



UNIVERSITAT DE VIC - AGBAR

AQUAFÒRUM 2012
Aigua, usos i coneixement

“L’aigua: un abundant recurs escàs”

Dr. Ramon Folch
President d'ERF



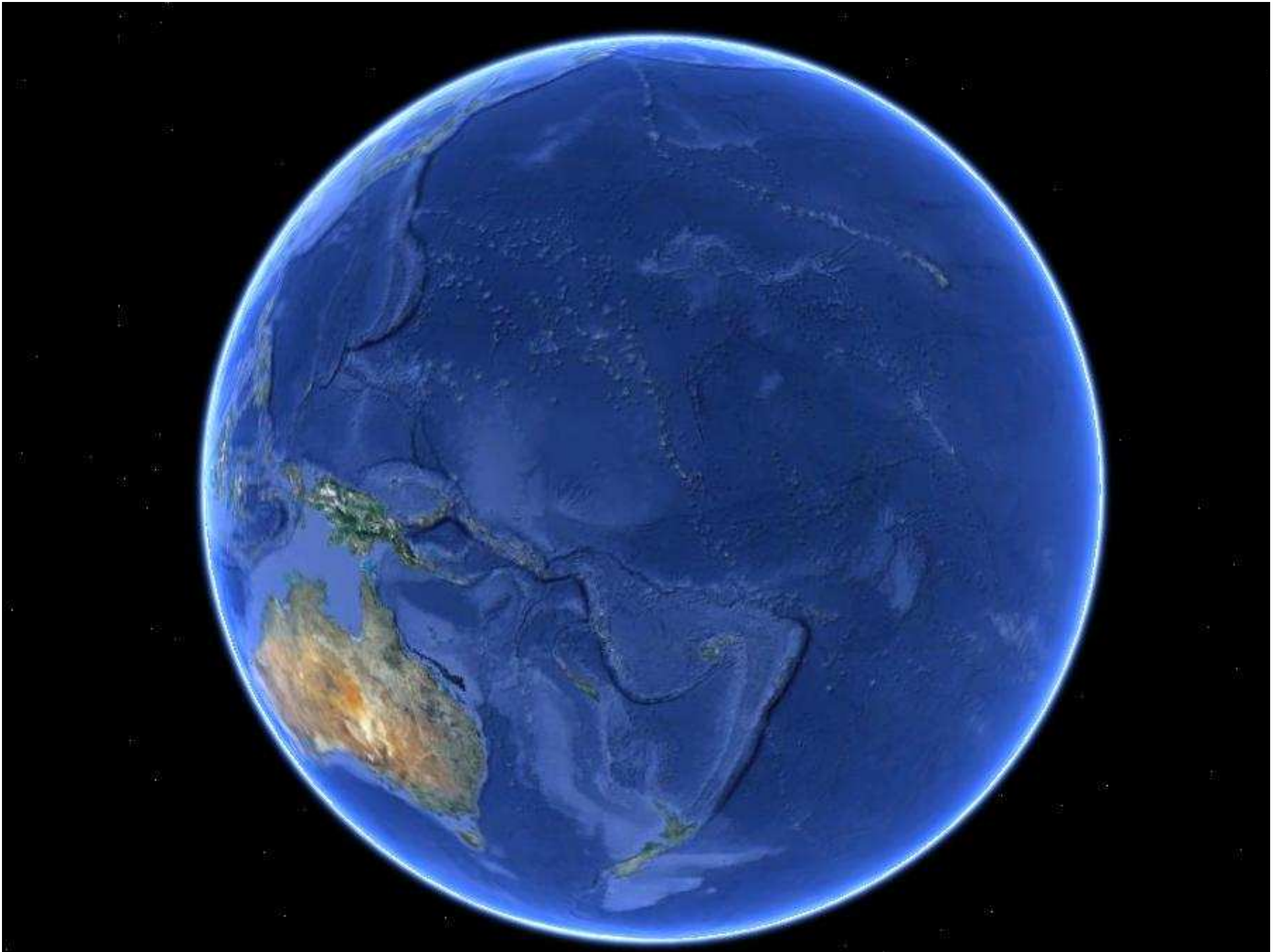


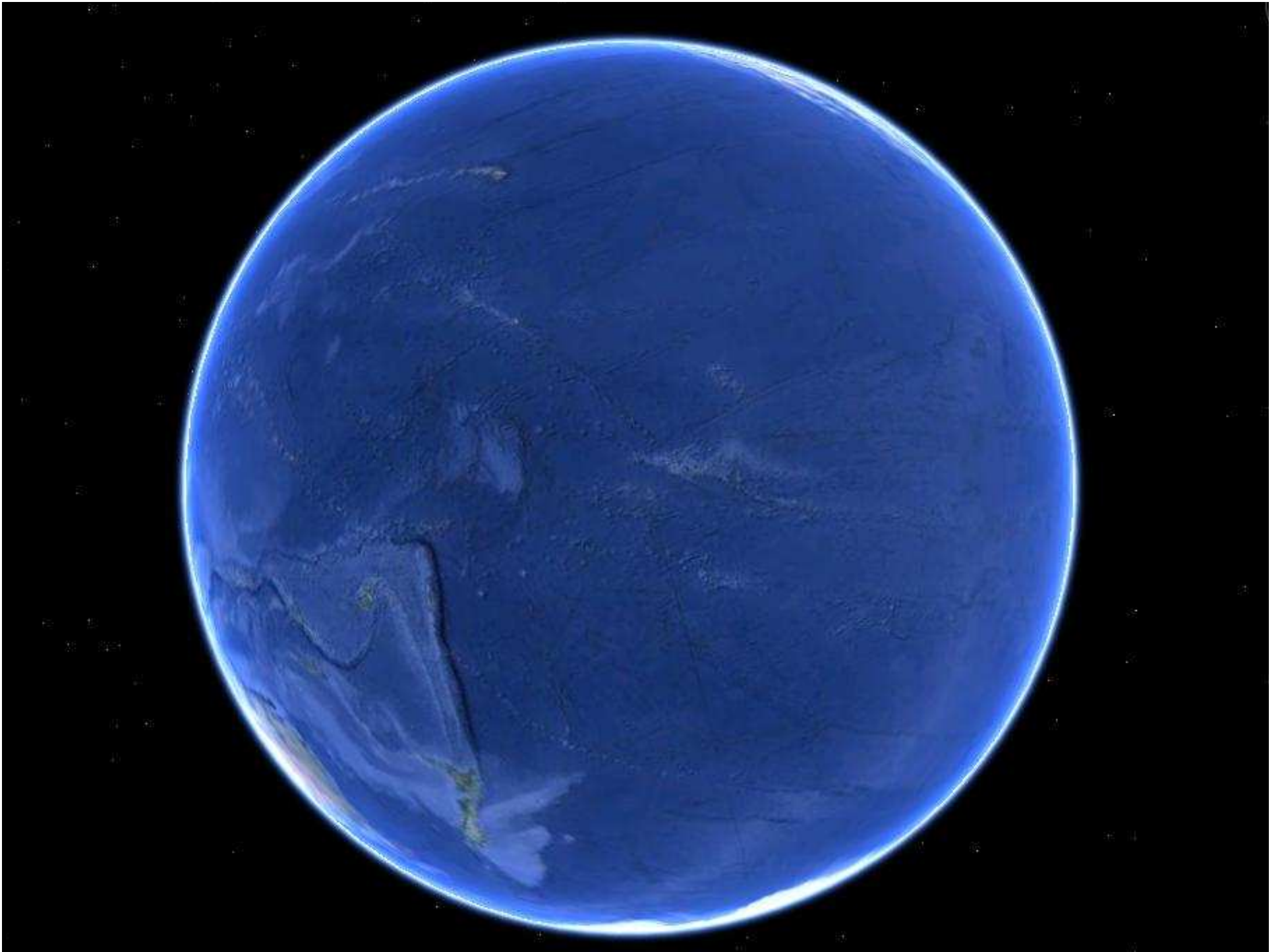
1

Planeta Aigua







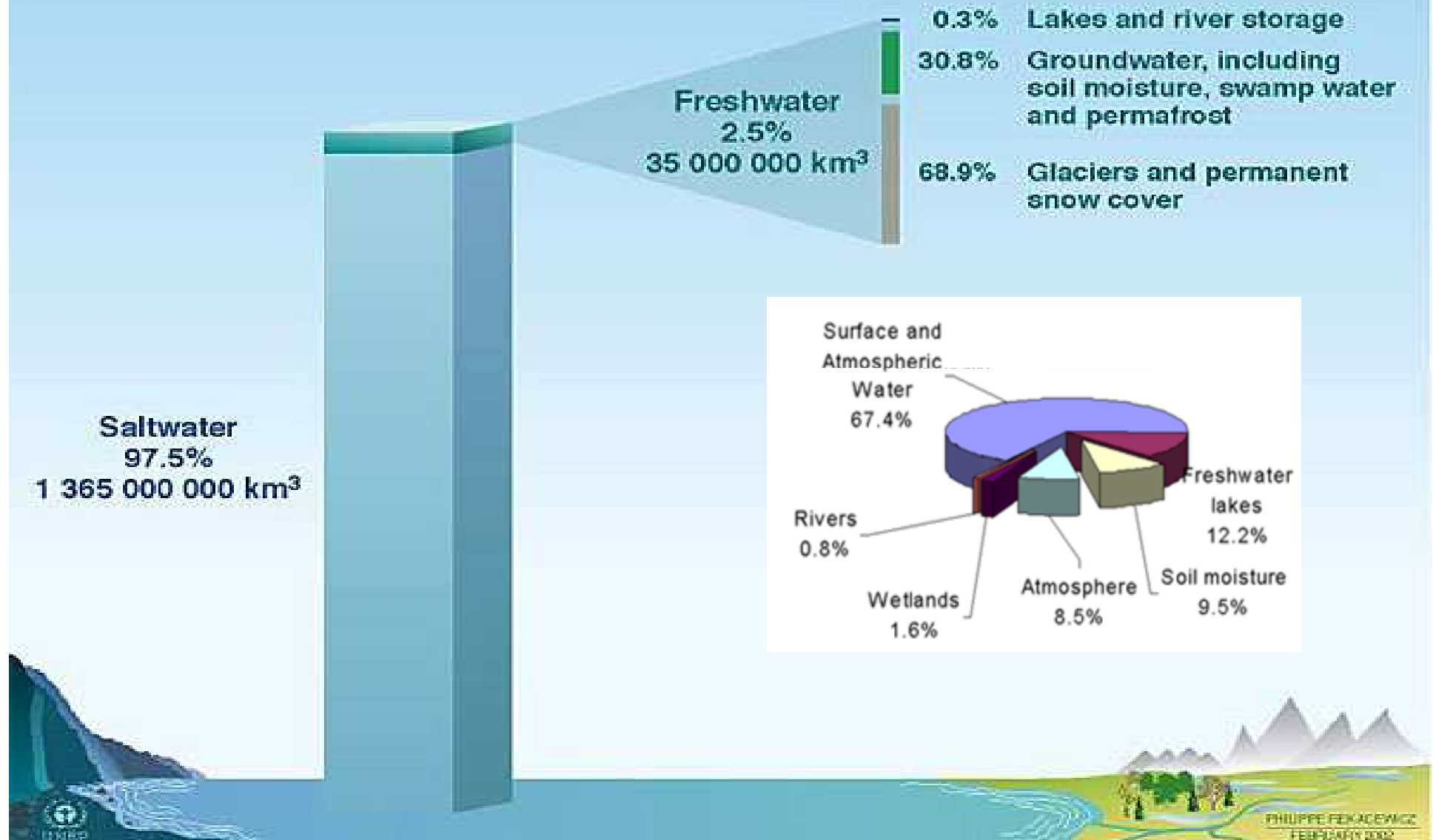






A World of Salt

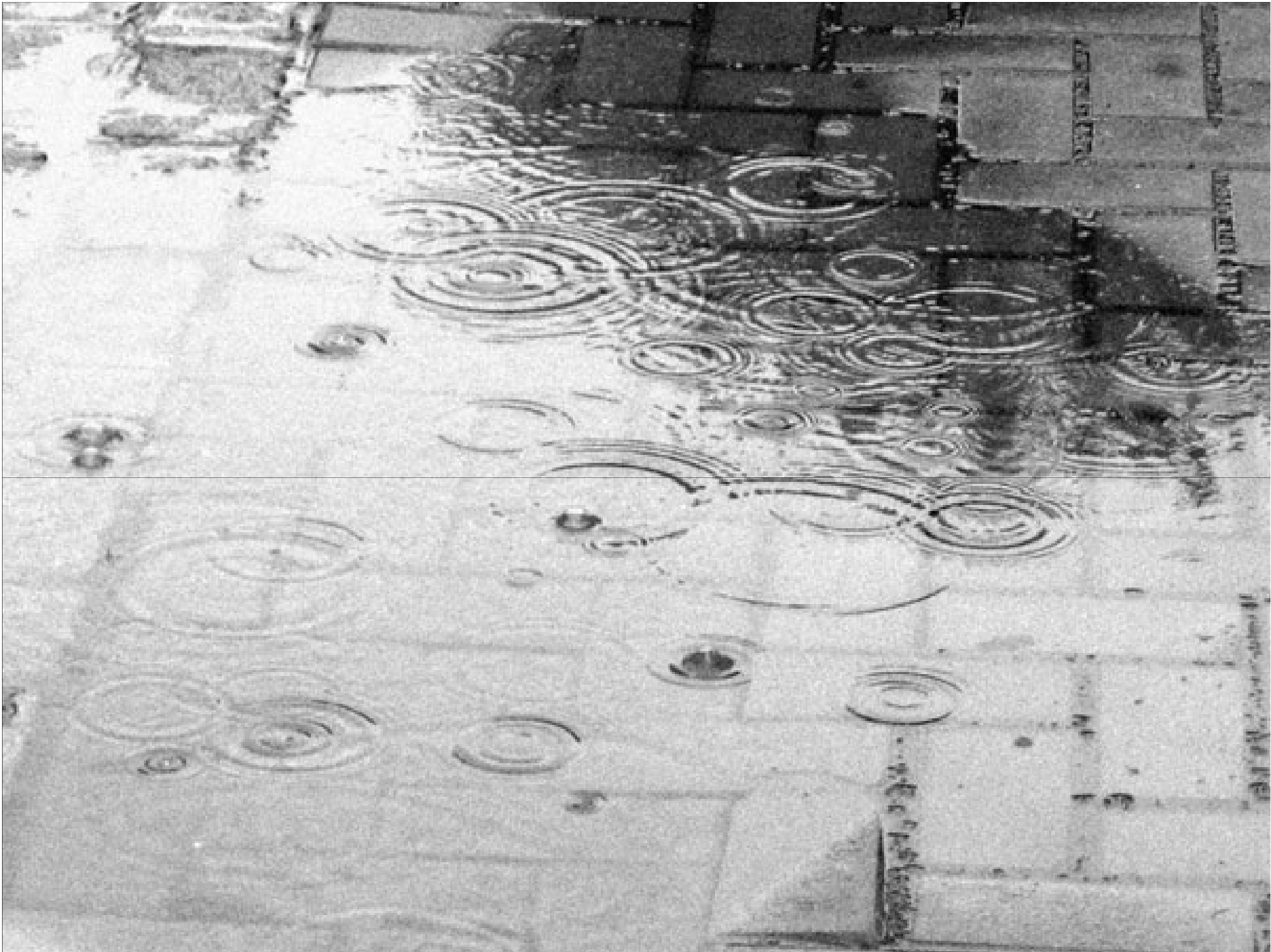
Total Global Saltwater and Freshwater Estimates



Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational, Scientific and Cultural Organisation (UNESCO, Paris), 1999.



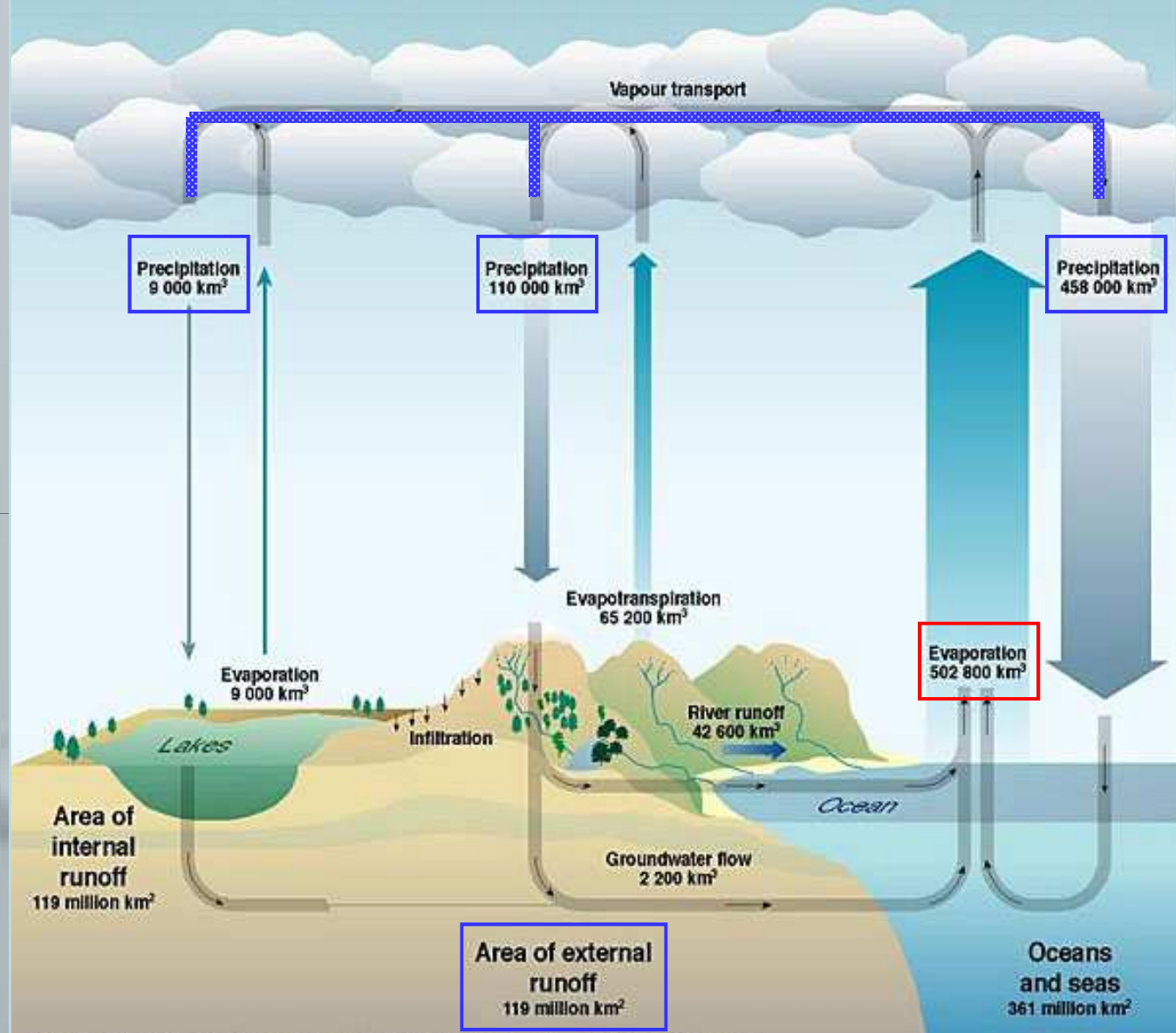






The World's Water Cycle

Global Precipitation, Evaporation, Evapotranspiration and Runoff



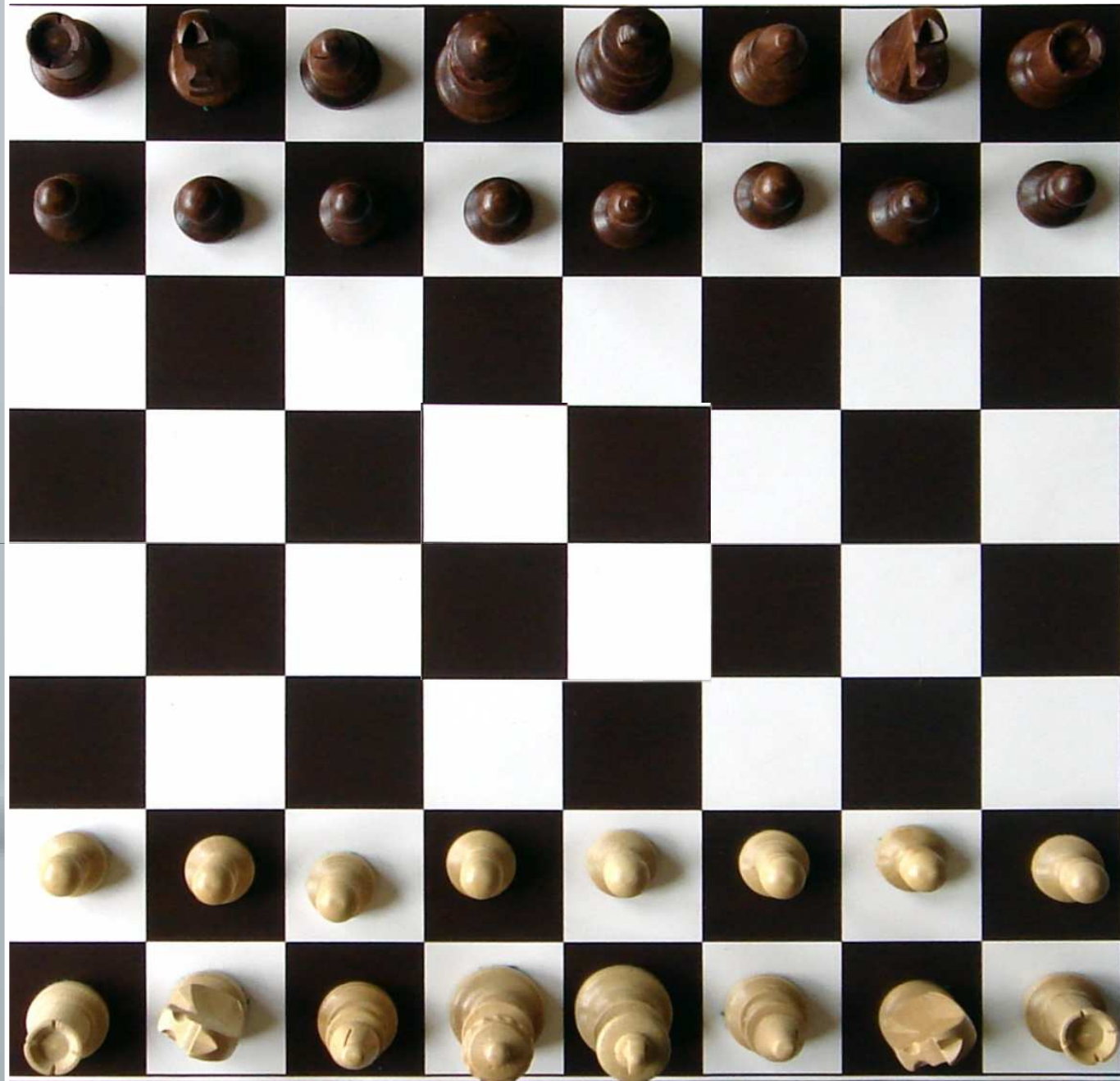
Note: The width of the blue and grey arrows are proportional to the volumes of transported water

