

Water Risk Assessment for Companies

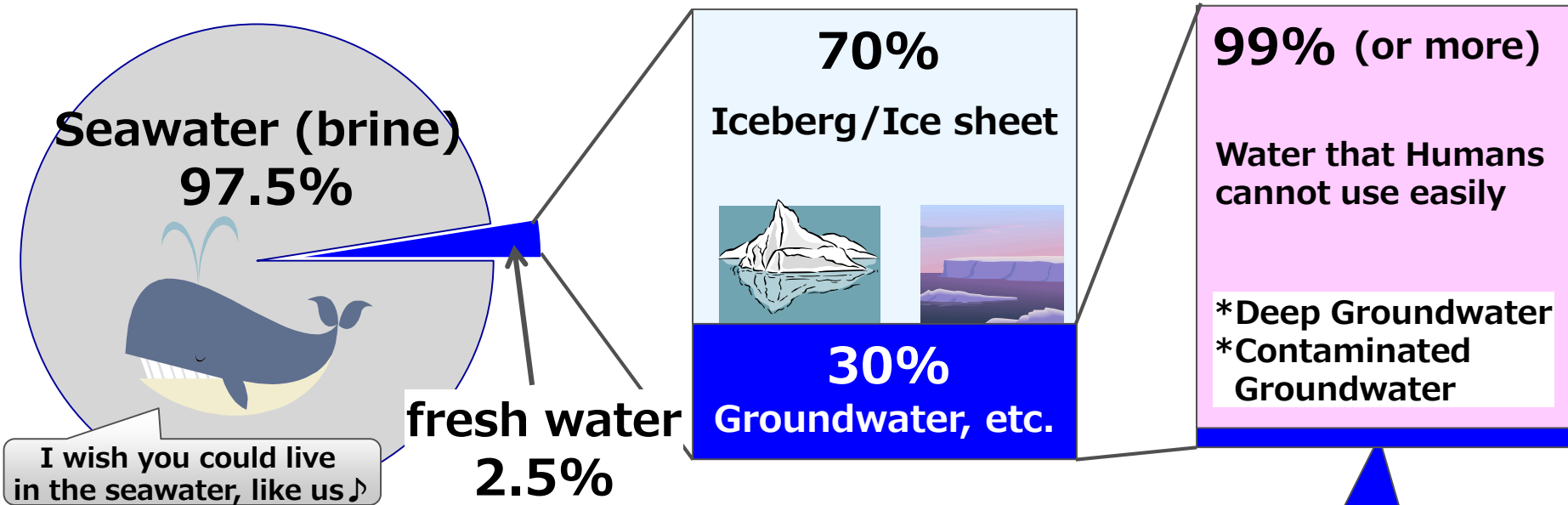
First step in water conservation activities

April 2020
Fujitsu Limited
Global Supply Chain Unit

Valuable water, even on "Water Planet"

Compiled based on the website of the Ministry of Land, Infrastructure and Transport and Tourism

Total global water volume: approx. 1.4 billion km³ (= 1.4 trillion kℓ)



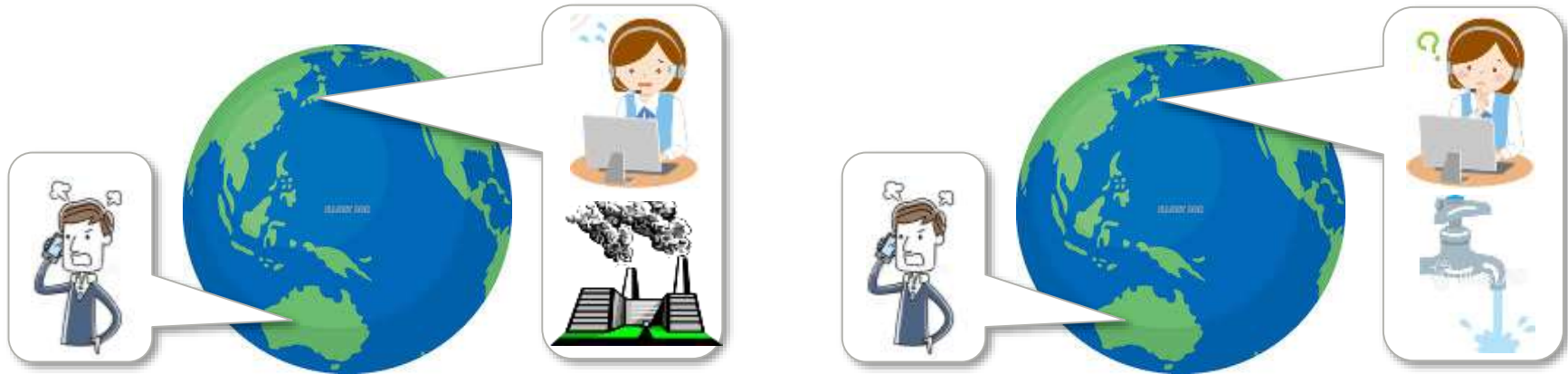
Used for agriculture, industry, domestic use, etc.

