

Global Solutions for a Changing Climate



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Urban Water Institute's 2024 Water Conference

February 22, 2024

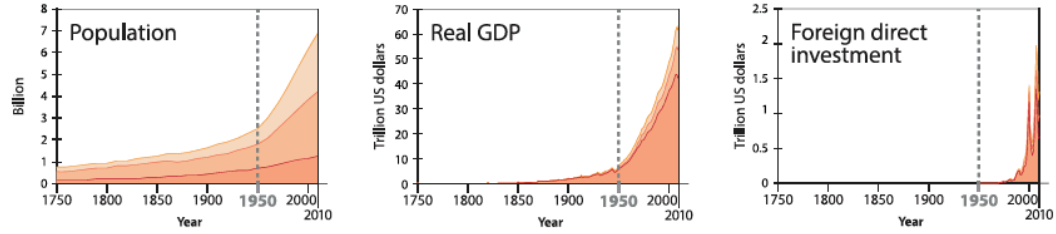
Palm Springs, CA



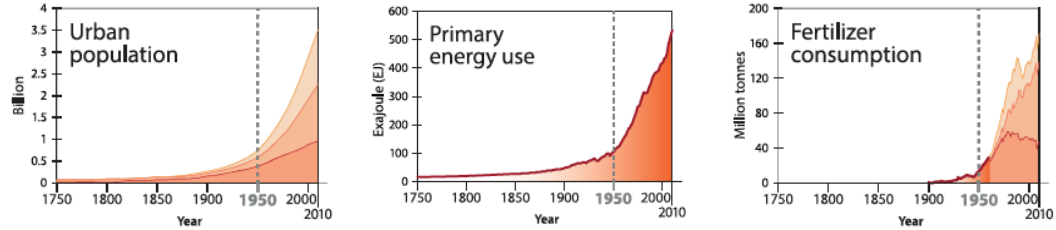
Water for All

Global Solutions for a
Changing Climate

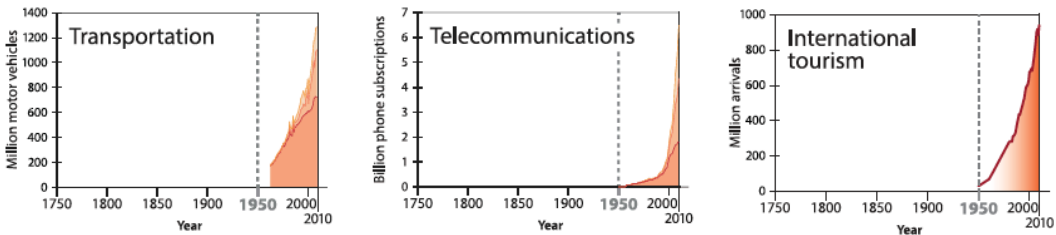
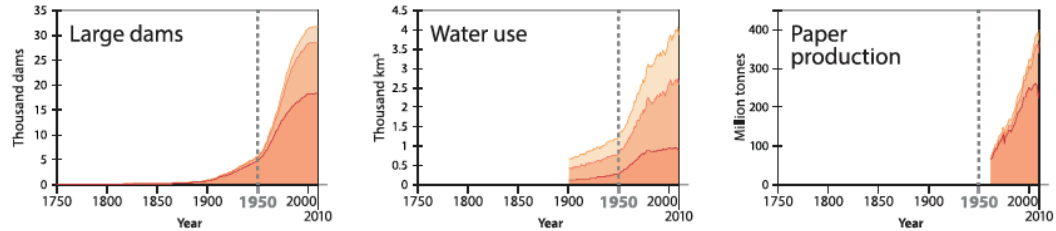
DAVID SEDLAK

