Mainstreaming Nature-based solutions in World Bank Flood Risk Reduction Investments

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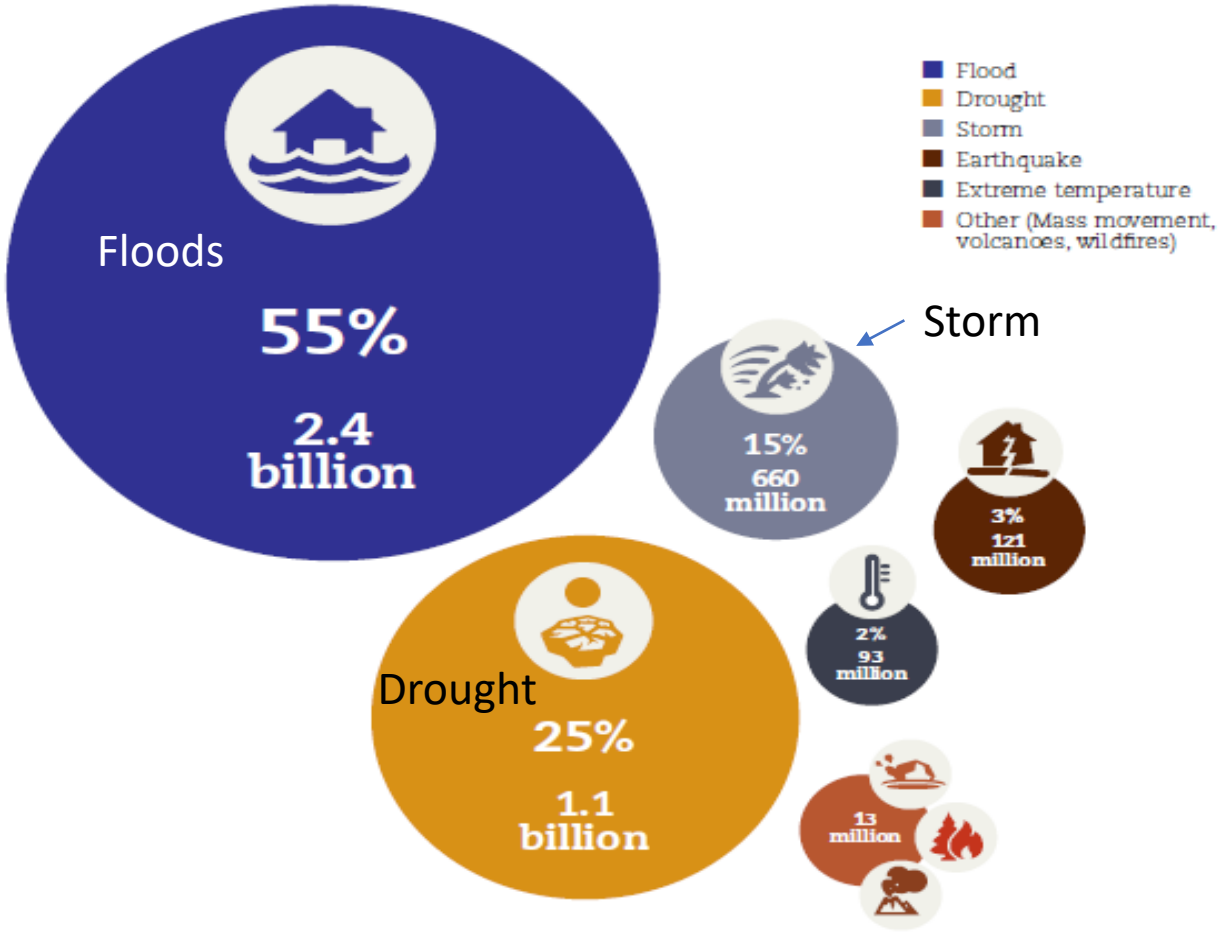
Flood Risk: What is at stake?



