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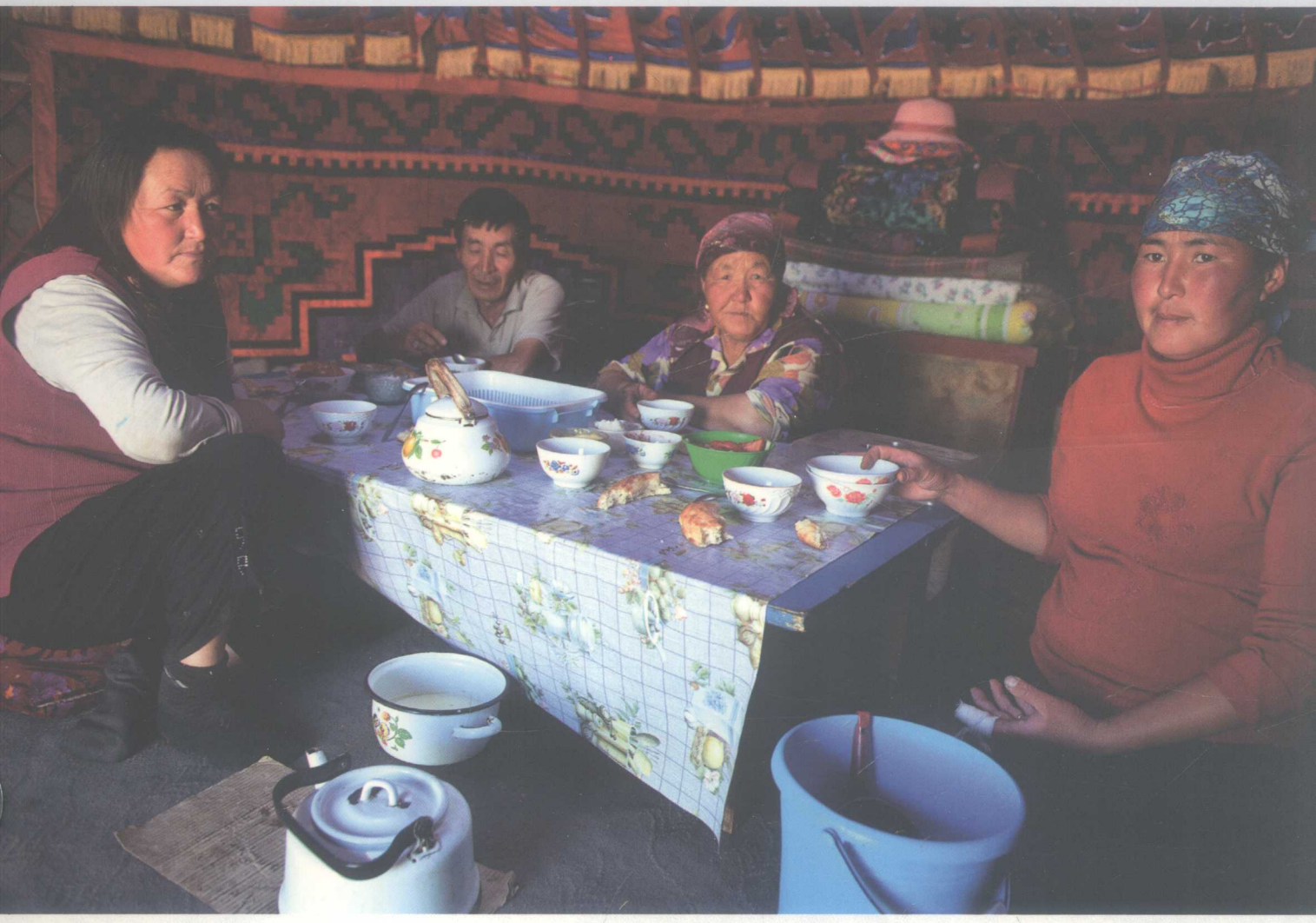
39