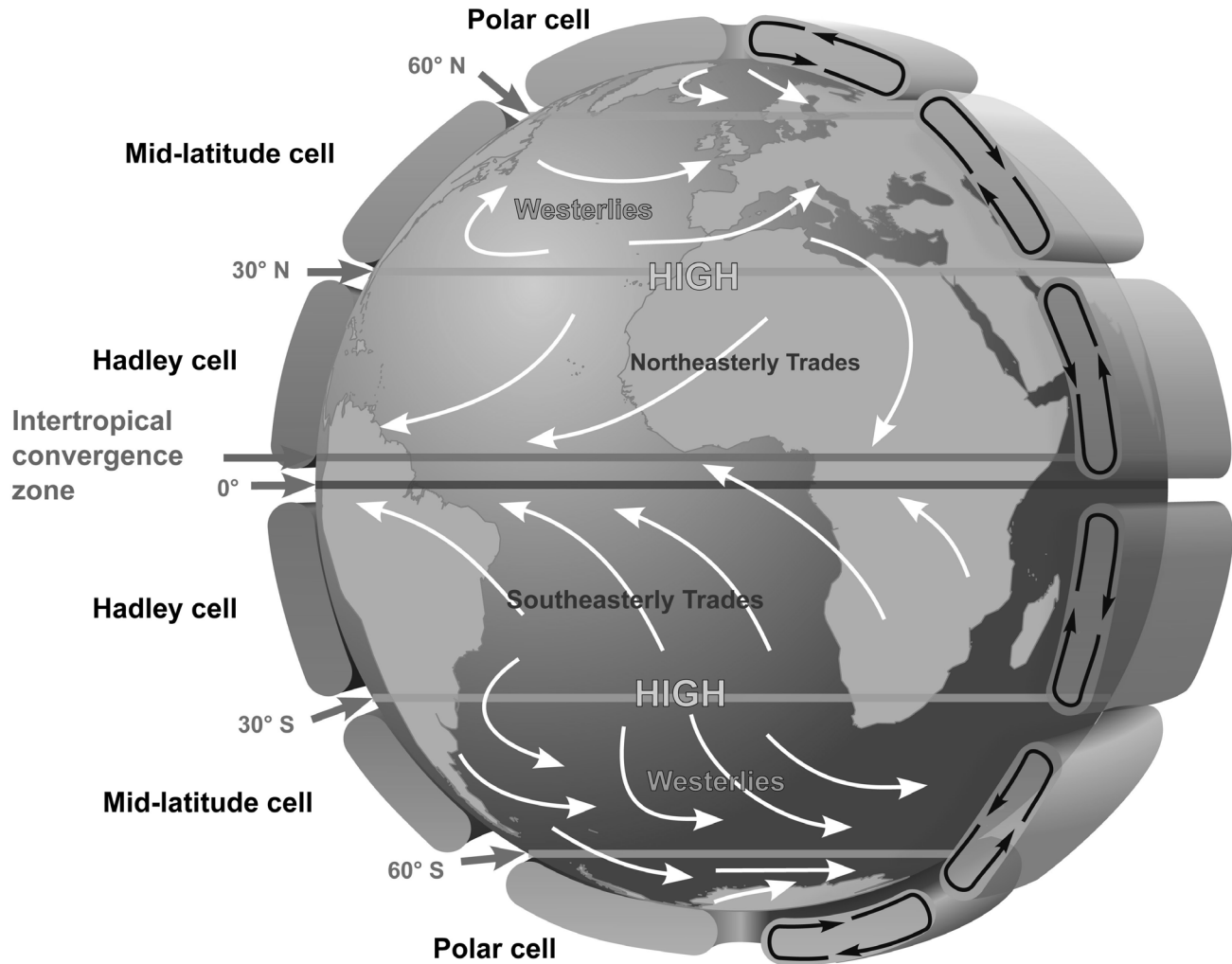


OECD BRICS Others



The Great Acceleration







Water for the Wealthy



Water for the Many

The Philippine Star



Water for the Poor

NY Times



Water for Health

Wikipedia



Water for Food



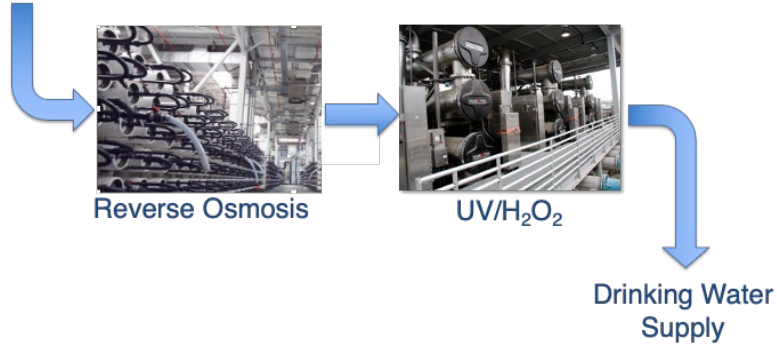
Water for Ecosystems

NASA

A Water Reuse Revolution

Full Advanced Treatment (FAT)