Floods - most frequent natural disaster

- **Loss of lives, livelihoods, assets and infrastructure**
- **Disruption of socio-economic activities**
- Short and long-term consequences for health, education opportunities

Exacerbating factors

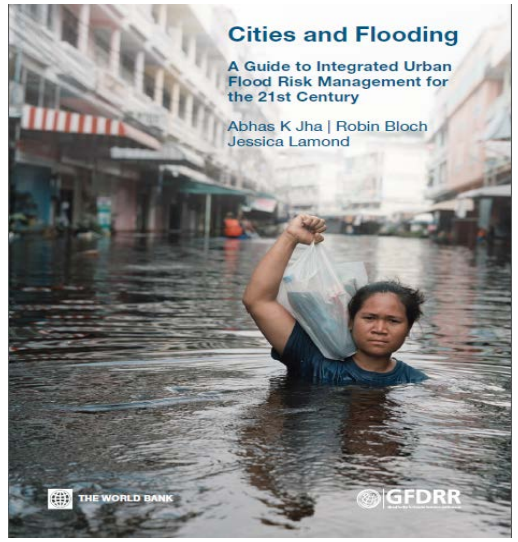
- **Urbanization** - increased concentration of people and assets; - and poor land use planning
- **Climate Change** - growing frequency and severity; exposure of coastal cities

Number of people affected by type of disaster (1994 -2013)

Source: EM-DAT CRED 2015 Database

Integrated Flood Risk Management

- ✓ *System approach - **holistic** and **multi-disciplinary***
- ✓ ***Forward-looking approach** which aims to avoid the mistakes of the past*
- ✓ ***Risk-based,** recognizing residual risk and uncertainty need to part of decision making*
- ✓ *A strategy based on implementing "the right balance" of **structural and non-structural measures**, adapted to climate change*



UFCOP
Urban Floods Community of Practice

Get the “right” balance between structural and non-structural measures

Structural Measures

Hard engineered

- Flood conveyance
- Flood storage
- Urban drainage systems
- Ground water management
- Flood resilient building design
- Flood defenses

Nature Based Solutions

- Utilizing wetlands
- Creating environmental buffers
- Urban greening efforts

Non Structural Measures

Increased preparedness

- Awareness campaigns
- Urban management

Flood avoidance

- Land use planning
- Resettlement

Emergency planning & management

- Early warning systems and evacuation
- Critical infrastructure

Speeding up recovery

- Building back safer
- Risk insurance

Where do we stand with our engagement in Nature Based Solutions?

We reviewed about 650 DRM/WRM projects and **96 projects** employing NBS solutions - with direct contributions or as a main objective – between 2012 and 2017.

Over these years, the Bank awarded a total of **US$ 3.7 billion** in lending and technical assistance to nature-based solutions.

Around **15 percent of the** 650 screened **DRM/WRM projects** featured a nature-based component at appraisal stage.

