduced long-term investment
Recurrent flooding in a region may discourage long-term investments by the government and private sector. Loss of resources can increase costs of goods and services, and delay development and growth.

Damage to infrastructure
Floods can damage vital infrastructure, overwhelm emergency services, destroy ecosystems and lead to a loss of human life.

Hindering economic growth and development:
The high cost of relief and recovery may adversely impact investment in infrastructure and other development activities in the area.

Disruption to industry can lead to loss of livelihoods
Loss of livelihoods, reduction in purchasing power and loss of land value in the floodplains can leave communities economically vulnerable.

Flood risks to the environment

Impacts on coastal areas
Introduction of excess sediment and nutrients, and pollutants such as chemicals, heavy metals and debris during flooding can degrade aquatic habitats, lower water quality, reduce coastal production, and contaminate coastal food resources.

High levels of sediments and nutrients
While cycling of sediments and nutrients is essential to a healthy system, too much has negative impacts on downstream water quality.



Risks to aquatic life
Damaged infrastructure can lead to pollution and subsequent health and environmental impacts, fish population die-off and closure of fisheries.

Flood risks to people

Significant population displacement
Floods force people to abandon their homes and communities, causing disruption to normal life.

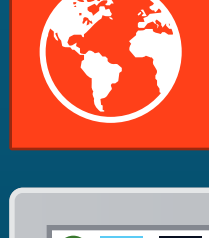
Deterioration of health conditions
Floods can increase transmission of communicable water-borne diseases and vector-borne diseases.

Destruction of crops
Flood waters can directly damage crops and delay harvest. Wet soil provides poor growing conditions, severely reducing yields. These impacts can potentially lead to increased malnutrition.

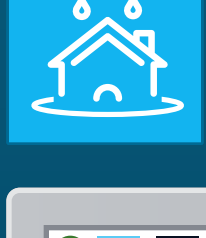
Psychosocial effects
The huge psycho-social effects on flood victims and their families can traumatize them for long periods of time. Loss, displacement and disruption can cause continuing stress.

The Flood and Drought Portal provides technical applications to prepare and respond to floods

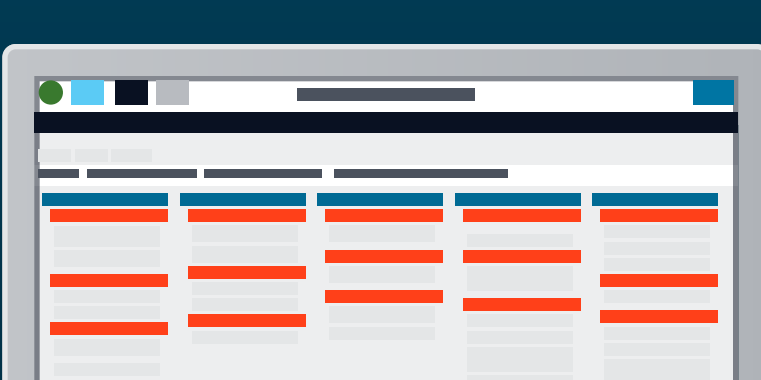
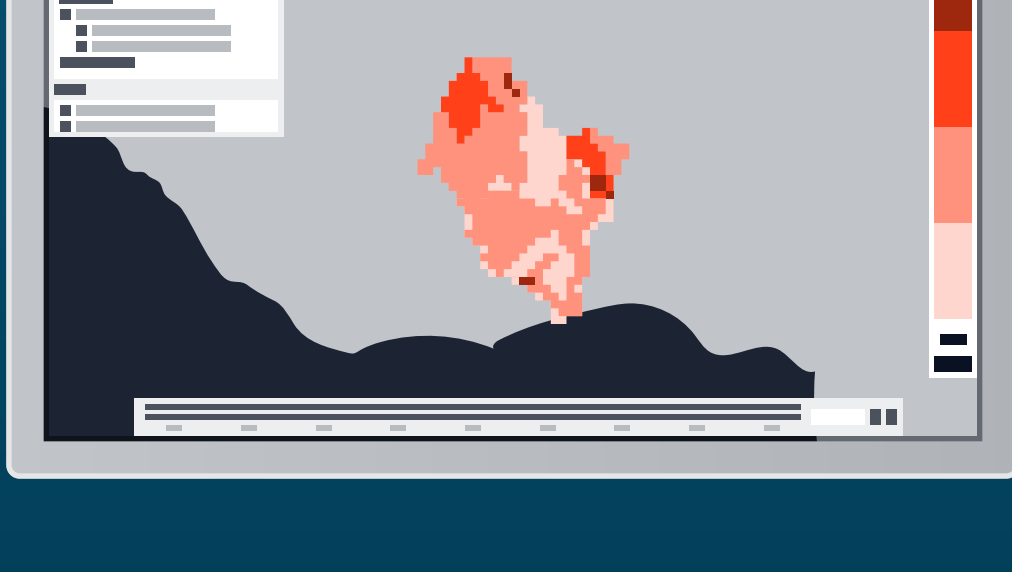
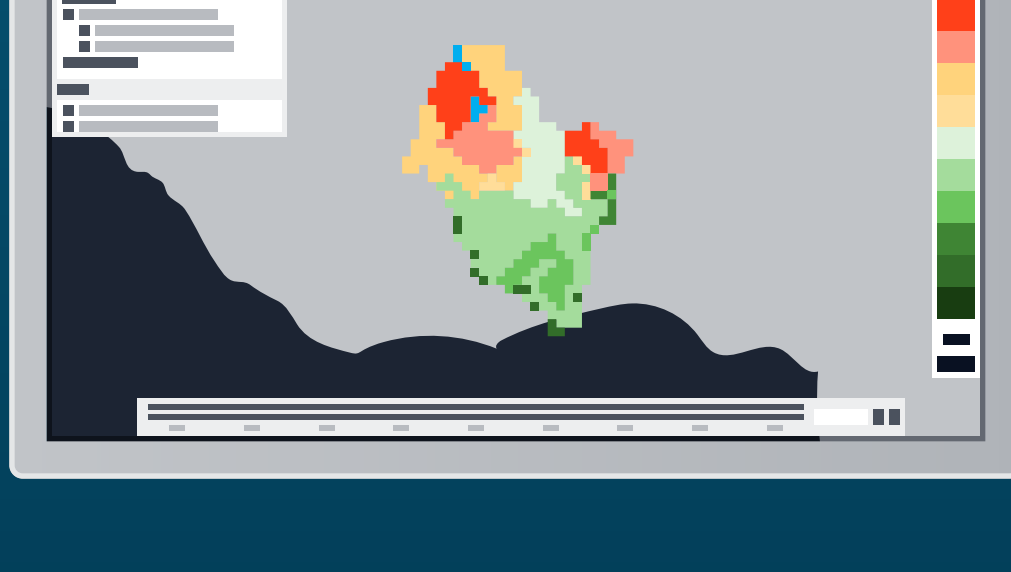
Information is needed to prepare and respond to floods, including climate data and flood indices which can be used to track floods, but also an understanding of how the flood hazard can have different levels of risk across a basin.



