

Water and Jobs

Based on: United Nations World Water
Development Report 2016

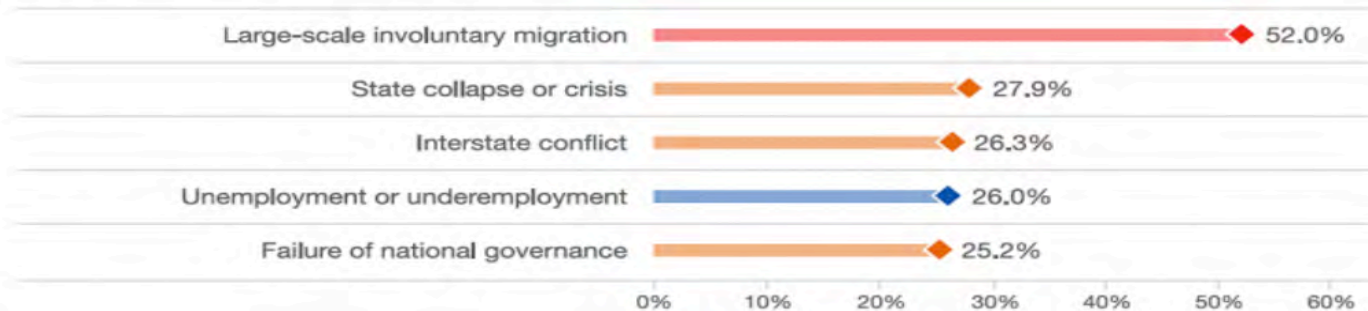
UN World Water Assessment Programme (WWAP), UNESCO

The Global Risks of Highest Concern, 2016



Percent of participants mentioning the respective risk to be of high concern for the time frame of 18 months or 10 years, respectively. Participants could name up to five risks in each time frame. In each category, the risks are sorted by the total sum of mentions.

For the next 18 months



For the next 10 years

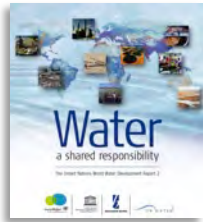


Read more: wef.ch/risks2016 #risks2016



Global Risk Report,
World Economic Form,
January 2016

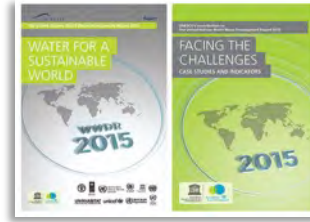
WORLD WATER DEVELOPMENT REPORTS



2006



2012



2015



2003



2009



2014



2016

The main product of WWAP is the WWDR (UN-Water Report) which is the UN's flagship report on Water

WWAP coordinates the work of 31 UN agency members and of 38 partners of UN-Water in the annual production of the authoritative WWDR

The Global Water Crisis

GLOBAL WATER DEMAND (scenario 2000 and 2050)



WWDR2015 describes **six critical challenge areas**

- Water sanitation and hygiene (WASH)
- Urbanization
- Agriculture
- Energy
- Industry
- Climate Change

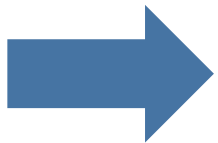
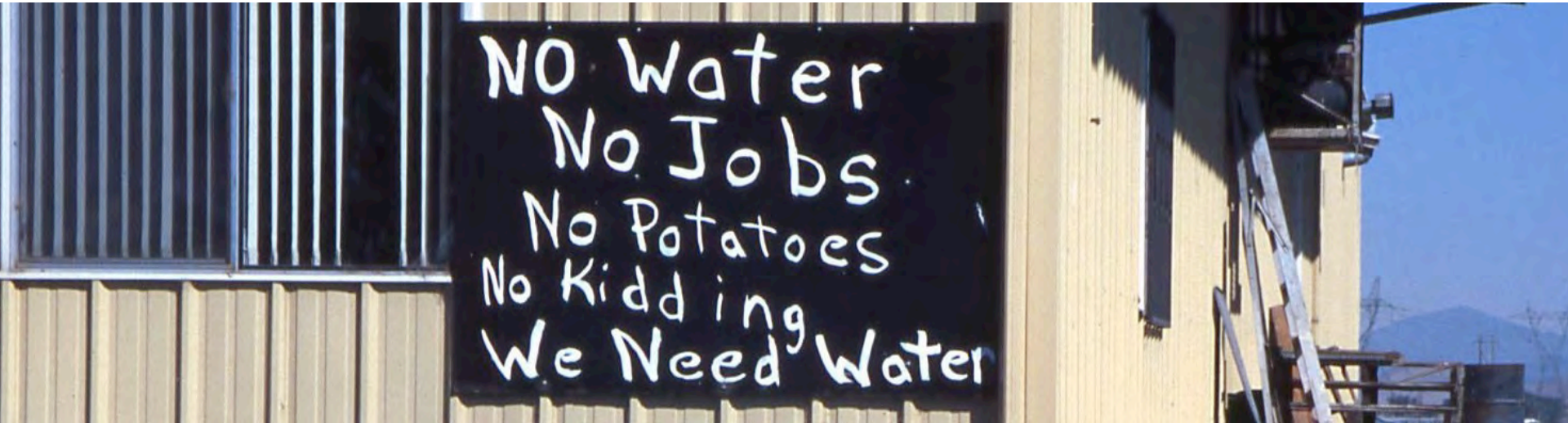
These challenges are **region-specific**.