Irrigation in Central Asia in figures

AQUASTAT Survey-2012



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Units

Lenght

1 km = 1 000 m = 1 x 10^3 m

1 km = 0.64 mile

1 mile = 1.56 km = 1 560 m

Area

1 acre = 4 047 m^2 = 0.4047 ha = 4.047 x 10^{-4} x 1 000 ha

1 are = 100 m^2 = 0.01 ha = 1 x 10^{-5} x 1 000 ha

1 feddan = 4 200 m^2 = 0.42 ha = 4.2 x 10^{-4} x 1 000 ha

1 ha = = 0.01 km^2 = 10 000 m^2 = 2.47 acres = 2.38 feddan

1 m^2 = 0.0001 ha = 1 x 10^{-7} x 1 000 ha

1 km^2 = 1 000 000 m^2 = 100 ha = 1 x 10^{-1} x 1 000 ha

1 km^2 = 0.41 square mile

1 square mile = 2.43 km^2

Volume

1 dm^3 = 1 litre = 0.001 m^3 = 1 x 10^{-12} km^3

1 hm^3 = 1 million m^3 = 1 000 000 m^3 = 1 x 10^{-3} km^3

1 km^3 = 1 billion m^3 = 1 000 million m^3 = 10^9 m^3 = 10^9 m^3

1 m^3 = 10^{-9} km^3

1 UK gallon = 4.546 litres = 4.546 dm^3 = 0.004546 m^3 = 4.546 x 10^{-12} km^3

1 US gallon = 3.785 litres = 3.785 dm^3 = 0.003785 m^3 = 3.785 x 10^{-12} km^3

Power-energy

1 GW = 1 x 10^3 MW = 1 x 10^6 kW = 1 x 10^9 W

1 GWh = 1 x 10^3 MWh = 1 x 10^6 kMh

US$1 = 1 United States dollar

1 °C = 1 degree centigrade

The information presented in this publication is collected from a variety of sources. It reflects FAO's best estimates, based on the most accurate and up-to-date information available at the date of printing.

List of abbreviations

ADB	Asian Development Bank
AEI	Area equipped for irrigation
ARSWR	Actual renewable surface water resources
ARWR	Actual renewable water resources
BAIS	Basin Authority of Irrigation Systems
BWMO	Basin Water Management Organization
BWO	Basin Water Organization
CACENA	Central Asian and Caucasus (under Global Water Partnership)
CDM	Clean Development Mechanism
CEP	Caspian Environmental Programme
CIDA	Canadian International Development Agency
CMO	Canal Management Organization
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EECCA	Eastern Europe, Caucasus and Central Asia
EIRP	Emergency irrigation and rehabilitation project
EU	European Union
EUWI	European Union Water Initiative
FAO	Food and Agriculture Organization of the United Nations
FO	Farm Organization
FSU	Former Soviet Union
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse gas
GWP	Global Water Partnership
HDI	Human Development Index
I&D	Irrigation and drainage
IBRD	International Bank for Reconstruction and Development
ICAS	Interstate Council for the Aral Sea
ICOLD	International Commission of Large Dams
ICSD	Interstate Commission on Sustainable Development
ICWC	Interstate Commission for Water Coordination
IFAS	International Fund for Saving the Aral Sea

IFI	International Financial Institution
IPM	Integrated Pest Management
IRGWR	Internal renewable groundwater resources
IRSWR	Internal renewable surface water resources
IRWR	Internal renewable water resources
ISF	Irrigation Service Fee
IWRM	Integrated water resources management
JFPR	Japan Fund for Poverty Reduction
JMP	Joint Monitoring Programme for Water Supply and Sanitation
MAC	Maximum allowable concentration
MDG	Millennium Development Goal
Meq	milli-equivalent
NGO	Non-governmental organization
O&M	Operation and maintenance
RSWR	Renewable surface water resources
SANIIRI	Central Asian Irrigation Research Institute
SAR	Sodium adsorption ratio
SIC	Sepang International Circuit (of the ICWC)
TARSW	Total actual renewable surface water resources
TARSWR	Total actual renewable surface water resources
TARWR	Total actual renewable water resources
TRSWR	Total renewable surface water resources
TRWR	Total renewable water resources
UN-SPECA	United Nations Special Programme for the Economies of Central Asia
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USSR	Union of Soviet Socialist Republics
WCA	Water Consumer Association
WHO	World Health Organization
WUA	Water user organization

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EXPLANATORY NOTES

This section gives a brief history of AQUASTAT, its main purpose and the methodology used to update country information. It describes the main sources of information, the collection and processing of the information as well as its reliability.