Treated Wastewater



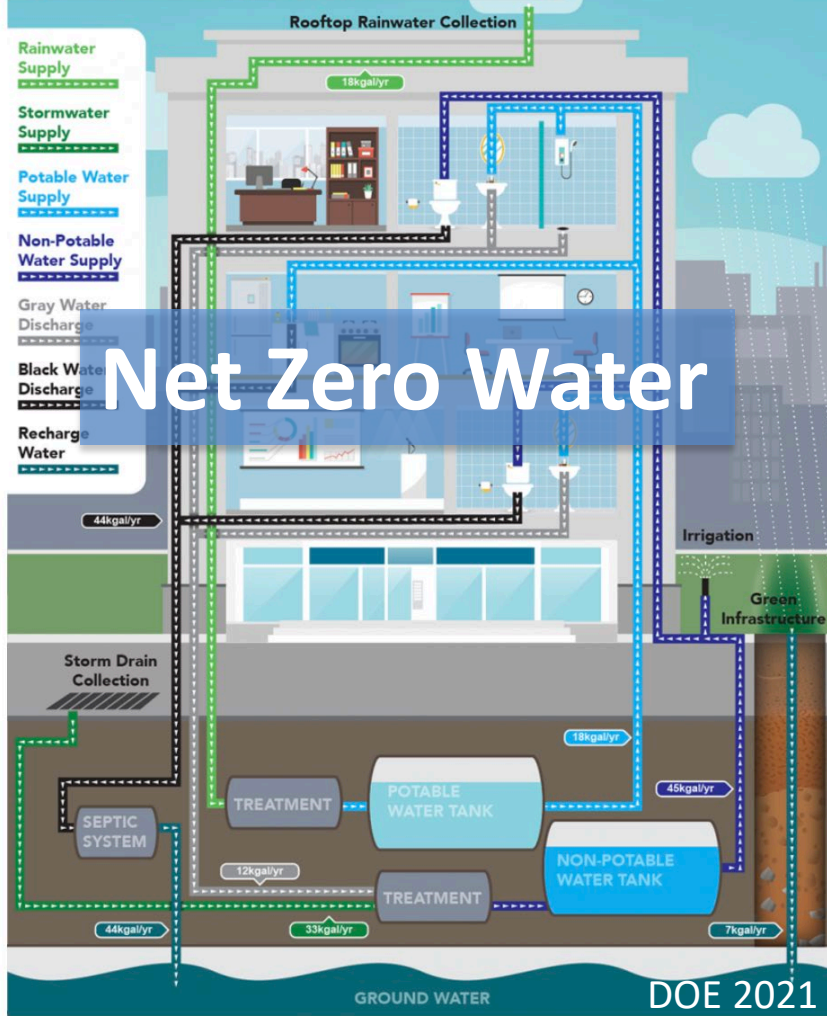
Physical/Chemical Treatment



Managed Aquifer Recharge



Scenario 1: The Ideal Net Zero Water Building

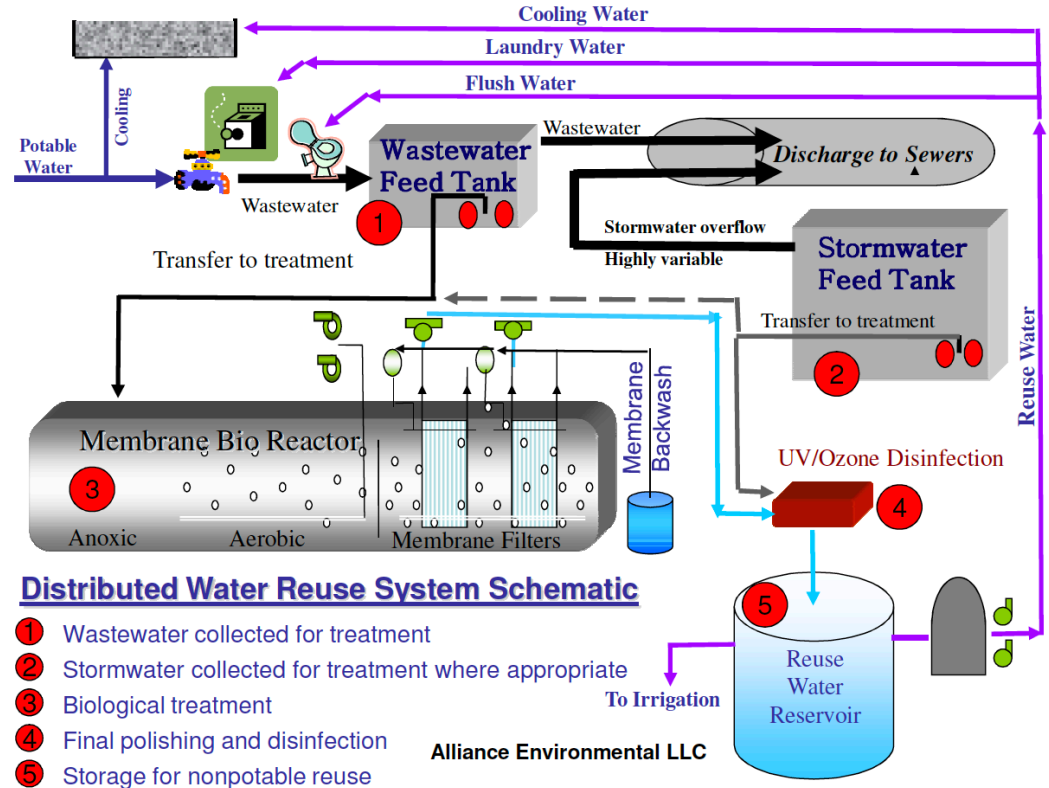


Net Zero Water

Halfway to Net Zero in New York



Battery Park City



Projects in Our Backyard

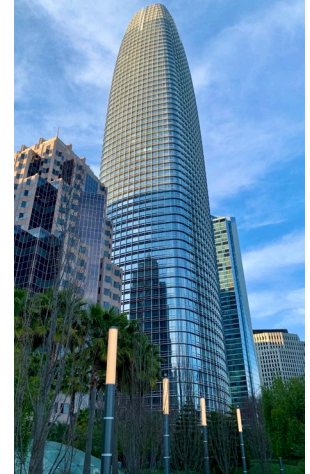
Uber Mission Bay at 1455 and 1515 Third Street –
San Francisco, CA



