

SVENSKA ARALSJÖSÄLLSKAPET

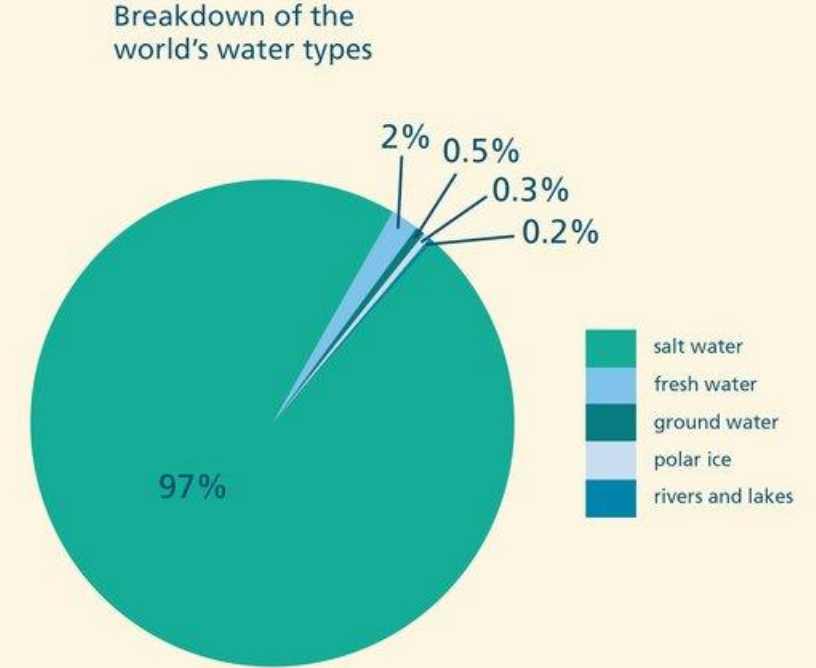
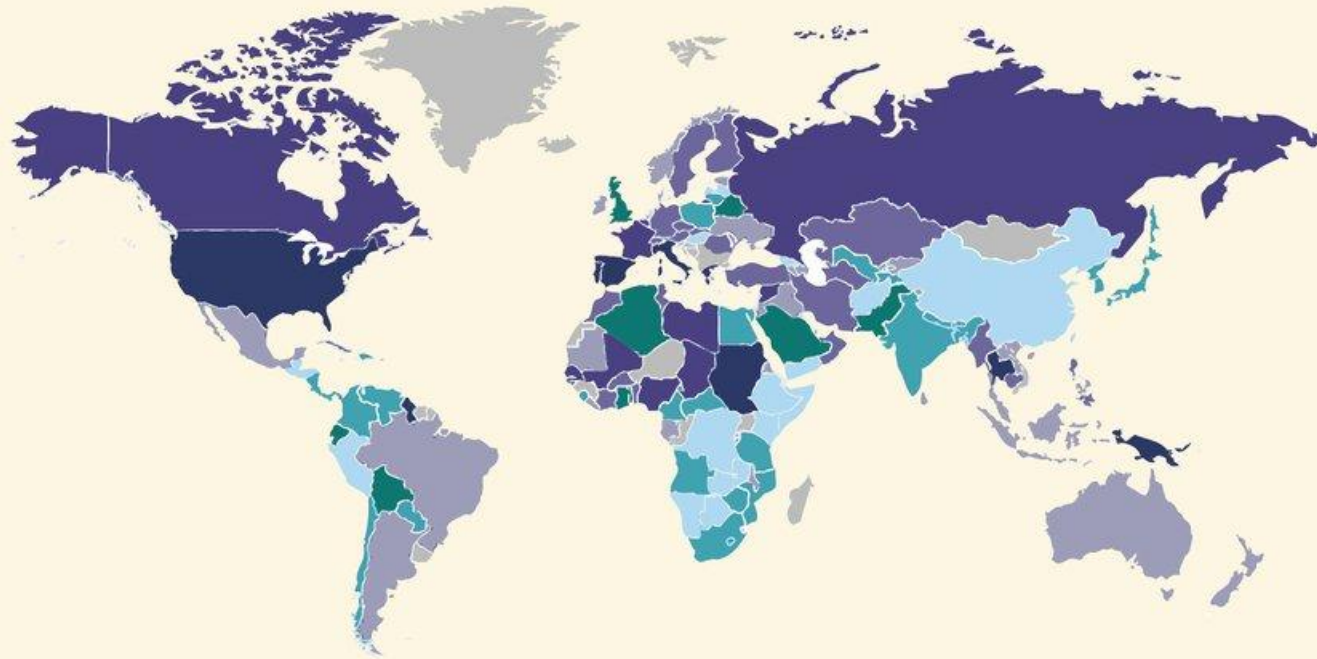
Swedish Aral Sea Society



