UNDERSTANDING "SUFFICIENCY" IN WATER-RELATED COLLECTIVE ACTION

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Water is already halting progress in business

53%

Companies that have already suffered detrimental impacts from water

40% increase from 2011

Barrick Gold suspends construction of $8.5 billion Pascua Lama Mine in Chile due to water risks and stringent permitting conditions

NBIM
Norges Bank Investment Management

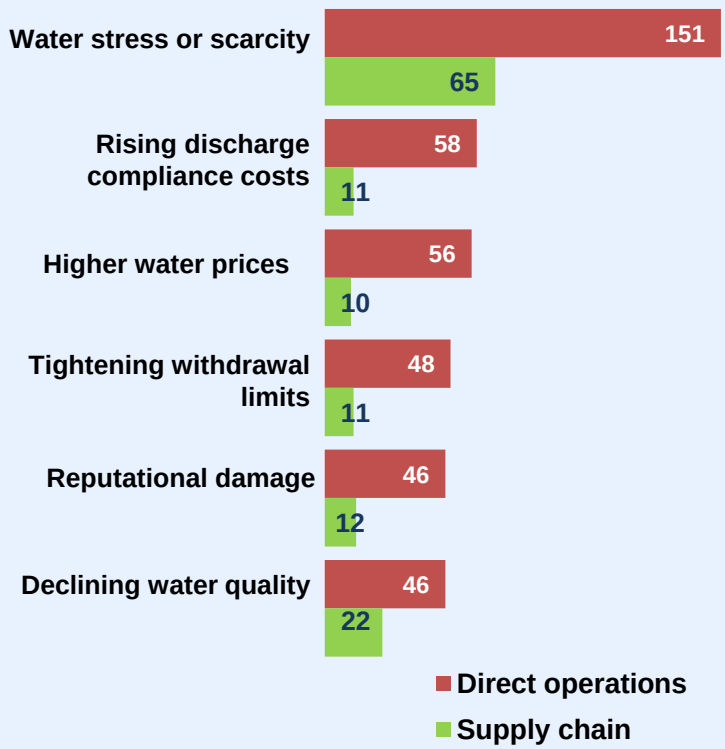
CDP
DRIVING SUSTAINABLE ECONOMIES

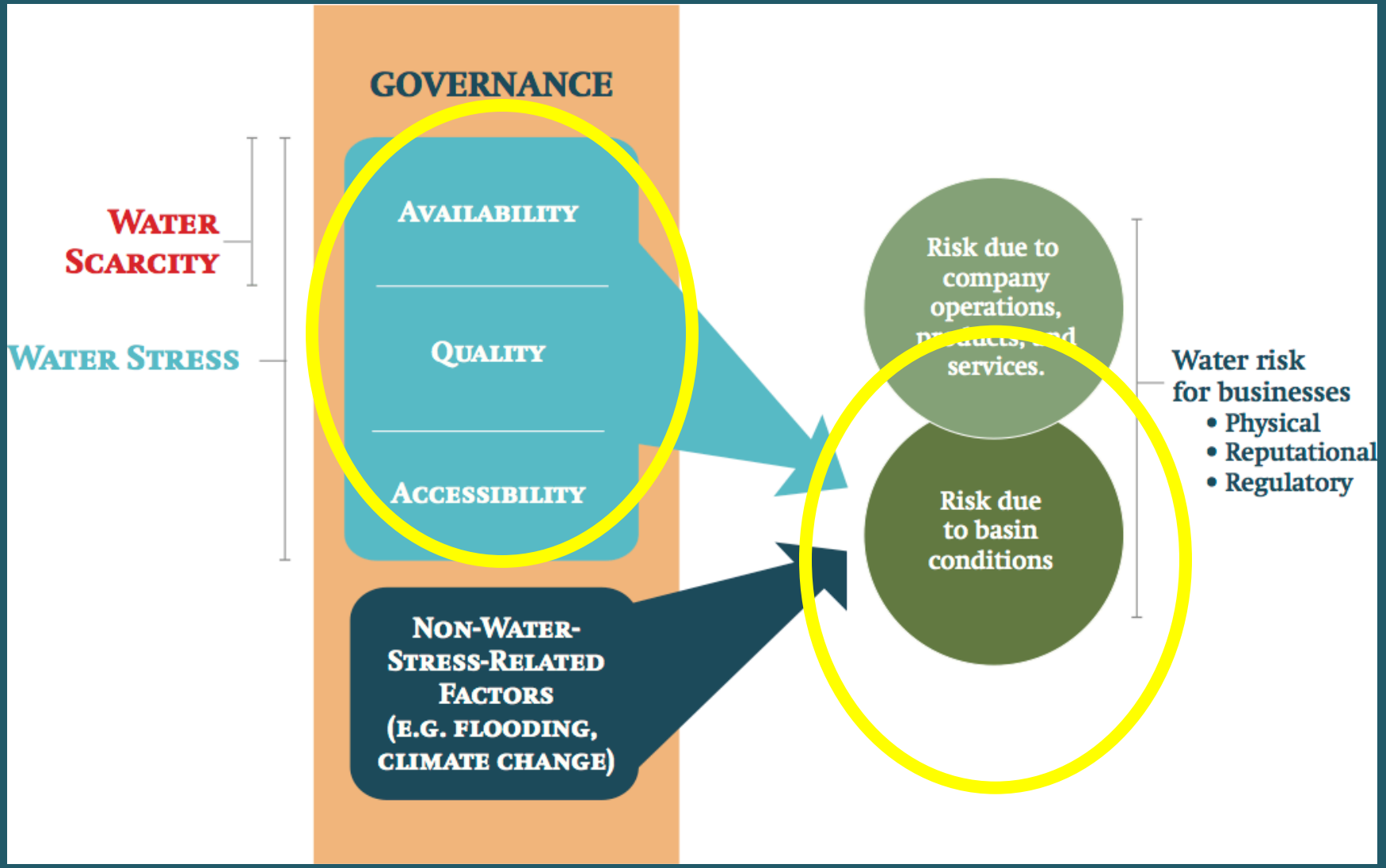
Water risk exposure is increasing

70%

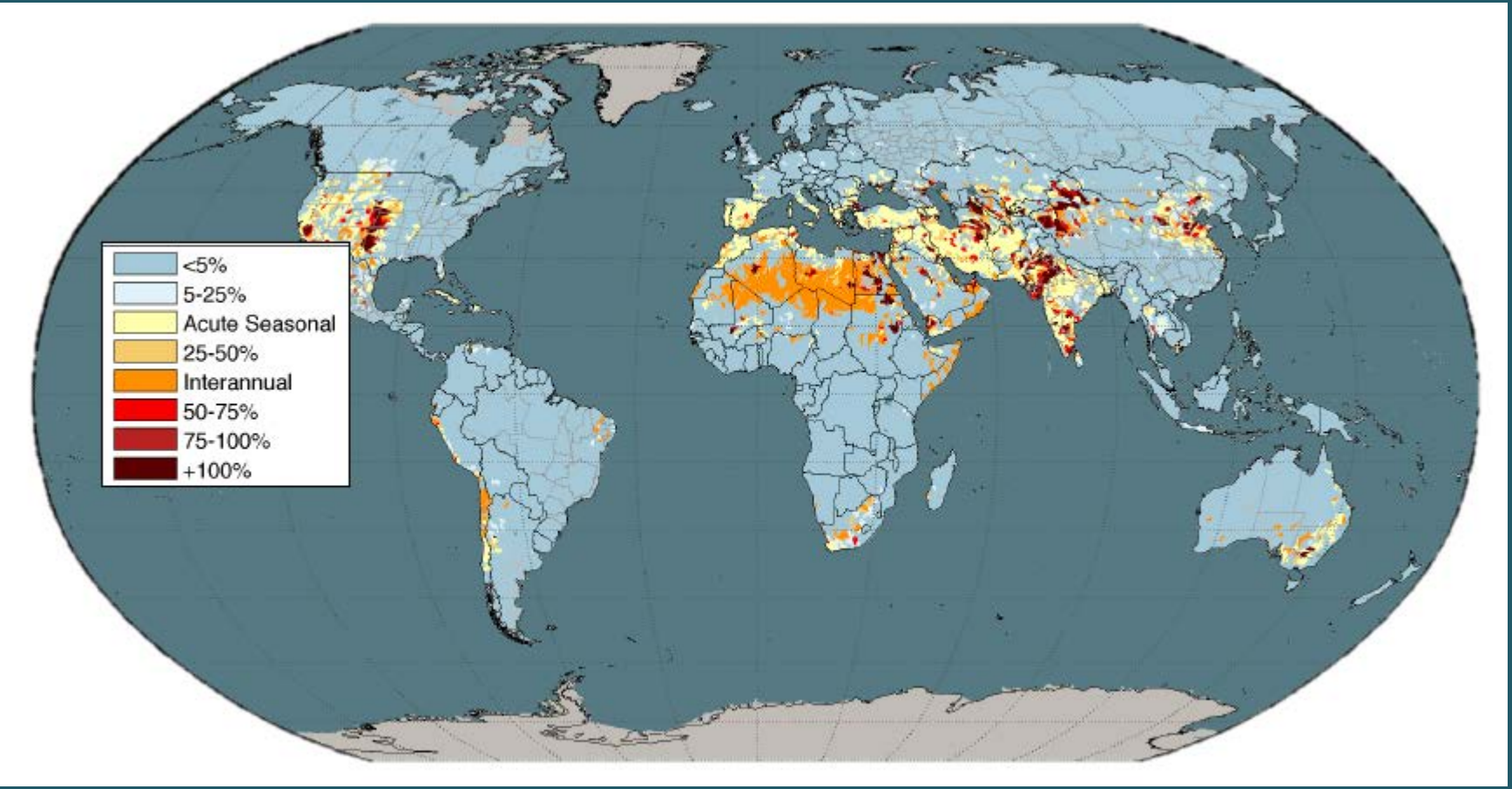
Companies reporting exposure to substantive water risks