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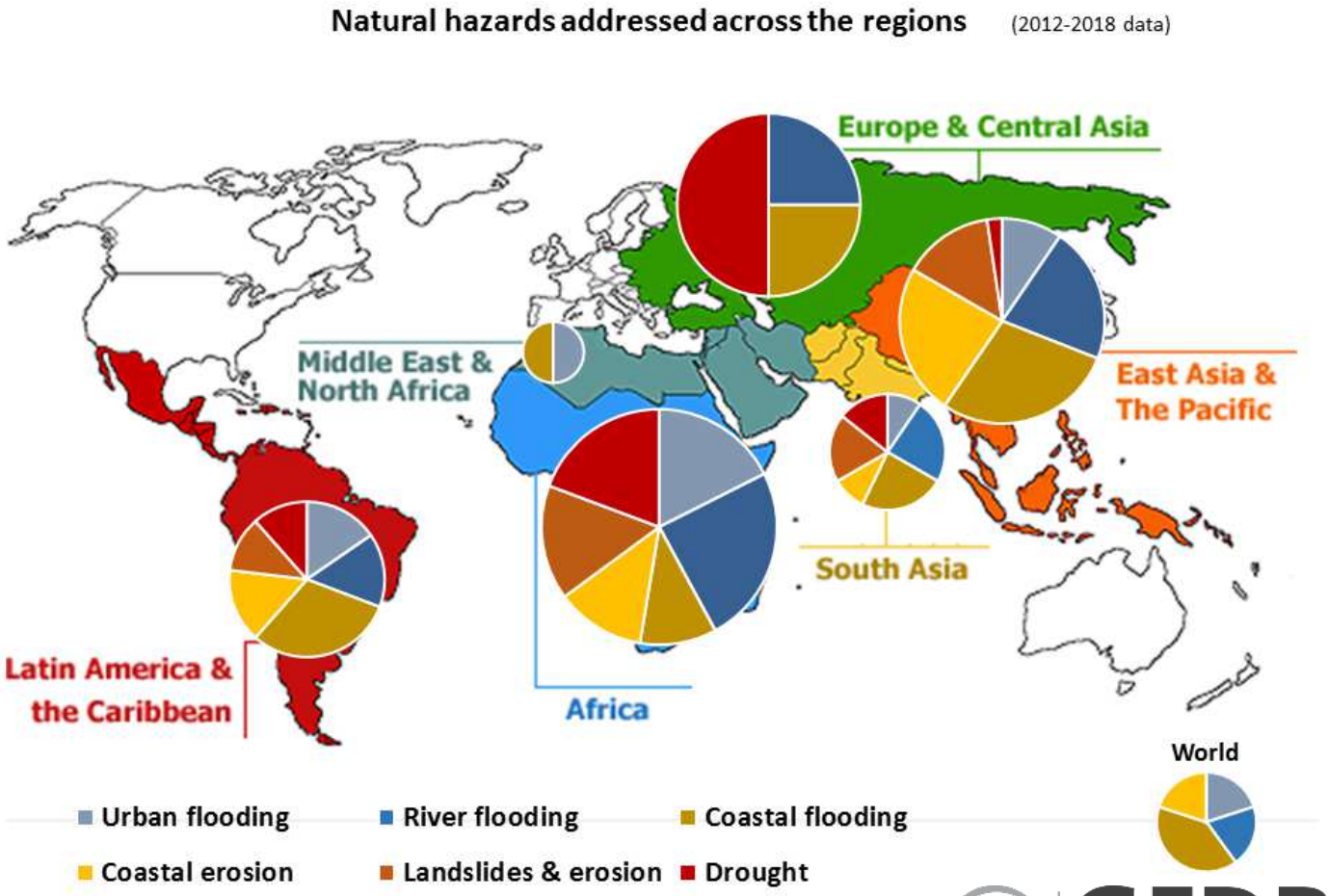
Natural hazards addressed with NBS

- Urban flooding (or pluvial/stormwater flooding)
- River flooding (or fluvial flooding)
- Coastal flooding
- Coastal erosion
- Landslides & inland erosion
- Drought



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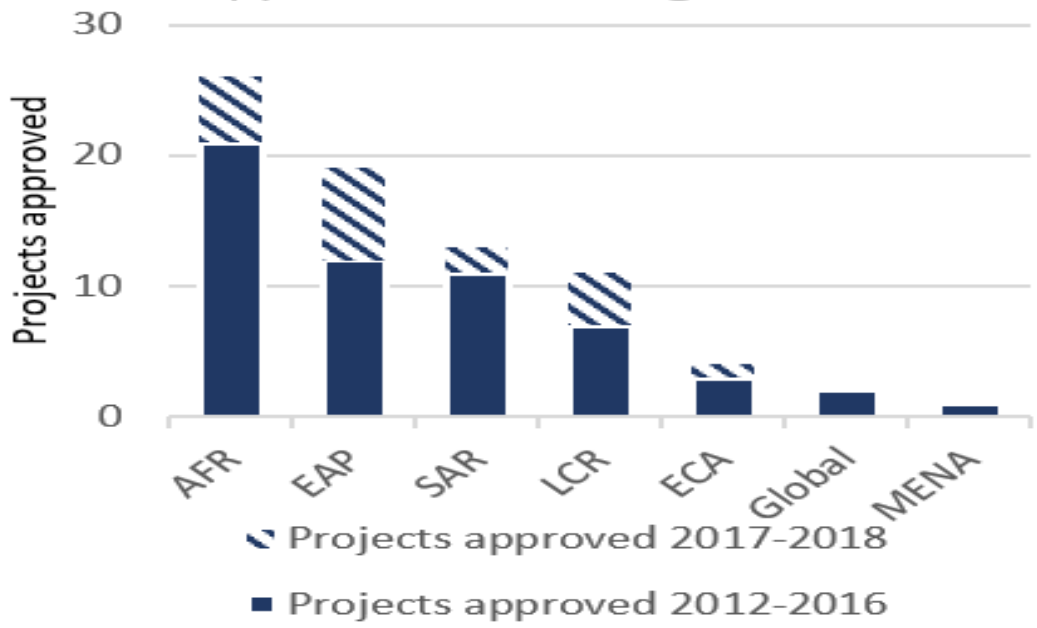
Nature-based portfolio in lending and advisory services for **DRM + WRM**

