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ADAPTATION

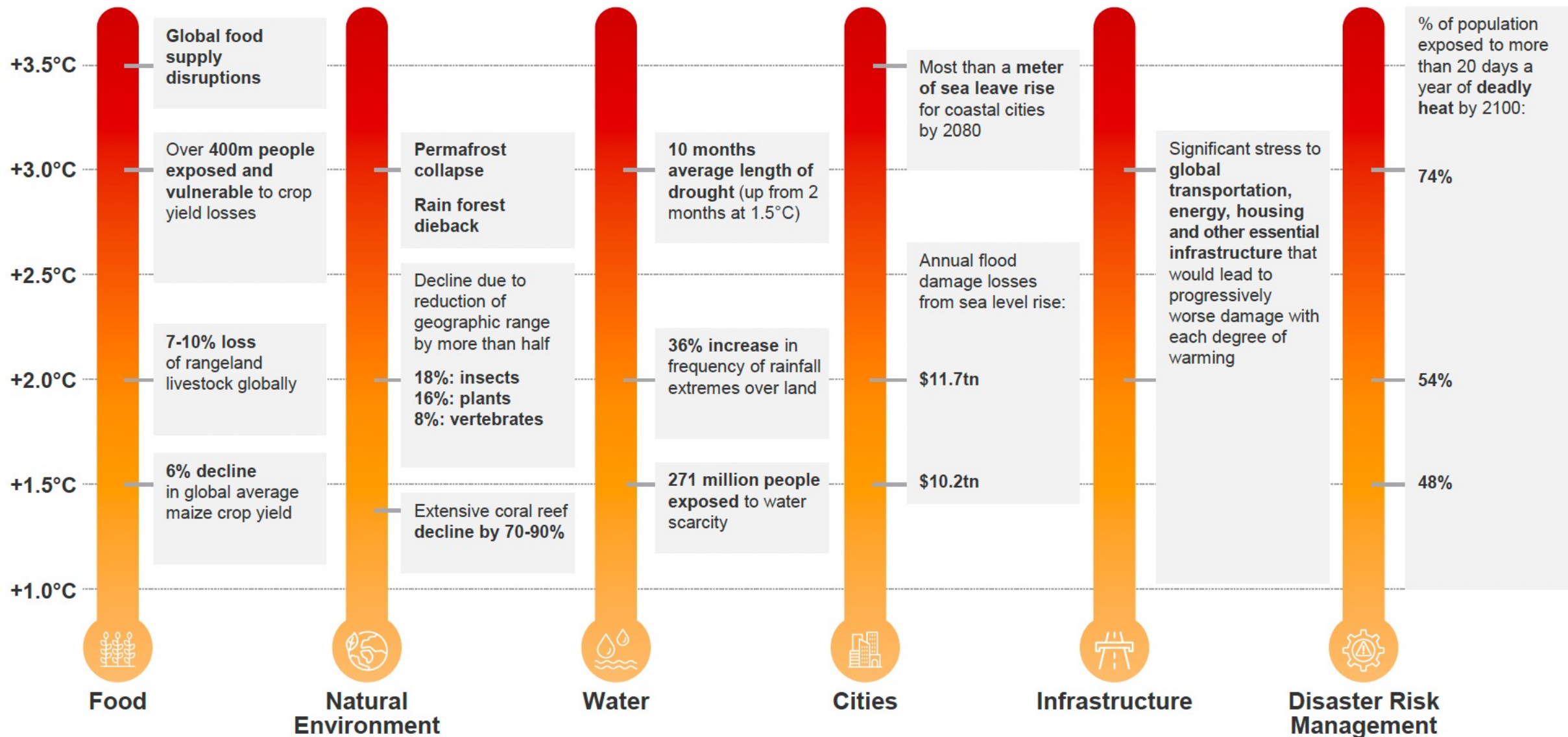
Climate Adaptation in Deltas

Key Note

