



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

Water is life, water is food

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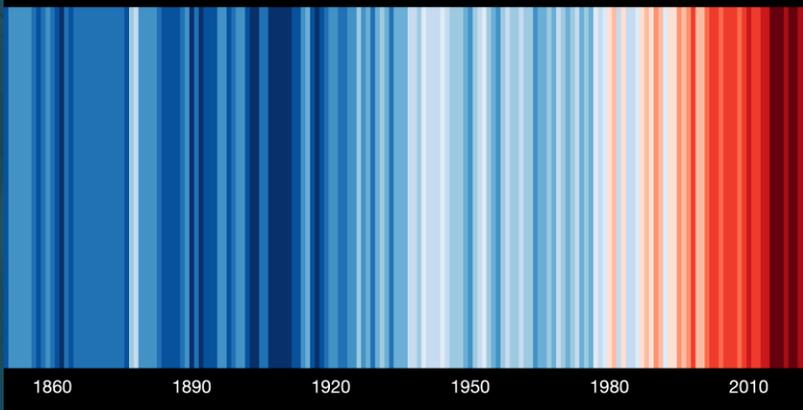


Water is central to food security and climate agenda



- Over 700 million people suffer from hunger (SOFI 2023)
- Around 3.2 billion people live in agricultural areas with high to very high water shortages or scarcity (SOFA 2020)
- Water demand by agriculture is projected to increase by 20 - 30% by 2050, and
- From 2000 – 2019 total cropland increased with 63 M ha, almost 85% of this increase is irrigated (SOLAW 2022)

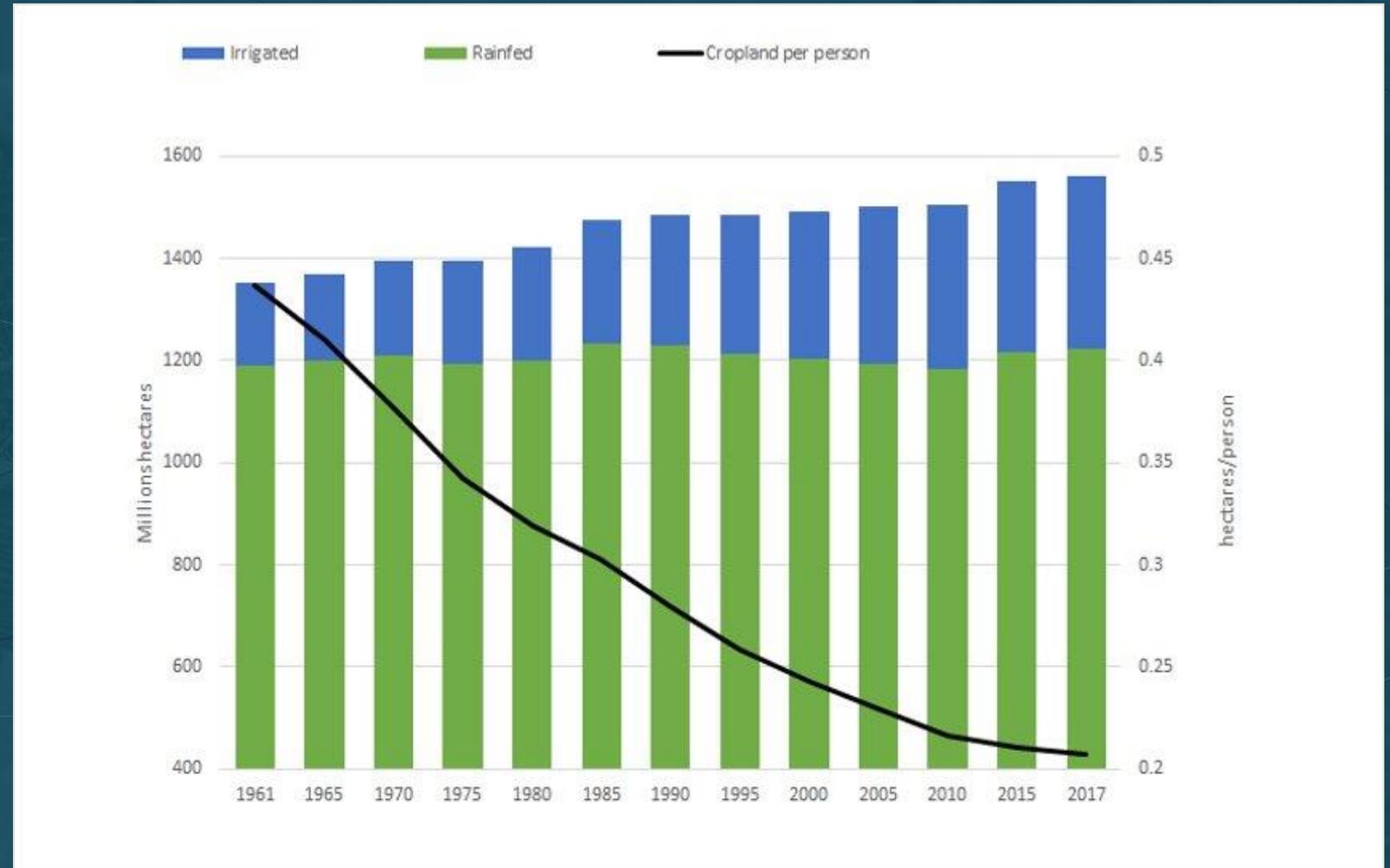
Global temperature change (1850-2022)