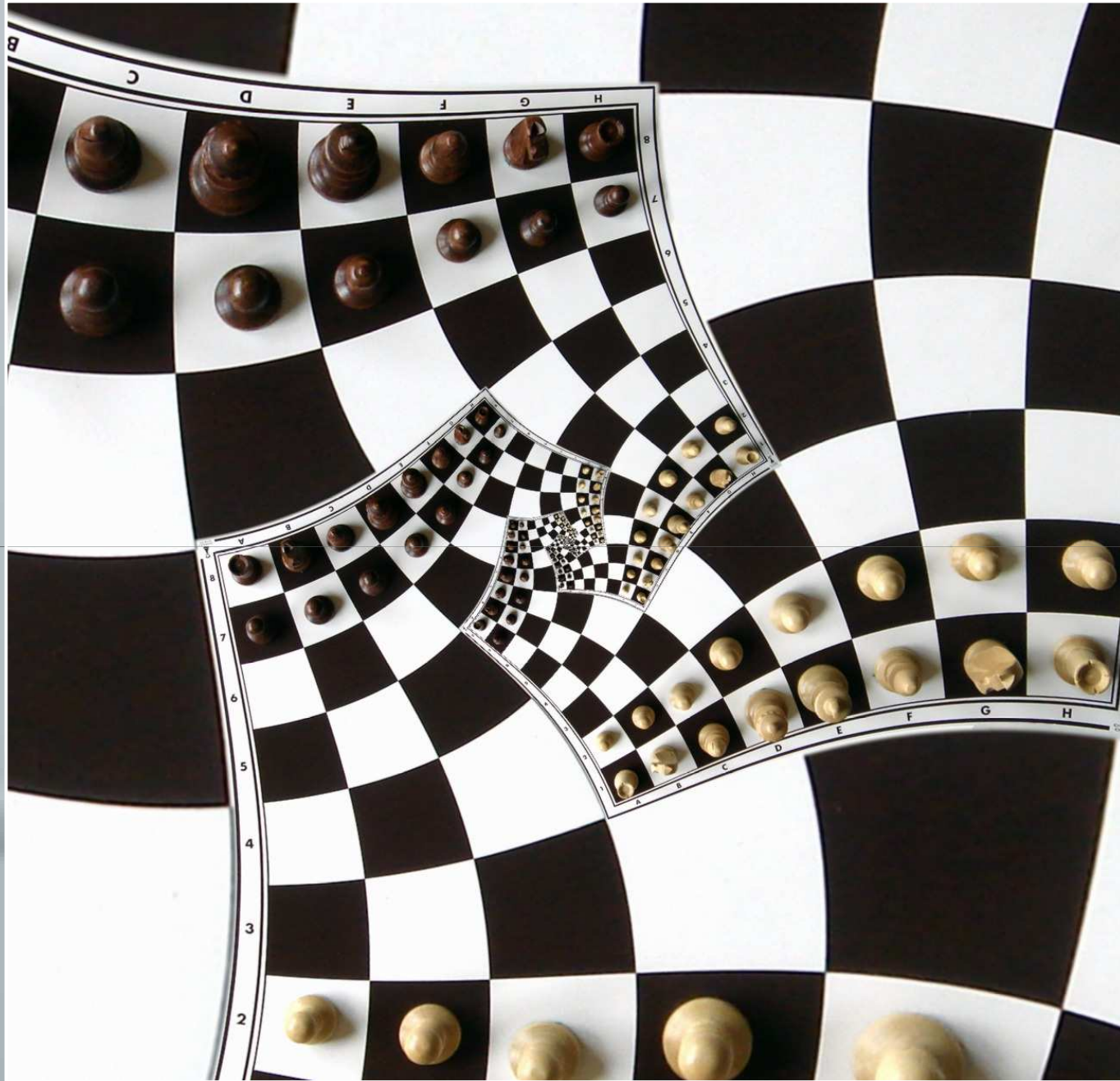
Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational, Scientific and Cultural Organisation (UNESCO, Paris), 1999; Max Planck, Institute for Meteorology, Hamburg, 1994; Freeze, Allen, John, Cherry, Groundwater, Prentice-Hall, Engle wood Cliffs NJ, 1979.

A background image showing several water droplets of various sizes on a light-colored, reflective surface. The droplets are arranged in a pattern that suggests a path or a trail, with a larger, more elongated droplet at the top and several smaller, more spherical ones below it. The lighting creates highlights and shadows on the droplets, giving them a three-dimensional appearance.

2

**La distribució anisotròpica
de les precipitacions**



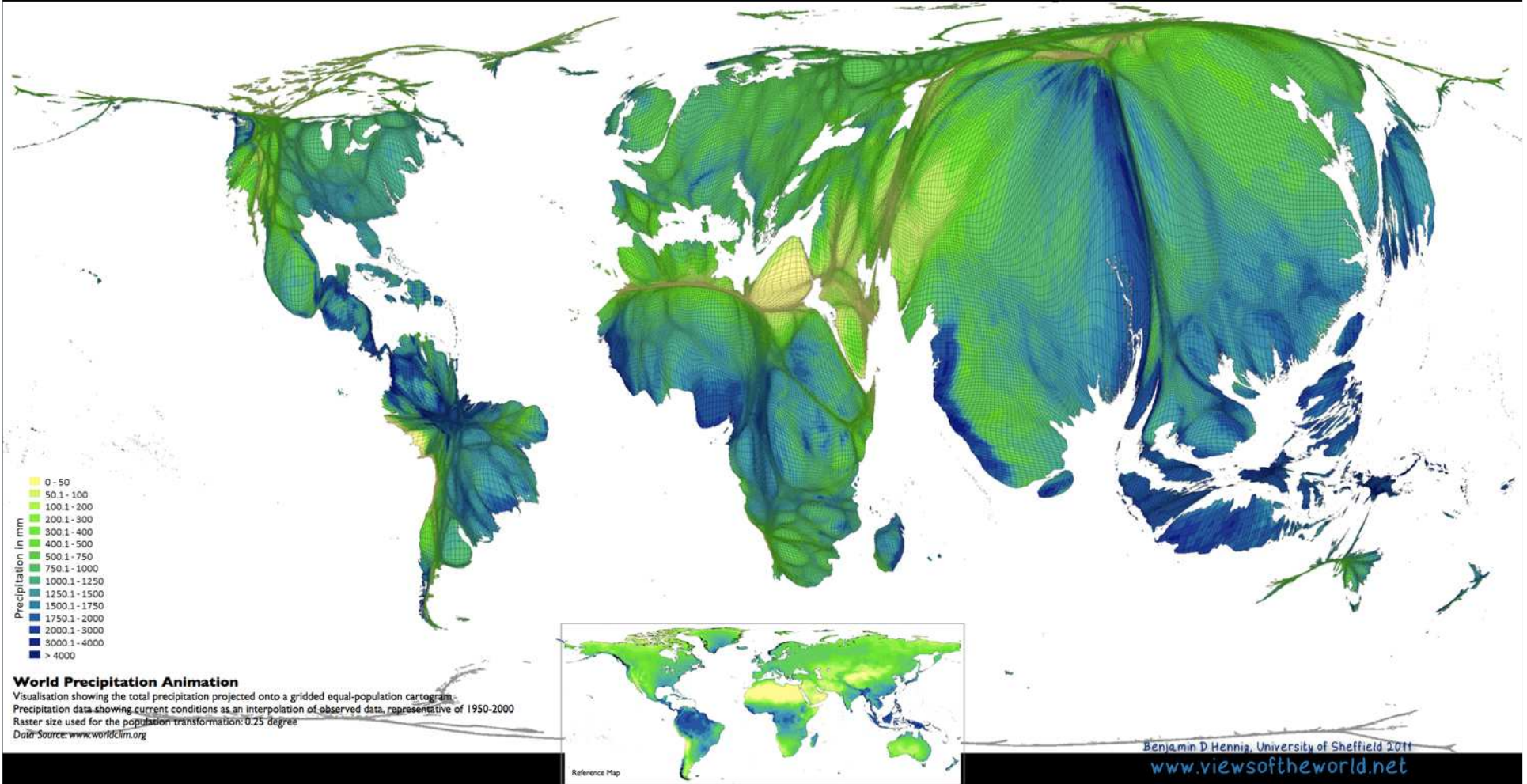


Millimeters	Inches
0 - 24	< 0.9
25 - 74	1.0 - 2.9
75 - 124	3.0 - 4.9
125 - 224	5.0 - 8.9
225 - 274	9.0 - 10.8
275 - 374	10.9 - 14.8
375 - 474	14.9 - 18.7
475 - 724	18.8 - 28.5
725 - 974	28.6 - 38.4
975 - 1474	38.5 - 58.1
1475 - 2474	58.2 - 97.4
2475 - 4974	97.5 - 195.9
4975 - 7474	196.0 - 294.3
7475 - 10004	294.4 - 394.0
> 10005	> 394.0