1% (or less)
0.01% of the Earth's total water

Easily available water
Shallow Groundwater / Rivers / Lakes

What should we do first for water resources conservation?

Although, reducing CO₂ emissions and conserving water resources are both important and international environmental issues...



No matter where CO₂ emissions increase in the world, it makes the impact to **global**.

Even if water consumption increases, **Direct impact remains local**.

Promoting the reduction of the use or consumption of water may not be equally important everywhere, however...

Any companies need to investigate and understand the water risks to which they are exposed.
(Business Continuity + Regional Impact)

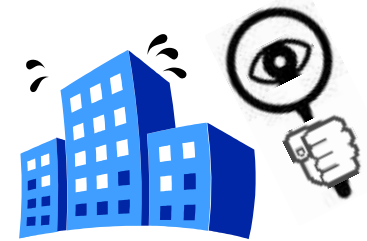
*There are global indirect impacts, as seen in the case where a country imports a product and certain amount of water was used in the country where such product was manufactured.

Why Companies can't be Independent of Water Risk?

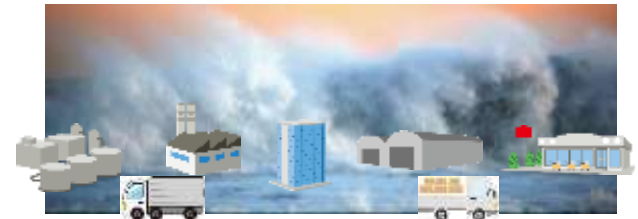
- *In the "Sustainable Development Goals (SDGs)" adopted by UN in September 2015 including targets for water and sanitation, water-related disasters, and conservation of the water environment.
- > The private sector, such as enterprises, are required to take action.



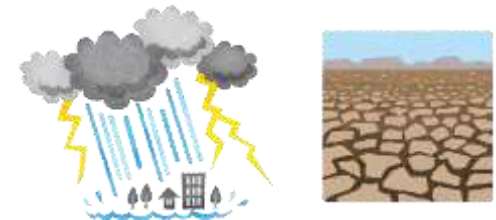
- *Water risk may overshadow business continuity.
- > Impact on investor behavior (ex: Growing environmental investments)
- > Increase and strengthen questions on water resources in various environmental activity evaluations.



- * Even if the internal process is safe, water risk in entire supply chain could affect whole business.
- > Cooperation with business partners and customers is required.



- *Increased frequency of weather "extreme phenomenon" (floods, droughts, etc.)
- > Growing global water risk requires constant monitoring now and in the future.



Reference: Long-term changes in (Ministry of Land, Infrastructure, Transport and Tourism, Japan Meteorological Agency) such as heavy rain or extremely hot days (extreme phenomenon)

https://www.data.jma.go.jp/cpdinfo/index_extreme.html

Reference: Weather and Climate Extracts (The World Climate Research Programme)

<https://www.wcrp-climate.org/gc-extremes-themes>

Water Risk surrounding Companies

Examples of water risk categories (Quoted from the CDP* questionnaire)

Risk Categories		Examples of Business Impacts
physical risk	water shortage	Droughts make it impossible to obtain sufficient water for business operations.
	excess water	Floods force plants to temporarily shut down.
	water quality deterioration	Deterioration in water quality makes it impossible to procure the water suitable for operation of the plant.
regulatory risk		Stricter wastewater quality standards require additional investment in wastewater treatment.
reputation risk		A lawsuit is filed against the deterioration of local water quality due to wastewater discharged from business sites.

