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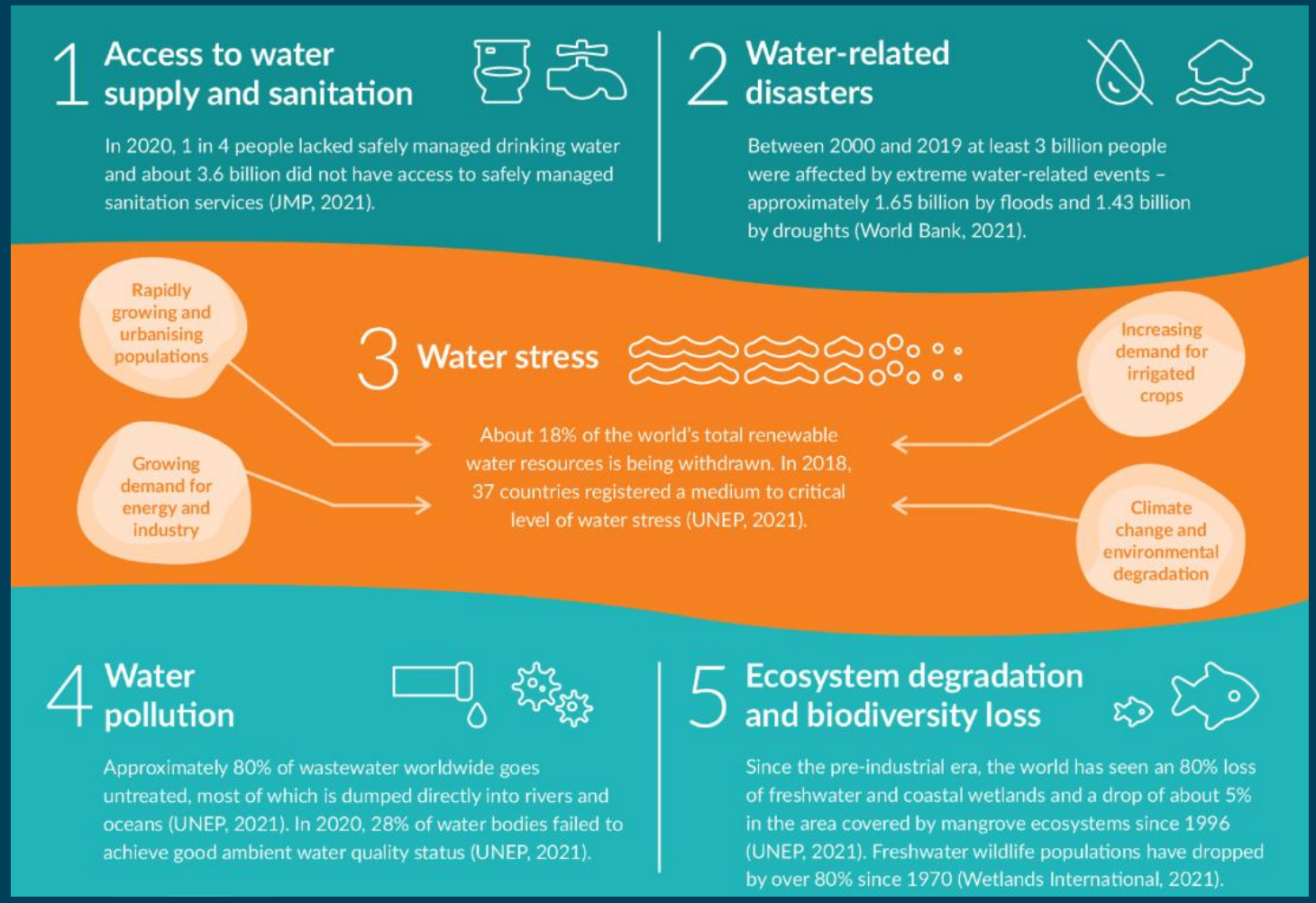
UN environment programme | CTCN UN Climate Technology Centre & Network

Integrated Water Resources Management (IWRM)

Key water problems



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IWRM principles

Importance of water management in agriculture

Effective management practices are essential for reducing vulnerability to water-related hazards such as droughts and floods

IWRM promotes efficient water use, conservation, and equitable distribution among users

Rainwater harvesting

Rooftop Harvesting: Collecting rainwater from rooftops into storage tanks

Surface Runoff Collection: Creating channels or basins to capture runoff from agricultural fields

Percolation Pits: Digging pits to allow rainwater to infiltrate and recharge groundwater

What is Rainwater Harvesting?

This is the gathering of rainwater and its storage and use for domestic, agricultural or industrial purposes. The water collected may be used for:

- drinking
- livestock
- irrigation
- refilling aquifers ('*groundwater recharge*')

How is rainwater harvested/stored?

Water may be gathered from every square area on which it falls and subsequently stored in affordable containers or water storage units such as plastic tanks. Water collection areas may include:

- Concrete/zinc roofs
- Road pavements
- Corridors
- Greenhouse plastic roofing

Rainwater Harvesting in Jamaica

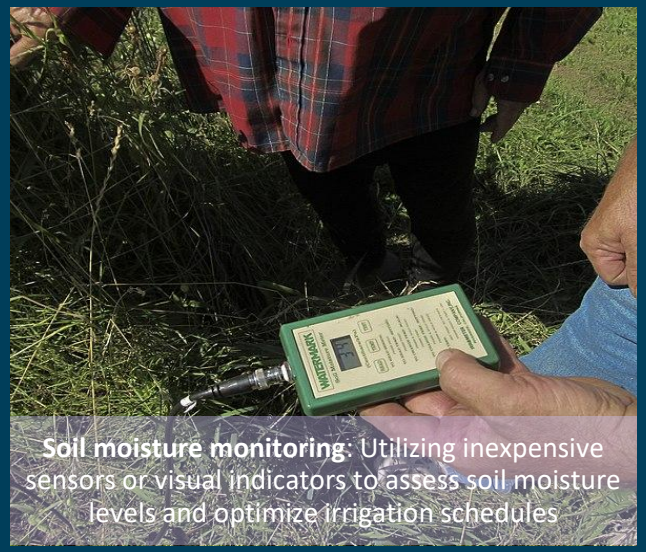
In Jamaica, our water resource is often mismanaged. However rainwater harvesting can mitigate through the adoption of the following practices:

- Water catchment areas can be put in place on both public and private buildings
- Water collected should be stored in containers which are safe from pests and rodents
- Householders can store water in tanks for backyard gardening
- Water can be stored in black tanks for subsistence farming outside of the usual irrigated areas

Rainwater is also a good source of water in times of drought and can always be used to complement the normal water supply. With respect to its use for drinking, it is to some extent healthier than chlorine and calcium based water from rivers, may also be treated for consumption.

Low-cost water conservation strategies

Drip irrigation: Delivers water directly to plant roots, minimizing evaporation and runoff



Soil moisture monitoring: Utilizing inexpensive sensors or visual indicators to assess soil moisture levels and optimize irrigation schedules

Mulching: Using organic materials to cover soil and retain moisture

Water storage solutions

Rainwater tanks: Storage tanks for collected rainwater, available in various sizes

Reservoirs: Larger bodies of stored water that can supply irrigation and livestock needs.

Surface ponds: Constructed ponds that capture runoff and provide a water source for crops.

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Integrated approaches to water management

Combining rainwater harvesting, water conservation strategies, and storage solutions creates a comprehensive water management system.

Encouraging community involvement and knowledge sharing can enhance the effectiveness of IWRM practices.

Policies and regulations should support sustainable water management at local and national levels.

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