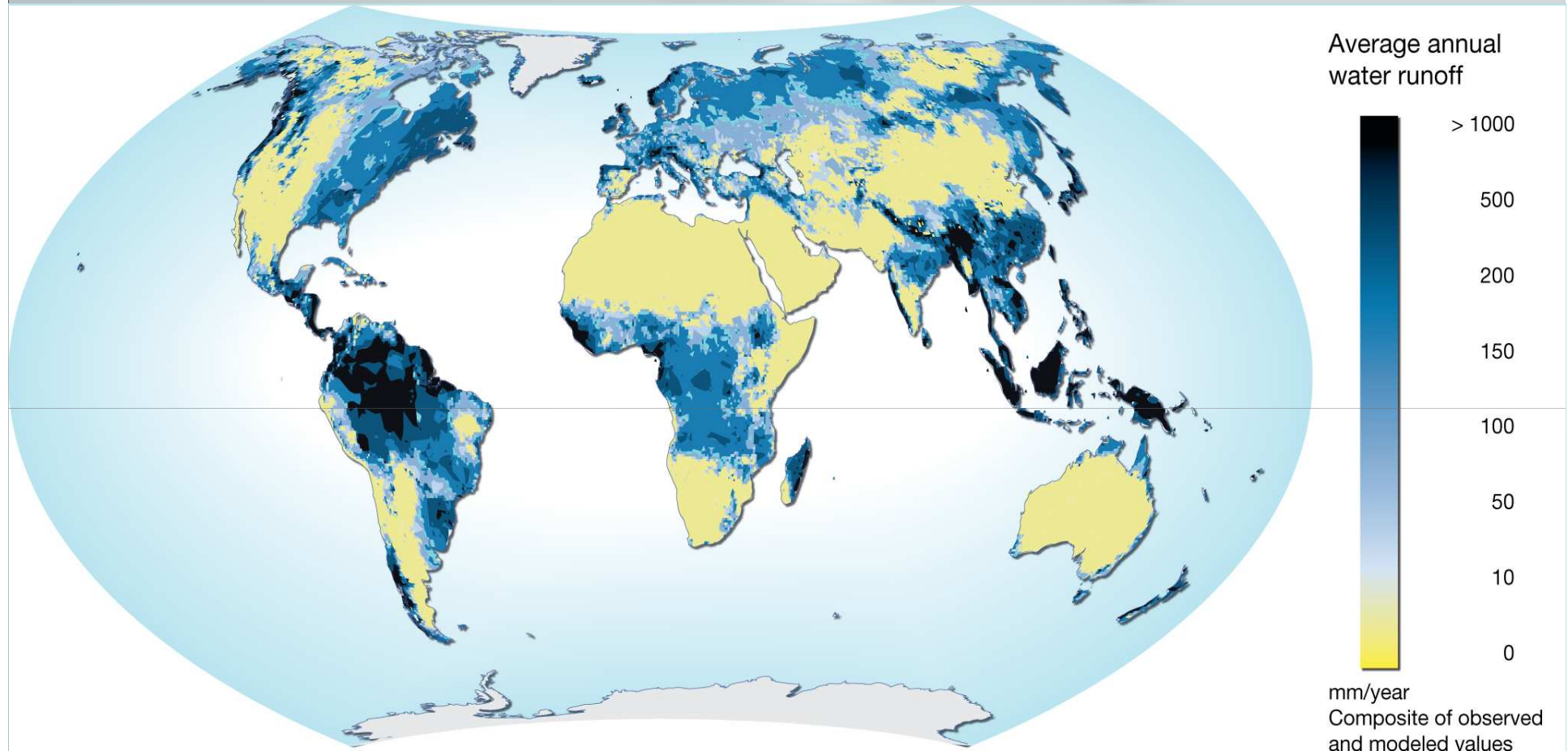
Total Annual Rainfall

Pluviometria mundial

Global Annual Precipitation

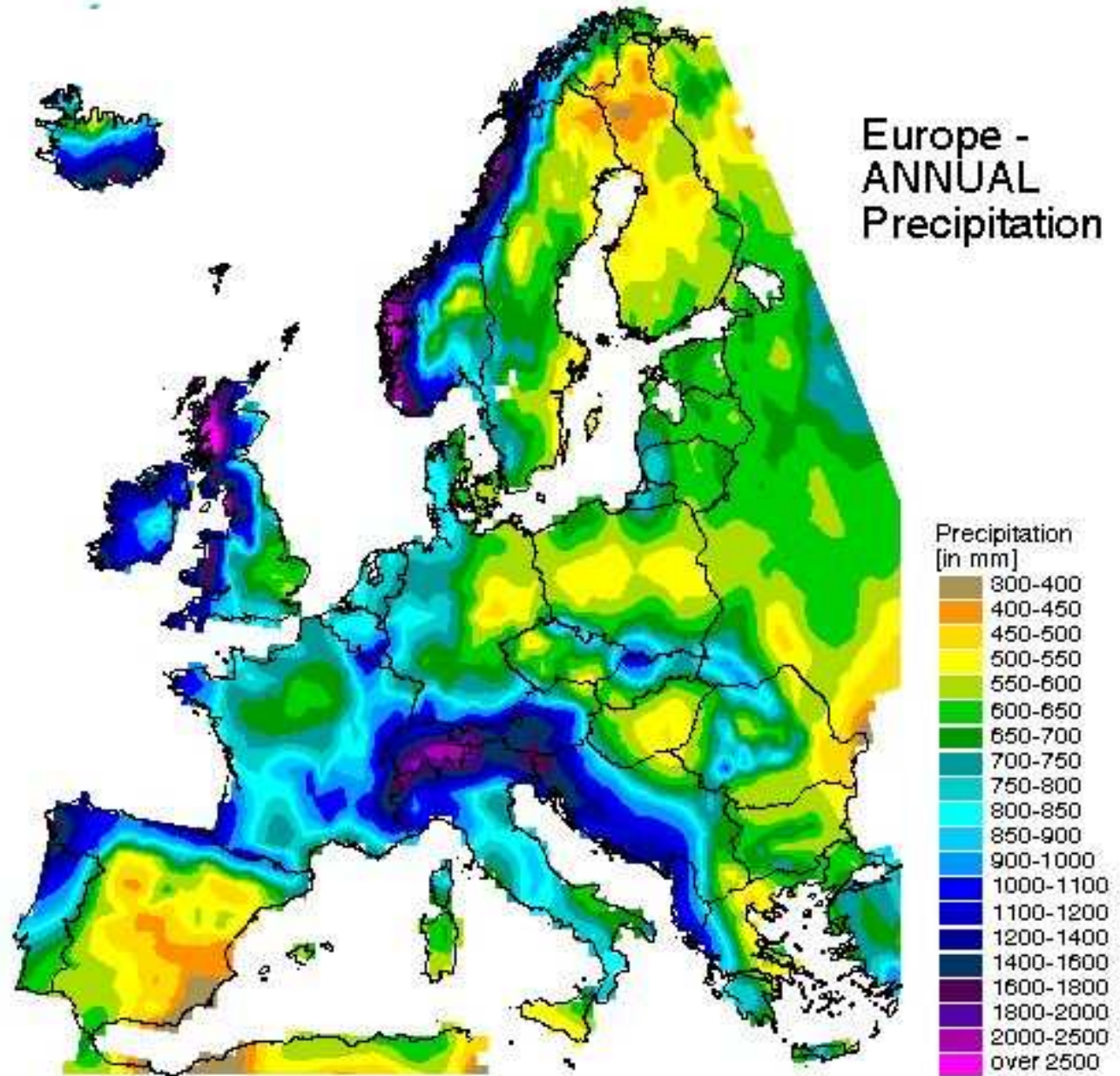


Pluviometria mundial i població



Aigües superficials circulants

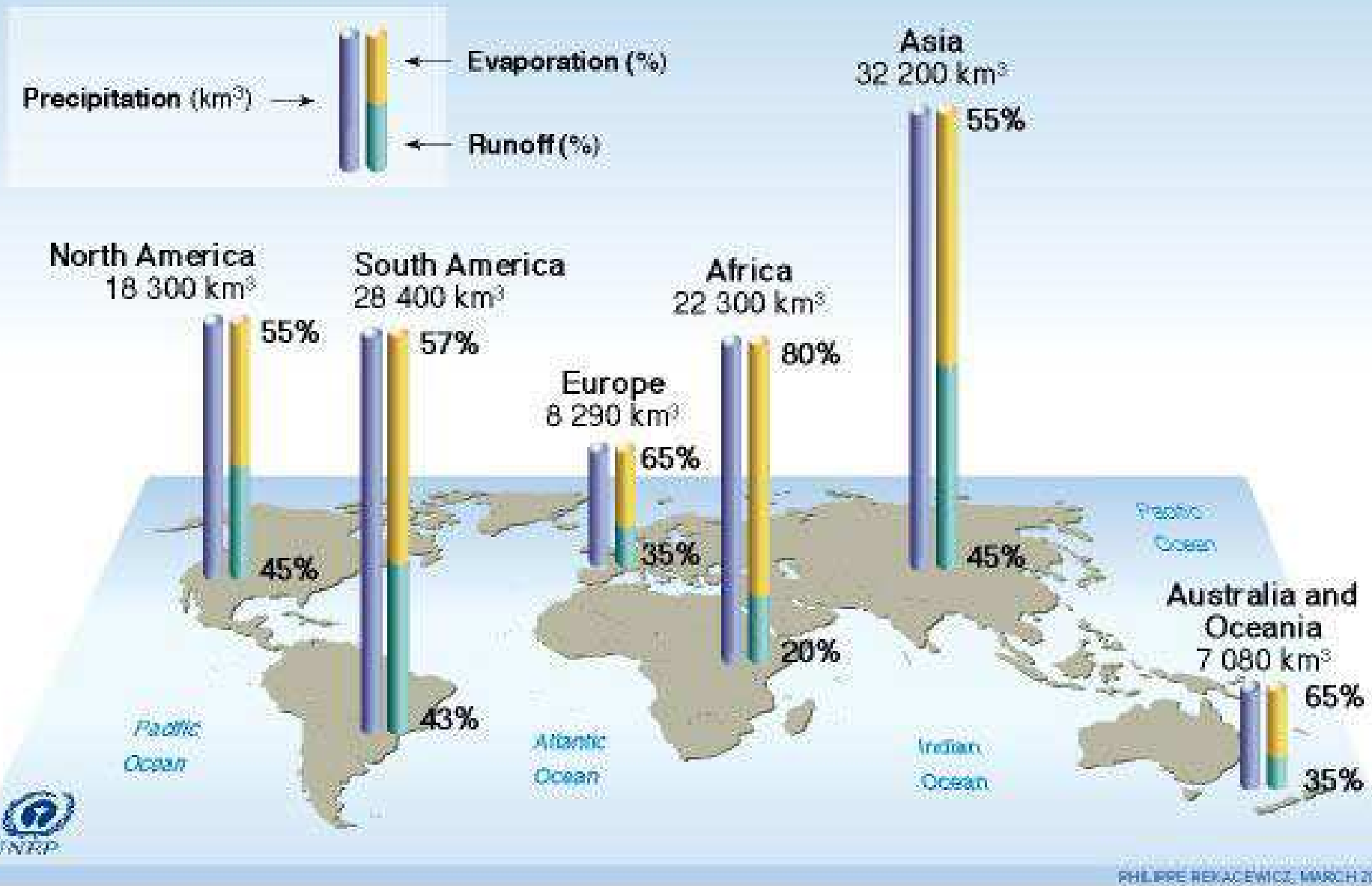
Europe - ANNUAL Precipitation



Pluviometria europea

The World's Surface Water

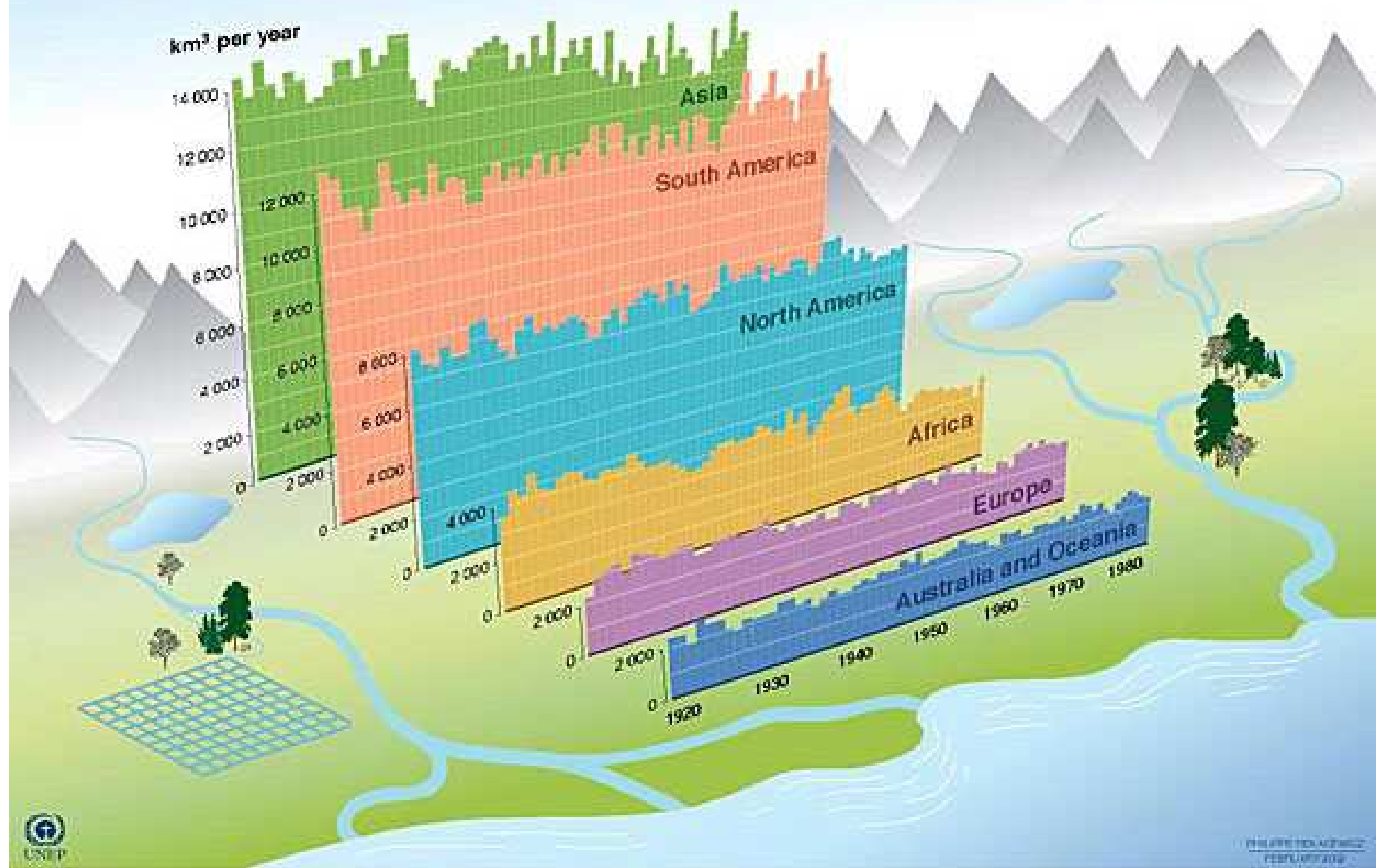
Precipitation, Evaporation and Runoff by Region



Source: Peter H. Gleick, *Water in Crisis*, New York: Oxford University Press, 1993.

