



DHI MARKET AREA: SURFACE & GROUND WATER

FLOODPLAINS

Improving the resilience of river communities

Floodplains have naturally attracted human settlement due to their proximity to water supplies, fertile soils and flat landscape, which make them attractive for building and construction. As a result, a large proportion of the global population now lives on river floodplains. However, many of these regions face flooding risks. Each year, millions of people are affected by floods that cause billions of dollars worth of damage. The number of people living and working in floodplains is expected to increase, with a consequent increase in flood risk, as more urban and rural floodplains are targeted for development. This means more and more people are at risk from flooding — a situation that is expected to worsen under climate change scenarios.

Improving the resilience of floodplain communities can be achieved firstly through the quantification of the actual risk. This must then be followed by mitigation of that risk through structural solutions such as levees and flood storages, or through non-structural solutions such as flood warning systems and regulatory measures (like floodplain management planning).

THE CHALLENGES

- Quantifying and managing the risk of floods on populations and infrastructure
- Ensuring the safety and improving resilience of floodplain communities
- Identifying solutions that balance flood risk against environmental impact and economic benefit
- Ensuring robust floodplain solutions in the face of changing climate
- Maintaining the positive impacts of flooding for agriculture and environment

OUR APPROACH

At DHI, we have a long history working with governments and communities to assess, mitigate and manage flood risks. We've developed specialist flood modelling and mapping software, based on our experience in working on some of the world's largest and most densely population floodplains. Our flood forecasting technology has been integrated into local and national early warning systems.

OUR SOLUTIONS

- Flood hydrology assessments
- Floodplain modelling and management
- Advanced flood mapping capabilities for stakeholder communication
- Robust flood forecasting technology
- Optimum flood mitigation structure operations
- Customised Decision Support Systems (DSS) for operational flood management and planning
- Climate change impact assessment

THE ULTIMATE GOAL EFFECTIVE FLOOD RISK MANAGEMENT



Floods have the **largest impact** out of all natural disasters globally.

OUR TOOLS AND SERVICES

We can provide you with everything you need to help you manage flood risks effectively. Our tools and services include:

- flood hydrology modelling and flood risk assessments
 - hydrodynamic modelling of rivers and floodplains
 - flood mapping
 - infrastructure impact assessments
 - optimised dam and structure operations
 - dam and levee break analyses
 - climate change assessment and downscaling
 - capacity building and training by THE ACADEMY by DHI
- MIKE Powered by DHI software tools:
 - MIKE 11
 - MIKE 21
 - MIKE FLOOD
 - MIKE 21C
 - Flood Toolbox
 - REAL TIME

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