

Water accounting: virtual water transfers and water footprints

Water resources across Europe
Confronting water scarcity and drought
European Environmental Agency: Side event
5th World Water Forum, Istanbul, 18 March 2009

Arjen Hoekstra
Maite M. Aldaya
University of Twente – the Netherlands
M. Botin Foundation



www.waterfootprint.org

Water Footprint
NETWORK

Globalization of Water



PRODUCTION of water-intensive goods

Local water consumption and
pollution related to export

CONSUMPTION of water-intensive goods

Water saving, but also water
dependency related to export



Water footprint of a product

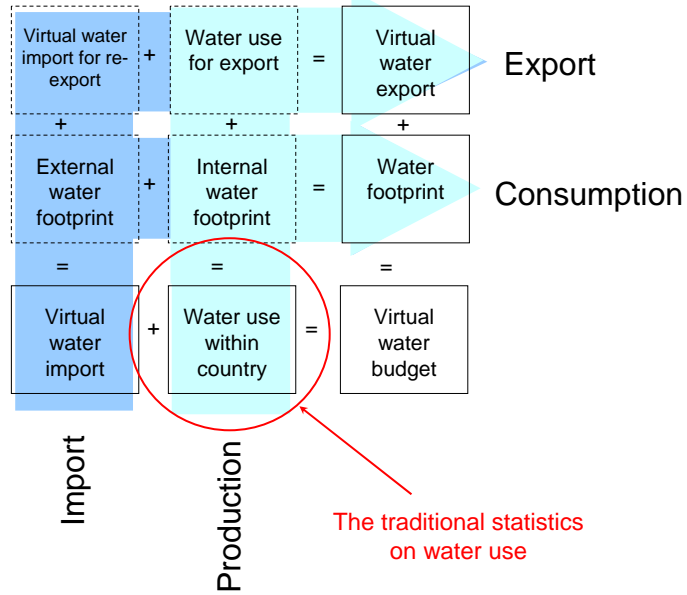
- ▶ the volume of fresh water used to produce the product, summed over the various steps of the production chain.
- ▶ when and where the water was used:
a water footprint includes a temporal and spatial dimension.
- ▶ type of water use:
 - Green water footprint - volume of rainwater evaporated.
 - Blue water footprint - volume of surface or groundwater evaporated.
 - Grey water footprint - volume of polluted water.



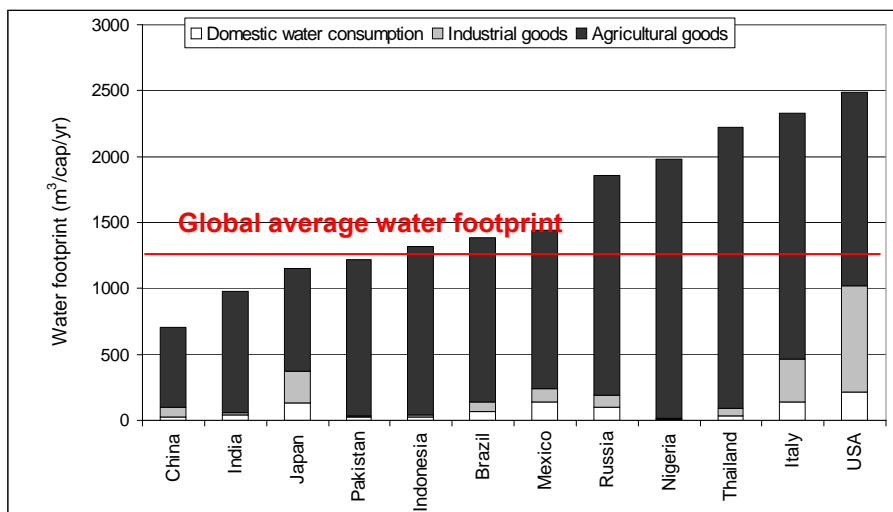
Water footprint of a nation

- ▶ total amount of water that is used to produce the goods and services consumed by the inhabitants of the nation.
- ▶ two components:
 - internal water footprint – inside the country.
 - external water footprint – in other countries.