Water use and management - Agriculture and Sanitation

Today, we'll explore how agriculture and sanitation rely on water and how sustainable science can address global challenges.

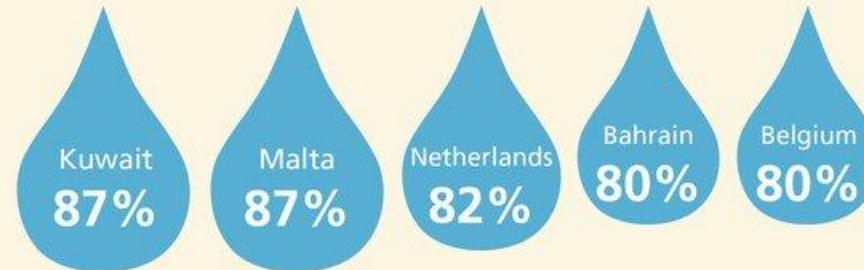
Akmal Sultonov JizPI



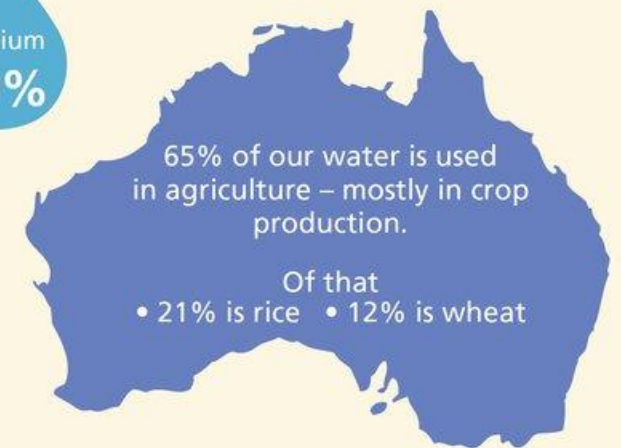
Highest water footprint per capita



Countries most dependent on water imports

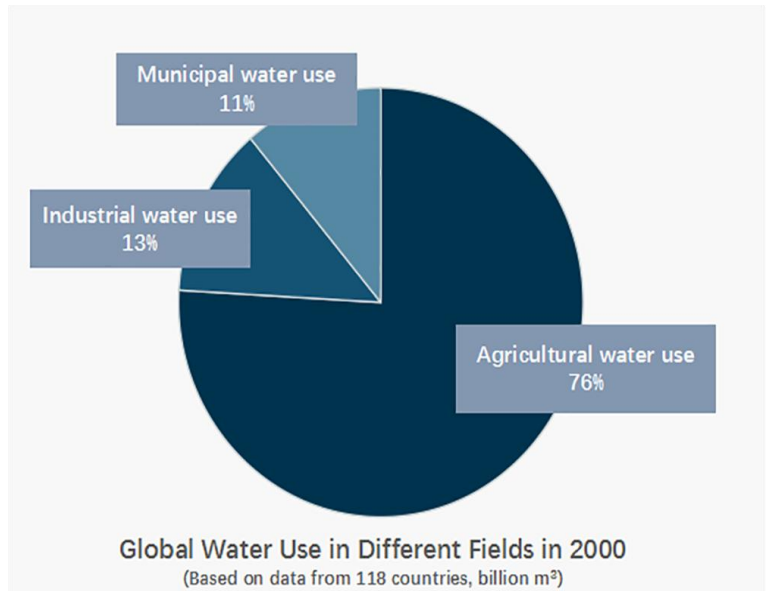
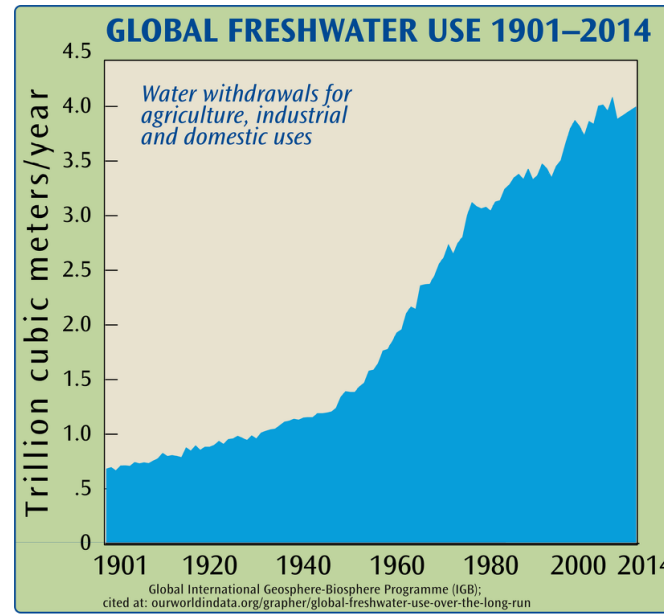