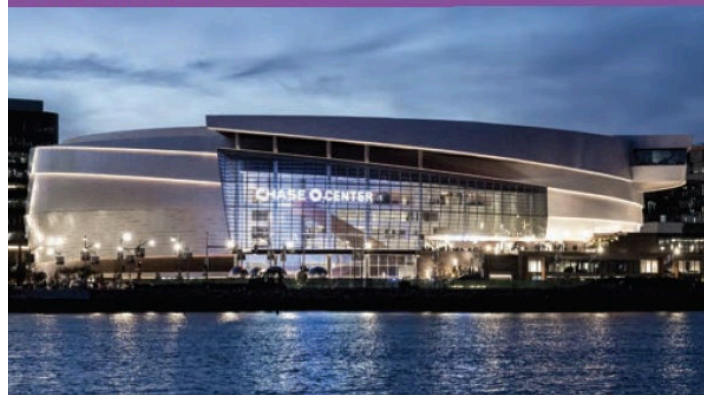
San Francisco Public Utilities Commission Headquarters –
525 Golden Gate Avenue



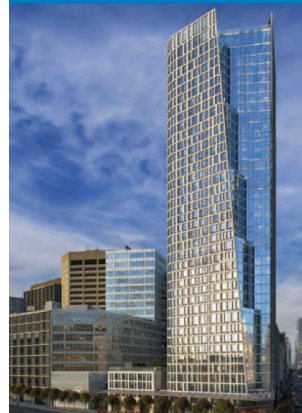
Salesforce Tower –
San Francisco, CA



Chase Center –
San Francisco, CA



Fifteen-Fifty at 1550 Mission Street –
San Francisco, CA



Mission Rock at Third and Mission Rock Street –
San Francisco, CA

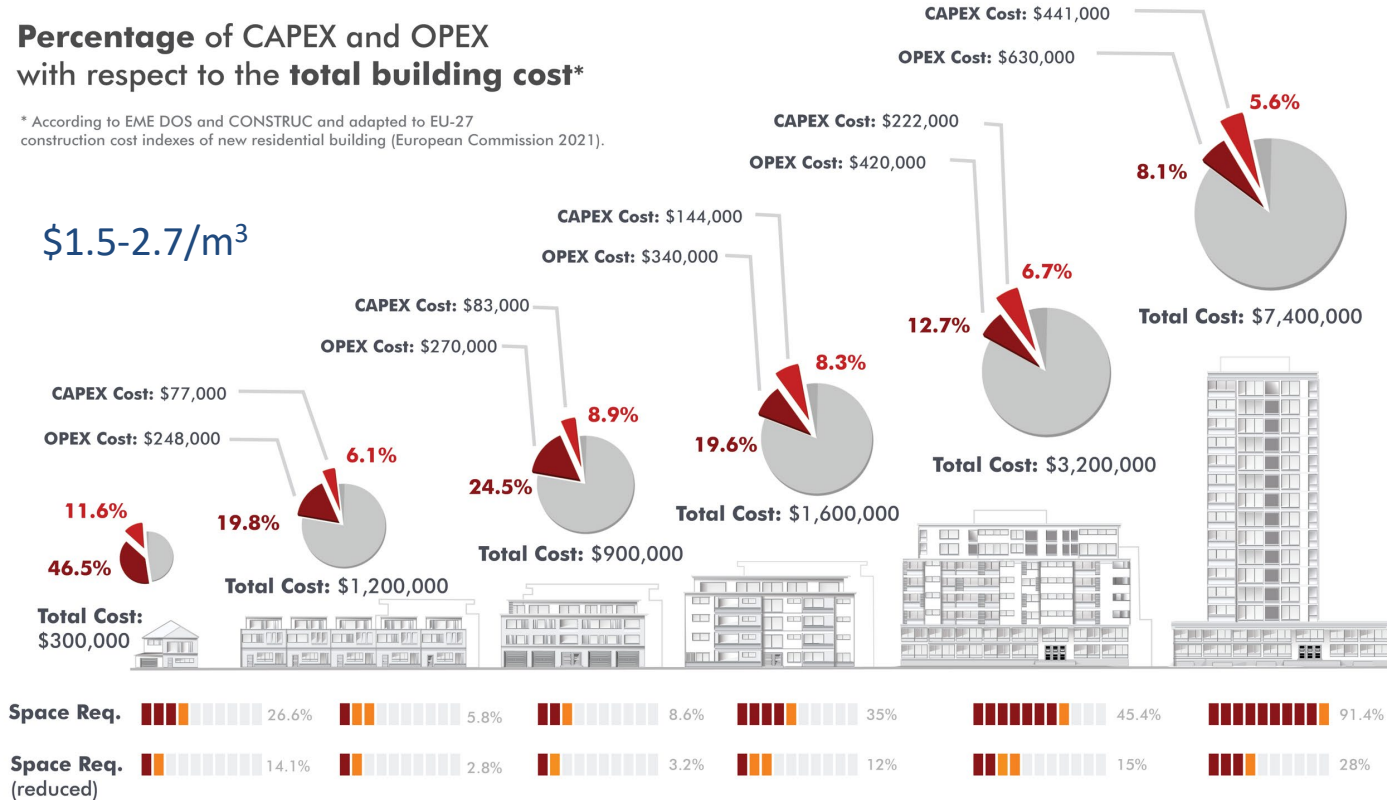


Costs: Techno-Economic Analysis

Percentage of CAPEX and OPEX with respect to the total building cost*

* According to EME DOS and CONSTRUC and adapted to EU-27 construction cost indexes of new residential building (European Commission 2021).

\$1.5-2.7/m³



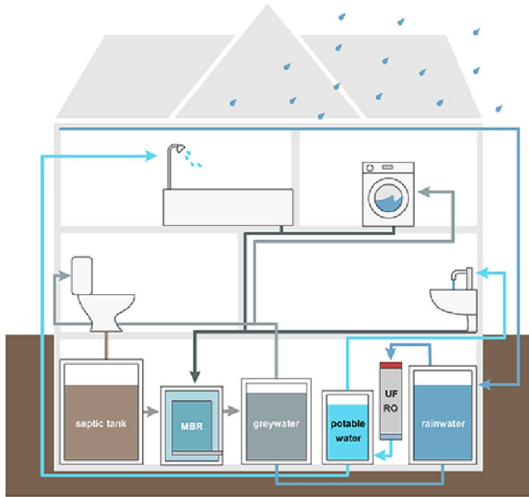
Garrido-Baserba et al. (2022)

Percentage of occupied space with respect to one entire floor plant or basement (%)

Calculation details in supplementary information

Beyond Big Projects in Wealthy Cities

Single Family Dwellings



Rabaey et al. (2020)

Rural Communities

THE CALIFORNIA REPORT MAGAZINE
Racism Robbed This Historically Black California Town of Its Water. Now, They're Developing Water of Their Own



By Teresa Cotarilos
Food and Environment Reporting Network Sep 9, 2022 Save Article



Sherry Hunter, president of the Allensworth Community Services District in rural Tulare County, stands near a swing set at the town's community center on Friday, Aug. 29, 2022. (Craig Kohlross/FERN)

Emerging Megacities

How Africa can leapfrog the world's stagnant water paradigm

August 12, 2019

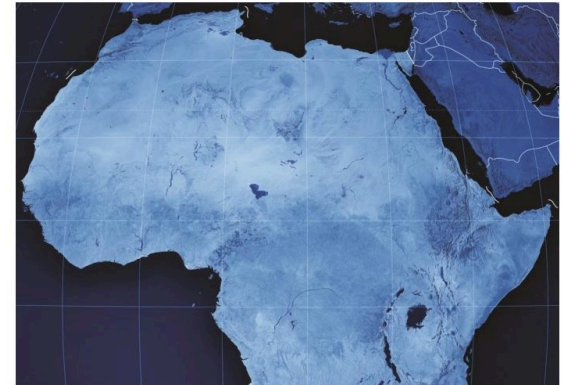


Photo credit: FrankRamsrott/iStock

*Africa has an unprecedented opportunity to embrace widespread water innovation. IWA is poised to help catalyse this, and to share the lessons globally in a two-way exchange with its African partners, writes **Kala Valravamoorthy**.*