19% increase from 2011




GOVERNANCE
WATER SCARCITY
WATER STRESS
AVAILABILITY
QUALITY
ACCESSIBILITY
NON-WATER-STRESS-RELATED FACTORS (E.G. FLOODING, CLIMATE CHANGE)
Risk due to company operations, products, and services.
Risk due to basin conditions
Water risk for businesses
• Physical
• Reputational
• Regulatory

Water Scarcity

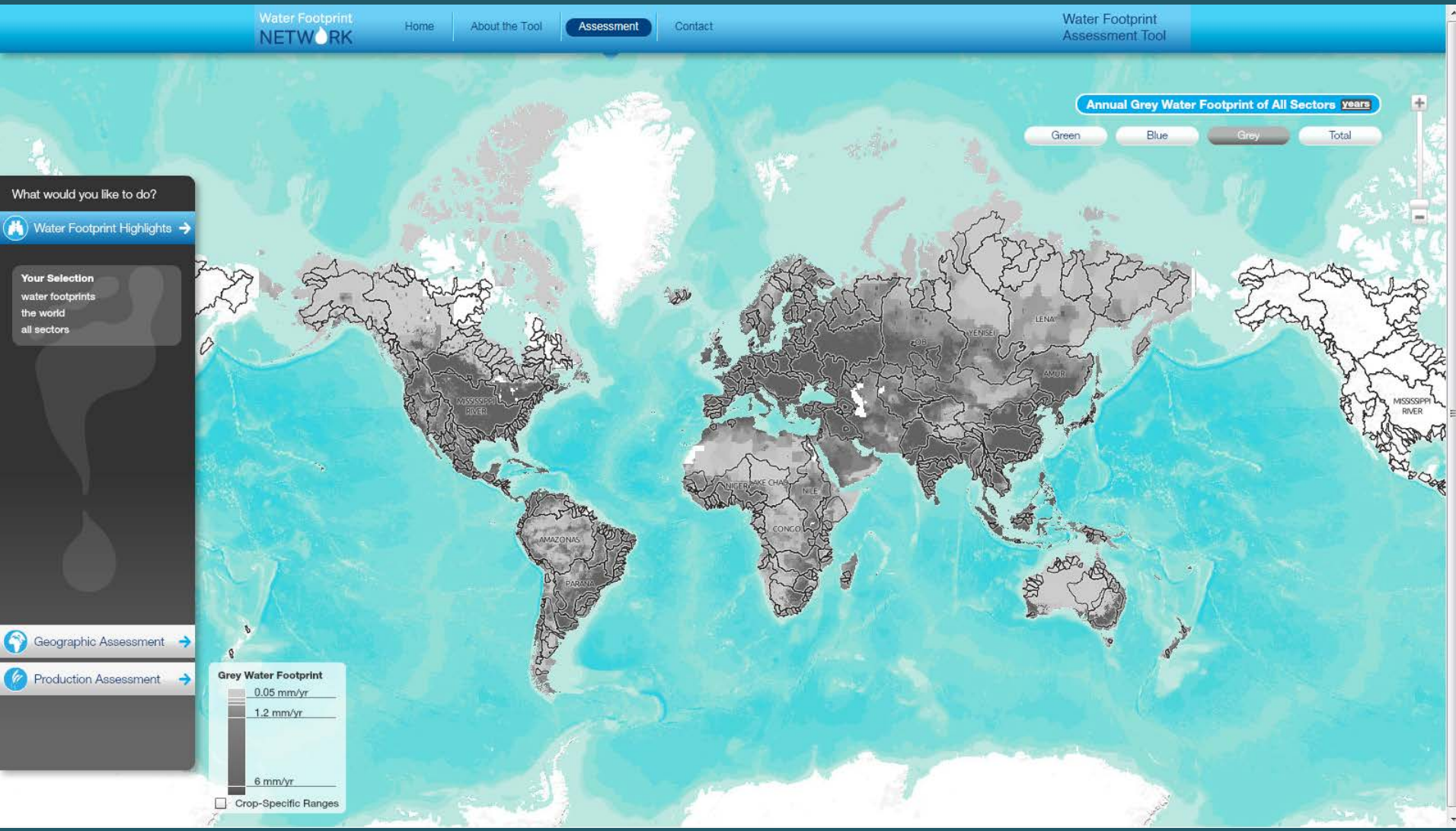


Water shortages are occurring in 20% of the planet's watersheds and aquifers

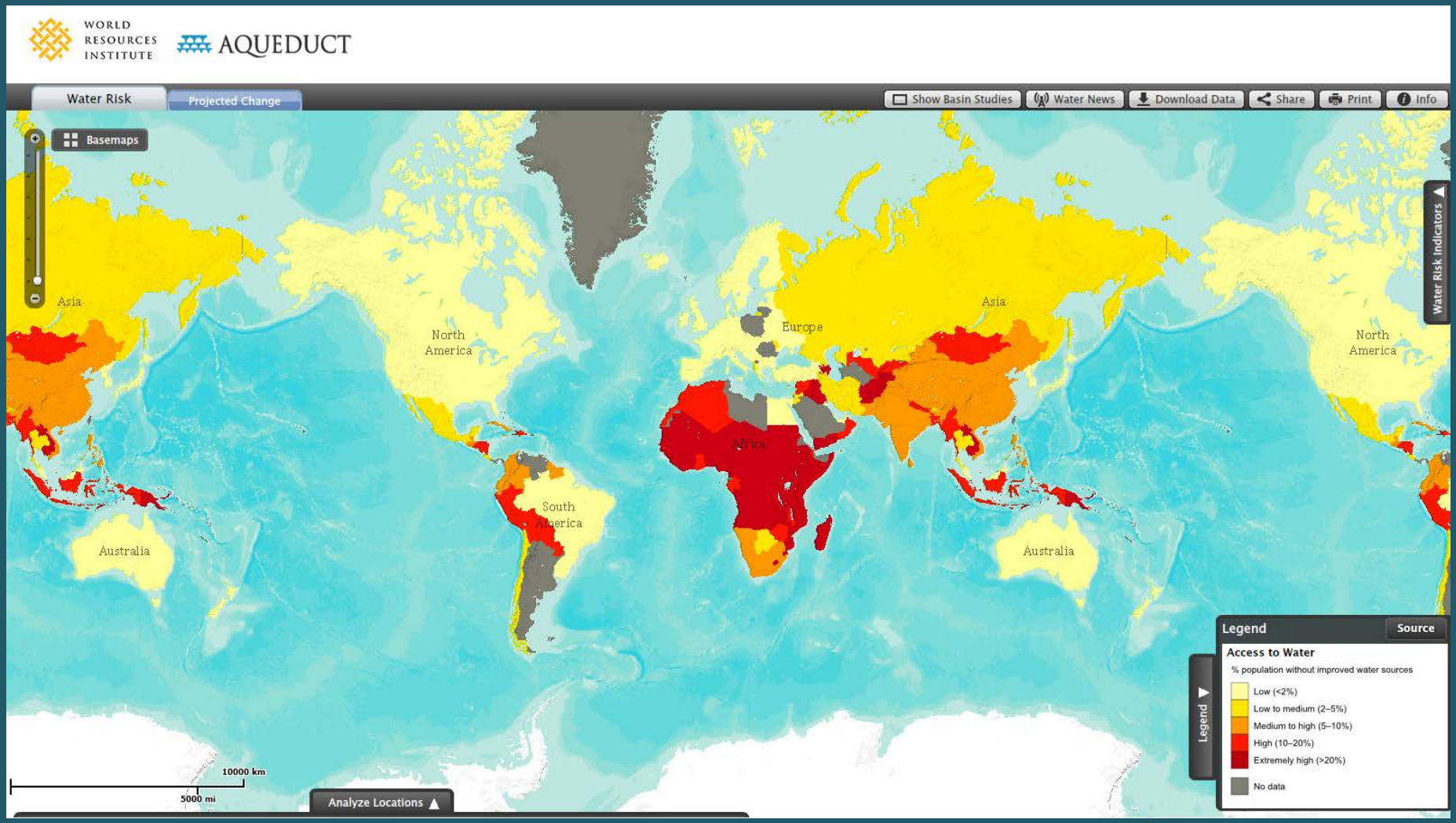
35% of the world's population is affected