River Runoff through the 20th Century

Average Annual Volumes by Continent, 1921-1985

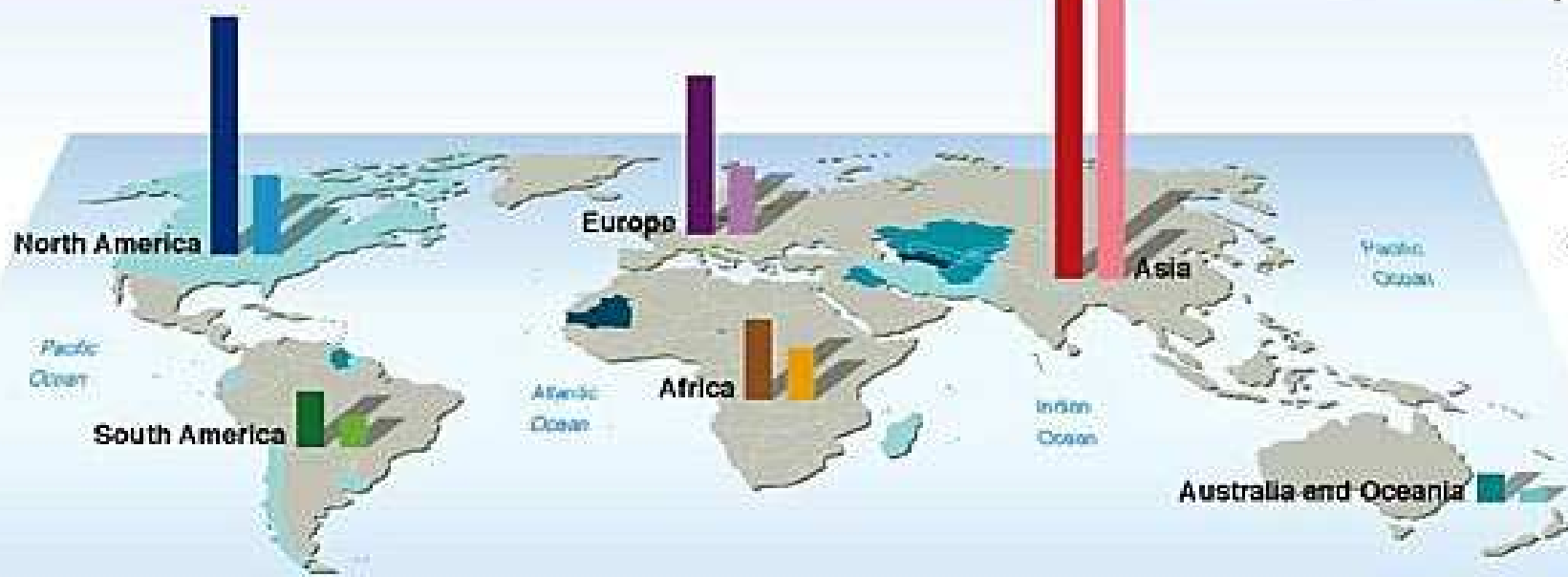
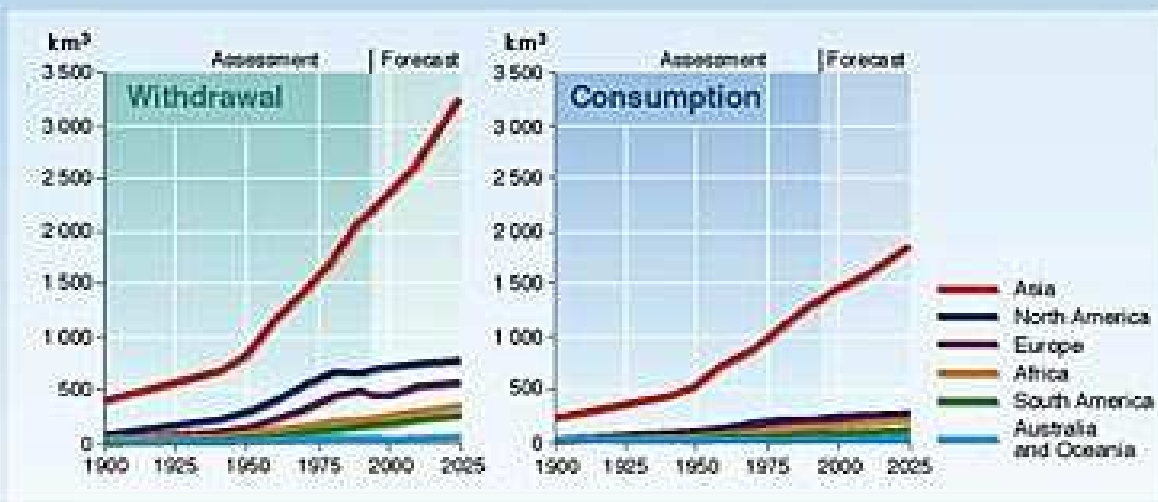




A light blue background with several water droplets of varying sizes. A large, elongated droplet is positioned in the upper right, with a trail of smaller, more spherical droplets leading from it towards the lower left. The droplets have a soft, blurred appearance, suggesting a shallow depth of field or a soft focus.

3
La gestió de l'aigua dolça

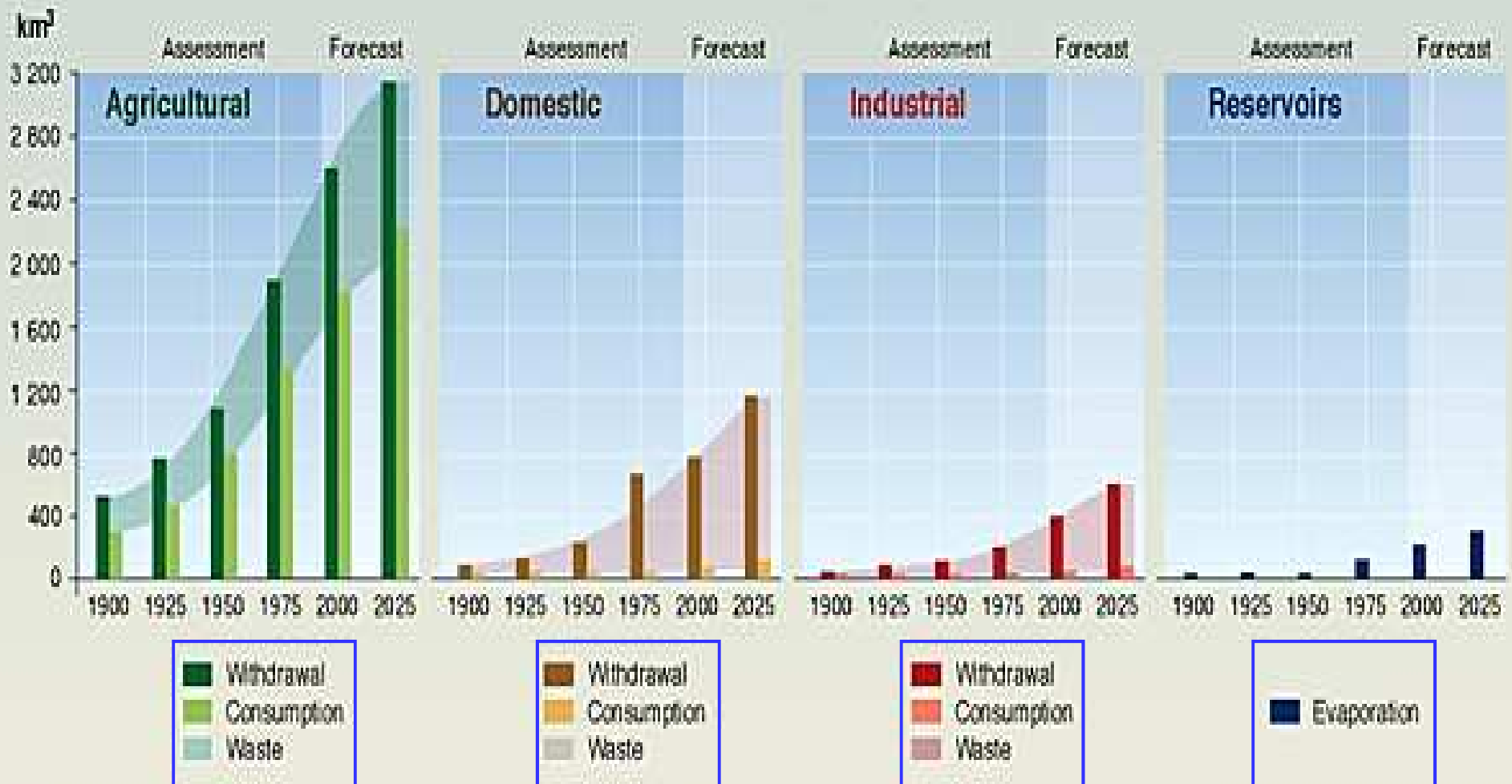
Global Water Withdrawal and Consumption



Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational, Scientific and Cultural Organisation (UNESCO, Paris), 1999; World Resources 2000-2001, *People and Ecosystems: The Fraying Web of Life*, World Resources Institute (WRI), Washington DC, 2000; Paul Harrison and Fred Pearce, *AAAS: Rise of Population 2001 - American Association for the Advancement of Science*, University of California Press, Berkeley.

Evolution of Global Water Use

Withdrawal and Consumption by Sector



Note: Domestic water consumption in developed countries (500-800 litres per person per day) is about six times greater than in developing countries (60-150 litres per person per day).

Consum domèstic a Barcelona: 110 litres per persona i dia



PHILIPPE RENAUD
7/2004/002



Aigua de xarxa

- arriba a casa
- proveïment continu
- sense envasos residuals
- barata: **2 €/m³**

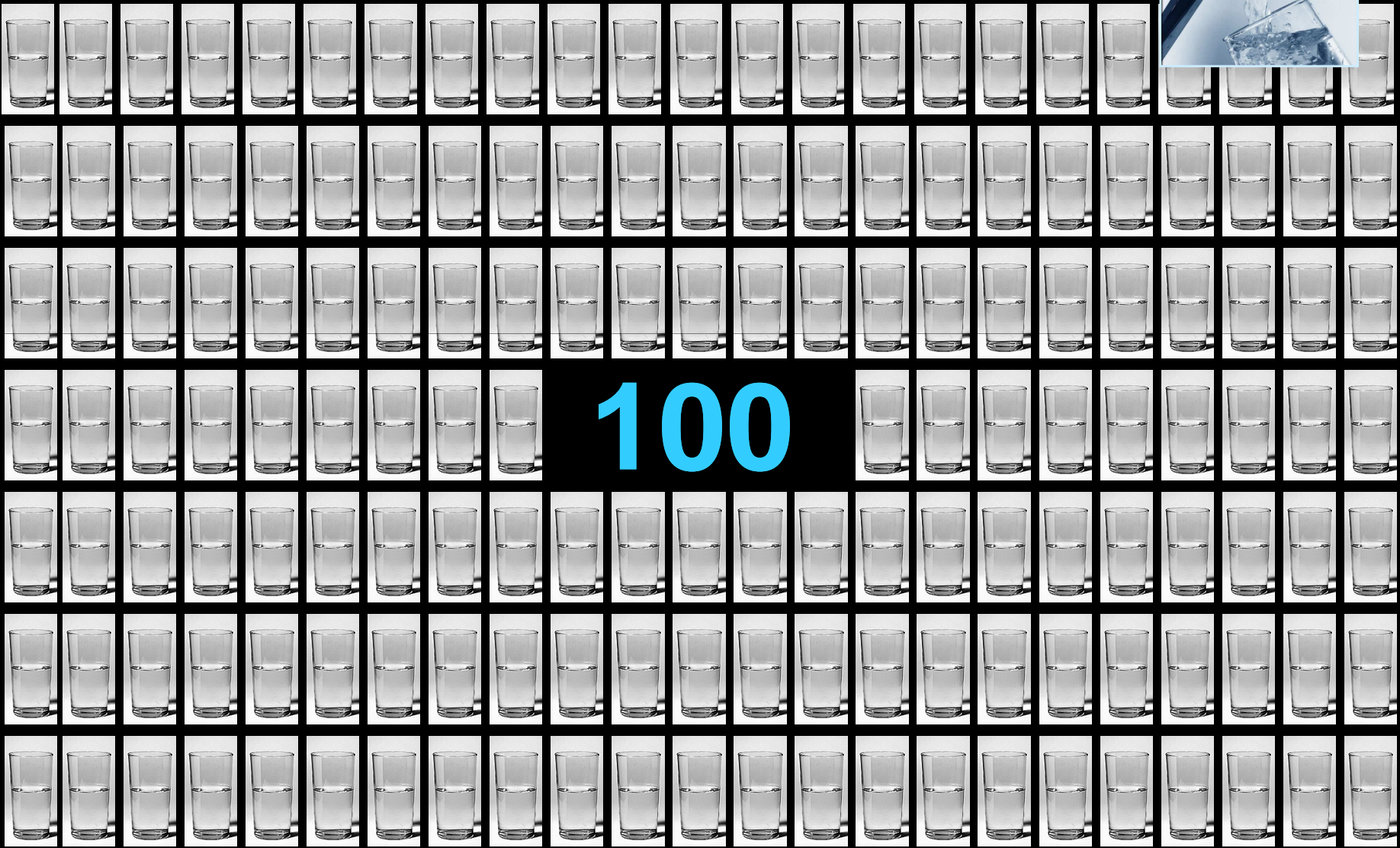


Aigua envasada

- cal tragar-la
- proveïment discontinu
- amb envasos residuals
- cara: **150-200 €/m³**