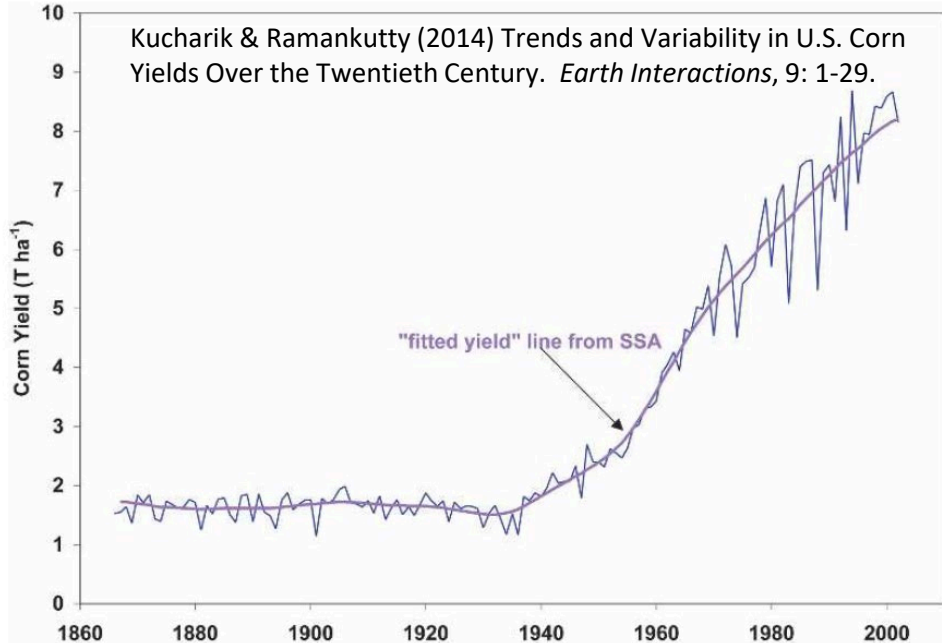
Water for Food

An aerial photograph of a center-pivot irrigation system in Kansas, USA. The image shows a complex pattern of circular and rectangular plots, each representing a different stage of crop growth or a different crop type. The colors range from vibrant green to brown and tan, indicating varying levels of water stress and crop maturity. The plots are arranged in a grid-like pattern, with some larger circular plots and many smaller rectangular ones. The overall appearance is a mosaic of different shades of green and brown, creating a textured, almost abstract pattern. The text "Water for Food" is overlaid in white at the top center.