Water footprint of different foods

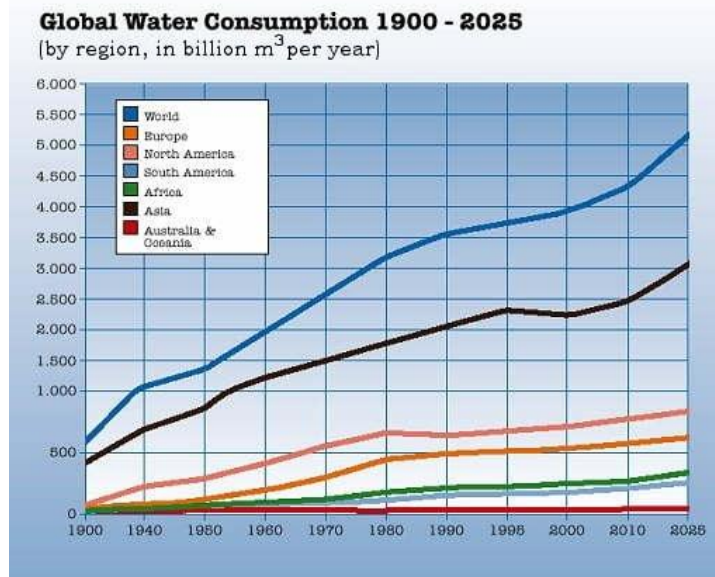


Introduction

- Water is a critical resource for life, agriculture, and sanitation.
- Unsustainable water use threatens food security, health, and ecosystems.
- Sustainable development goals (SDGs), especially **SDG 6 (Clean Water and Sanitation)**, emphasize efficient water management.
- Without **efficient water use**, we risk losing the ability to feed growing populations sustainably.