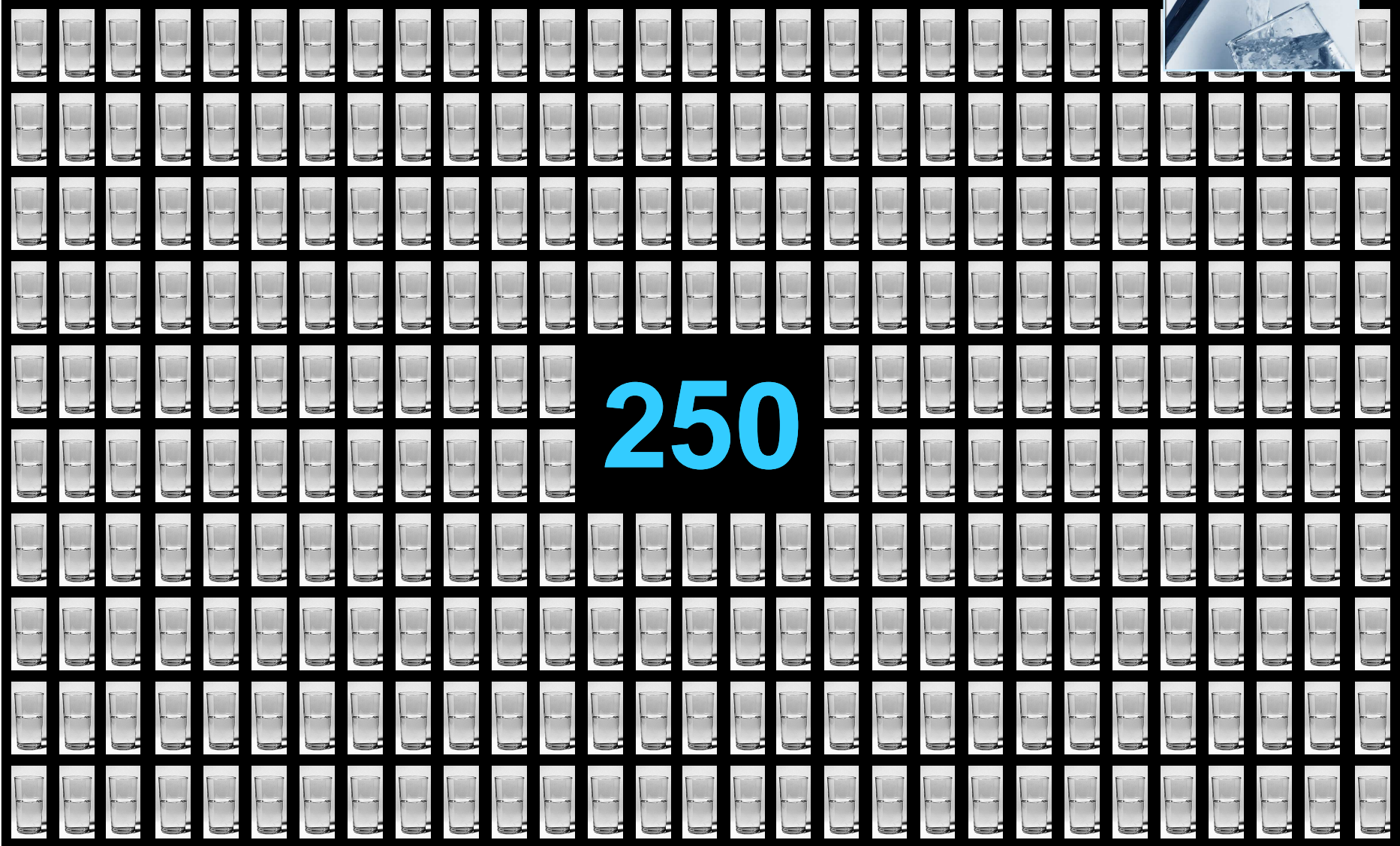
1



100



1



250

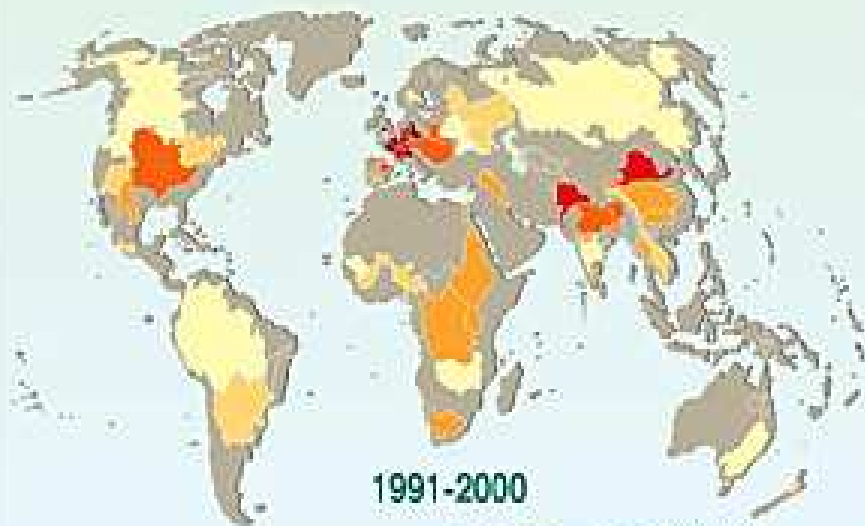




Global Average Nitrate Levels Concentrations at Major River Mouths



1976-1990



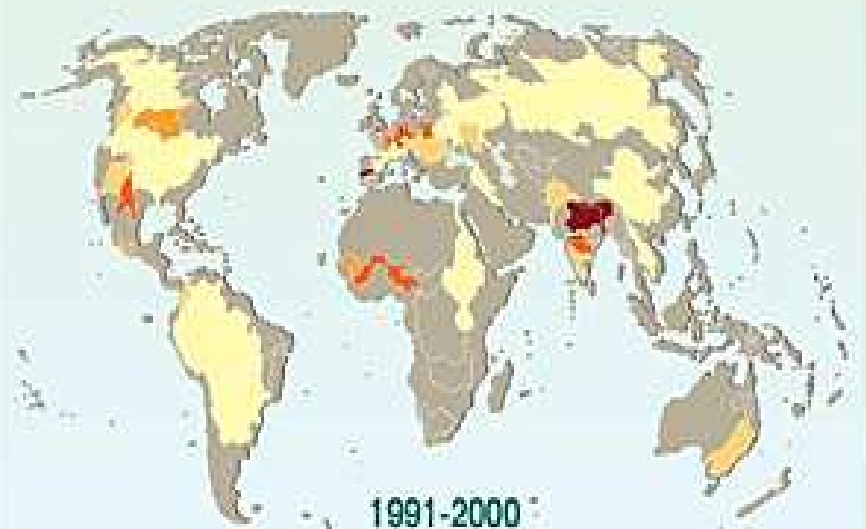
1991-2000



Global Dissolved Phosphate Levels Concentrations at Major River Mouths



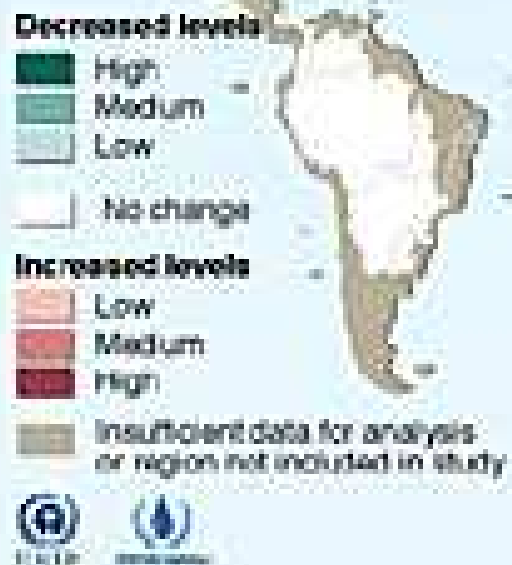
1976-1990



1991-2000

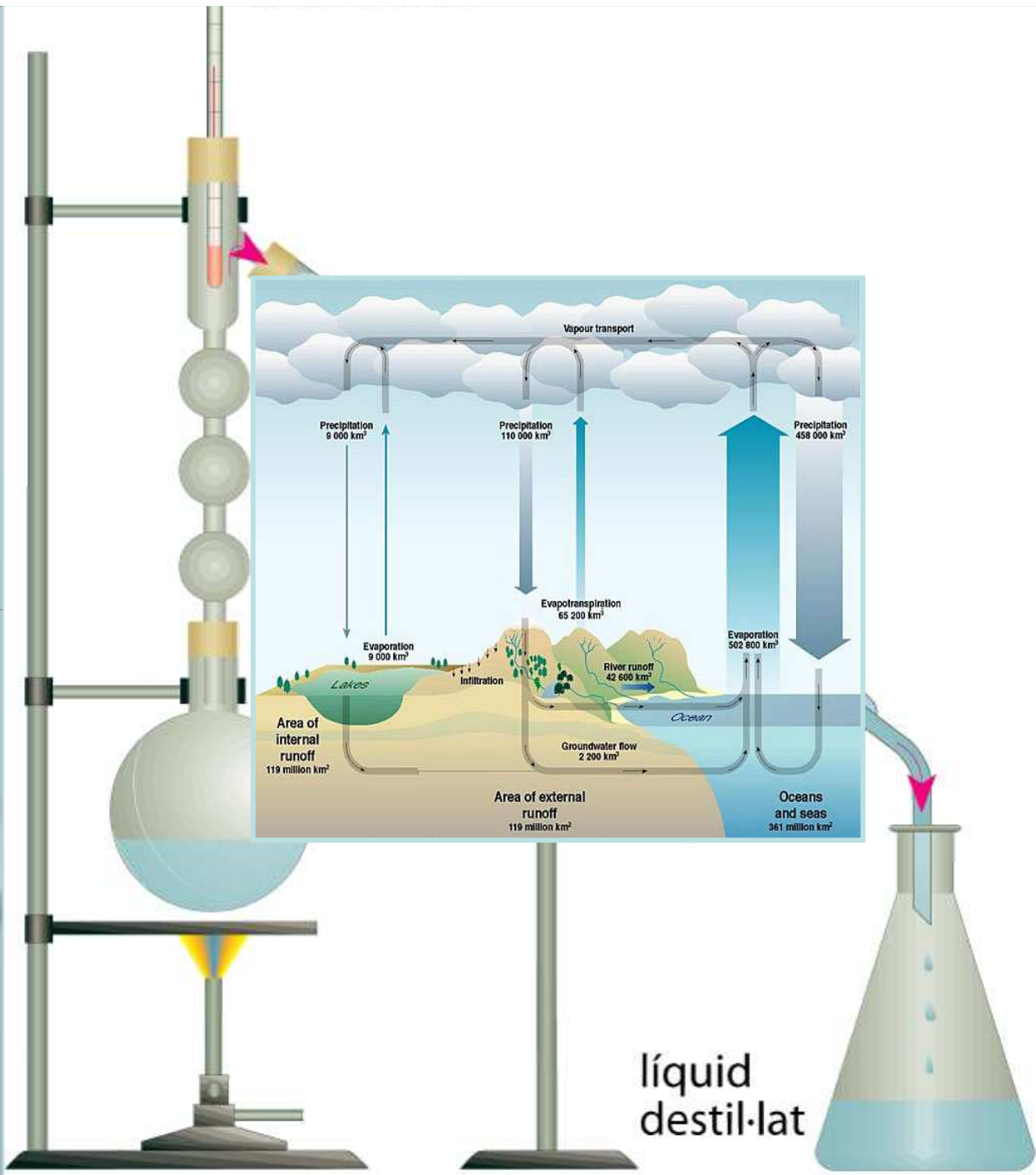


Variacions en el nivell de nitrats (1976-2000)