Evolution of land under irrigated and rainfed cropping

Net increase in cultivated area over the last 60 years is attributable to a net increase in irrigated cropping

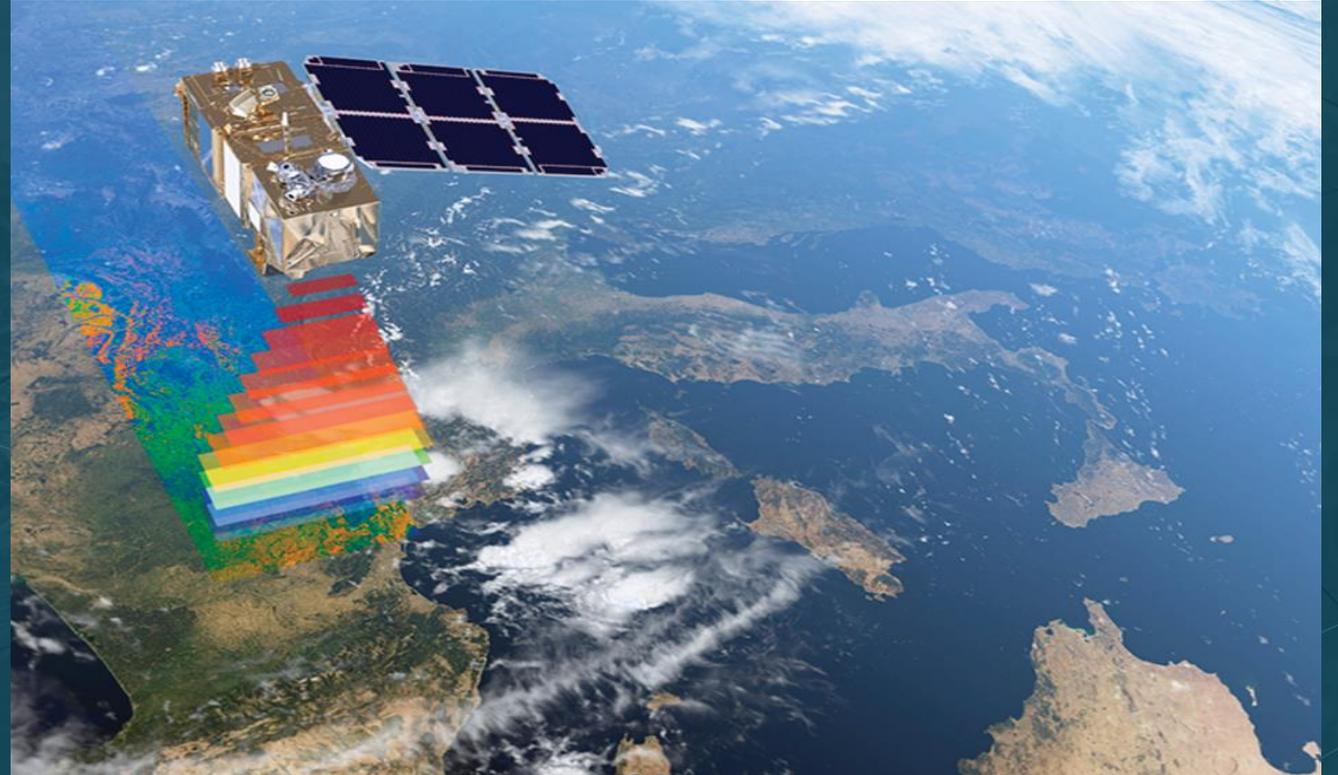
At the same time, agriculture is facing growing water scarcity