Current situation of global Water Resources <https://www.rifeng.com/>



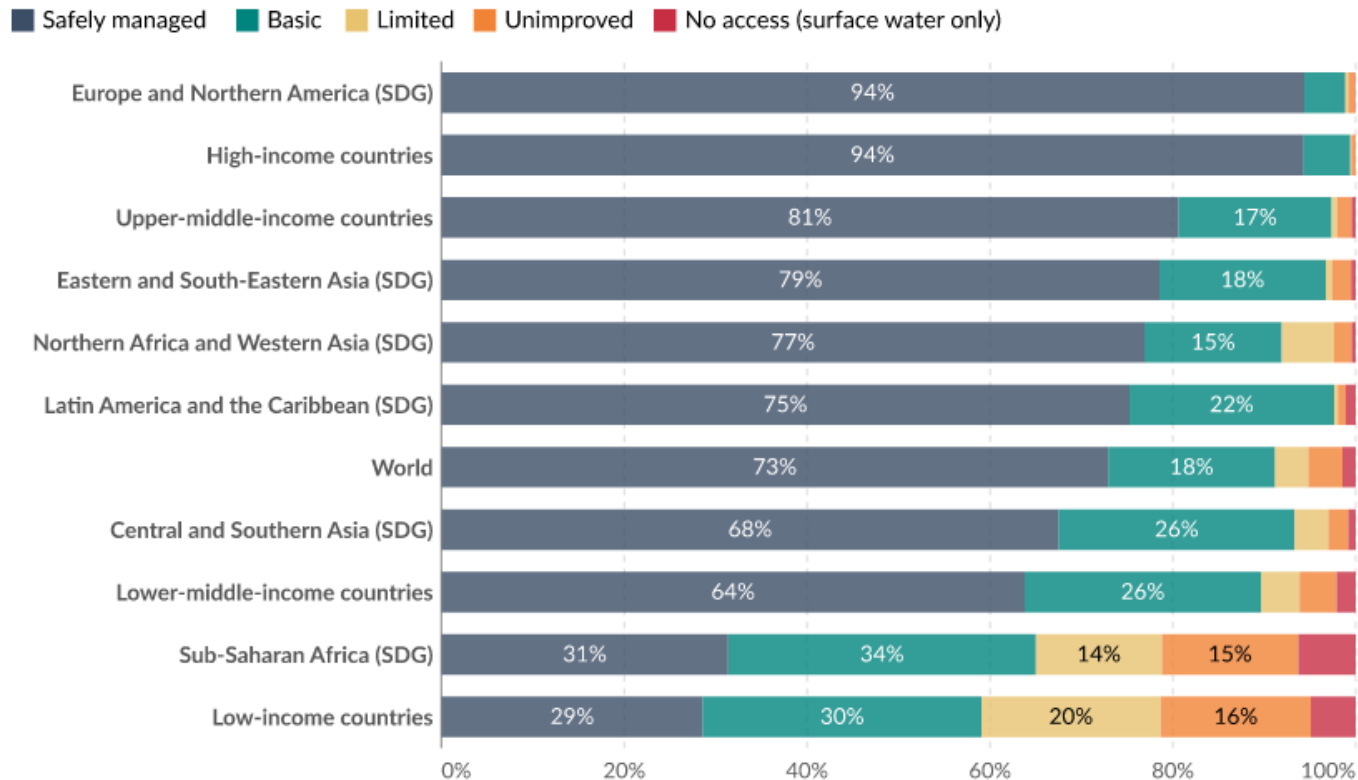
Global water report



Water and Sanitation

Share of the population using drinking water facilities, 2022

Our World
in Data



Data source: WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) (2024)
OurWorldinData.org/water-access | CC BY

2.2 billion people lack access to safely managed drinking water (UN, 2023).

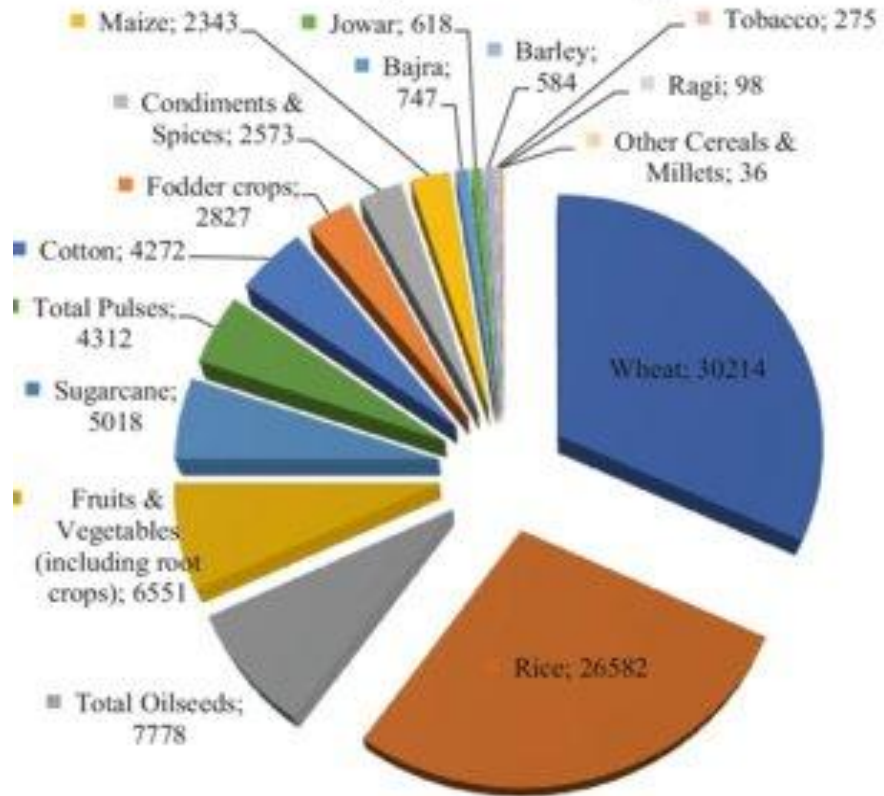
Poor sanitation leads to water contamination, diseases like cholera, and environmental harm.