Data and information tool gives access to/provides global satellite data including current and forecasted climate information such as rainfall, temperature and evapotranspiration.



Flood assessment tool helps utilities locate and identify flooding hazards, estimate impacts and provide risk assessment.



Water indicator tool is a library of indicators with information on the data needed and how to apply - e.g. to measure issues such as drought hazards.



Issue analysis tool helps utilities identify the causes behind an helps users identify the causes behind an environmental issue affecting the water resource.



Basin Planning tool Evaluate options to mitigate the identified issues and impacts. Uses a behind the scenes water resources model, for evaluation of plans by stakeholders in the water and energy sectors.

Water users across sectors can use these tools to understand the impacts of climate variability, land use change and other changes across a basin, to inform policies and investments to prepare and respond to floods.

With insights on flood risk from the Flood and Drought Portal, basin organisations and their stakeholders can plan to avoid danger, damage and disruption.

Floods are also important as they link rivers to surrounding floodplains. They recharge groundwater, fill wetlands, moving sediment and nutrients around the landscape.

Modify homes and businesses to help them withstand floods including building above flood levels, replacing materials and waterproofing homes.

Improve drainage and hydraulic structures this includes underground drainage that can handle common storms, as well as sustainable urban drainage such as permeable pavements, infiltration trenches and retention basins.

Introduce water storage areas including culverts, flood storage reservoirs, as well as wetlands and natural water bodies.

Leave room for the river Remanding straightened rivers by introducing their bends increases their length and can delay the flood flow and reduce the impact of the flooding downstream.

Constructing levees and dykes To protect flood plain areas

Improve soil conditions Well drained soil can absorb huge quantities of rainwater, preventing it from running into rivers.

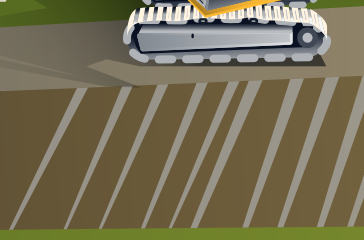
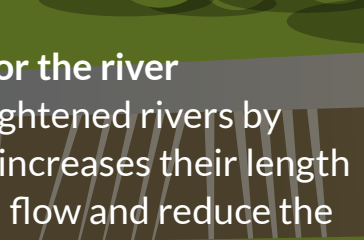
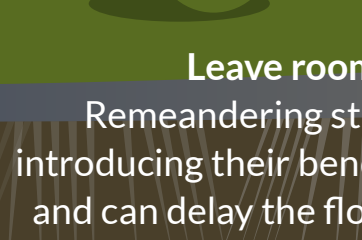
Protect wetlands and reforest upstream areas Wetlands can soak up moisture - and forested areas can slow down waters when rivers overflow.

Permanent and continuous monitoring of the risk of flooding through a network measuring water levels of streams/rivers.

Land, water and urban area managers can better prepare for floods with improvements in modeling flood risks and preparation of precise flood risk maps.

Use and improve flood early warning systems giving people more time to take action during flooding, potentially saving lives.

Being able to better plan and prepare us for floods will lead to more impactful investments and achievement of the targets in the Sustainable Development Goals.



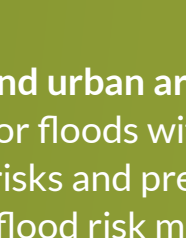
Improved water security and safety through planning from catchment to consumer

Increased economic productivity through better preparedness and planning for climate impacts of flooding and droughts

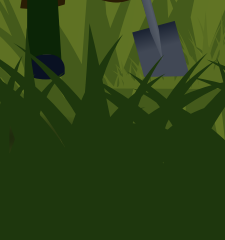
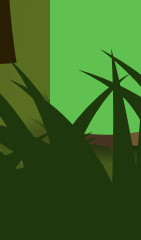
Improved livelihoods from increased efficiency in water supplies to industry and agriculture

To get started with the tools right now, register for free by visiting

www.flooddroughtmonitor.com



Learn more at fdmt.iwlearn.org



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