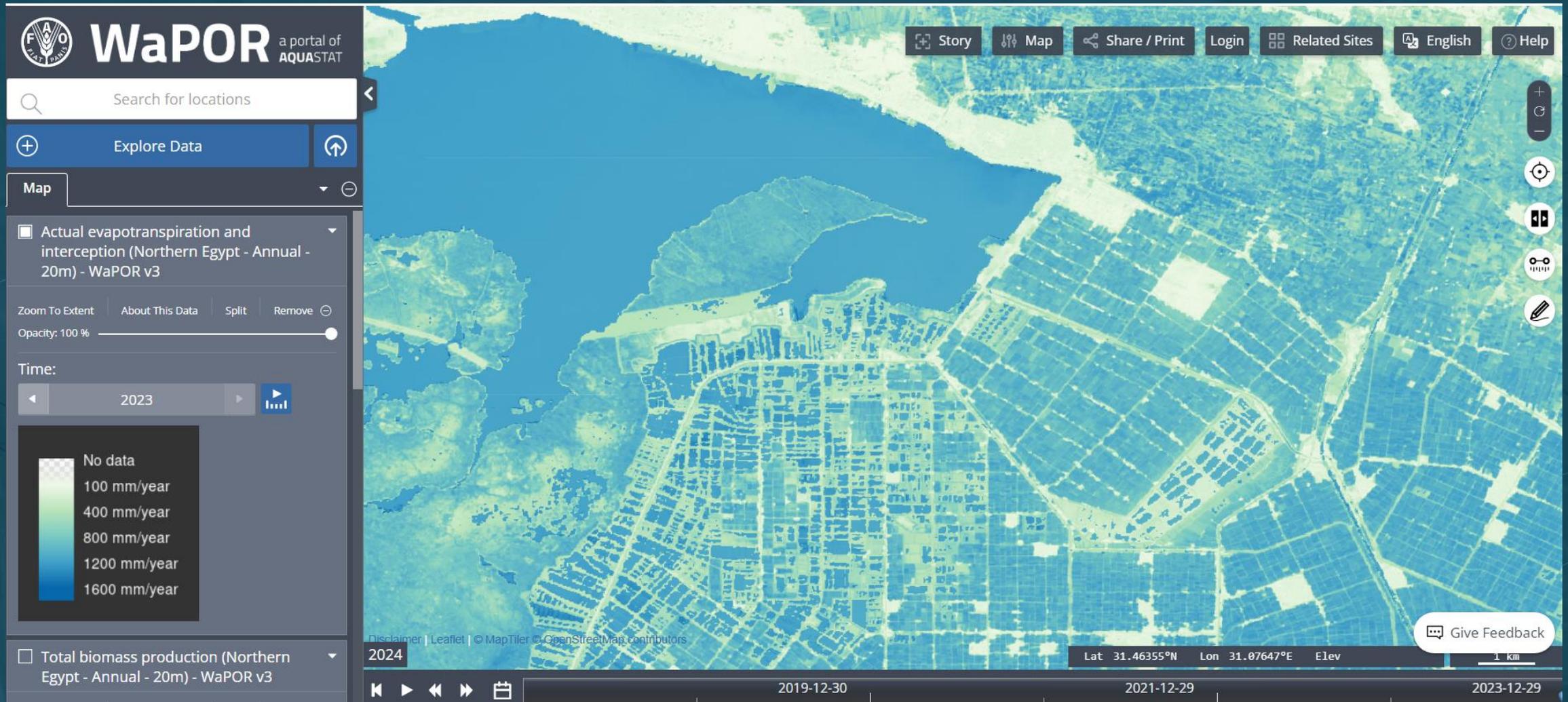
Monitoring water use in agriculture in space and time



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Examples: Precision agriculture

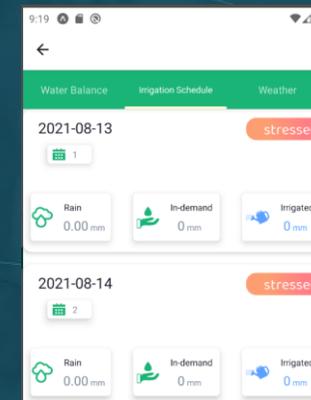


Examples: Precision agriculture

ICT-based solutions (apps) for irrigation scheduling advice and applications beyond water productivity

IRWI (Egypt), LARI-LEB (Lebanon), IREY (Tunisia), WaFIRR (Jordan) apps help farmers know:

- how much water is required so that they can decide when and how much to irrigate and
- how healthy is the crop and predicted yield during the season.
- Apps can use WaPOR data in combination with user's inputs and other data sources



Examples: Solar Power Irrigation

- **Low Carbon (avoids use of fossil fuels)**
- **Relatively scale independent**
- **Risk for over pumping because energy is for free**



Examples: Modernising irrigation schemes

- **Modernise yesteryears' schemes for tomorrow's needs**
- **Support farmers' initiatives**
- **Focus on service-oriented management**
- **Build for the future: Expand capacity and knowledge**
- **Look beyond irrigation: Invest outside the water sector**



Examples: Improving water use in rainfed agriculture

- **Soil & water conservation techniques:**
 - **Reduce run-off and increase infiltration**
 - **Increase soil moisture storage**
- **Supplementary irrigation**
- **Rainfall forecasting (irrigation scheduling)**



Six principles for action

- 1. Base strategies on a mutually agreed evidence base**
- 2. Ensure cost-effectiveness**
- 3. Improve governance and institutional capacity at all levels**
- 4. Adapt responses to local conditions**
- 5. Ensure policy alignment between water, energy, agriculture, food security and environment**
- 6. Anticipate change through robust decision-making and adaptive management**



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Thank you !

