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**Food and Agriculture Organization  
of the United Nations**

# Decarbonizing Water in Agrifood Systems

*FAO's water journey towards the 2030 Agenda*

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[www.fao.org/land-water](http://www.fao.org/land-water)

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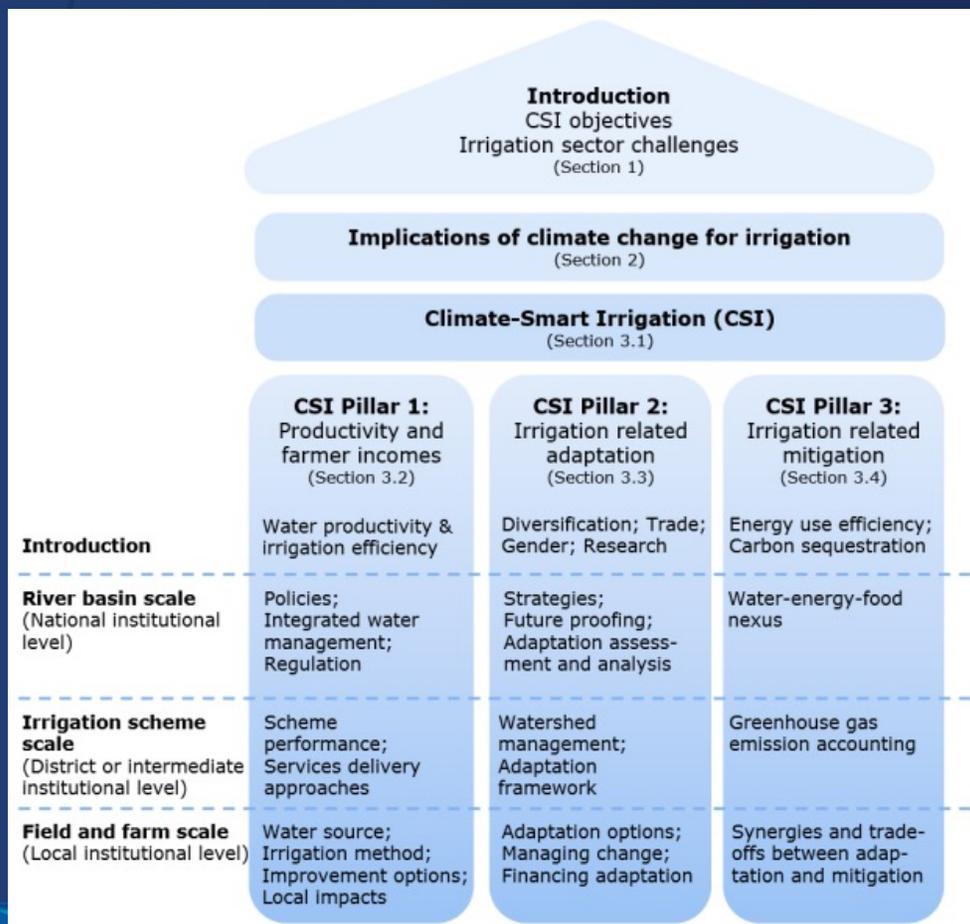
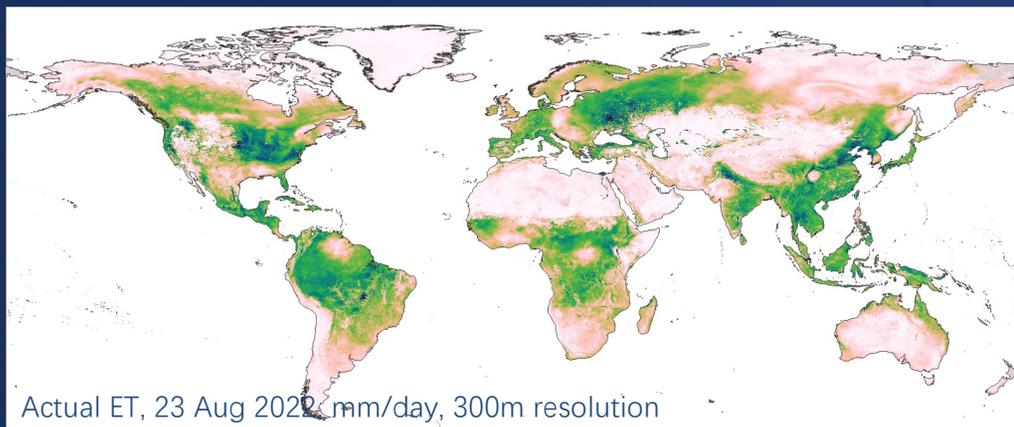
# Persistent agricultural water challenges

- While agrifood systems are vulnerable to climate change, they are responsible for more than one-third of all human-caused greenhouse-gas emissions.
- Agricultural water use is responsible for 72% of global freshwater withdrawal, making it the biggest sectoral water user.
- Global demand for agricultural water is expected to increase of 24% by 2050 under a sustainability scenario.
- Agriculture takes the brunt of extreme weather events due to climate change:
  - **Flood:** Estimated 1.8 billion people exposed to a significant flood hazard; direct economic loss in agricultural sectors around USD 80 billion in 2021.
  - **Drought:** agriculture absorbing over 80% of the economic losses.