Most of the investment in NBS is concentrated in the Africa region (with 32 projects), followed by East Asia & the Pacific (28), South Asia projects (12 each) and LCR, MNA & ECA.

Fig. 2 Nature-based project approvals across regions



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Nature-based solutions for DRM

Ecosystems are the central elements of nature-based solutions. The following ecosystems have been conserved, restored or created in an effort to reduce disaster risk, making up the nature-based solutions defined in this analysis:

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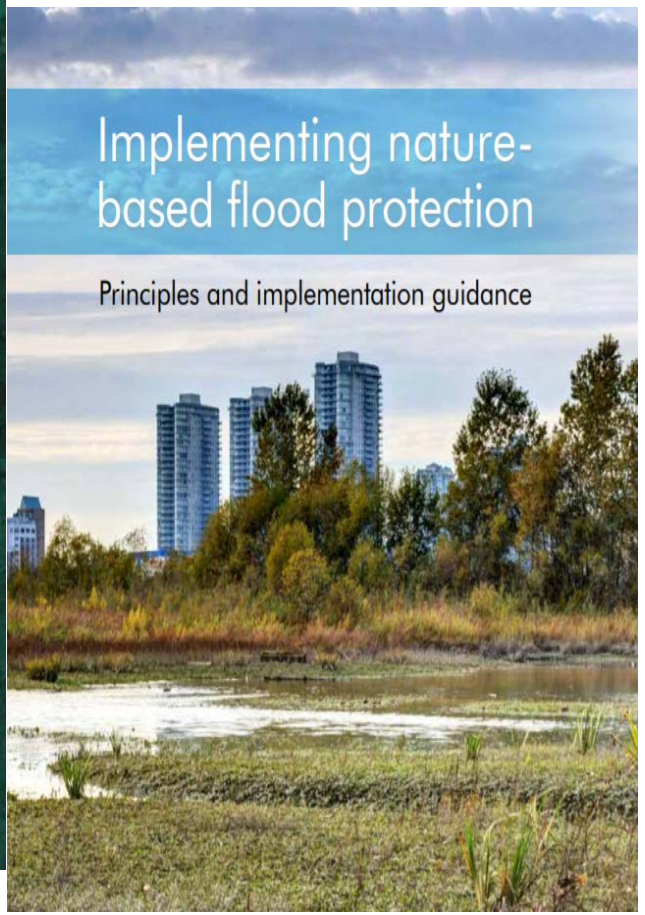
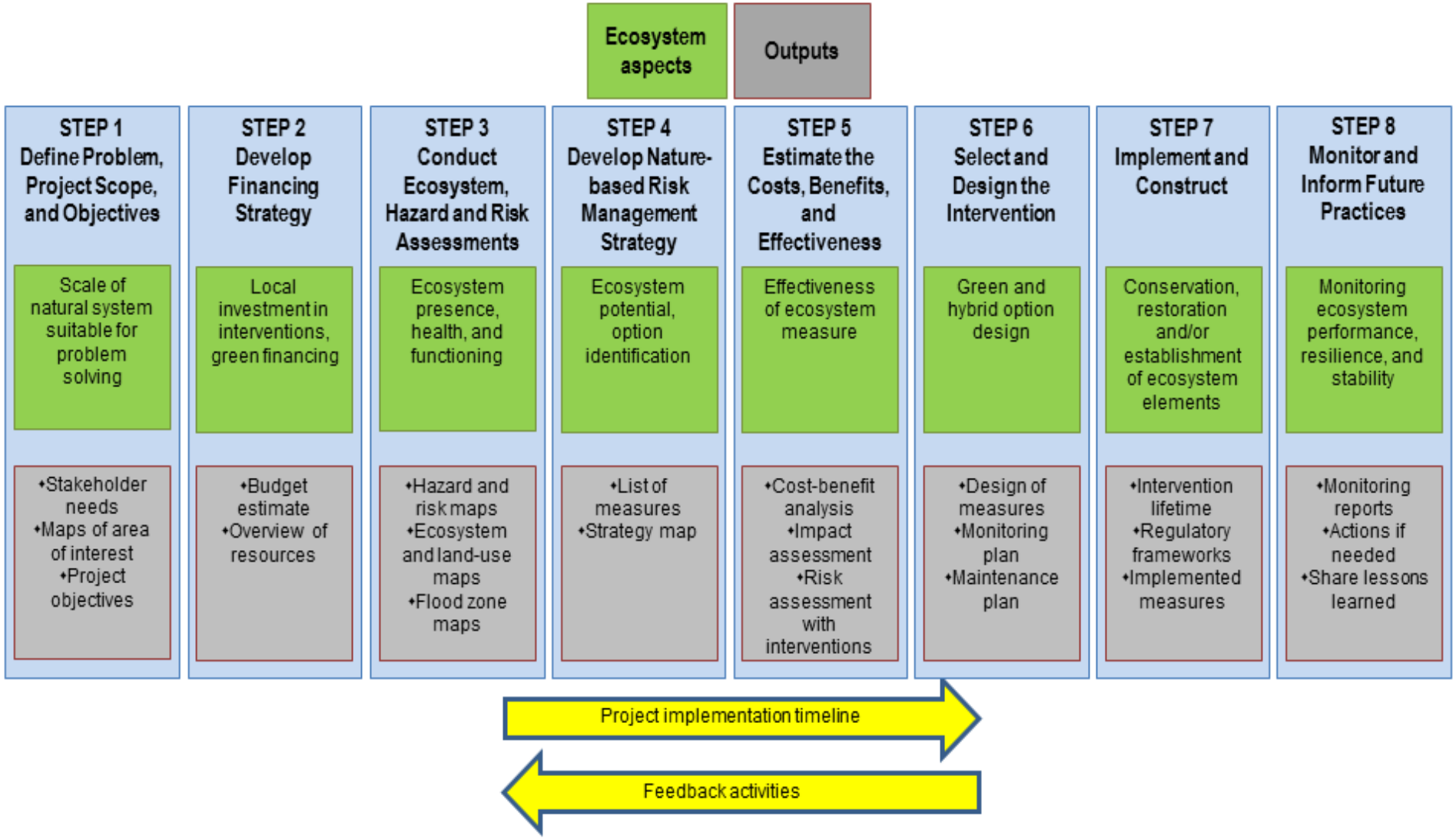
NBS Program: *promote a wider use of nature based solutions*