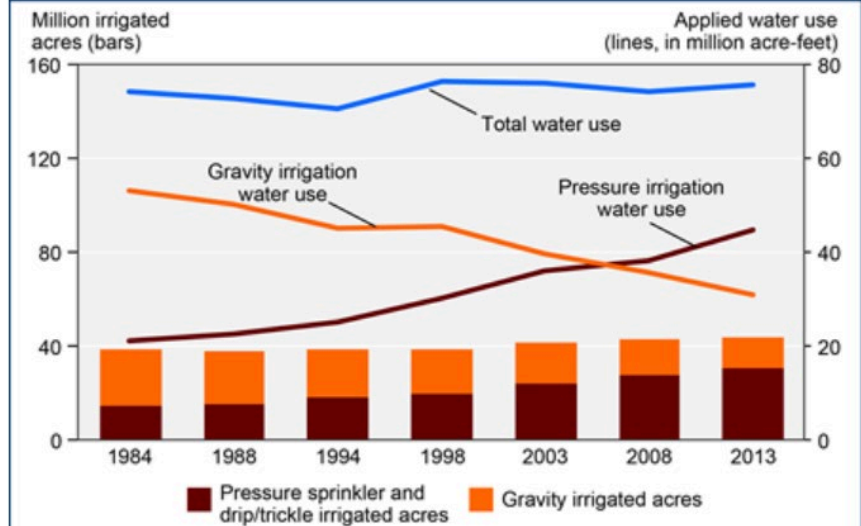
Center-Pivot
Irrigation in Kansas
USA

Wikipedia

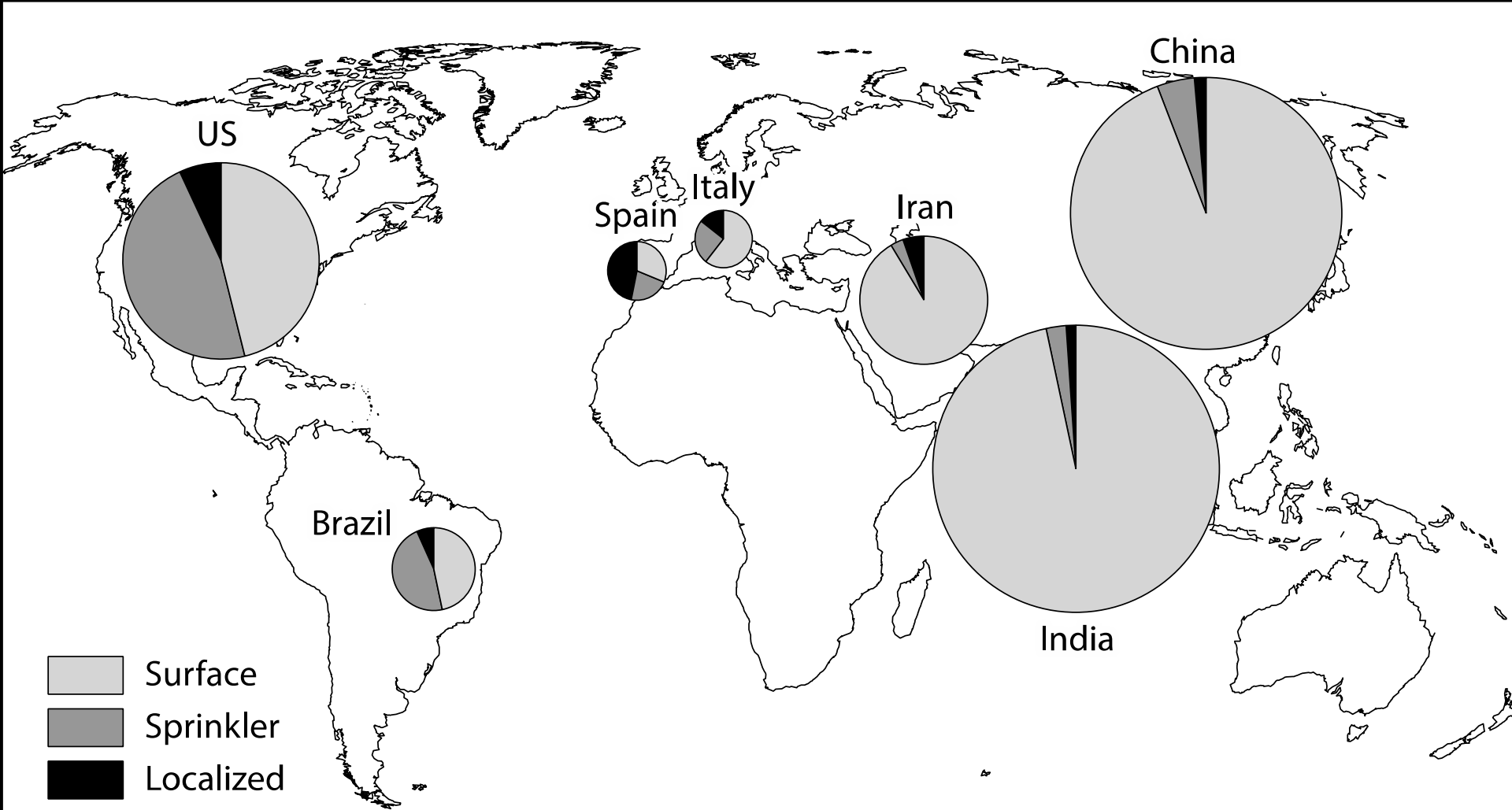
The First Green Revolution



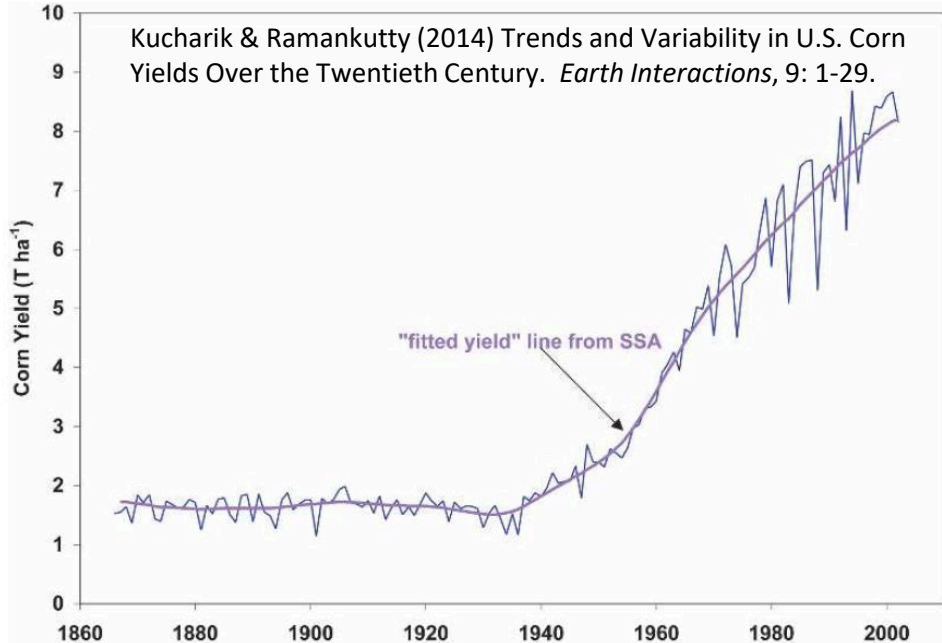
Irrigated acres and applied water use, 17 Western States, 1984-2013