Joep Verhagen
Global Lead Water and
Urban

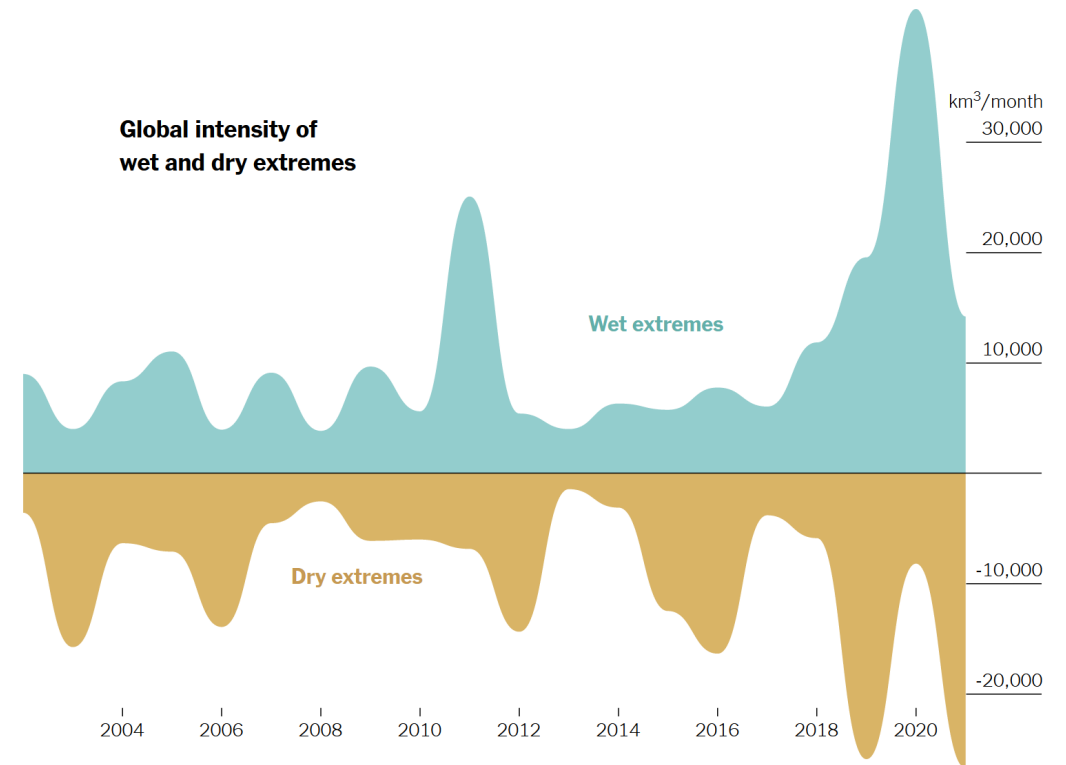
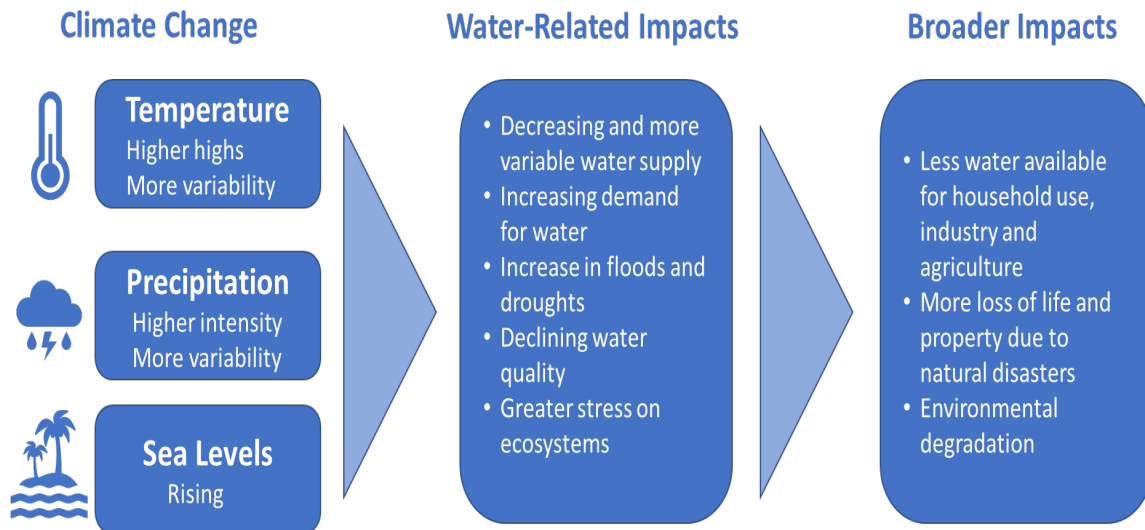
June 15, 2023