WWDR 2015 - Key Messages



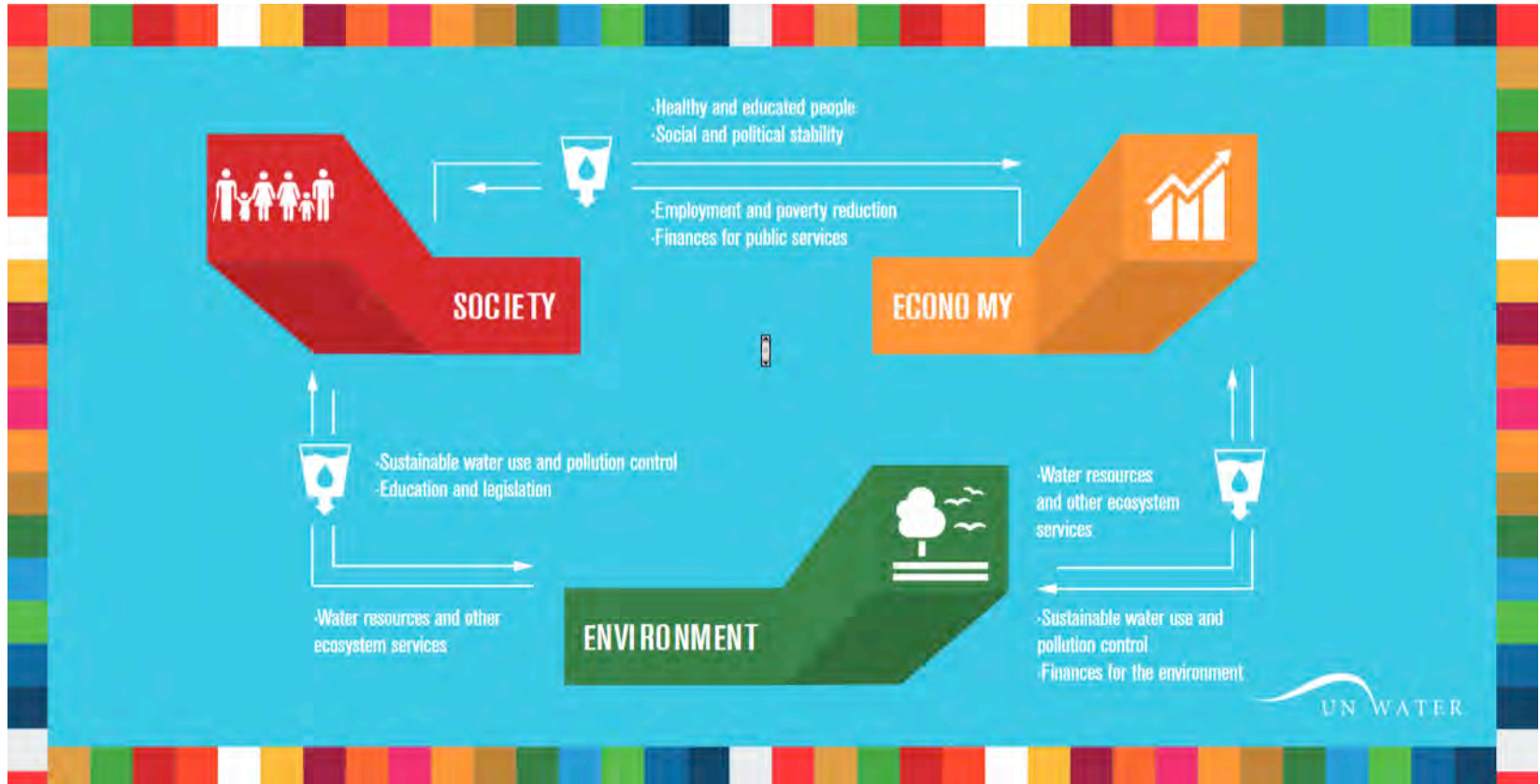
WATER's role
in addressing
**CRITICAL
DEVELOPMENT
CHALLENGES**

Main Finding of WWDR 2016



Opportunities for sustainable economic growth, employment (decent jobs) and resilient societies are contingent upon the sustainable management of water resources and the provision of water-related services