Changes Between 1976-1990 and 1991-2000

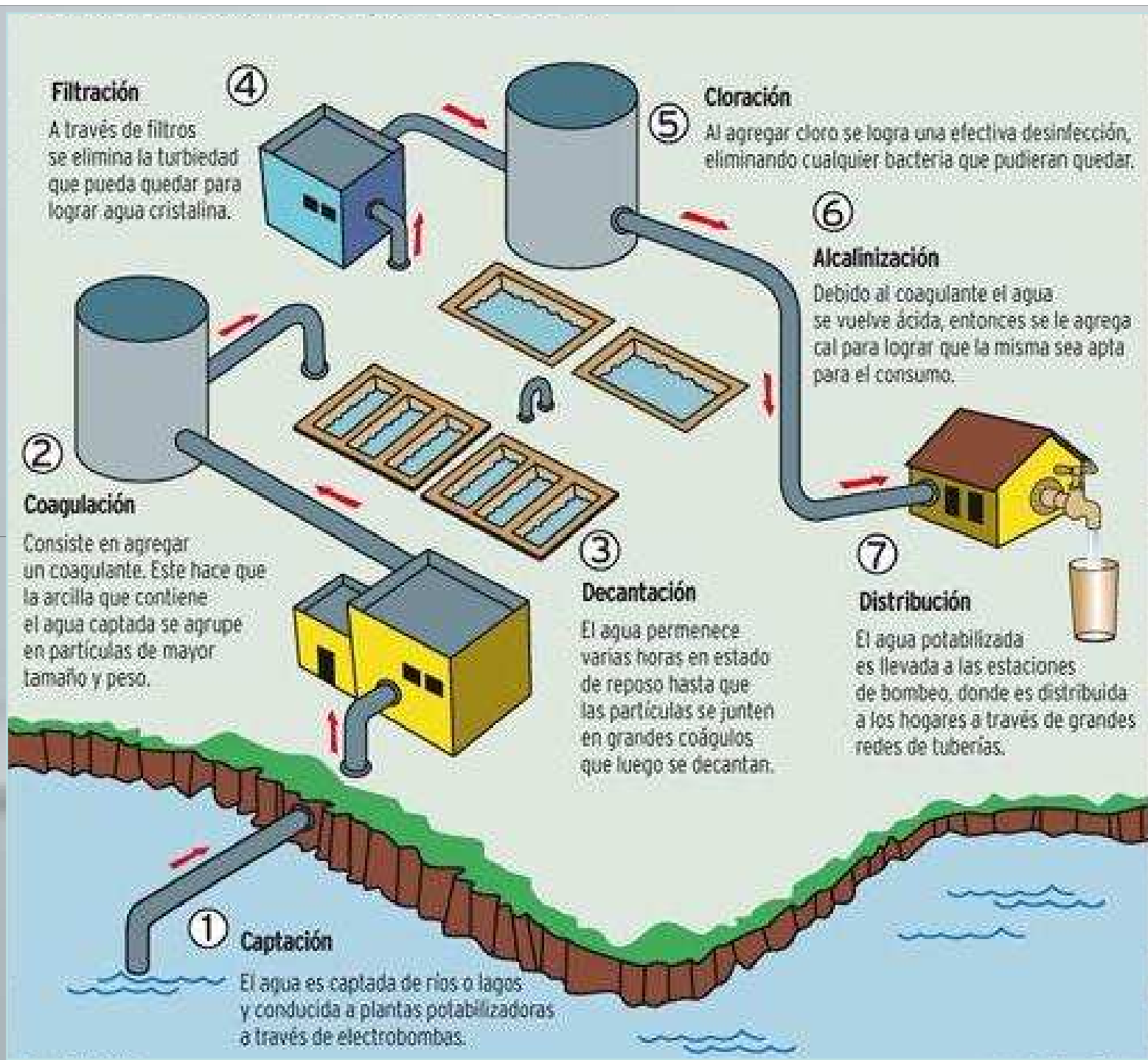
Variacions en el nivell de fosfats (1976-2000)



líquid destil·lat

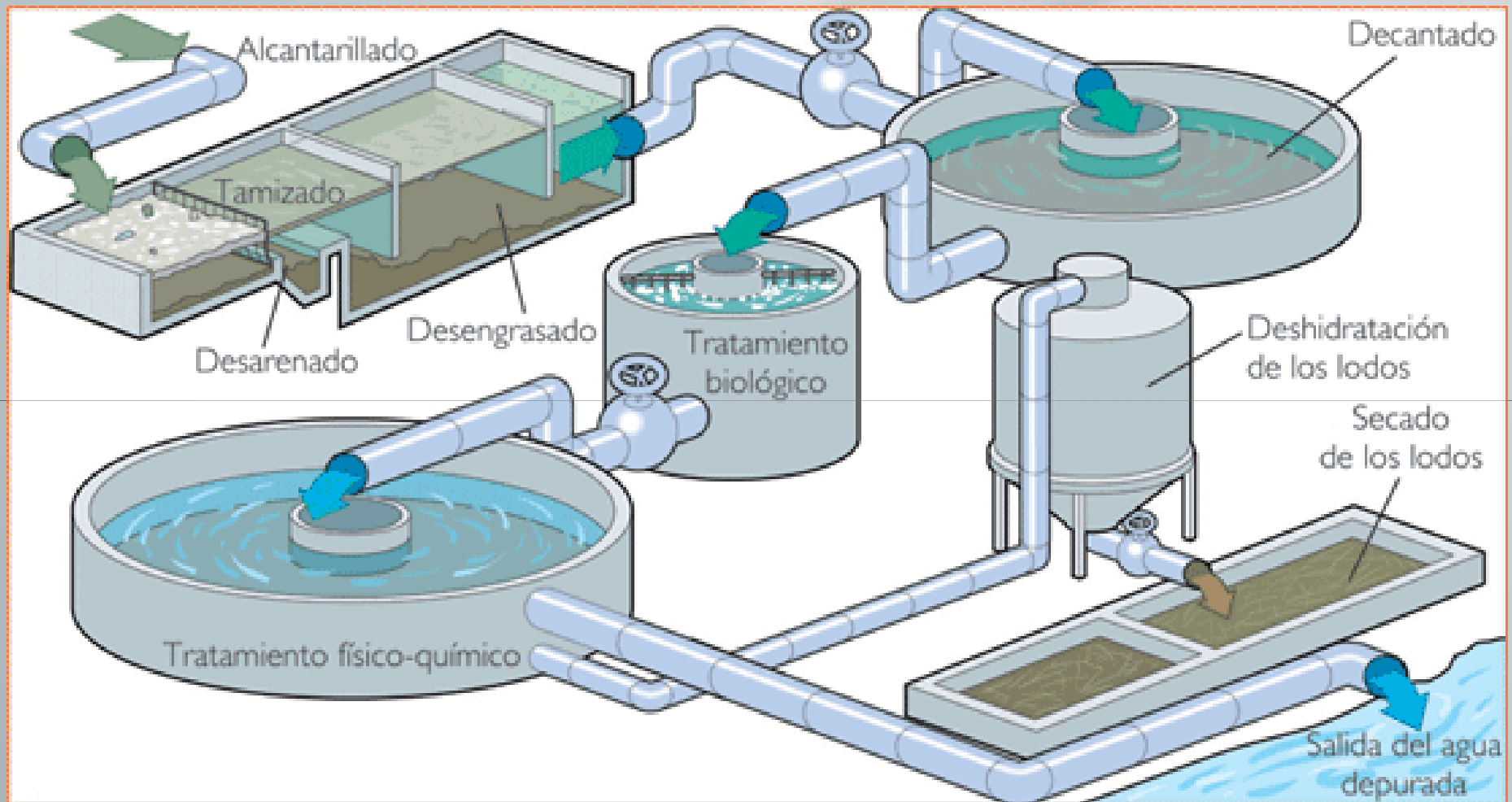


Captació i potabilització





Planta potabilitzadora d'ATLL a Cardedeu



Depuració



EDAR del Baix Llobregat al Prat



Restitució de cabals

Reciclatge







Regeneració

Gestió de l'oferta...