There is no safe climate scenario



Climate Change is also Water

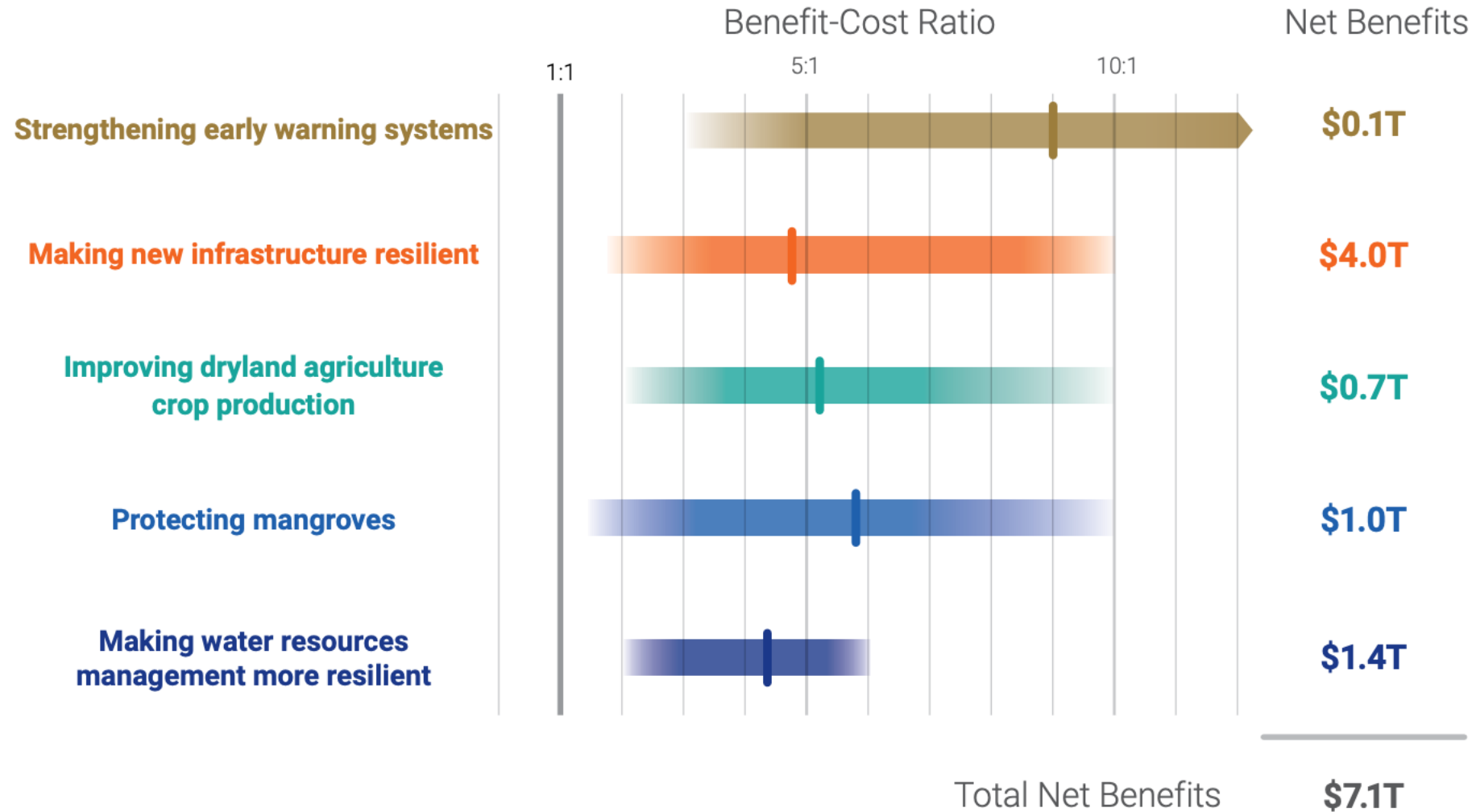
Figure 1: Impacts of Climate Change on the Water Sector



Rodell and Li, (2023)

The economic value in adaptation

The **Global Commission on Adaptation** estimated that **investing \$1.8 trillion** globally in five areas from 2020 to 2030 **could generate \$7.1 trillion in total net benefits**