Water and the 3 Dimensions of Sustainable Development





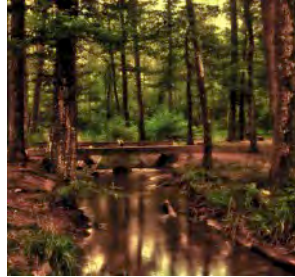
Section TWO

WATER-DEPENDENCY OF JOBS

WATER-DEPENDENT JOBS



AGRICULTURE



FORESTRY



FISHERIES



ENERGY



**RESOURCE-INTENSIVE
MANUFACTURING**



RECYCLING



BUILDING

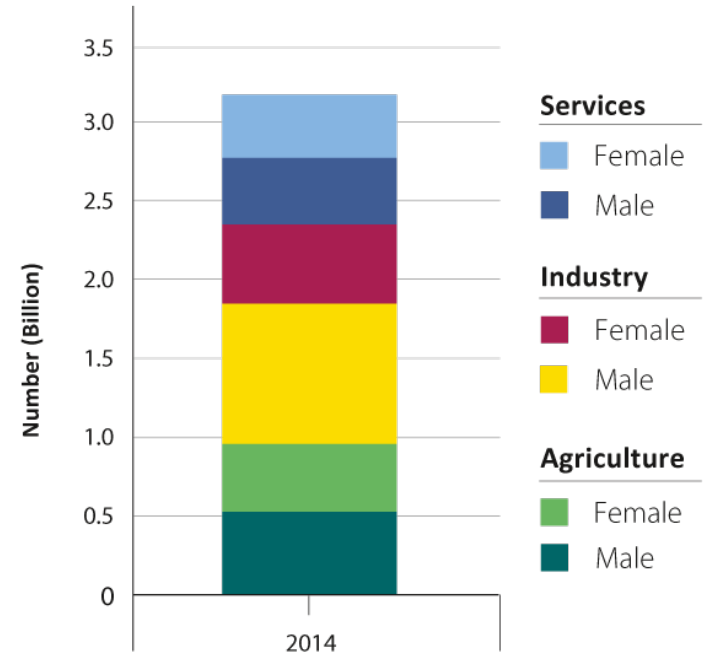


TRANSPORT

HEAVILY/MODERATELY WATER-DEPENDENT JOBS

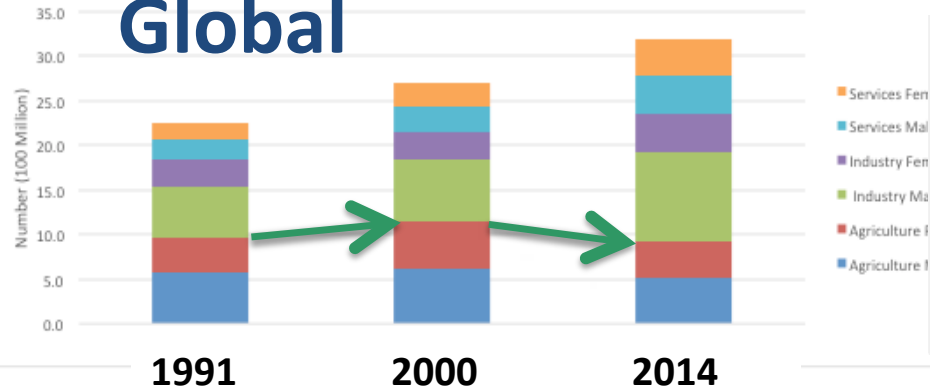


Global employment trends, by sector and age

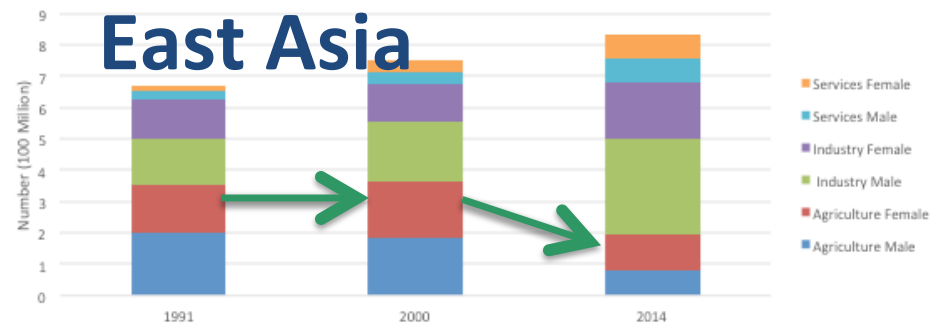


Employment per sector / green is agriculture

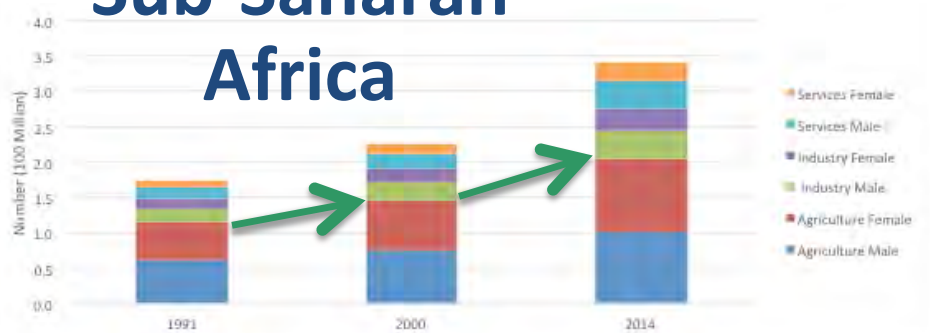
Global



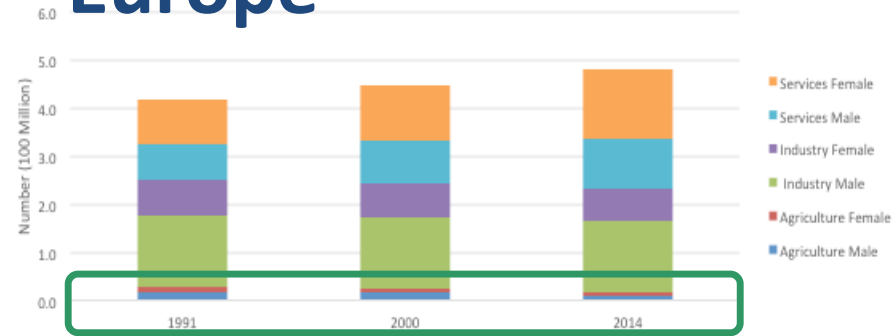
East Asia



Sub-Saharan Africa



Europe



HEAVILY/MODERATELY WATER-DEPENDENT JOBS



AGRICULTURE



95%

**42% of
GLOBAL
WORKFORCE**



INDUSTRY

30%

SERVICES



10%

**HEAVILY
WATER-DEPENDENT**

INDUSTRY



60%

**36% of
GLOBAL
WORKFORCE**

SERVICES



30%

AGRICULTURE



5%

**MODERATELY
WATER-DEPENDENT**



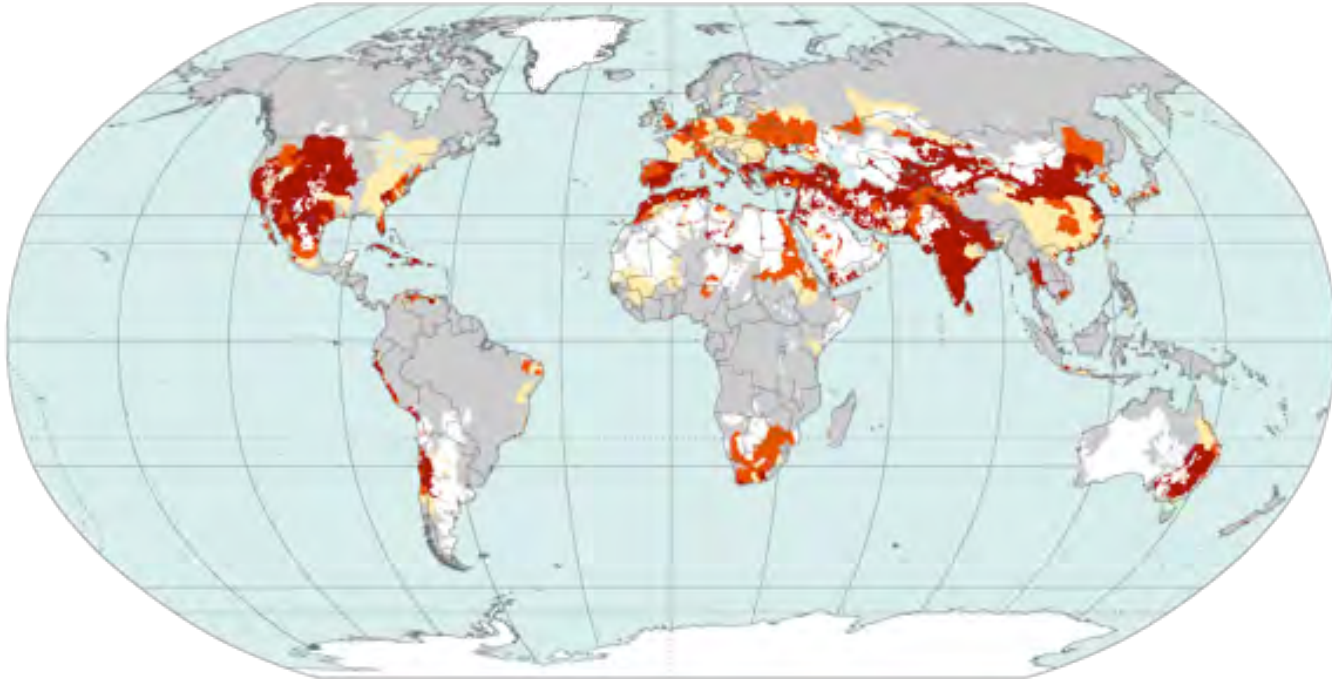
Three out of four jobs that make up the entire global workforce are water-dependent