Connection to agriculture: Runoff from farms pollutes water sources.

"Sanitation isn't just about health—it's about protecting our water resources for all uses."

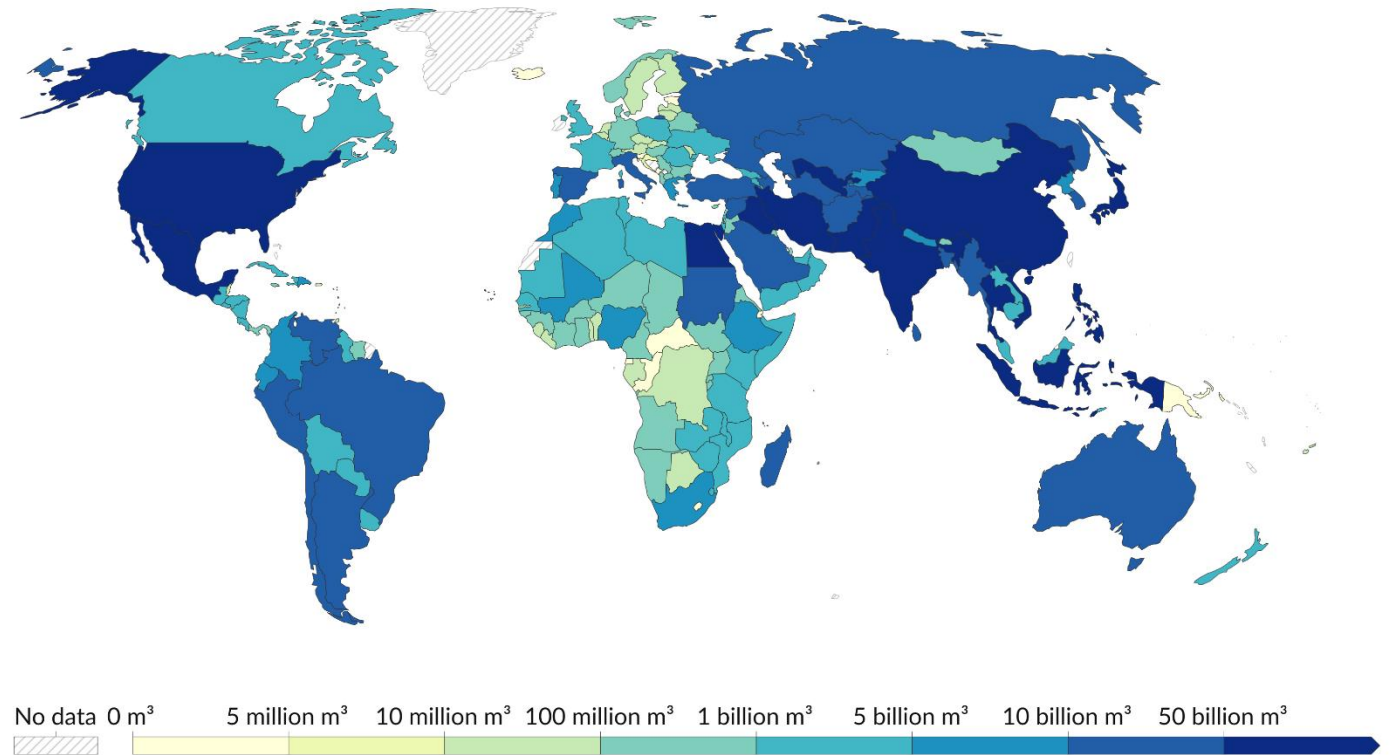
Water use in agriculture

Gross area under irrigation by different crops in 2014-15
(Thousand hectare)