The financing of adaptation

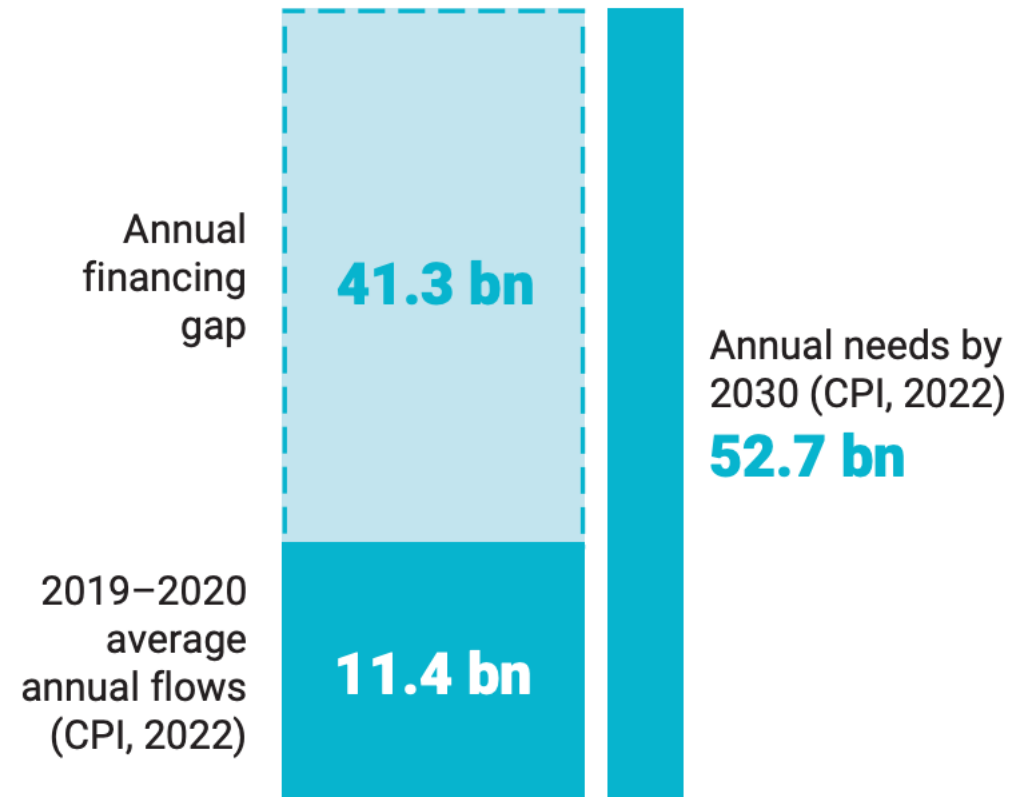
Annual cost of adaptation for developing countries

2030	US\$160 billion/year to \$340 billion/year
2050	US\$315 billion/year to \$565 billion/year

Source: UN Environment Programme, [Adaptation Gap Report 2022](#)




Adaptation Finance Commitments (US\$bn) vs. Needs in Africa



Source: GCA, [State and Trends in Adaptation Report 2022](#)



An aerial photograph of a coastal village. The left side of the image shows a dense green mangrove forest bordering a body of water. The rest of the image shows a sandy area with several buildings, many with corrugated metal roofs in various colors (white, green, brown, red). There are palm trees scattered throughout, and several cars are parked on the sandy ground. A paved road runs along the right edge of the village. A large blue rectangular box is overlaid on the left side of the image, containing white text.

Coastal areas and delta are
at the forefront of climate
change

Coastal Areas and Deltas

- 40% of global population lives within 100 km of coast (20% of land mass).
- About 2/3 of global GDP is generated within 100 km of the coast.
- There 17 megacities around the globe, and 14 of them are located in coastal areas.
- Rich and biodiverse eco-systems that are under threat.