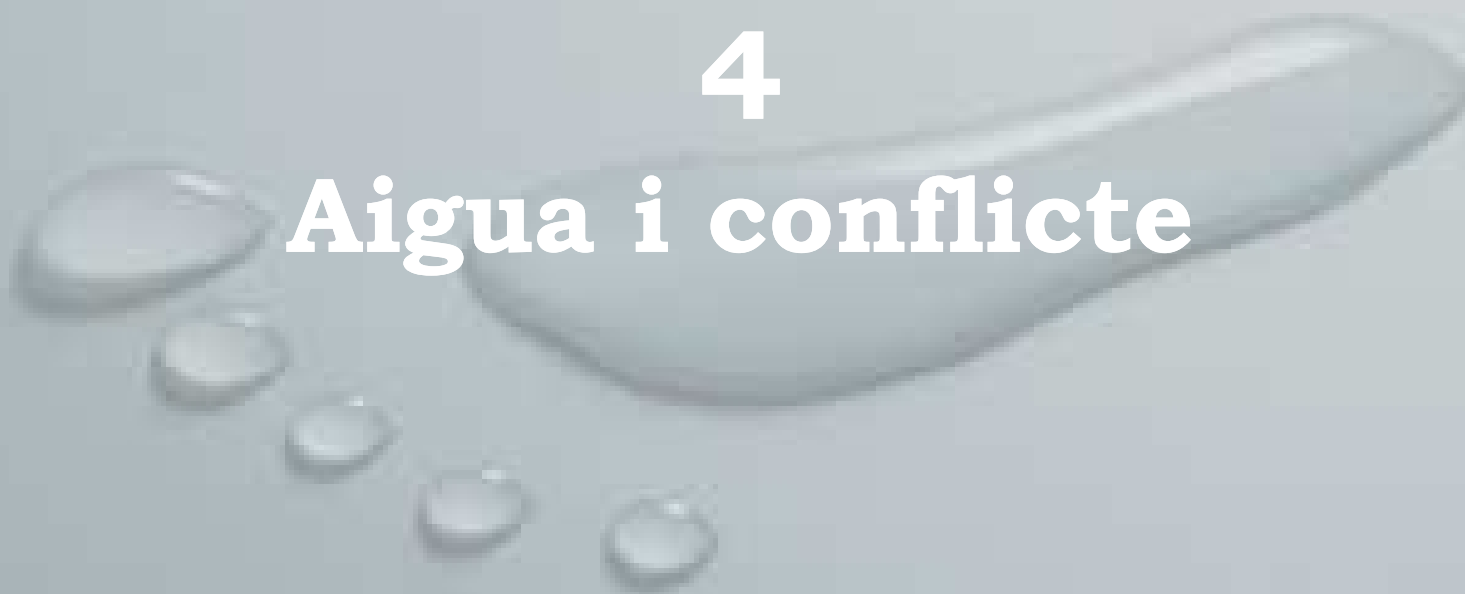


...vs. gestión de la demanda



4

Aigua i conflicte

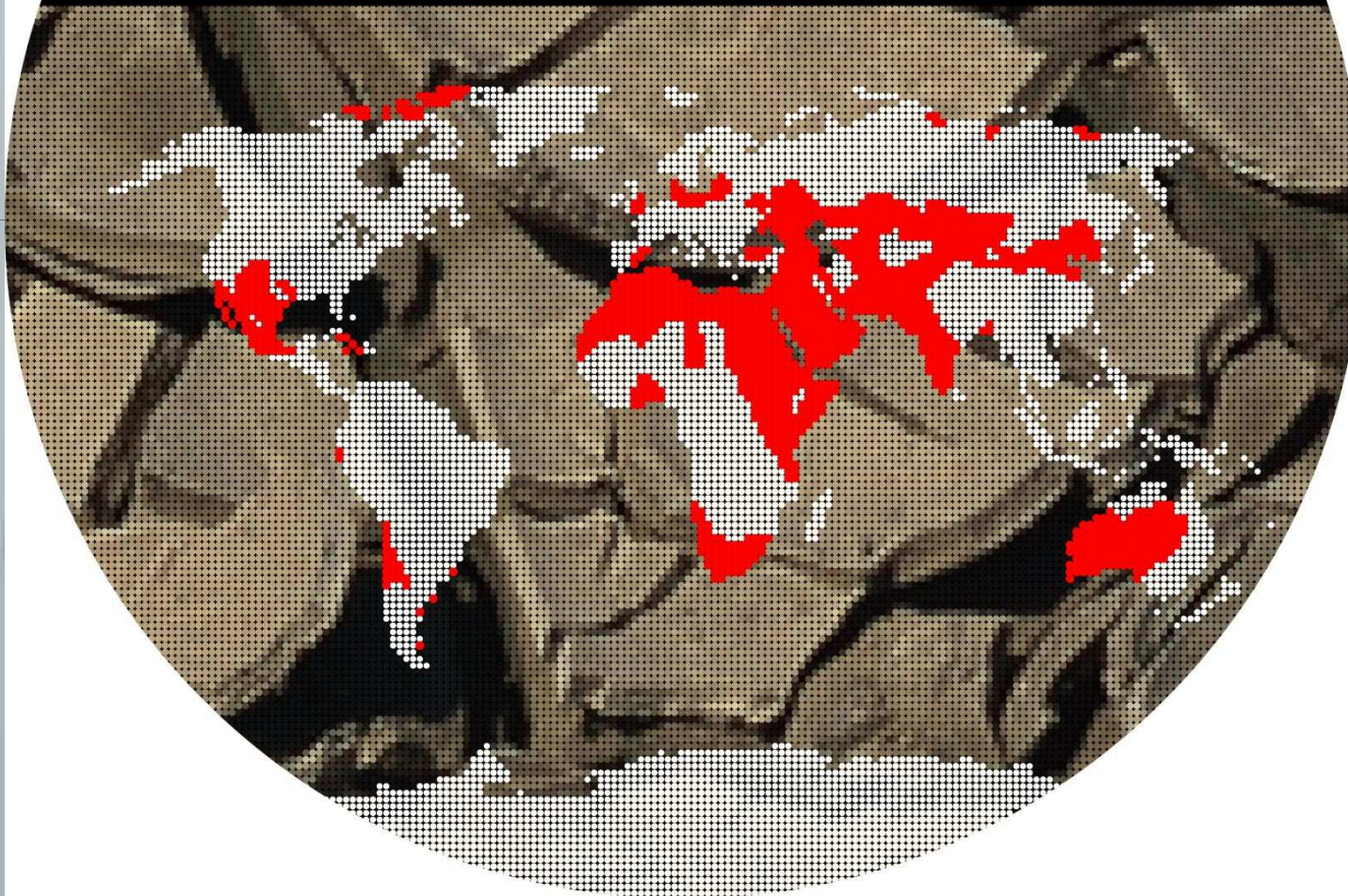




2004

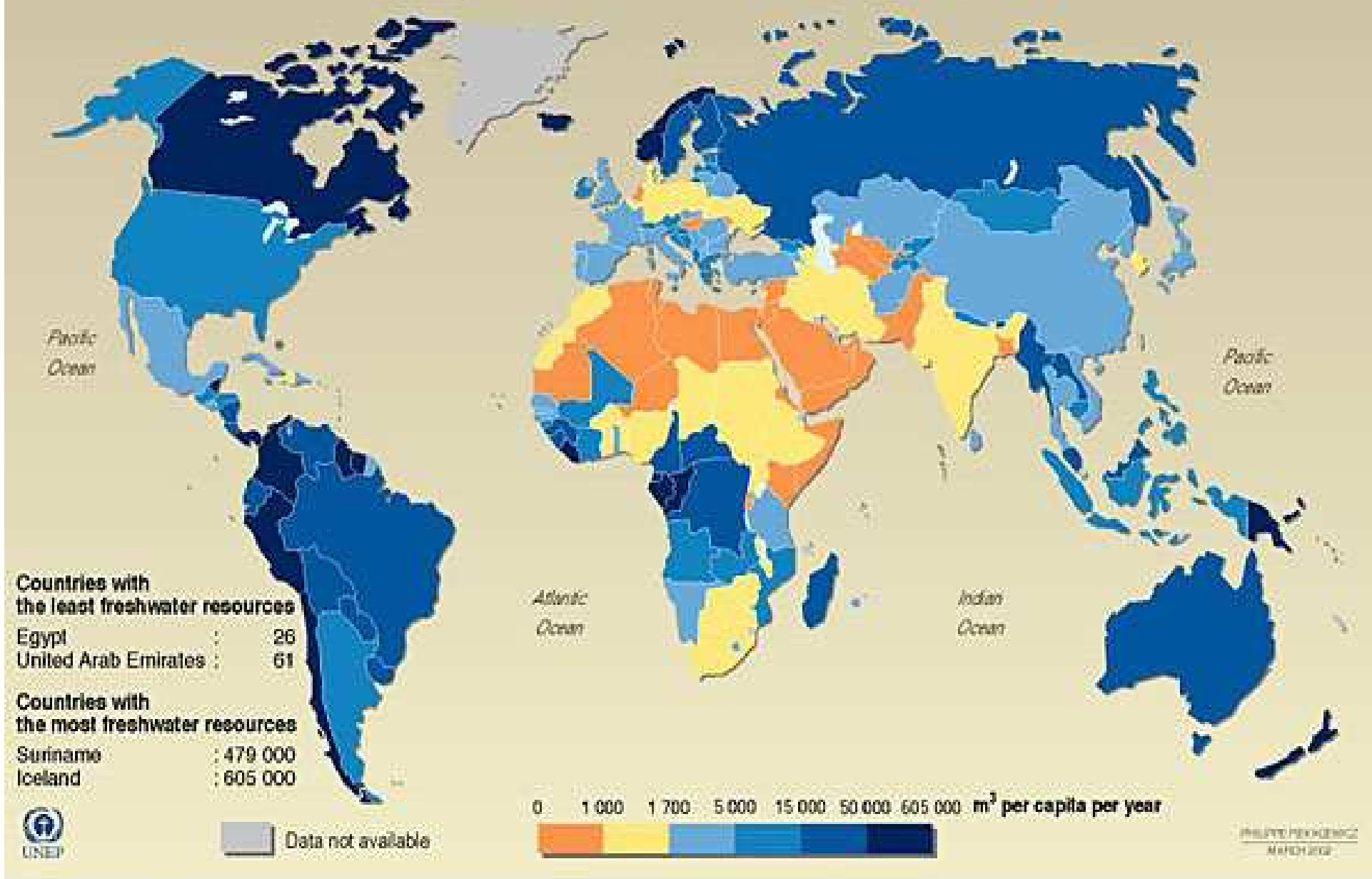
Escassetesa d'aigua dolça
Shortage of freshwater

Escasez de agua dulce
Rareté de l'eau douce



Availability of Freshwater in 2000

Average River Flows and Groundwater Recharge



Source: World Resources 2000-2001, People and Ecosystems: The Fraying Web of Life, World Resources Institute (WRI), Washington DC, 2000.

Freshwater Stress

1995



2025

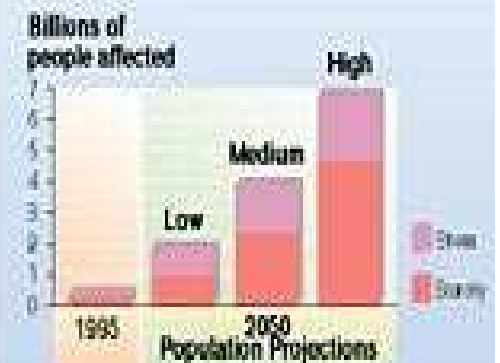


Water withdrawal as percentage of total available



Source: World Meteorological Organisation (WMO), Geneva, 1996; Global Environment Outlook 2000 (GEO); UNEP, Earthscan, London, 1999.

People Suffering from Water Stress And Scarcity





L'AIGUA CONFLICTIVA

Turquia, Síria i Iraq

Control del Tigris i de l'Èufrates

Israel, Palestina, Jordània i Síria

Control del Jordà i dels aqüífers del Golan

Índia i Pakistan

Control dels rius del Punjab

Índia i Bangladesh

Control del curs baix del Ganges i del Brahmaputra

Xina, Myanmar, Laos, Tailàndia, Cambodja i Vietnam

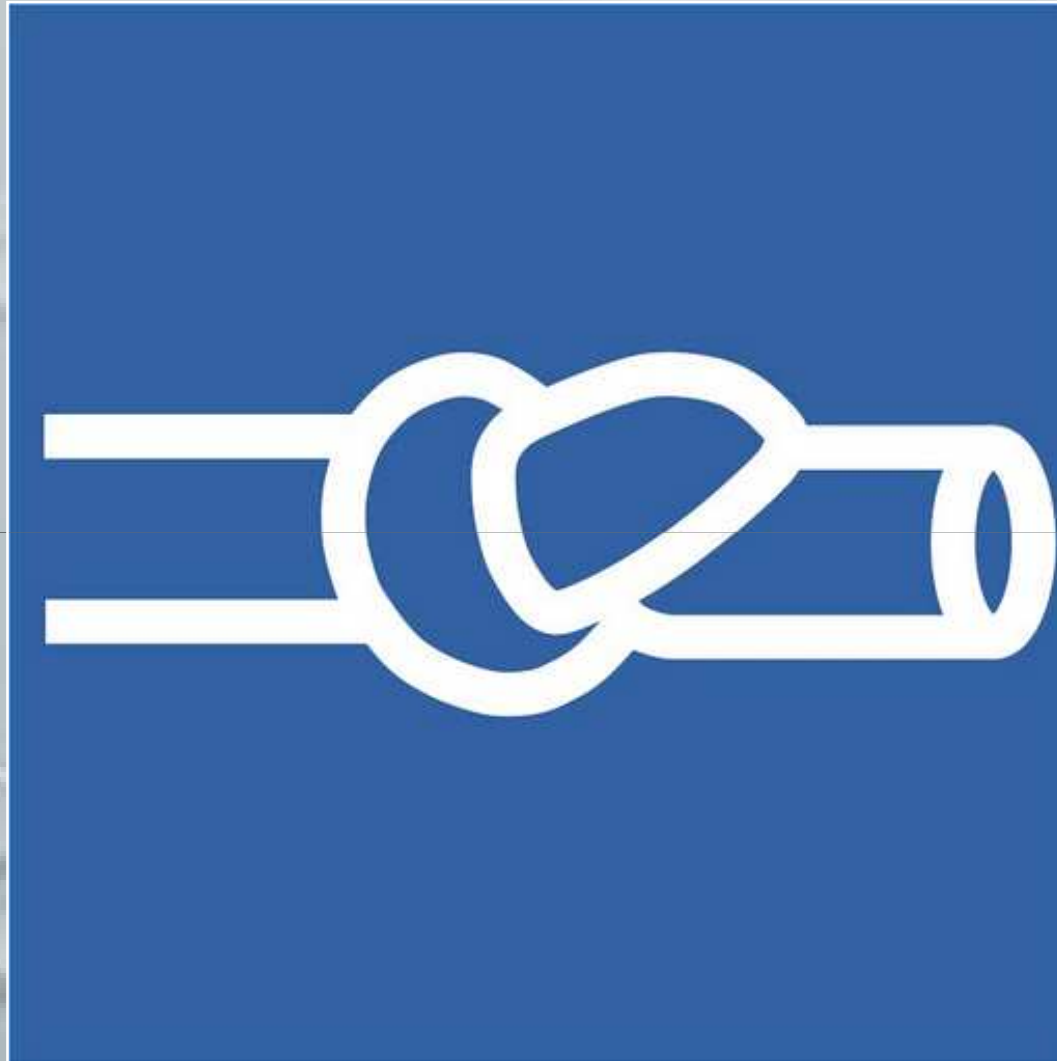
Control del Mekong

Kirguizistan, Uzbekistan i Tadjikistan

Control de l'Oxus i del Jaxartes

Egipte, Etiòpia, Sudan N. i S., Kenya, Tanzània, Uganda, Rwanda i Burundi

Control del Nil





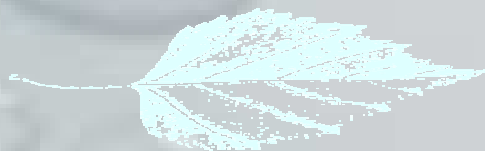
5

Epíleg









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