



Food and Agriculture Organization
of the United Nations

Remote Sensing-Based Estimation of Internal Renewable Water Resources

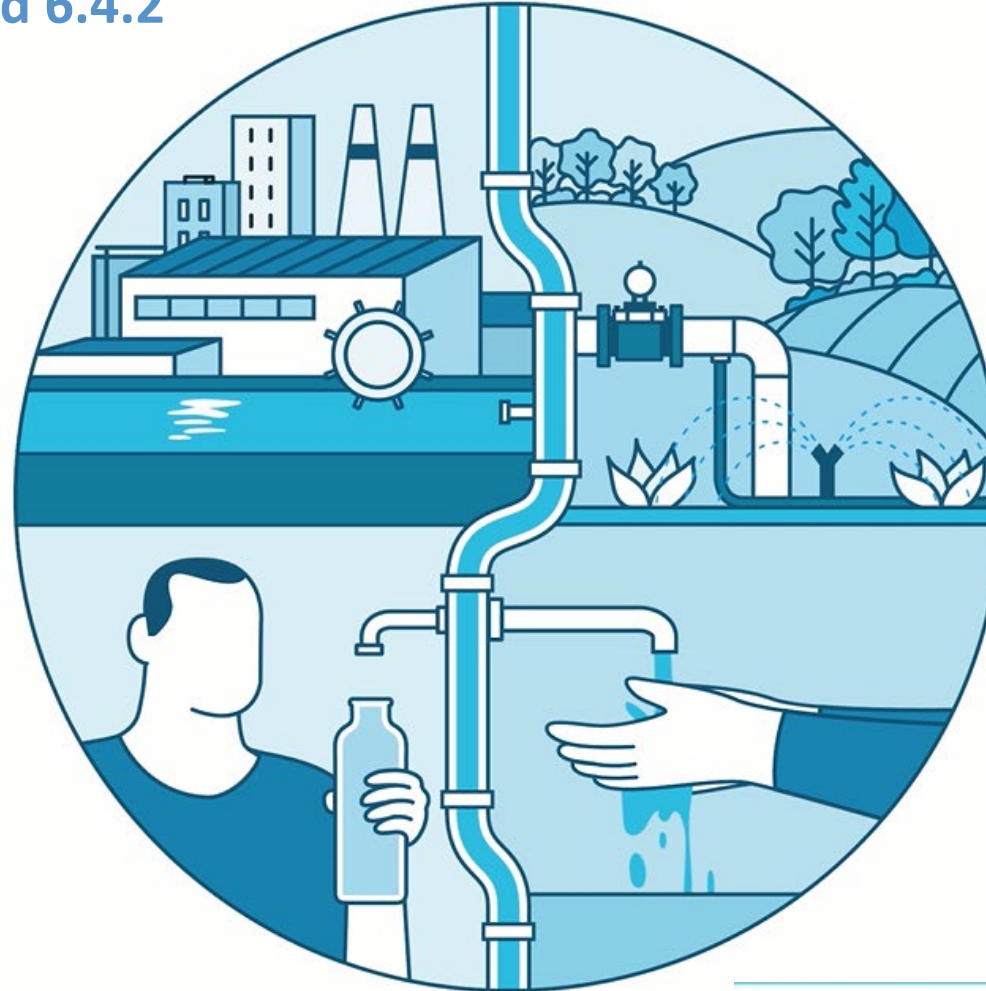
A global complement to country statistics derived from
ground-based hydrological estimates

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FAO is custodian agency for 6.4.1 and 6.4.2

- FAO Custodian Agency of 2 indicators: 6.4.1 and 6.4.2;
- Only 41% of countries actively submitted the questionnaire in 2024



The main challenge for this indicator is therefore obtaining enough information to demonstrate increases in value added per unit of water withdrawn, especially in the poorest regions.



SUSTAINABLE DEVELOPMENT GOAL 6

Clean water and sanitation

Ensure availability and sustainable management of water and sanitation for all.

 SUMMARY TABLE

INDICATORS

6.4.1

6.4.2

6.4.1 Change in water-use efficiency over time

FAO

6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources

FAO

AQUASTAT

- Information system on water resources and agricultural water management.
- Data provided by National Correspondents on:
 - **Water resources:** internal, transboundary, total
 - **Water use:** by sector, by source, wastewater
 - **Irrigation:** location, area, typology, technology, crops
 - **Dams:** location, height, capacity, surface area
 - And Water-related institutions, policies and legislation.



(Internal) Renewable Water Resources

IRWR

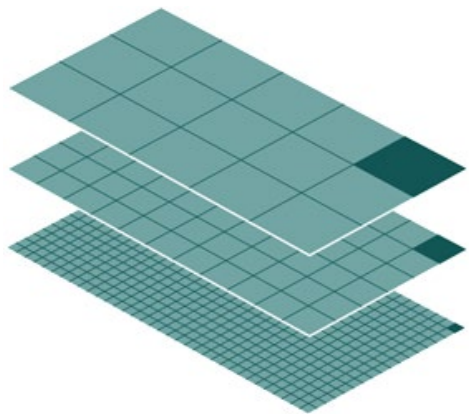
“long-term average annual flow of rivers and recharge of aquifers generated from endogenous precipitation.”



WaPOR provides actionable information

Near-real time (every 10 days) data on biomass development and water consumption (actual evapotranspiration), in addition to agro-climatic parameters on a daily time step (reference ET and precipitation).