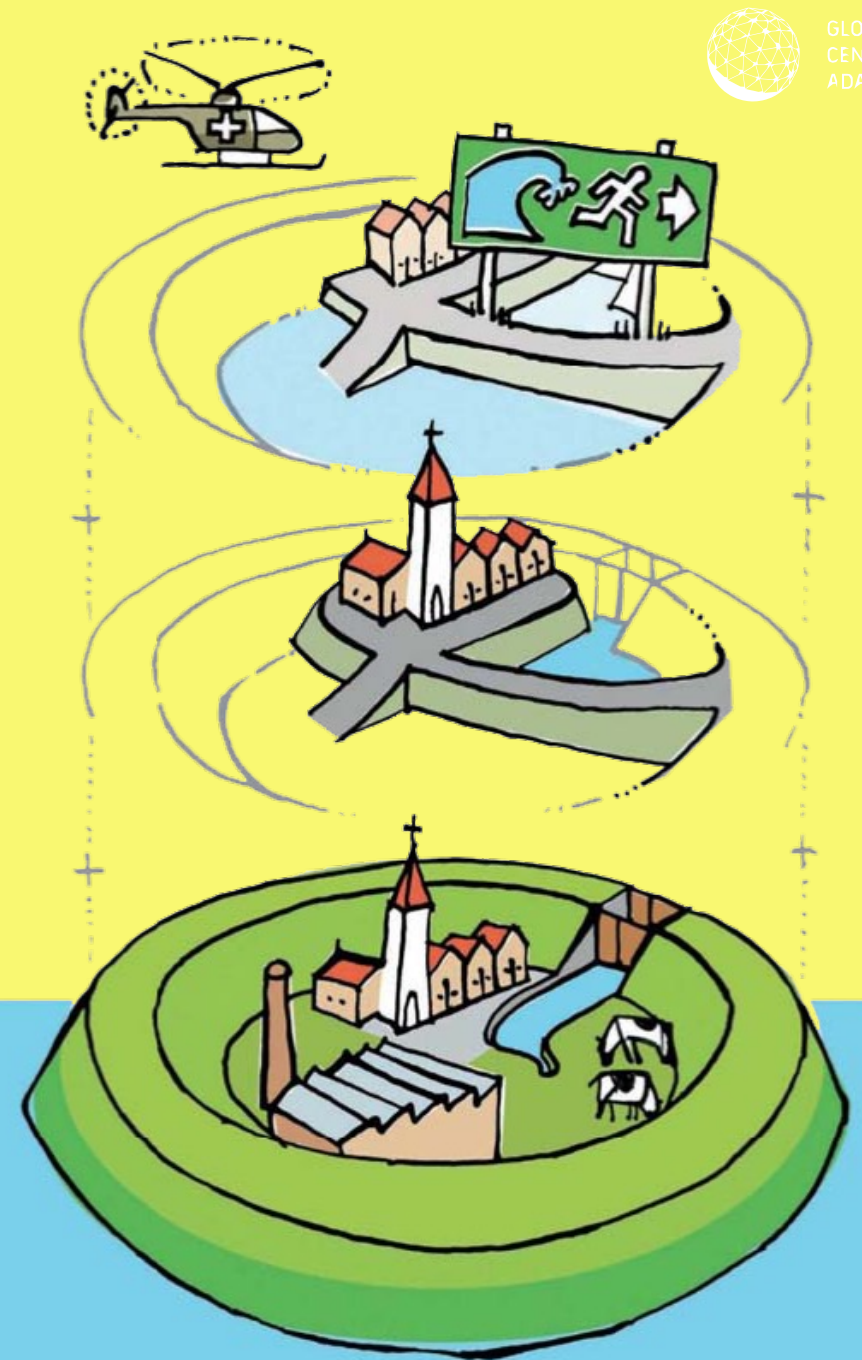
Senegal

- Approximately 75% of population lives in coastal zone; 95% of formal economy concentrated in there.
- At the country level, coastal degradation imposes costs to **7.6 percent of GDP in Senegal** in 2017. **Costs of floods** in coastal districts is estimated to be US\$ 230 million in 2017. This corresponds to 1.4 percent of the Senegal's GDP.
- AfDB estimates that Senegal will lose up to 40% of its GDP (as compared to a 'normal situation') under high warming scenario by 2050.
- Large and diverse range of stakeholders (Ministry of Tourism, Environment, Oceans, Fisheries, Planning, Urban Development, and so on).
- Integrated approach needed; necessary law is stuck for 10 years.
- Who owns the 'new' beach?



Netherlands : Really prepared?

- 26% below sea level; 59% vulnerable to flooding. 70% of population live in areas vulnerable to flooding. Low probability but high impact.
- Economy concentrated in coastal areas.
- Multilayered safety concept (protection, spatial planning, contingency).
- Dedicated institutional structure and long-term budget sustainability.
- Increased risk of flooding and droughts.
- Prepared for sea level rise? AAA credit rating at risk?