Agricultural water withdrawals, 2015

Total agricultural withdrawals, measured in m³ per year. Agricultural water is defined as the annual quantity of self-supplied water withdrawn for irrigation, livestock and aquaculture purposes.



Challenges in Water Management

Challenges in Water Management

Overuse

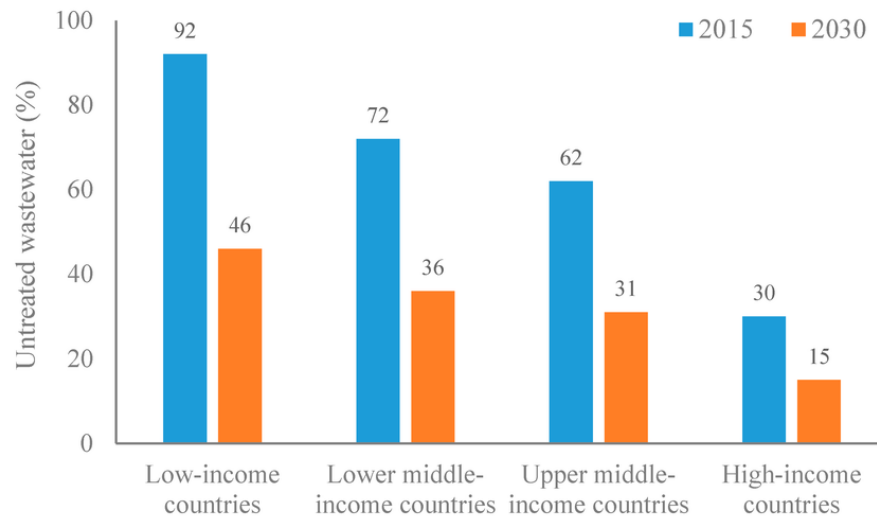
Depleting aquifers faster than they recharge.

Pollution

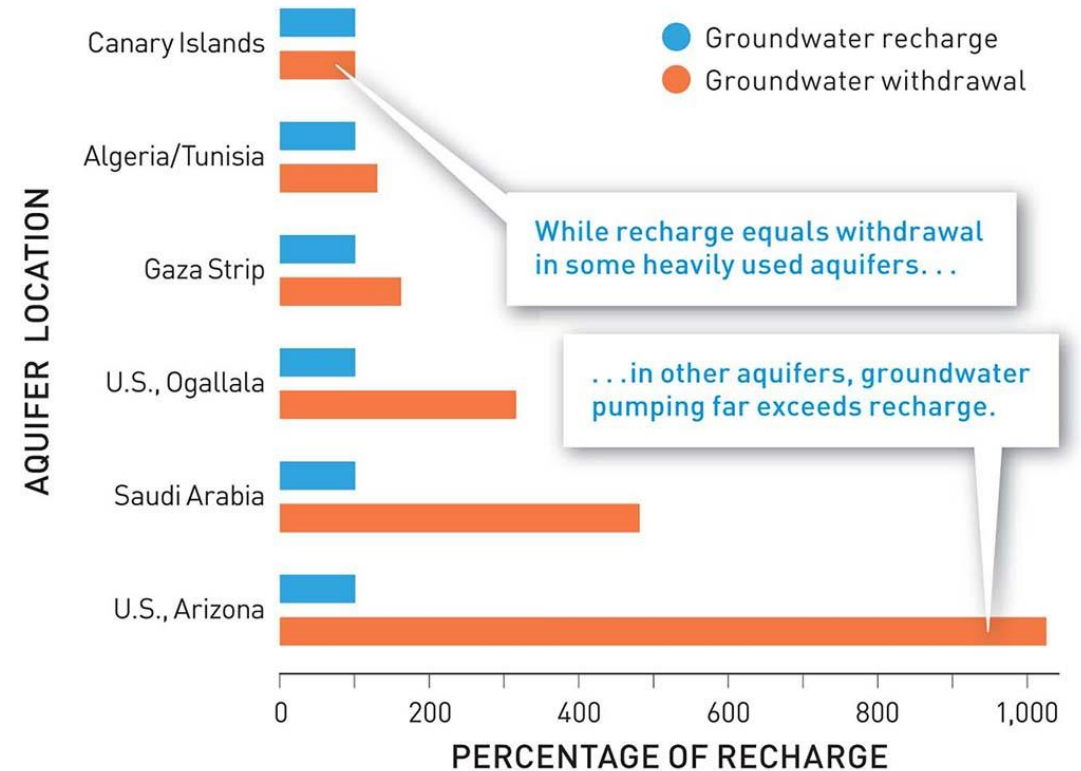
Fertilizers, pesticides, and untreated sewage.