Spatial resolution ranges between 300 m and 20 m



300m

100m

20m (new test 10 m, daily data)

300m resolution

global data



Food and Agriculture
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United Nations

Methodology

- $IRWR = \max(PCP - AETI, 0)$
- Calculation done at annual time-step
- Results aggregated per country
- PCP north of 60°N taken from IMERG

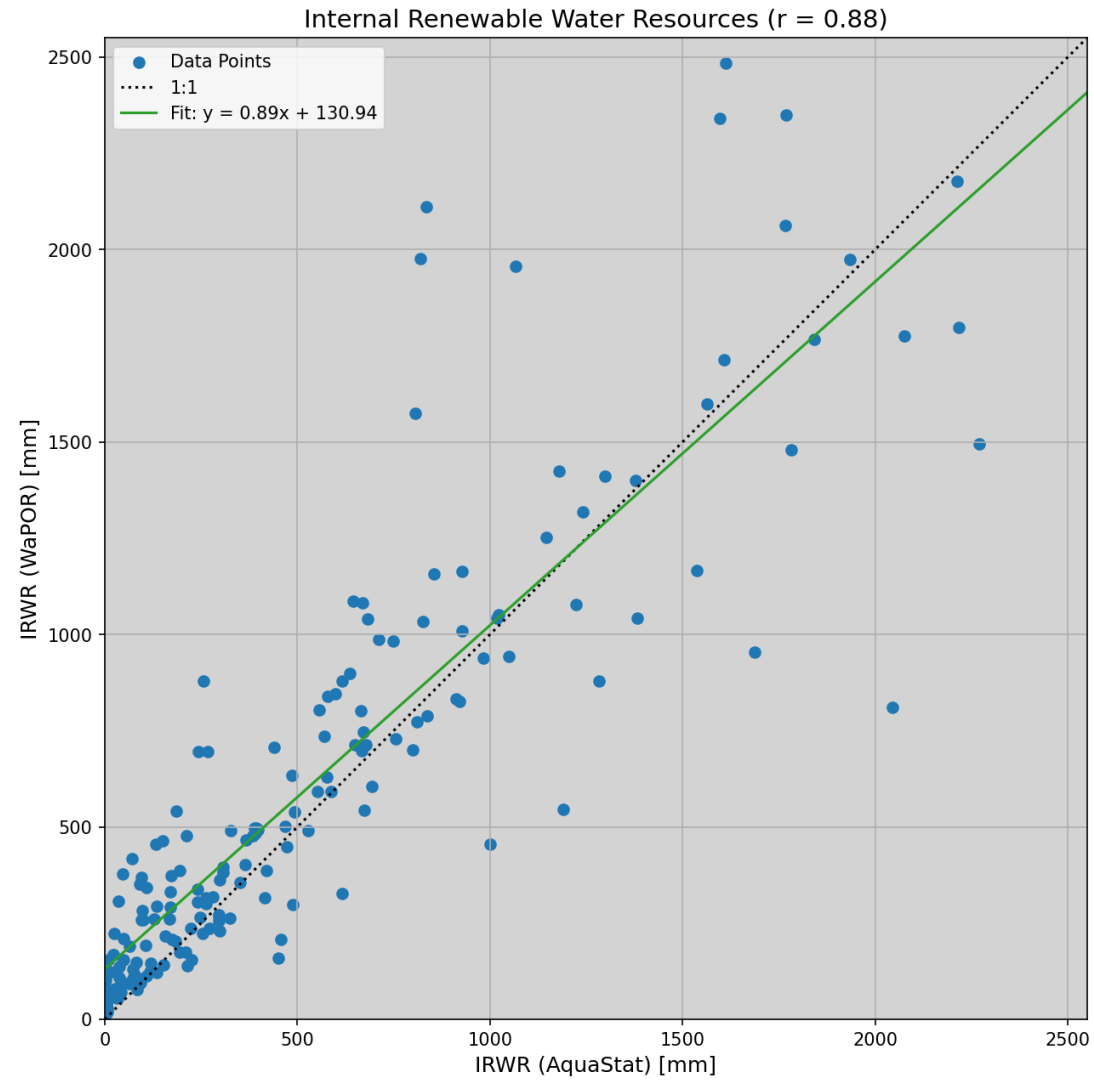
The screenshot shows the AQUASTAT Dissemination System interface. On the left, a configuration panel is open, showing the following settings:

- Variables:** Yearly Internal Renewable Water Resources (IRWR) in depth
- Area:** World
- Year:** 2020
- Type:** All

On the right, the main display area shows a table of results for the year 2020. The table includes a column for 'Area' and a column for the value, with a 'W' icon next to each value. The data is as follows:

Area	2020
Afghanistan	136.20 W
Albania	685.70 W
Algeria	27.90 W
American Samoa	3,423.90 W
Andorra	875.10 W
Angola	150.70 W
Anguilla	285.50 W
Antarctica	- W
Antigua and Barbuda	54.90 W
Argentina	136.80 W
Armenia	221.60 W
Aruba	344.20 W
Ascension, Saint Helena and...	- W
Australia	251.60 W
Austria	744.00 W

Results



Conclusions

- WaPOR can play an important role in providing operational water accounting tools.
- Allows for filling data availability in AQUASTAT
- Aggregation to other delineations (than country borders) can be explored.



Thank you