Good practices to scale up and accelerate climate adaptation in Deltas

- 6 lighthouse case studies (Argentina, Bangladesh, Colombia, Indonesia, Mozambique, Netherlands, Vietnam).
- <https://gca.org/reports/living-with-water-climate-adaptation-in-the-worlds-deltas/>



**Living with
water: climate
adaptation
in the world's
deltas**

**Lighthouse cases for scaling
up and accelerating water**

What works ...

- There is an urgent need to improve understanding of what works in delta environments, and share lessons and information across countries for scaling up.
- Climate adaptation in delta areas is a complex issue best looked at through a systems lens.
- While action is required immediately, climate-change adaptation is a long-term game.
- Communities must be at the center of adaptation planning and action.

What works ...

- Nature-based solutions, combining 'green' and 'gray' infrastructure, are promising but need urgent scaling.
- Deltas need dedicated governance structures organized on water management principles.
- Adaptation in deltas needs an increased level of long-term financing commitments

Singapore

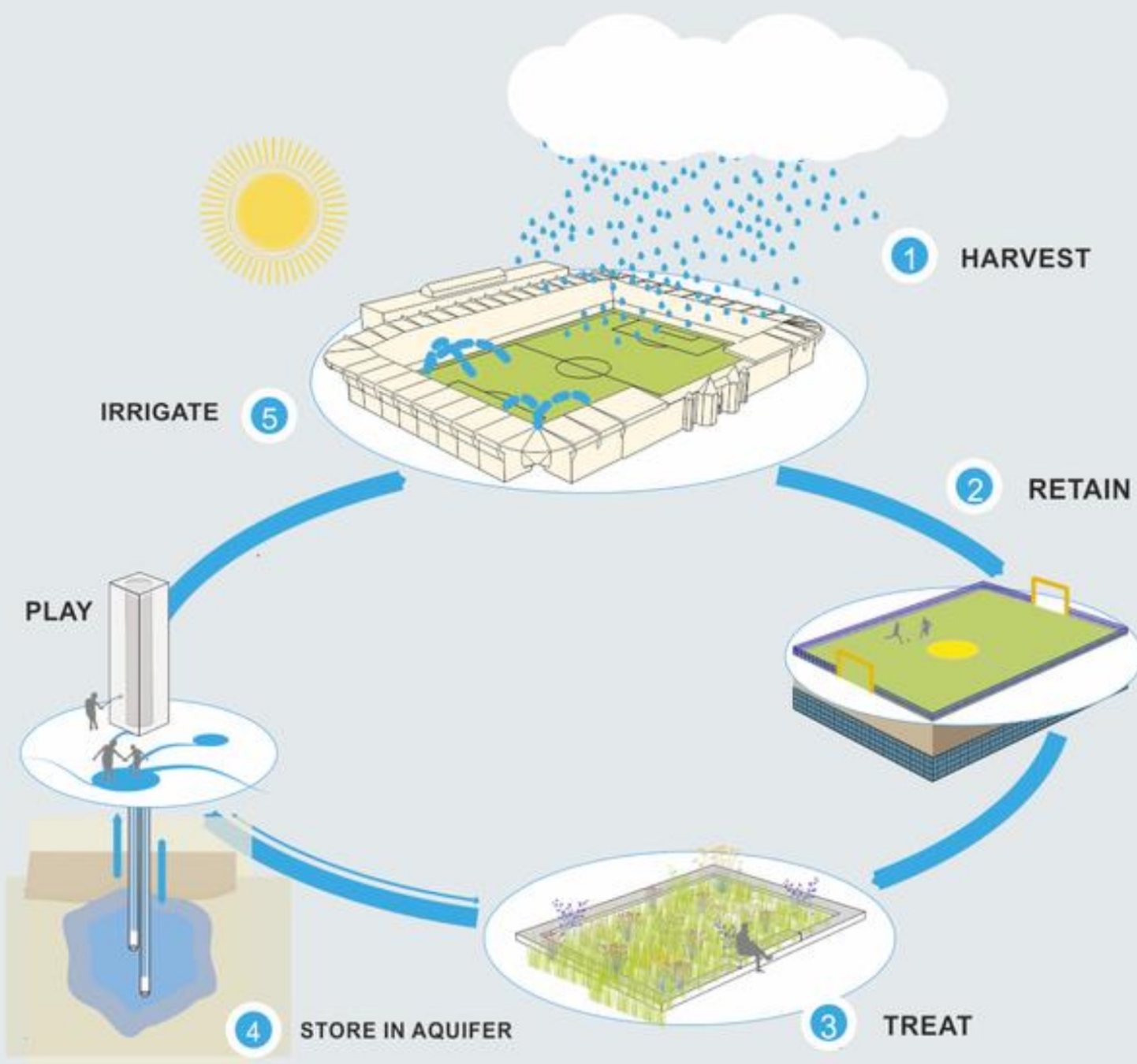


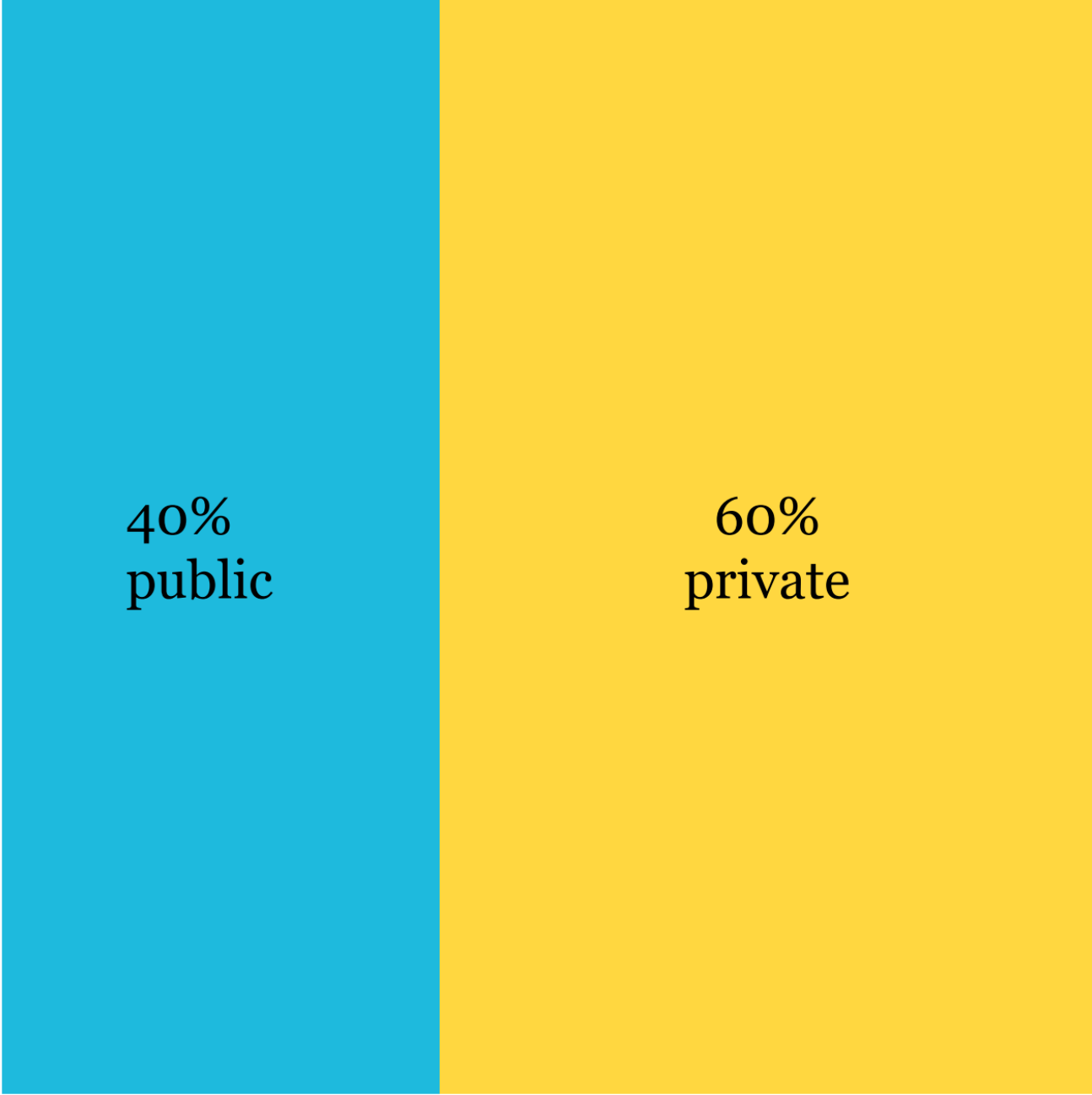
Rotterdam





Circular water usage





40%
public

60%
private



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