60% of the world's irrigated acreage is affected

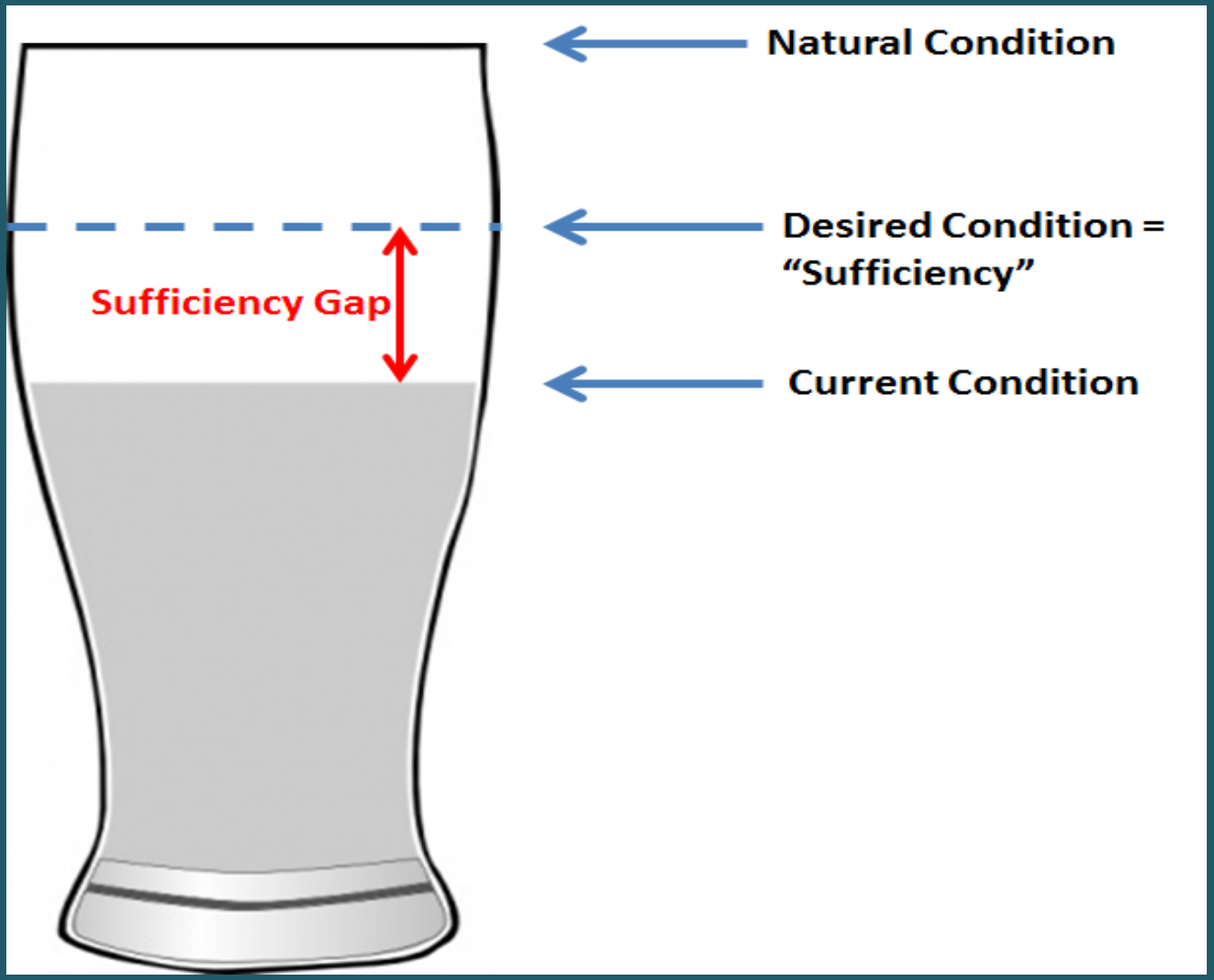
Water Pollution



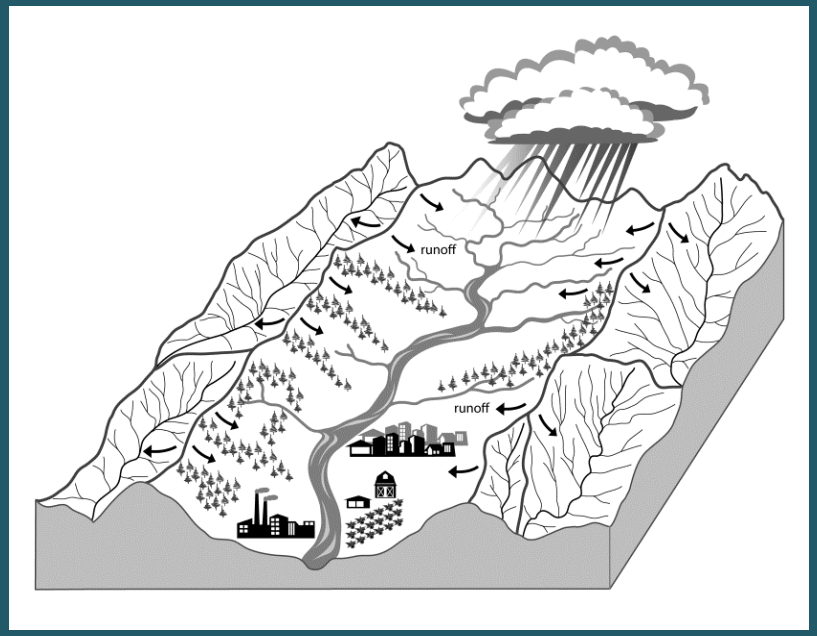
Water Access

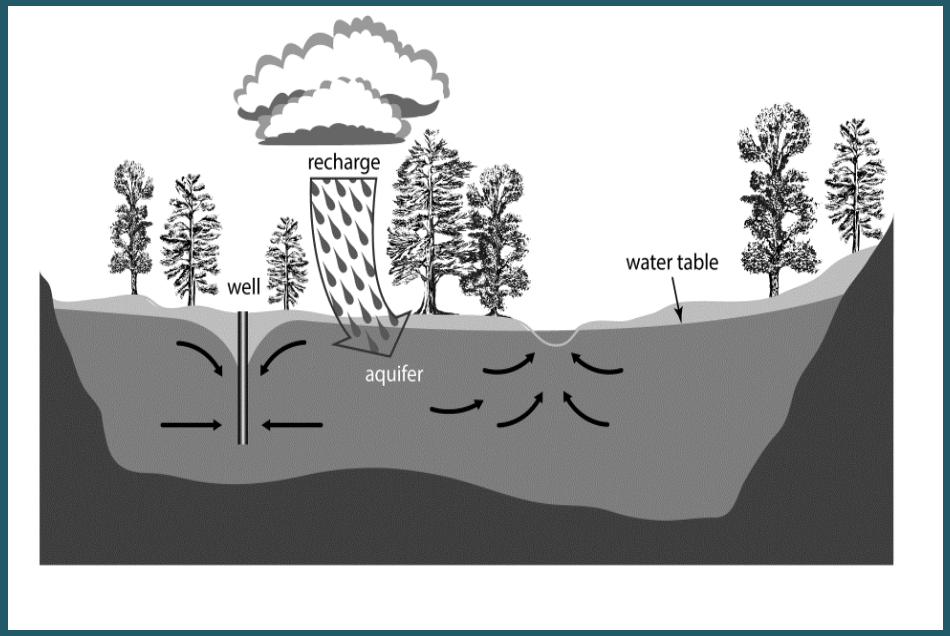


“Sufficiency” in Water Stewardship



Focus on Local Watersheds and Aquifers





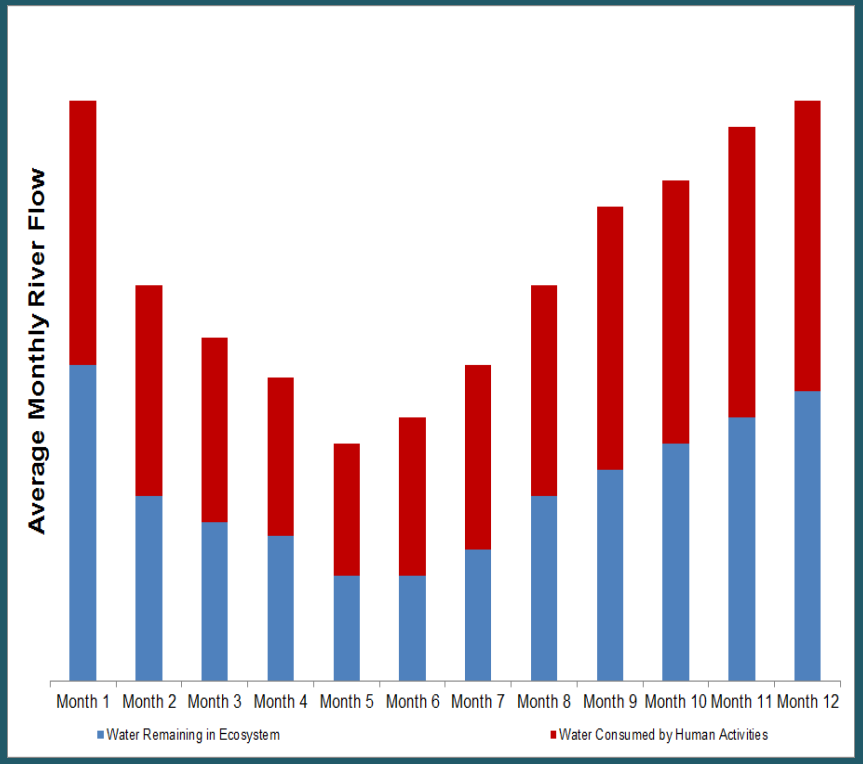
