

Landscape scale Disaster Risk Reduction

And the role of wetland ecosystems

90% of all hazards are water-related. To effectively address disaster risk, it is fundamental to understand how water behaves in the landscape, how factors such as infrastructure, vegetation, land use and climate change influence water flows, and to connect all water users and stakeholders. We work on initiatives to transform landscapes into safer and more prosperous environments.

Urban Water Dialogues, Panama City

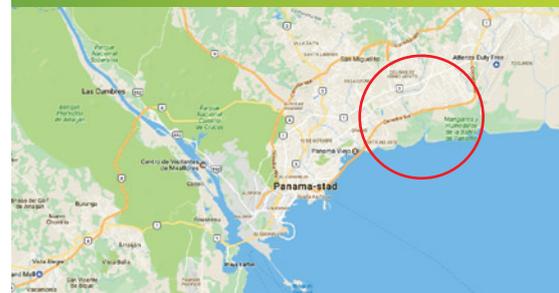
The Juan Díaz sub-district of Panama City has become the most flood-prone area of Panama due to urban developments and landfills in the floodplains, riverbeds and mangroves.

Experts of the Dutch water sector, supported by Wetlands International, analysed the problem and advised to start 'Water Dialogues'. These dialogues facilitated a participatory learning process for identifying root causes to risk, stimulating innovative solutions such as 'Building with Nature' and optimising initiatives on water governance. Importantly, they restored trust among all stakeholders.

Wetlands International considers the 'Water Dialogues' as an effective way to facilitate nature-based flood risk reduction, which can be replicated in other cities.

Case Focus:

- Region: Panama City
- Risks: flooding
- People affected: 236,006
- Ecosystems: mangroves, floodplains, riverbeds
- Ecosystem services: water retention, (extreme) rainwater infiltration



Interventions:

- 'Water Dialogues': a platform to facilitate a new inclusive process of water management
- Community action to clean up the drainage system
- Watershed analysis and design for flood risk reduction
- An Action Plan, which clearly defines the tasks ahead, including regulatory adjustments



DRR Team 2015 Scoping Mission in
Juan Díaz, Metro Park



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Protest by neighbourhood Association of Juan Díaz, 2015

Flood risk

The Juan Díaz sub-district is a low-lying area separated from the sea by mangroves. Rivers and a creek run through it, but are mostly encroached and channeled. The floodplains, wetlands and mangroves have been used for landfill.

When heavy rains fall, the landfills divert the water to lower lying neighbourhoods. Upstream urban expansion caused sedimentation of the river and streams, and reduced rainwater infiltration, which increases the river flow into the lower part of the basin.

Further, the area suffers from a badly maintained drainage system and serious garbage problem.

Multi-stakeholder approach

Neighbourhood groups demanded a stop of landfill projects. The developers claim to abide official building codes and blame the government. Government agencies pointed the finger at each other. Environmental NGOs joined the debate to defend the threatened wetlands.

Supported by:



More information at www.wetlands.org.

Results 'Water Dialogues'

- Dialogues sessions held with Dutch water experts and communities, different ministries, Bay of Panama Sanitation Project, Communal Boards, municipal departments, private developers, knowledge institutes and NGO's
- Evaluation of the actual drainage system, planned developments and coordination of the water management activities of the different authorities
- A hydrological study (financed by IDB) was done showing the impact of the landfills on flooding of neighborhoods
- Community action to clean-up the drainage system
- Action plan for regulatory adjustments, including a Risk Zone Map and additional building requirements to prevent inadequate construction in flood risk zones
- The infrastructural measures will include 'Building with Nature' solutions and benefits for urban residents
- The 'discourse' of blaming others transformed into identifying the real causes and taking joint action



Mrs Raisa Banfield, vice Mayor of Panama leading the Water Dialogues

Wetlands International Panama functions as the liaison between the Municipality, the Netherlands Embassy and the Dutch water experts. It also provides technical input, facilitates planning, implementation of actions, knowledge development and capacity building processes and supports the regulatory framework adjustment.