The background of the slide is a close-up photograph of parched, reddish-brown soil. The soil is cracked into irregular, polygonal shapes, with deep, dark fissures running across the surface. The lighting is bright, casting soft shadows that emphasize the texture and depth of the cracks. In the lower-left quadrant, a single, dry, yellowish-brown stalk of grass or a small piece of wood lies on the cracked earth.

Section THREE

WATER SCARCITY LIMITS GROWTH

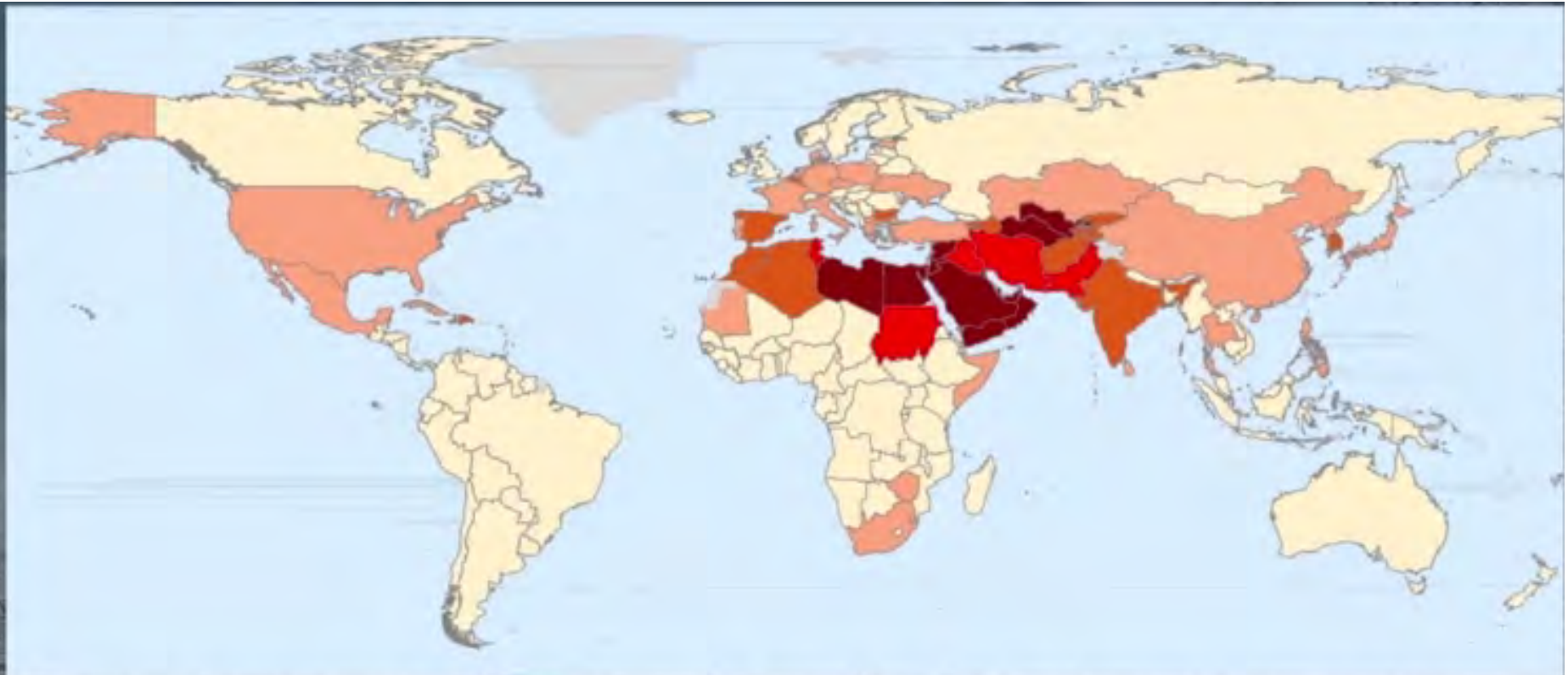
ADDRESSING WATER SCARCITY



Annual average water withdrawals-to-availability ratio

0 – 0.1 (no water stress) 0.1 – 0.2 (low water stress) 0.2 – 0.4 (mid water stress) more than 0.4 (high water stress) no data

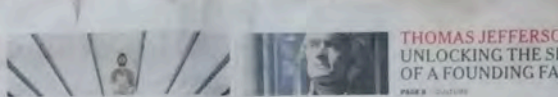
ADDRESSING WATER SCARCITY



ADDRESSING WATER SCARCITY CAN SUPPORT SUSTAINABLE DEVELOPMENT

Economic water scarcity – whereby access is not limited by resource availability, but by human, institutional and financial constraints – affects employment opportunities for a large swath of the global population, particularly in the least developed countries of Africa, southern/ southeast Asia, and Latin America.





International New York Times

WEDNESDAY, APRIL 13, 2016

Killing stirs Germany's unease with new arrivals

Science teacher's murder by Afghan widowed migrant

BY ALISON DALE
Mehdi Houthouder, an immigrant from Iran, was believed high school science teacher before he was decapitated, and for going out of his way to help settle some of Germany's newest immigrants.



Heavy rain in Kerala, India, has caused flooding, and power outages at the facility mean that in 17 million weather patterns that have brought severe drought to parts of Africa.