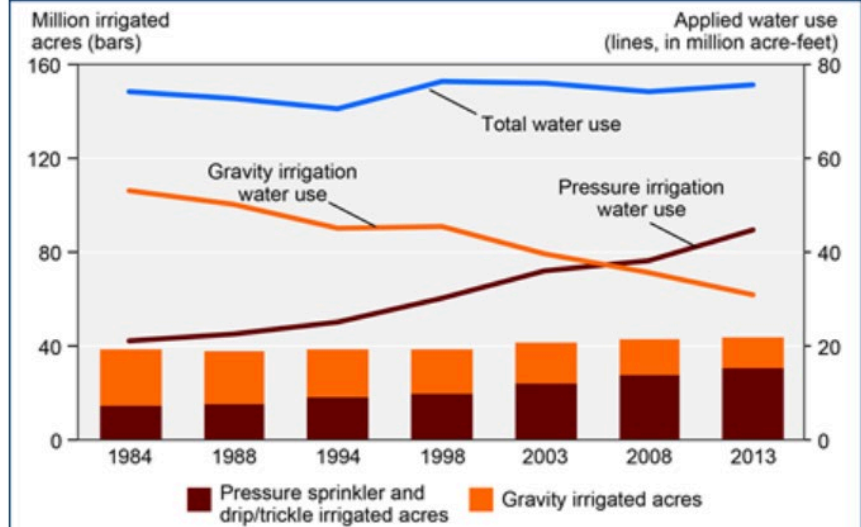
Source: USDA, Economic Research Service using USDA, National Agricultural Statistics Service, Farm and Ranch Irrigation Survey (FRIS) data. Note that FRIS reports onfarm water applied, not withdrawn; this chart excludes irrigated horticulture crops under protection.



