



# AQUASTAT

FAO's global information system  
on water and agriculture

## PRODUCTS and CHALLENGES

by

**Karen FRENKEN**

AQUASTAT Programme Coordinator

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# AQUASTAT products



## ➤ Country database: 75 variables

Geography et population (11), climate and water resources (13), water use (20), irrigation et drainage (27), environment and health (4)

## ➤ Country profiles: 140 countries

Africa, Asia, Latin America and the Caribbean

## ➤ Regional overviews: 5 regions

Africa, Middle East, Southern and Eastern Asia, Former Soviet Union, Latin America and the Caribbean

## ➤ Water resources: 200 countries

Water resources balance sheets for all countries, containing internal, external and total renewable water resources, considering agreements

## ➤ Agricultural water use: 150 countries

Irrigated crop calendar, crop water use, irrigation water withdrawal

# AQUASTAT products

*(continued)*



## ➤ Maps, tables and GIS products: wide variety

Global, regional and national maps and tables, geo-referenced database on dams, spatial data

## ➤ Institutions: around 300

Addresses and links to institutions in the field of agricultural water resources management, presented by country

## ➤ Glossary: around 300 terms

Definitions related to water resources and agricultural water management, including source, comments, related terms in FAO official languages (Arabic, Chinese, English, French, Russian and Spanish)

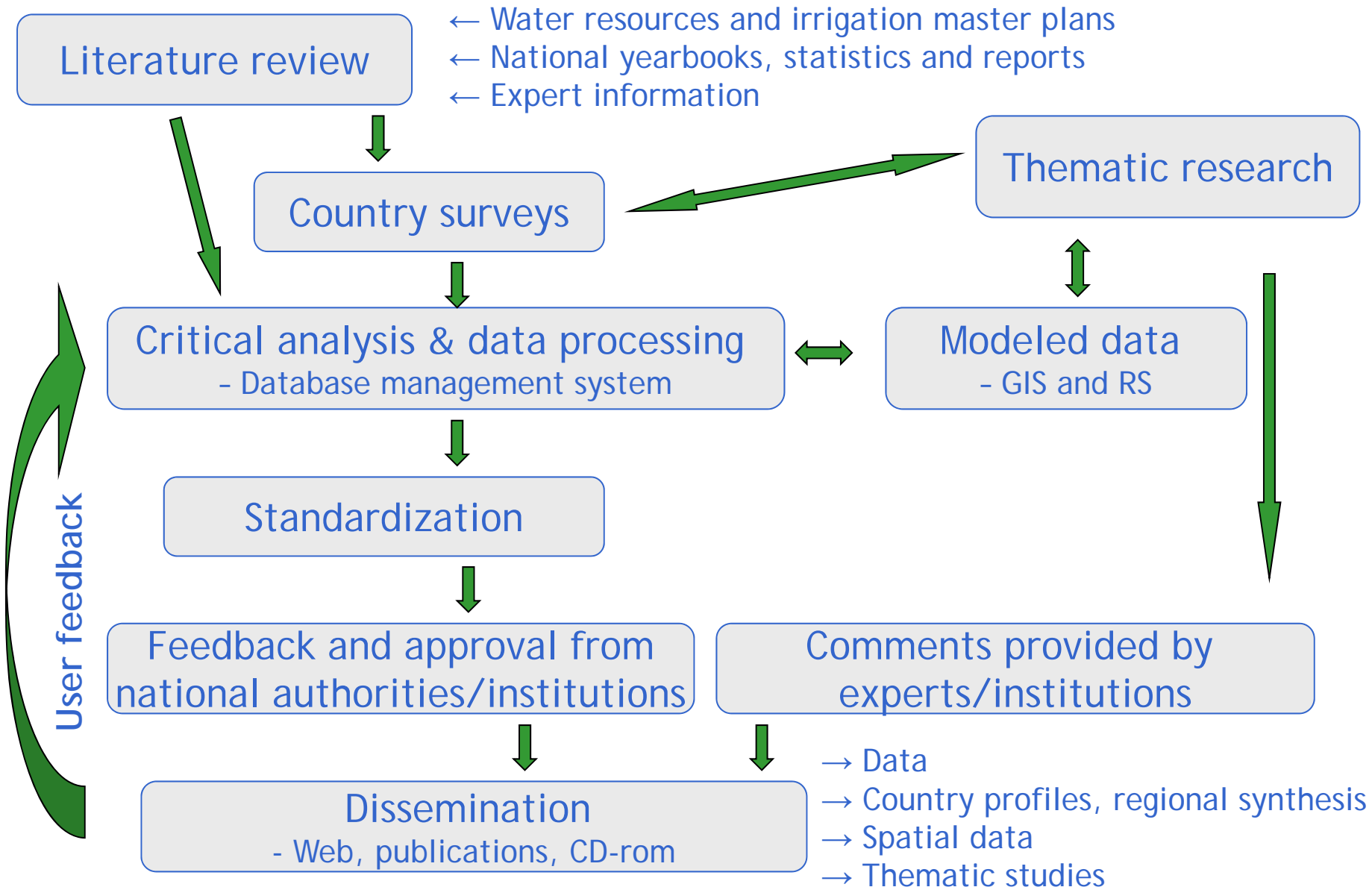
## ➤ Publications: 20 reports, brochures, articles