Climate Change

Droughts and floods disrupt water availability.



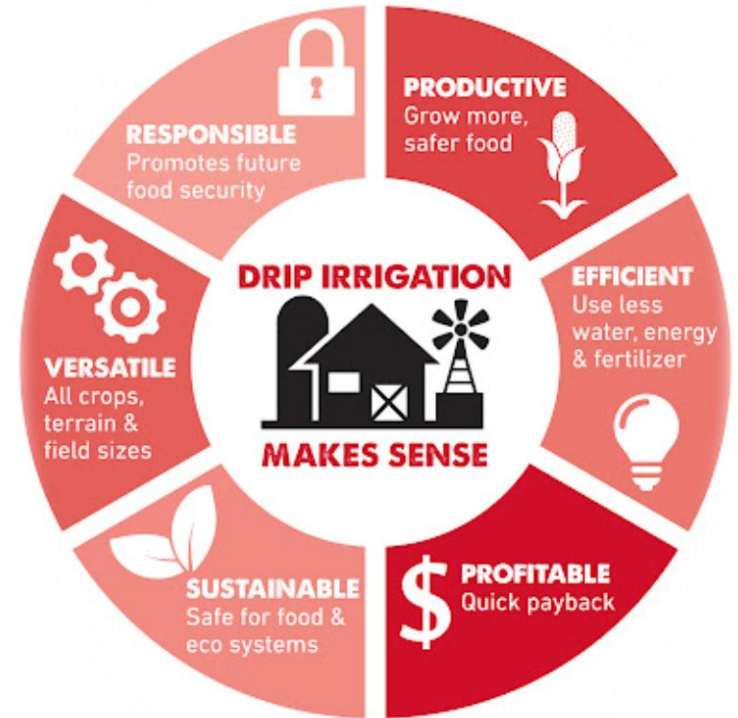
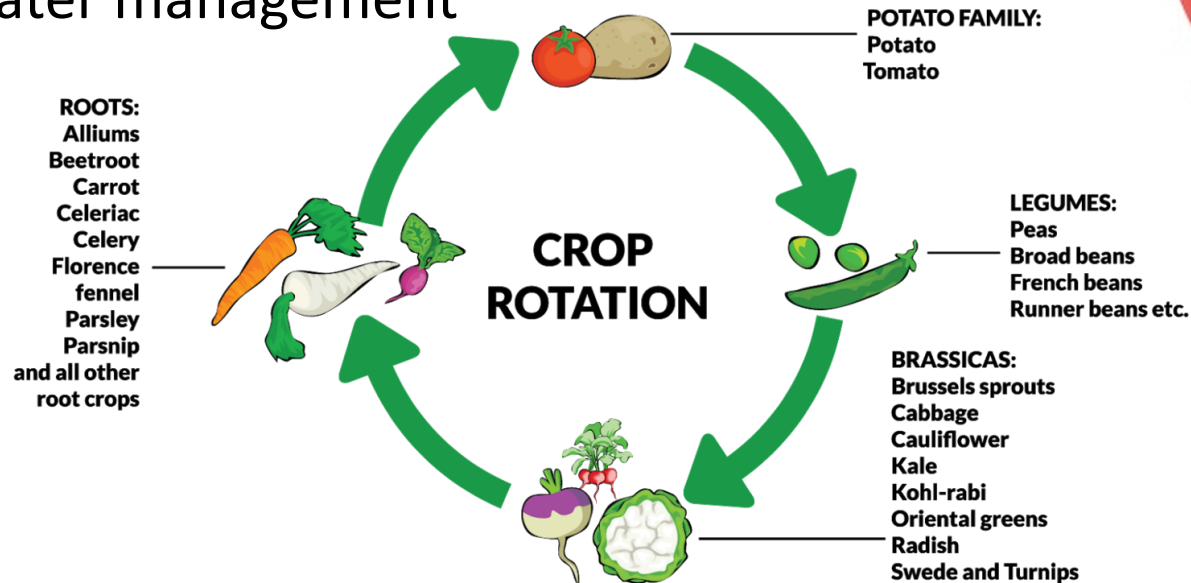
GROUNDWATER RECHARGE OR WITHDRAWAL
(AS PERCENTAGE OF RECHARGE)