BY ALISON DALE
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Drought reverses Zambia's fortunes

Trickle at a crucial dam shows how climate risks threaten much of Africa

BY NICHOLETTE GUNZ
Even as drought and the effects of climate change grow visible across the globe, the Kariba Dam now always the

ready and economy flourish, where a...
...of the tropical belt Africa...
...of climate change...
...of the tropical belt Africa...
...of climate change...
...of the tropical belt Africa...
...of climate change...

E.U. calls for big effort to disclose tax data

Panama Papers effort to include havens in probe

BY JAMES KANTER
European Union officials are pushing for a big effort to disclose tax data from the Panama Papers.

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World News

E.U. delays visa threats against U.S. and Canada

BRUSSELS
Bloc wants recognition of newest member states

BY JAMES KANTER
European Union authorities on Tuesday delayed a growing effort to require that United States and Canadian citizens obtain visas to travel to Europe.

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Drought devastates Zambia's economy

ZAMBIA
Drought has led to a sharp decline in copper production, prompting the company to shut down plans for expansion.

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Power cuts for the Good Time Steel Company Zambia have resulted in 40% lower production output and machinery breakdowns, prompting the company to shut down plans for expansion.

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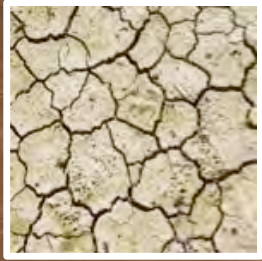
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FOLLOW-ON EFFECTS OF WATER SCARCITY



Drought



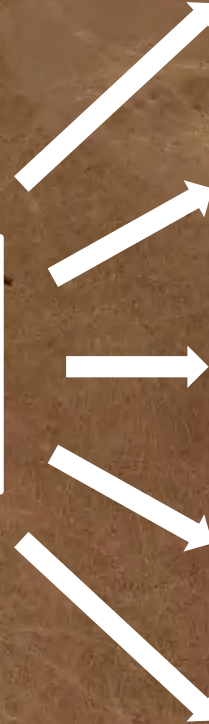
Lower agricultural productivity



Unemployment



Migrations



FOOD INSECURITY

FOOD IMPORT
DEPENDENCY

INFORMAL
SETTLEMENTS

UNEMPLOYMENT

SOCIAL UNREST

Case Study Syria

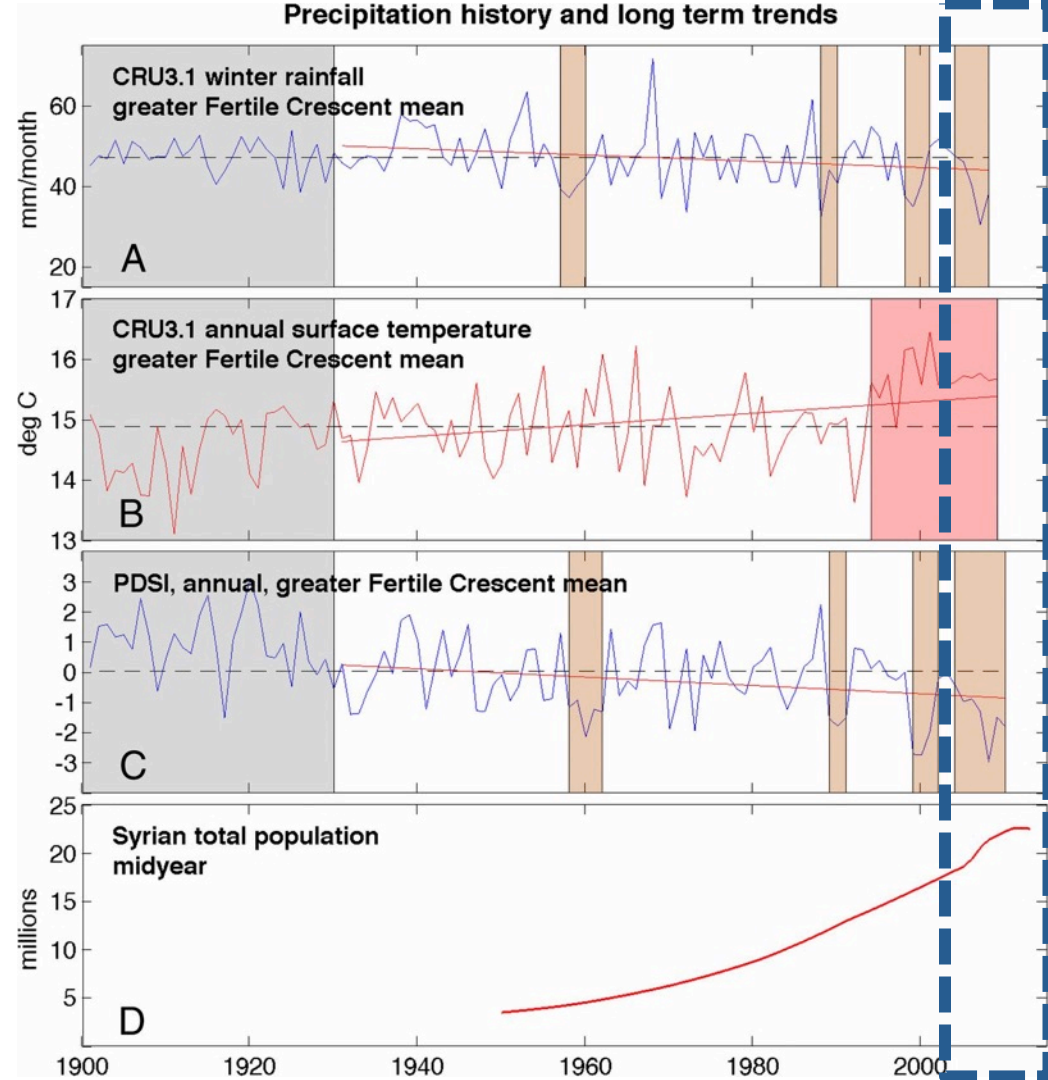
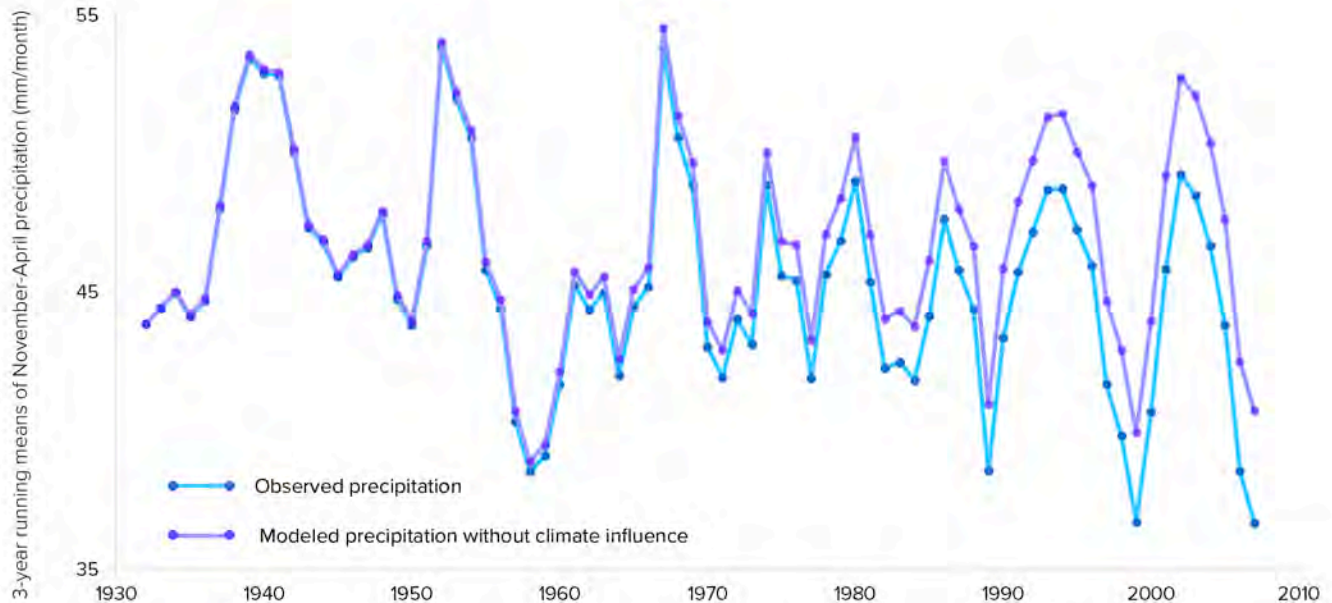