A glossary of all terms used in this report is provided, which also can be found in the AQUASTAT glossary web page (http://www.fao.org/nr/water/aquastat/data/glossary/search.html?lang=en). This glossary web page contains an explanation of all variables and indicators available in the AQUASTAT main country database (http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en) as well as other terms related to water and agriculture.

Introduction

It is in the mandate of the Food and Agriculture Organization of the United Nations (FAO), as stated in Article 1 of its constitution, "to collect, analyse, interpret and disseminate information related to nutrition, food and agriculture". Within this framework, in 1993 FAO launched a programme known as AQUASTAT, its global information system on water and agriculture (http://www.fao.org/nr/aquastat). AQUASTAT collects, analyses and disseminates data and information, by country, on water recourses and water use, with emphasis on irrigated agriculture, which is targeted at users in international institutions, national governments and development agencies. Its goal is to support agricultural and rural development through sustainable use of water and land by providing the most accurate information presented in a consistent and standard way and more specifically:

- up-to-date and reliable data by country;
- methodologies and definitions for information on the water resources and irrigation sector;
- systematic descriptions about the state of agricultural water management by country;
- predictions of future agricultural water use and irrigation developments;
- in-depth analysis based on diverse thematic studies;
- contribution to major international publications;
- answers to requests from governments, research institutions, universities, non-governmental organizations and individuals.

The AQUASTAT publication series "Irrigation in [name of region] in figures" started with Africa (FAO, 1995). The survey continued with the Near East (FAO, 1997a), the countries of the former Soviet Union (FAO, 1997b), Southern and Eastern Asia (FAO, 1999), and Latin America and the Caribbean (FAO, 2000). In 2005 the African continent was updated (FAO, 2005), in 2008 the Middle East region (FAO, 2009) and in 2011 Southern and Eastern Asia (FAO, 2012b).

More than a decade after the first publication, it appeared necessary to update the data and information and to identify the main changes in water use and irrigation that had occurred in the countries of Central Asia. The regional division of the world adopted by AQUASTAT is given in Figure 1.

In this new survey, a third objective has been added to the two objectives given in the previous publication. To:

- provide for every country the most accurate status of rural water resources management, with a special focus on irrigation, by featuring major characteristics, trends, constraints and prospective changes in irrigation and in water resources;
- support regional analysis by providing systematic, up-to-date and reliable information on the status of water resources and of agricultural water management that can serve as a tool for regional planning and predictive studies;
- prepare a series of chronological data and developments in order to highlight the major changes that have occurred in the last decade on national and regional scales.

To obtain the most reliable information possible, the survey is organized as follows:

1. Review of literature and existing information at country and subcountry level.
2. Collection of information by country using a detailed questionnaire filled in by national experts, international consultants, or the AQUASTAT team at FAO.

3. Compilation and critical analysis of the information collected using data-processing software developed for this survey, and selection of the most reliable information.
4. Preparation of country profiles and submission to national authorities responsible for water resources or water management for verification, correction and approval.
5. Preparation of the final profile, the tables and the figures presenting the information by country.
6. Updating of the online database.
7. Preparation of the general regional analysis, the figures and the regional tables.

Where possible, AQUASTAT has made use of national capacity and competence. While collecting the information by country, preference was given to national experts as they have a better knowledge of their own country and easier access to national or so-called 'grey' documents, which are not available outside the country. For five of the six countries of Central Asia (all but Afghanistan), a national consultant assisted the AQUASTAT team.