Molles, *Environment: Science, Issues, Solutions*, 1e, © 2016 W. H. Freeman and Company

Sustainable Science Solutions for Agriculture

- Precision irrigation (e.g., drip systems) reduces water waste.
- Crop rotation and drought-resistant crops minimize water demand.
- Rainwater harvesting for small-scale farmers.
- Digital water management



Creating list of water consumers' association



Min Water

Asosiy oynaga qaytish

Suv istemolchilari uyushmasi ro'yxatini shakillantirish

Nomi

Viloyatni tanlang

Tumanni tanlang

Kanalni tanlang

Bazaga yozish



Min Water

Xo'jalik jadvalini shakillantirish

Asosiy oynaga qaytish

Kanal nomi	Istemolchi	Xo'jalik nomi	Ekin maydonlari							
			Paxta va texnik ekinlar	Ozuqa ekinlar	Makkajoxori	Sabzavot va kartoshka	Poliz ekinlari	Kop yillik daraxtlar(bog, tut,	Galla	Tomorqa
Chap tarmoq	Rahim Esanq									
Bazaga yozish										



Min Water

Suv istemolchilari uyushmalarining amalda olgan suvlari to'g'risida hisobot

Asosiy oynaga qaytish

Viloyatni tanlang

Hisobot tayyorlash

Tumanni tanlang

Hisobot tayyorlash

T/R	Nomlanishi	Maydoni	Meyori	Aprel			May			Iyun			Iyul			Avgust			Sentyabr		
		"ga"	m3/"ga"	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III			
1	Jizzax tumani																				
1	Rahim Esanqulov																				
1	Bobojon Fayziyev	45		0	8.84	17.65	20.6	23.51	0	0	0	0	0	0	0	0	0	0	11.76	23.51	
2	Oltin Vodiy	50		0	9.83	19.61	22.89	26.13	0	0	0	0	0	0	0	0	0	0	13.06	26.13	
3	Amur Temur	94		0	0	0	0	34.68	34.68	49.12	51.88	54.64	60.09	58.15	56.34	36.87	36.87	35.1	35.1	0	0
4	Qodirjon	90		0	0	0	0	19.58	39.24	62.75	78.4	78.4	78.4	70.61	39.24	19.65	0	0	0	0	0
5	Amur Temur	94		0	0	0	0	20.45	40.98	65.54	81.89	81.89	81.89	73.75	40.98	20.52	0	0	0	0	0
	Jami:	373	mln/m3	0	0.019	0.037	0.043	0.124	0.115	0.177	0.212	0.215	0.22	0.203	0.137	0.077	0.037	0.035	0.035	0.025	0.05
2	Amur Temur																				
	Jami:	0	mln/m3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Umumiy jami:	373		0	0.019	0.037	0.044	0.124	0.115	0.178	0.212	0.215	0.221	0.203	0.137	0.077	0.037	0.035	0.035	0.025	0.05

Sustainable Science Solutions for Sanitation

- Eco-friendly wastewater treatment (e.g., constructed wetlands).
- Greywater recycling for non-potable uses.
- Community-led sanitation projects (e.g., India's Swachh Bharat).