The First Green Revolution



Irrigated acres and applied water use, 17 Western States, 1984-2013



Source: USDA, Economic Research Service using USDA, National Agricultural Statistics Service, Farm and Ranch Irrigation Survey (FRIS) data. Note that FRIS reports onfarm water applied, not withdrawn; this chart excludes irrigated horticulture crops under protection.

Advanced Water Technology for Agriculture

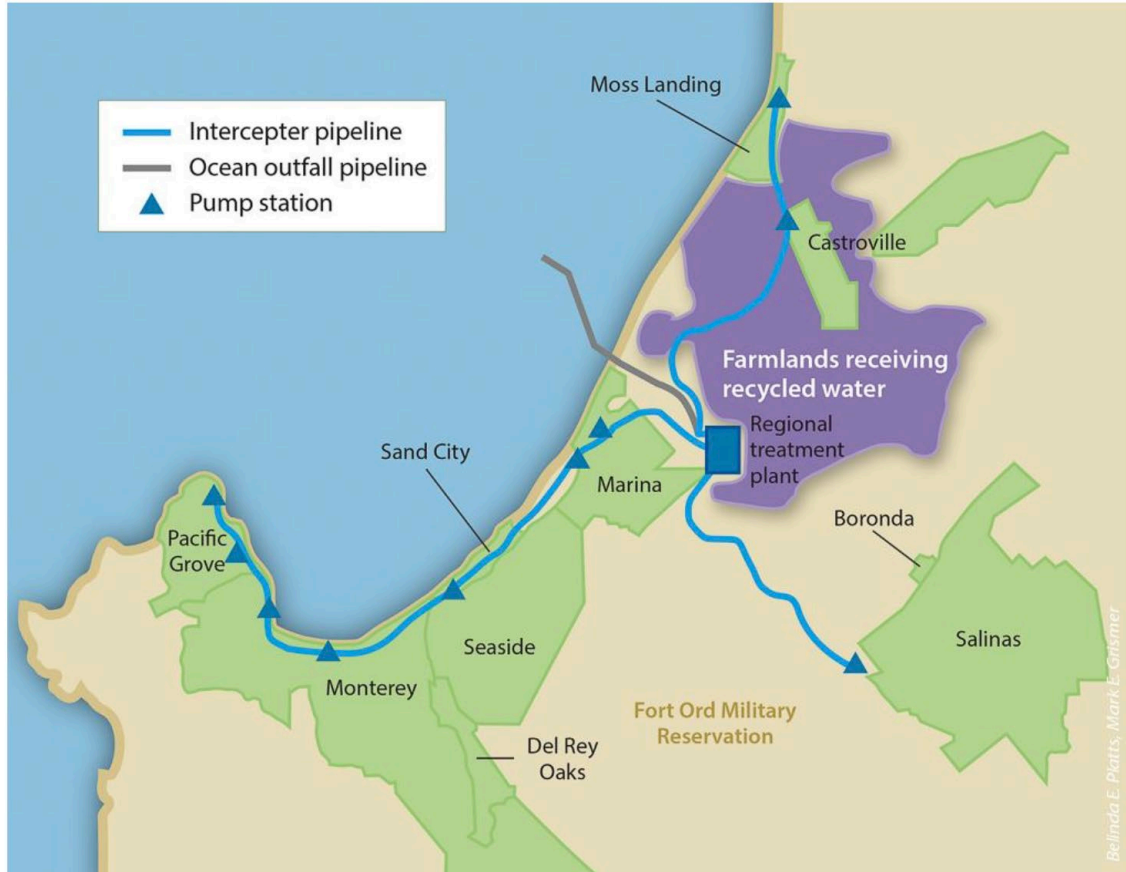
Brackish Water Desalination



Modular Small-Scale Treatment



Advanced Water Technology for Agriculture



Belinda E. Platts, Mark E. Gristner

Takeaways

Water challenges facing wealthy city dwellers are one of six global water crises.

No single solution will solve the world's water crises.

Experience gained in local water crises can be applied in new locations.

People in this room are integral to **Water for All**.

Water for All

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