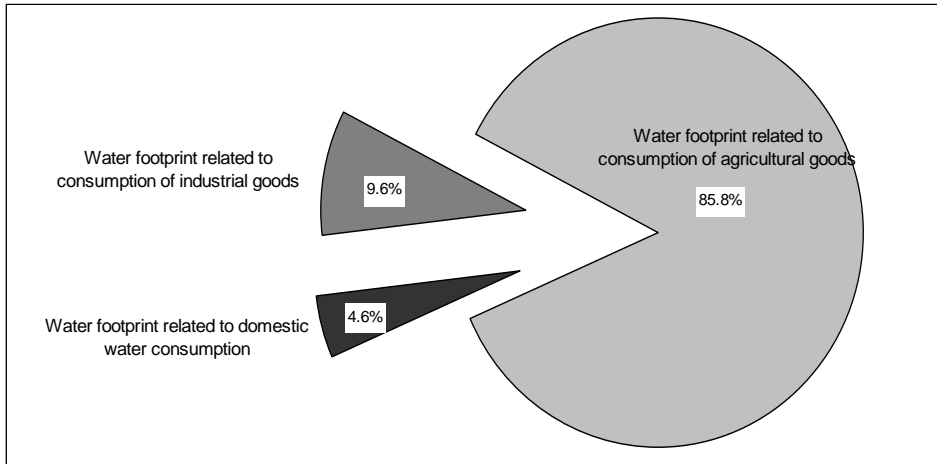
National water accounting framework



Water footprint per capita



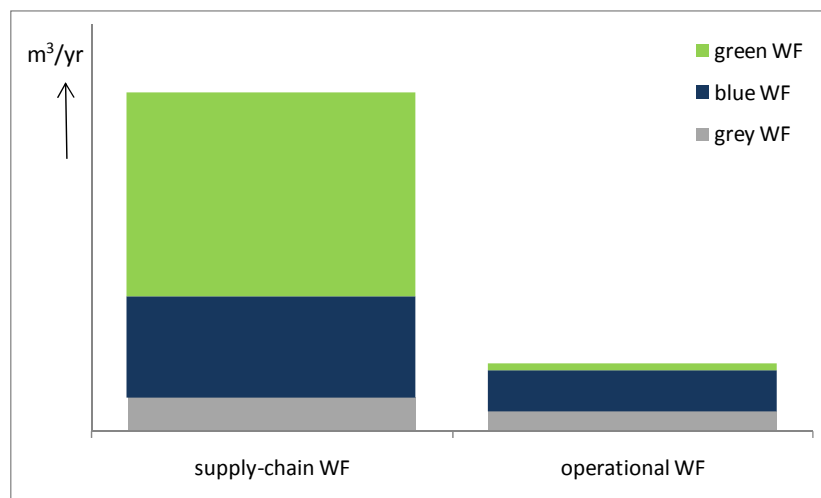
Global water footprint contribution by consumption category



Global water footprint = 7450 Gm³/yr

[Hoekstra & Chapagain, 2008]

Water footprint of a business



Water use efficiency at different levels

Level	Means
User level Local water use efficiency	Create incentives to the water user: water pricing, promoting technology, awareness raising
River basin level Water allocation efficiency	Allocate water where its value added is highest
Global level Global water use efficiency	Virtual water trade from water-abundant to water-scarce regions

Key question: how to develop a coherent set of actions at different spatial levels to solve local water problems?

Practical use of the concepts of virtual water & water footprint

1. Analysis

providing understanding of the relation between production chains, trade and water use

2. Awareness raising

showing the link between consumption and impacts of water use

3. Indicator for policy making

labelling of products; certification of businesses; benchmarking; setting community standards with respect to water use; international negotiations on sustainable & equitable water use

Target groups

governments, civil society, businesses, investors, consultants, international agencies, academia



Mission: Promoting sustainable, equitable and efficient water use through development of shared standards on water footprint accounting and guidelines for the reduction and offsetting of impacts of water footprints.

Network: bringing together expertise from academia, businesses, civil society, governments and international organisations.

Waterfootprint.org: Water footprint and virtual water

http://www.waterfootprint.org/?page=files/home

Most Visited - Getting Started Latest Headlines Adobe - Design Cen... David Gray: listen to... TED | Talks | Camer... MySpace.com - Davi... Photoethnography.c... After the

Water Footprint Water Footprint NETWORK

Introduction

Introduction [Spanish] [Italian] [French] [German] [Turkish]

About WFN
National Water Footprints
Corporate Water Footprints
Your Footprint Calculator
Product Gallery
Case Studies
Publications
Glossary
Links
Contact

People use lots of water for drinking, cooking and washing, but even more for producing things such as food, paper, cotton clothes, etc. The water footprint is an indicator of water use that looks at both direct and indirect water use of a consumer or producer. The water footprint of an individual, community or business is defined as the total volume of freshwater that is used to produce the goods and services consumed by the individual or community or produced by the business.

16000 litres water → 1 kg beef

The relation between consumption and water use

"The interest in the water footprint is rooted in the recognition that human impacts on freshwater systems can ultimately be linked to human consumption, and that issues like water shortages and pollution can be better understood and addressed by considering production and supply chains as a whole," says Professor Arjen Y. Hoekstra, creator of the water footprint concept and scientific director of the Water Footprint Network. "Water problems are often closely tied to the structure of the global economy. Many countries have significantly externalised their water footprint, importing water-intensive goods from elsewhere. This puts pressure on the water resources in the exporting regions, where too often mechanisms for wise water governance and conservation are lacking. Not only governments, but also consumers, businesses and civil society communities can play a role in achieving a better management of water resources."

New in 2008: Book on 'Globalisation of Water'

The 2007-paper on 'Water Footprints of Nations'

The 2006-paper on 'Water Neutrality'

Download other publications
[List of publications](#)

Thank you