Around 20 publications

# How information is gathered in AQUASTAT



(Note: AQUASTAT is a global country-level information system)



# Some key questions...



- ✓ Is there **enough water** to feed the world in the near future (competition with other sectors, water balance)?
- ✓ How does irrigation contribute to **food security** and the achievement of the **MDGs and WSSD targets**?
- ✓ What are the **performances** of the irrigation sector? How do they change with time?
- ✓ What is the **impact** of irrigation on the **environment**?
- ✓ What is the impact of **biofuel** and **climate change** on food production?



# Challenges...



A global country-level information system, such as AQUASTAT, faces many challenges to provide information that would help to answer these types of questions. To mention but a few:

- ❖ Differences between countries (size, climate, level of development, etc.)
- ❖ Discrepancies in data for the same variable
- ❖ Definitions and methodology used for data reported
- ❖ Information by country versus river basin
- ❖ Non-availability or unreliability of data for some major indicators (such as example MDG), including data for time series
- ❖ Sustainability of the monitoring process in relation to national water monitoring capacities

# Discrepancies in data...



Example: Area equipped for irrigation in OECD countries  
(1 000 ha)

	OECD	AQUASTAT &UniBonn	IWMI	Δ AQUA - OECD	Δ IWMI - OECD	Δ IWMI - AQUA
Australia	2 497	3 343	11 865	846	9 368	8 522
Austria	4	90	116	86	112	26
Czech Republic	20	51	518	31	498	467
Finland	64	88	125	24	61	37
Hungary	166	242	242	76	76	0
Italy	2 698	3 977	2 830	1 279	132	- 1 148
New Zealand	285	619	125	334	- 160	- 494
Slovakia	70	209	110	139	40	- 99
Sweden	54	188	84	134	30	- 105
Switzerland	25	55	30	30	5	- 25
United Kingdom	170	242	971	72	801	729
USA	22 543	27 914	28 045	5 371	5 502	132
Other 18 *	26 211	26 513	23 223	302	- 2 988	- 3 290
<b>TOTAL</b>	<b>54 807</b>	<b>63 533</b>	<b>68 284</b>	<b>8 726</b>	<b>13 477</b>	<b>4 751</b>
<b>ABSOLUTE DIFFERENCE</b>				<b>9 373</b>	<b>29 378</b>	<b>24 654</b>

\* Difference between AQUASTAT and OECD < 15%

# Definitions and methodologies used for data reported...



- How to **homogenize information** from > 200 countries?
  - Insufficient information available to analyze, interpret and compare data reported
- How to **harmonize methodologies** for > 200 countries?
  - In order to better understand, AQUASTAT is doing an exercise to improve understanding of methods used by countries to estimate the data on water resources and water withdrawal they report
- Can countries be **“obliged”** to use same methodology and definitions?
  - Efforts exists, such as the IRWS and SEEAW, but this will still remain at pilot scale for a long time and countries cannot be forced to apply. Sometimes countries have different “interests”

# Information by country versus river basin...



- Country collects data by **administrative unit** rather than by (sub-)**basin**
- Water **exchange** between countries
- Estimation of **natural and actual** renewable water resources
- Total renewable water resources versus **exploitable** water resources
- **Scheme-level** irrigation efficiency versus **basin-level** irrigation efficiency
- Water **withdrawal** versus water **consumption**

# Insufficient data and time series for major indicators...



- Example of **MDG Water Indicator 7.5** “Proportion of renewable water resources withdrawn” for which AQUASTAT is responsible to provide data:
  - Monitoring means having **time series**: how to obtain time series for > 200 countries?
  - How to obtain annual or even 5-yearly information on **water withdrawal by sector** for all countries?
  - How to deal with **long-term average** annual precipitation and water resources?
  - How to deal with **climate change** versus long-term averages? Rolling averages?

# Data collection sustainability...



- AQUASTAT deals mainly with countries in **Africa, Asia, Latin America and the Caribbean** (Europe and Northern America are taken care of by Eurostat/OECD)
- It remains important to get data from country, because there still is a lot of important **"grey" literature**
- Almost impossible to obtain all these data without having to **pay** for it or recruit a **consultant**
- Water is used by different sectors, people are **specialized** in one sector. How to get the complete picture?
- How to ensure **quality** (see slide on data discrepancies)?
- How to make this **sustainable** for > 150 countries? Costs?



**Thank you!**  
**Merci!**  
**¡Gracias!**

<http://www.fao.org/nr/aquastat>