Figure: Kelley et al., 2015; PNAS
Map: Circle of Blue, 2016

Separating the Influence of Climate Change (1932 - 2007)

Using measurements of carbon dioxide concentrations in the atmosphere coupled with climate models and statistical analysis, scientists were able to estimate what rainfall in the Fertile Crescent would have looked like without the influence of climate change.

Case Study Syria



Graphic based on: Kelley, C.S., S. Mohtadi, M.A. Cane, R. Seager and Y. Kushnir, 2015: Climate change in the Fertile Crescent and implications of the recent Syrian drought. *Proc. Nat. Acad. Sci.*, 112(11): 3241 - 3246, doi/10.1073/pnas.1421533112.

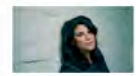
Global development
professional
network

The solution to the migrant crisis is jobs in low income countries

Migrants will continue to flow to the west if real investment isn't made to improve the economy of least developed countries



Most popular



Monica Lewinsky: The shame sticks to you like tar



Lily Allen on being stalked: 'I was asleep. He steamed into the bedroom and started screaming'



Dozens killed as 7.8-magnitude earthquake hits Ecuador

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The Guardian, 16 April 2016



Section FOUR

ADDRESSING GAPS AND INEQUALITIES

FILLING THE KNOWLEDGE GAP



Making sound policy decision needs better insights and robust metrics regarding

- 1) the current and future **state of water resources** and demand, and
- 2) the **work reality** including informal, part-time and unpaid work.

Data needs to be **disaggregated** with respect to gender, geography, income, ethnicity, culture, religion etc.



FILLING THE CAPACITY GAP



**FIGHTING INEQUALITY FOR WOMEN'S
EMPOWERMENT AND DECENT JOBS**

Data, monitoring and accountability

17.18 By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts

BRIDGING THE GAP OF SEX-DISAGGREGATED WATER DATA

THE GLOBAL GOALS

For Sustainable Development

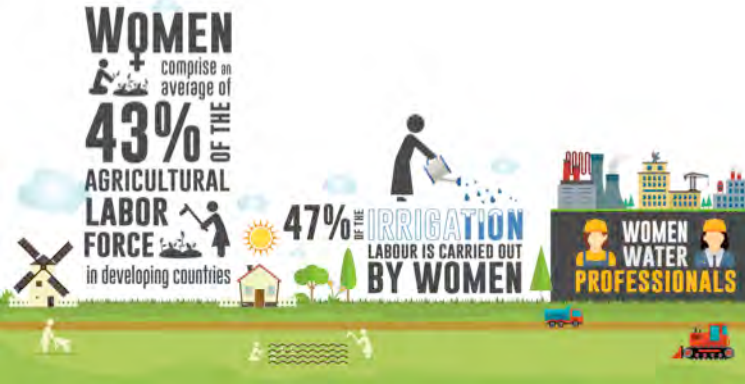


“Women play a central part in the provision, management and safeguarding of water.

....Acceptance and implementation of this principle requires policies to address women specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation, in ways defined by them”.

Dublin Statement on Water and Sustainable Development, 1992

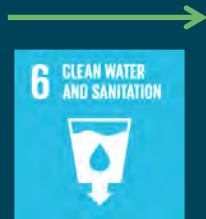
BUT...



WATER, IF NOT ENGENDERED, IS ENDANGERED!