*CDP is an international NGO working on environmental issues such as climate change.
<https://www.cdp.net/>

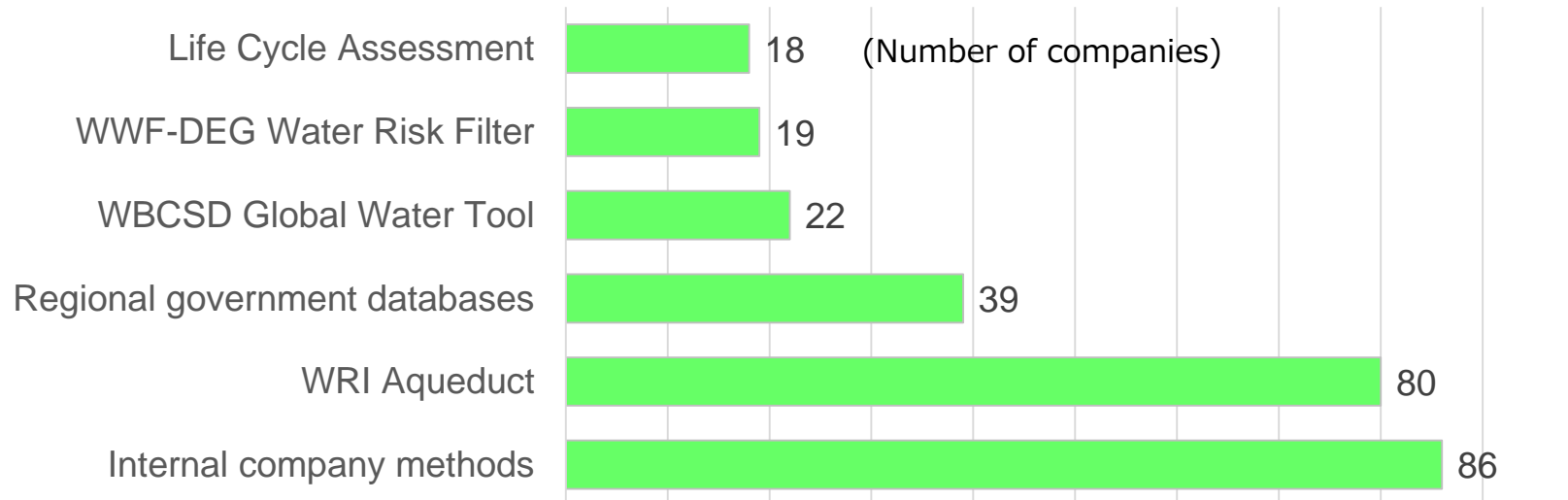
Recent examples

- *Production lines of many companies stopped due to typhoon damages. (Japan, China, etc.)
- *Parts makers shut down due to massive floods, and supply to companies stagnates (2011: Thailand)
- *A drink maker was sued by local residents for huge groundwater consumption, and then the court ordered plant closure. (2014: India)

Where to Start Water Risk Assessment?

- 1) Grasp water consumption and usage not only for the company but also for the entire supply chain.
- 2) Confirmation of location conditions and other related information of major sites.
- 3) Implementation of water risk assessment, if necessary, using public tools.
* About public tools, refer to the next slide.
- 4) Enhance the accuracy of risk assessment by incorporating more detailed regional factors (storage of water resources, flood control measures, etc.) and seasonal factors (rainy season, dry season, typhoon season, etc.) that are not included in the public tools.

Adopted water risk assessment method (Data from CDP Japan 500 Water Report 2017)



WRI Aqueduct Water Risk Atlas <https://www.wri.org/aqueduct>

- Indicate risks by specifying areas by address or latitude-longitude.
- A detailed breakdown of risk is possible with using 12 metrics.
- Future risks 10 or 20 years from now can be calculated taking into account climate change, global economic development, population growth, etc.

WWF-DEG Water Risk Filter <https://waterriskfilter.panda.org/>


- Display risk by entering industry and address (+ business information as optional).
- Evaluation results can be output in the CDP Water response format.
- Risk mitigation measures are presented for indicators evaluated as high risk.
- Additional water-related opportunity analysis capability is planned.

WBCSD Global Water Tool

- Launched in 2007 as the first public tool for water risk analysis.
- No longer available since handing over the position to Aqueduct Water Risk Atlas and WWF-DEG Water Risk Filter.

Reference: Other assessment tools or databases that could be available

- Water Footprint Network Assessment Tool <http://www.waterfootprintassessmenttool.org/assessment/>
- IPCC Climate Change Projection <https://www.ipcc.ch/report/ar4/wg1/global-climate-projections/>
- Maplecroft Global Water Security Risk Index <https://www.maplecroft.com/>
- Hazard maps produced and provided by local governments or the national government



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