Quantifying the Sufficiency Gap
Example: Water Quantity

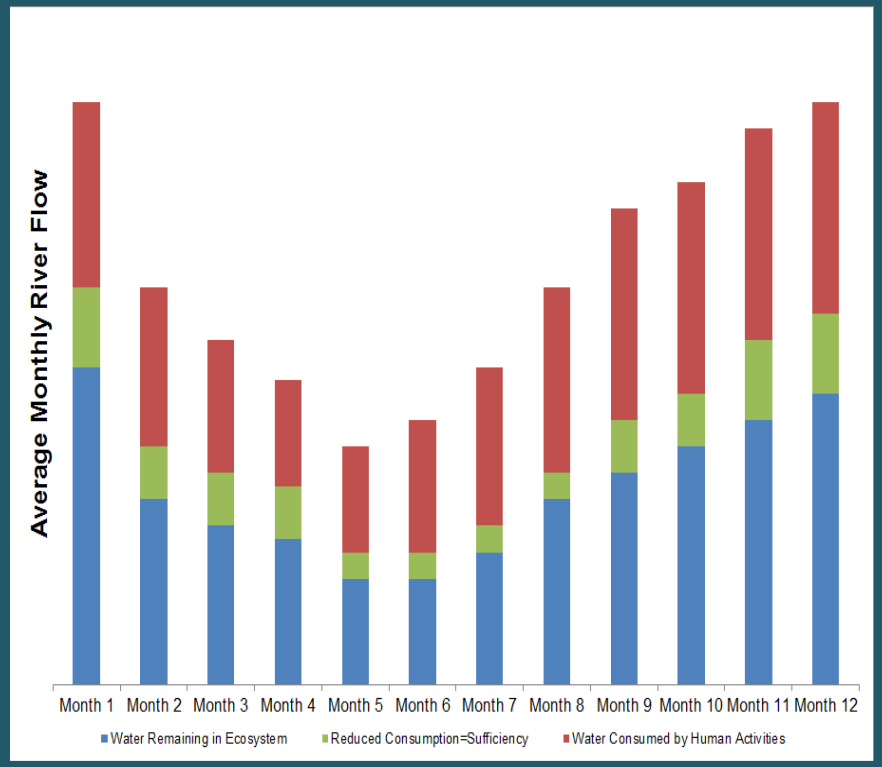
Water Budget for the Jiaojiang Watershed in China
(based on output from the global WaterGAP3 model, summarized here as annual average values. Monthly values are also available. MCM=million cubic meters)

Total Water Available in Watershed	=	630 MCM
Agricultural consumption	=	160 MCM
Domestic consumption	=	11 MCM
Manufacturing consumption	=	77 MCM
Electricity consumption	=	0.58 MCM
Livestock consumption	=	3.3 MCM
Total consumption in watershed	=	252 MCM
Total flow remaining in watershed	=	378 MCM

Is this sufficient?