- The **lack of sex-disaggregated data** is a major obstacle to the production of scientific evidence on gender-related inequalities in the water realm

- Women and men have different perceptions on priorities, needs and uses for water and sanitation
- We need to create a **gender baseline knowledge** related to water and a global standard for gender sensitive water monitoring



→ 45.2% of countries do not produce any gender statistics related to water (gender water data is among the least available of national-level indicators according to a 2013 survey by the UN Statistical Commission)

A REALISTIC PICTURE is needed to inform policy makers and guide targeted actions and investments





Section FIVE

**INVESTING IN WATER, IS INVESTING IN JOBS
SUPPORTING RESILIENT SOCIETIES**

THE MULTIPLIER EFFECT OF INVESTING IN WATER

Investing **US\$1 million** in water supply and sanitation infrastructure



10-26 jobs
in the USA



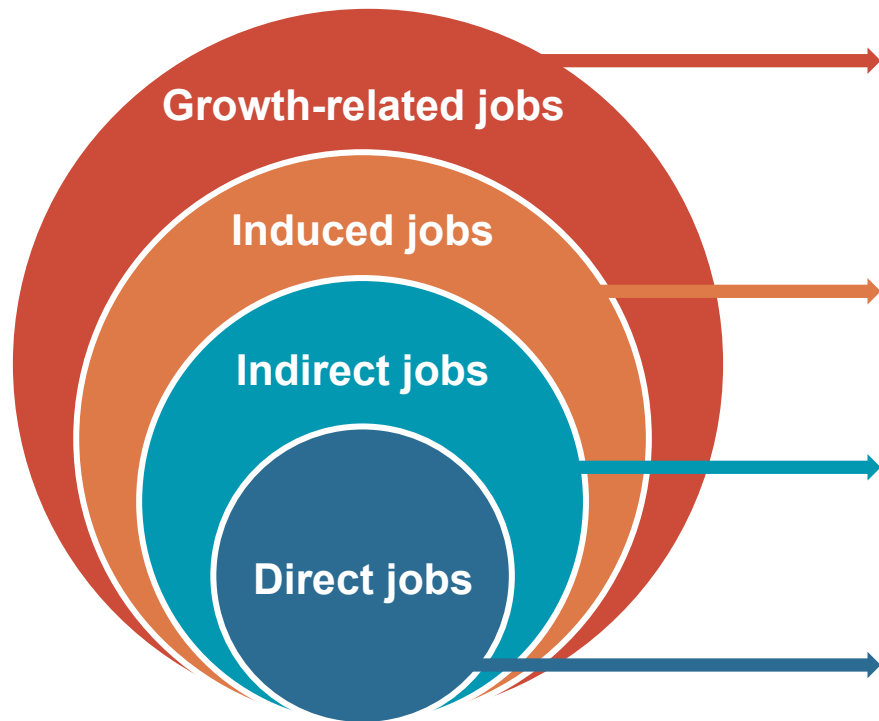
100 jobs
in Latin America



Investments in infrastructure and operations of water-related services can provide high returns for economic growth and for direct and indirect job creation



CREATING AND SUSTAINING 'WATER JOBS' ENHANCES THE MULTIPLIER EFFECT



e. g. Jobs resulting from macro-benefits such as improved infrastructure



e. g. Jobs resulting from increased consumption by employees in direct/indirect jobs



e. g. Jobs at chemical plant producing products for the water treatment plant



e. g. Jobs created at a recently-built water treatment plant

IMPROVING ACCESS TO WATER SUPPLY AND SANITATION SERVICES MAKES GOOD BUSINESS SENSE



(UN-Water 2016)



**BUT STILL
TODAY...**



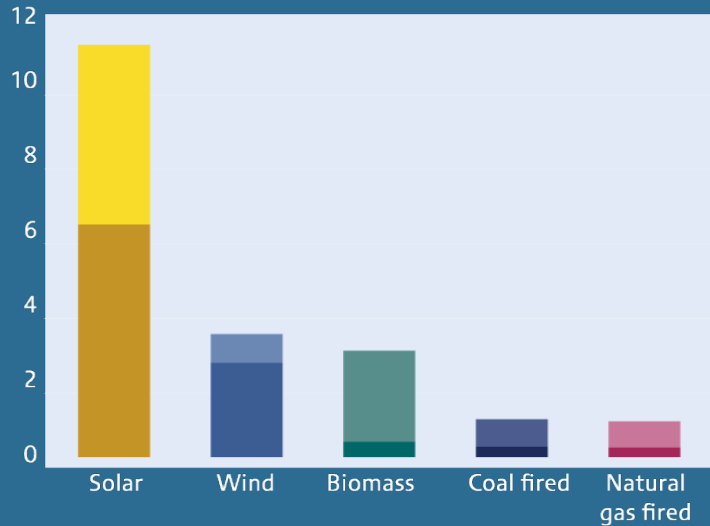
Section SIX

**WATER IS A FUNDAMENTAL DRIVER
FOR GREEN GROWTH**

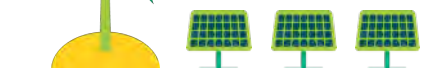
NEW OPPORTUNITIES through INNOVATION in a **GREEN ECONOMY**

AVERAGE EMPLOYMENT OVER LIFE OF FACILITY

Jobs per megawatt of average capacity



NEW OPPORTUNITIES through INNOVATION in a **GREEN ECONOMY**

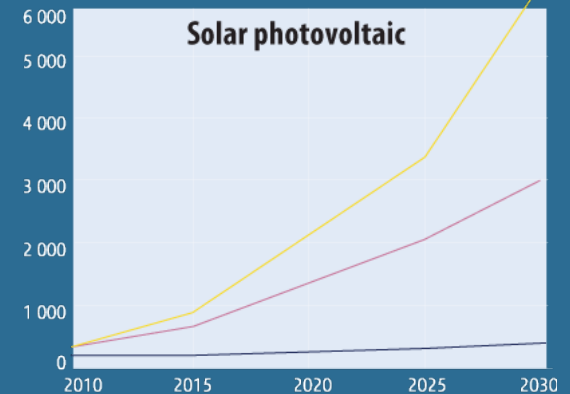
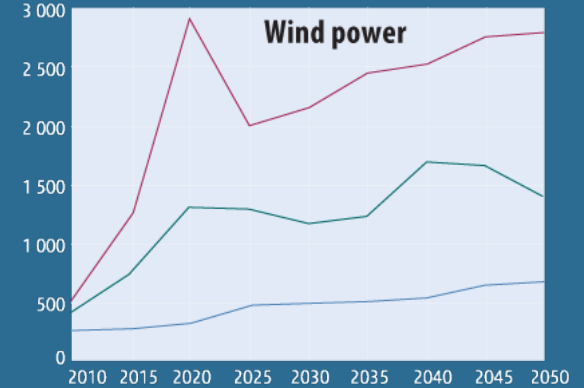


