Natural and Nature-Based Flood Management: A Green Guide

The Natural and Nature-Based Flood Management: A Green Guide (Flood Green Guide) supports local communities’ flood management efforts using an INTEGRATED WATERSHED APPROACH.

The Flood Green Guide was developed by an INTERDISCIPLINARY GLOBAL TEAM of subject matter experts from around the world.

The Flood Green Guide provides guidance on an optimal combination of approaches including engineering, NATURAL AND NATURE-BASED METHODS, and non-structural approaches to manage flood risk, while promoting environmental and social co-benefits.

INTEGRATED FLOOD MANAGEMENT is a holistic approach to flood risk management that requires contextual analysis and risk assessments.

BETTER PRACTICES include a combination of hard engineering, nature-based, and non-structural methods to achieve optimum flood risk management.

Flood risk management activities must INTEGRATE disaster risk-reduction and adaptation to a changing climate.

DECISION PROCESSES should be socially equitable and comply with local/national laws and institutions, including informal social norms and customs.

URBAN ISSUES should be considered and factored into basin wide flood management planning.

FLOOD DISASTER RECOVERY improves community resilience to future extreme events, avoids introduction of new social or environmental vulnerabilities, and enhances community adaptation capacity to climate uncertainties.
FOUNDATIONAL CONCEPTS CHAPTER:
- The water cycle & flood types
- Integrated flood risk management
- Ecosystem services & climate change

FLOOD RISK ASSESSMENT CHAPTER:
- Information needs & sources
- Data analysis
- GIS & mapping

URBAN ISSUES CHAPTER:
- Urban flooding & factors affecting urban floods
- Urban microclimate and heat island effect
- Urban planning & land use zoning

SELECT NATURAL AND NATURE-BASED METHODS:
- Upper watershed management and restoration
- Soil conservation measures
- Wetlands restoration
- Swales and permeable pavements
- Green roofs/walls and blue roofs
- Constructed wetlands
- Rainwater harvesting and rain gardens
- Detention basins and retention ponds
- Multipurpose infrastructure
- Natural drainage path restoration
- Riparian vegetation restoration

SELECT CASE STUDIES
- Bogota urban land use management and flood risk reduction
- Bridging the gap between flood science and communities
- Community based mangrove restoration in Da Loc, Vietnam
- Floating gardens: an ecological solution for two flood prone areas
- Integrated and participatory flood risk management in Belo Horizonte, Brazil
- Risk games: improving community participation and communications
- Voices of youth: mapping risk around the globe

About the project: World Wildlife Fund, in partnership with the US Agency for International Development Office of Foreign Disaster Assistance (OFDA), developed Natural and Nature-Based Flood Management: A Green Guide. The Flood Green Guide is supported by a training program and a website platform – www.envirodm.org – with a resource library, online learning and additional information on evolving flood risk management better practices.