Defining “Desired Conditions”

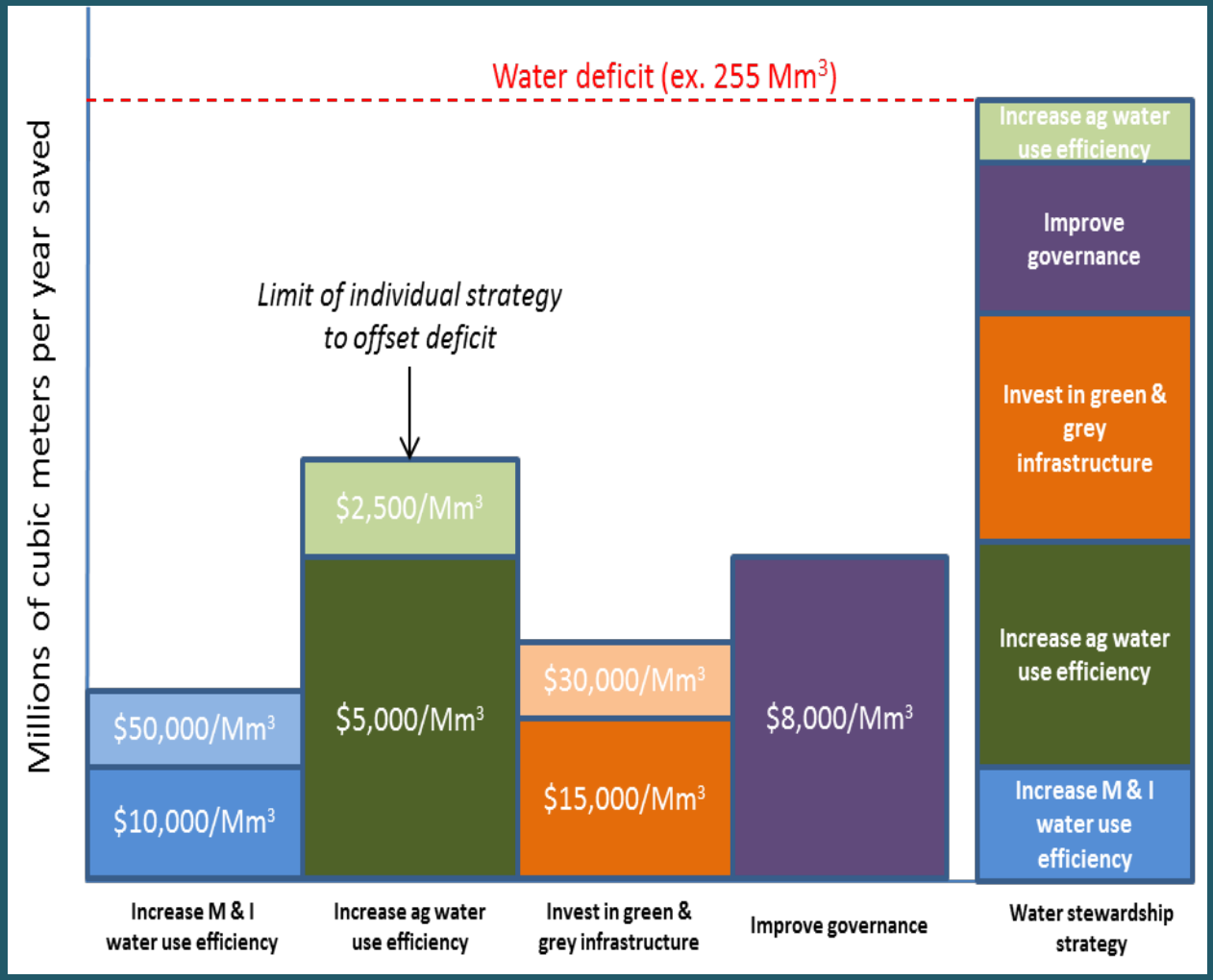




Strategies to Fill the Gap

Guanajuato Aquifer, Mexico

Overdraft of 255 Mm^3



Possible Next Steps

- Create illustrative examples for water quality, water access, +?
- Make best-available data for each watershed or aquifer easily accessible to companies
- Create or enhance tool(s) to help companies and local communities explore options for attaining sufficiency
- Work with interested companies to apply this concept