GREEN JOBS IN THE FUTURE

Scenarios

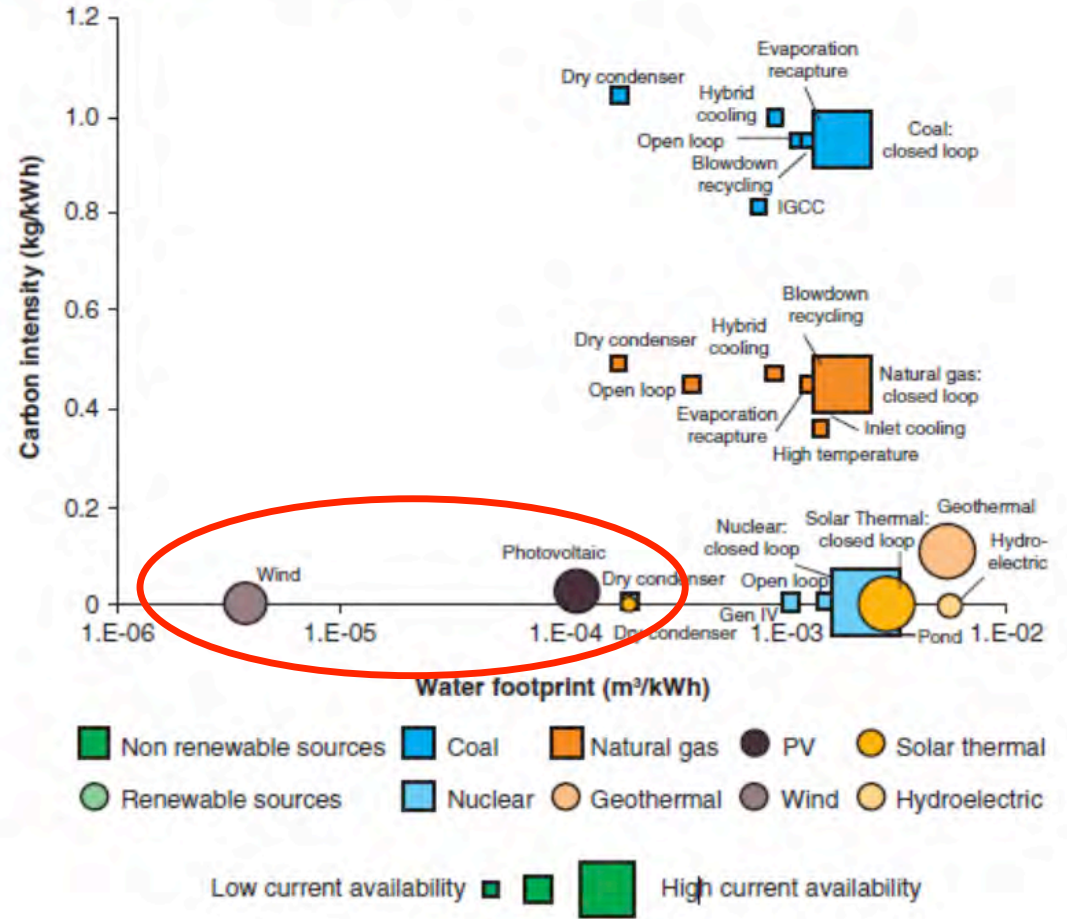
— Reference — Moderate — Best case

Thousands jobs per year



WATER FOOTPRINT VS. CARBON INTENSITY

FIGURE 3.1 Indicative Water Footprint and Carbon Intensity of Energy Production, by Source



“Improved water stewardship pays high economic dividends”,
World Bank, May 2016

ON DOLLAR (green) BABY


Direct/indirect/induced jobs



US\$1
million



10-15 jobs
in alternative water supplies



5-20 jobs
in stormwater management



12-22 jobs
in urban conservation and efficiency



10-72 jobs
in environmental restoration and remediation





Section SIX

CONCLUSIONS

TAKE-HOME MESSAGES

Opportunities for *sustainable* economic growth, employment (decent jobs) and resilient societies are contingent upon the sustainable management of water resources and the provision of water-related services.

1. Three out of four jobs are water-dependent
2. Water scarcity and supply disruptions limit economic growth potential and impact jobs
3. Water scarcity (exacerbated by climate change) can be one important trigger for migration
4. Investments in water infrastructure and 'water jobs' generate positive returns and have a multiplier effect on job creation across all economic sectors
5. The transition to a greener economy enhances opportunities for decent jobs





Better water, better jobs, better lives
Towards 2030 Agenda

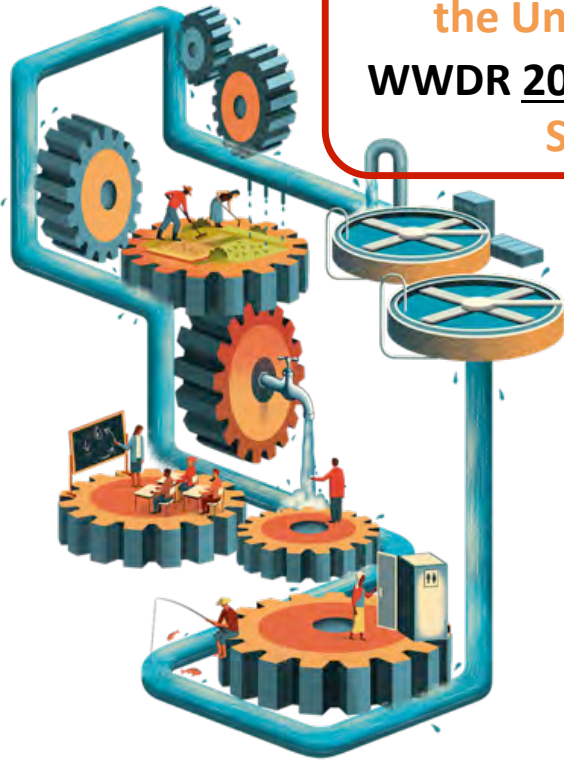
WWDR 2014: Water and Energy

WWDR 2015: Water for a Sustainable World

WWDR 2016: Water and Jobs

WWDR 2017: Wastewater –
the Untapped Resource

WWDR 2018: Nature-based
Solution for Water



THANK YOU

WWDR and other publications, videos, PPTs,
TOOLS etc. are available at:

 www.unesco.org/water/wwap


United Nations
Educational, Scientific and
Cultural Organization


World Water
Assessment Programme