https://www.naturebasedsolutions.org/

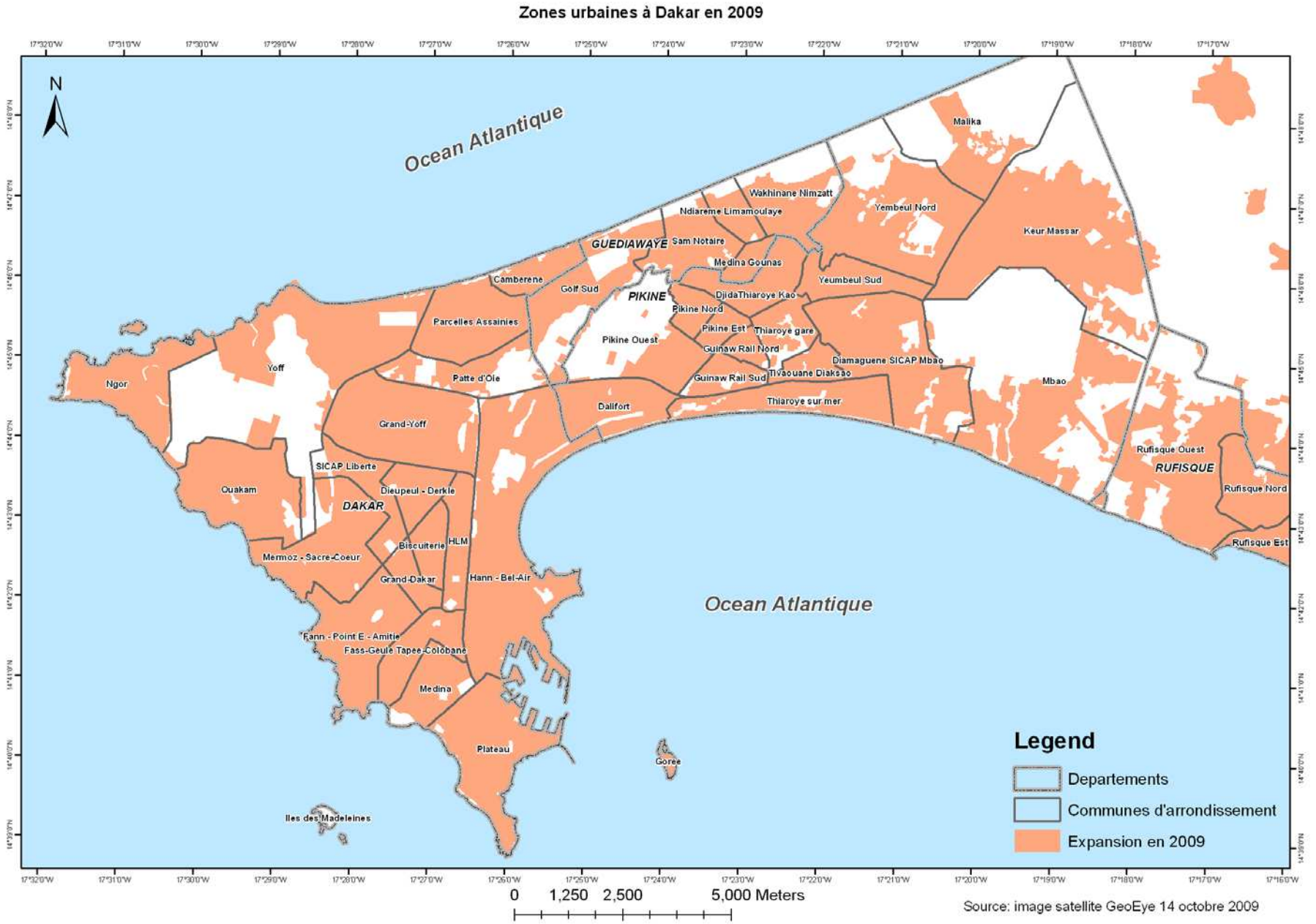


Project implementation guidance



Mozambique Cities and Climate Change Project

Senegal: Stormwater Management and Climate Adaptation Project



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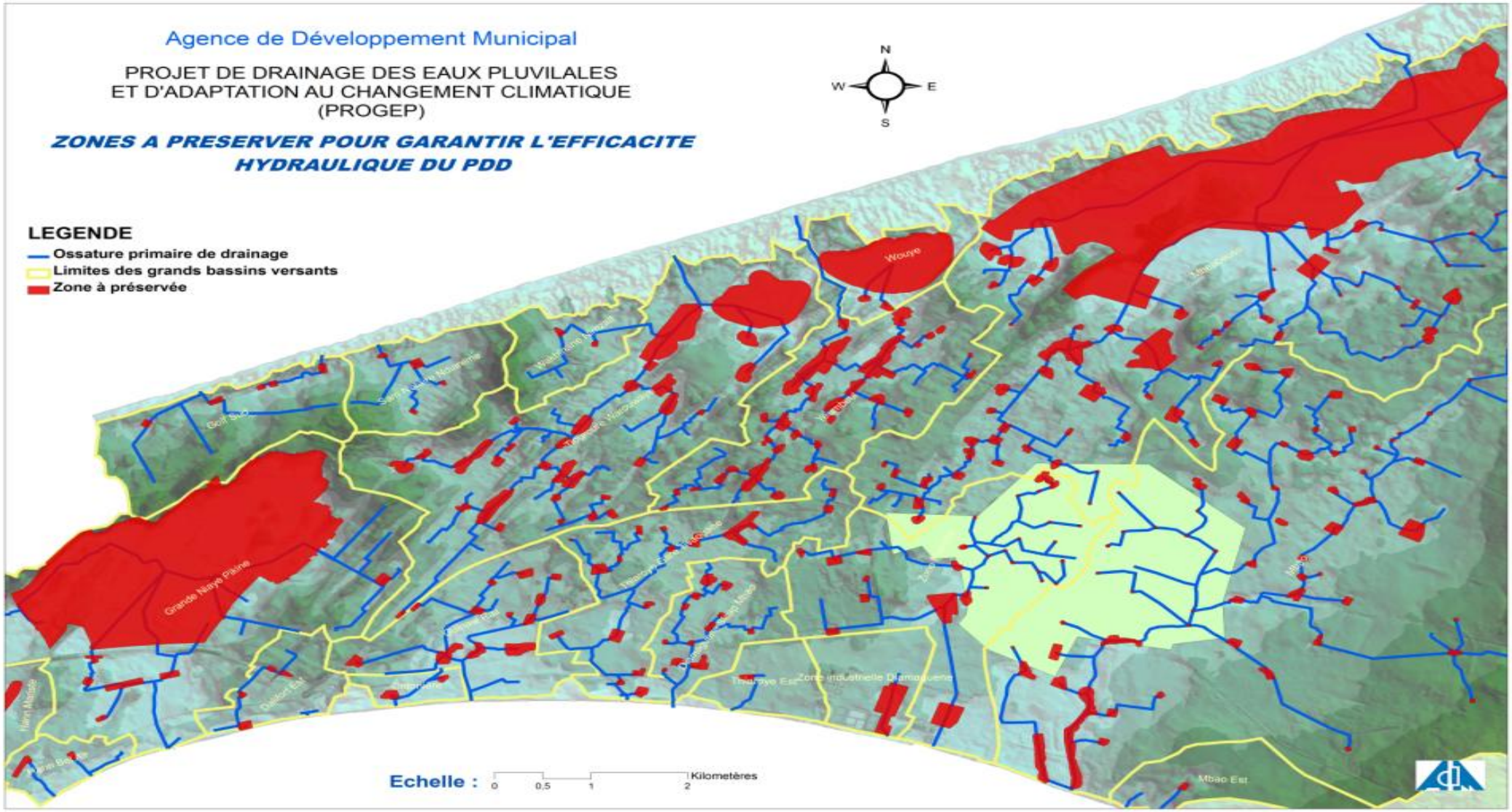

Sri Lanka Metro Colombo Urban Development Project

Some of the challenges

- Challenging **institutional & legal frameworks in countries** & lacking political support
- Insufficient **technical & illustrative information on the efficacy of green solutions** to convince countries and design project
- **Lack of trust in NBS**/Ingrained perceptions, difficult to change perceptions in the absence of data
- **Over reliance on gray infrastructure** & traditional engineering solutions
- A struggle with the **Bank project cycle** (timeframes too short)
- A **lack of capacity** in the team (for design & implementation) and among clients agencies
- **Missing funds** for pilots and TA for the design phase (e.g. CBAs)

Good Practice and Lessons Learnt

- There is no dichotomy between green and gray infrastructure
- Think multipurpose and promote solutions that will both reduce flood risks also create livable spaces where people can work and recreate.
- Create urban spaces that attract developers and investments, and involve communities and all stakeholders in the process
- Consider funding modalities where both public and private funds with incentive mechanisms to encourage private sector investments
- Ensure proper maintenance of green spaces to fulfil their role

The way forward

- Strengthening knowledge and partnerships
- Creating new tools that will help our task teams to mainstreaming NBS in DRM/Flood risk reduction projects
- Establish mechanisms that would allow to identify NBS opportunities early in the project cycle
- Mobilizing additional resources for technical assistance

Thanks for listening!

For more information, please visit our new website

Natural Hazards

Nature-based solutions @

https://naturebasedsolutions.org

.. We also released our **Nature-based flood risk reduction guidance** in Spanish and French!

You can find it on our website.