# Climate-smart, regenerative & digital irrigation

- *CS irrigation*: attention to 3 CSA pillars
- *Regenerative agriculture* to increase water retention and reduce runoff (soil fertility, biodiversity and C soil sequestration)
- *Digital agriculture*: near real time intel to reduce inputs, such as WaPOR monitoring water productivity

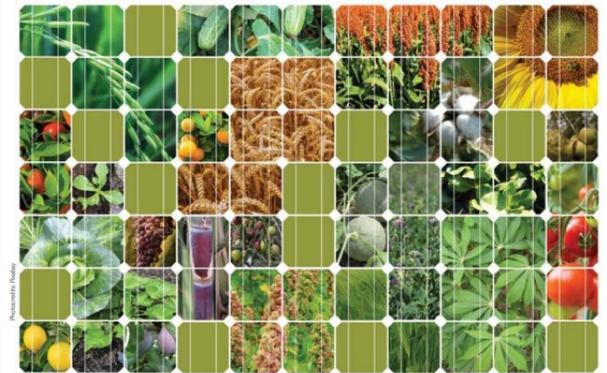


# Solar-powered irrigation

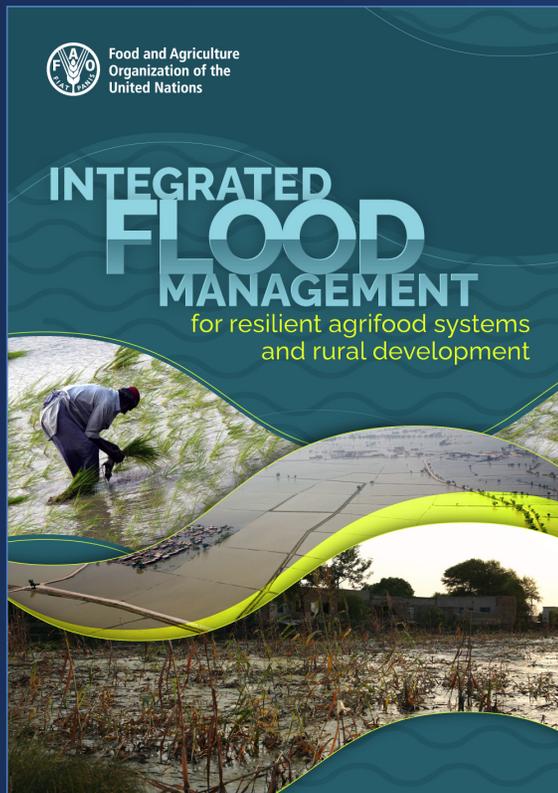
- 3.2 billion people live in agricultural areas with high to very high water scarcity, of whom 1.2 billion people – 1/6 of the world's population - live in severely water-constrained agricultural areas, with serious implications for food security (SOFA, 2020)
- Solar panels for irrigation to increase resilience to climate change
- Green subsidies vs black subsidies (fuel/electricity)
- Appropriate water management for sustainable abstraction
- Gender equity (crops traditionally cultivated by women – vegetable, easier to use than previous treadle pumps)



## The benefits and risks of solar-powered irrigation - a global overview



# FAO's work on flood & drought management



- Assess resilience of agrifood systems to flood risks
  - Involve agriculture and rural communities in planning, designing, implementing and monitoring flood management actions
  - Scale up resilience intervention in agriculture and rural areas
  - Optimize use of flood water in agriculture
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- **Integrated drought management to shift emergency response towards proactive preparedness plans and to maximise response to drought**
    - **Drought portal with UNCCD**
    - **Drought finance tracker**

# Other FAO water initiatives for increased resilience

- Global dialogue on Water Tenure
- Water-Food-Energy-Ecosystem nexus
- Multiple use
- Source-to-Sea
- Ecosystem-based solutions
- One Health
- WASAG
- AWSAME





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# Thank you for your attention!

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# FAO National Water Roadmaps

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- Country-led, participatory process supported by interested partners, including related UN-Water Task Force on Country-level Engagement
- A water action plan to achieve all SDGs in countries by 2030; not just for the water sector, but for all economies, for environment and for all 2030 SDGs.
- A renewed country-owned commitment to water built upon National Agenda or National Sustainable Development Strategy, (intended) Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), Integrated Water Resources Management (IWRM) Plans, and other related national development plans and commitments;
- The Roadmap could consist of national targets and indicators, a prioritized water investment plan, partnerships for implementation, and governance arrangements.

# FAO's 8 commitments to the Water Action Agenda

- National Water Roadmaps towards the 2030 Agenda
- Global Dialogue on Water Tenure
- WaPOR: Remote sensing activities for water productivity
- Global Water Data Portal
- Irrigation needs & potential mapping
- Integrated drought management
- WASAG: Addressing water scarcity in agriculture through partnerships and innovation
- AQUALEX: water legislation collection



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