

# WATER STORAGE – A NECESSITY TO REACH THE SDGS

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# Overview

- Introduction
- **TOO MUCH. TOO LITTLE. TOO DIRTY**
- Water Storage
- Impact on SDGS
- Summary



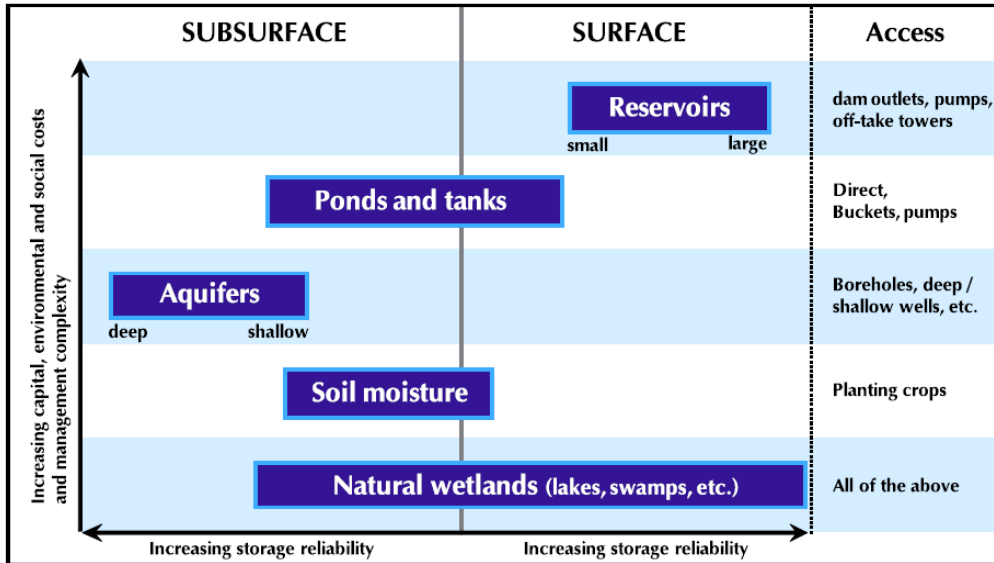
From the „Stern Review Report on the Economics of Climate Change“ published 2006

***People will feel the impact of climate change most strongly through changes in the distribution of water around the world and its seasonal and annual variability.***

# TOO MUCH. TOO LITTLE. TOO DIRTY

Problem	Outcome (examples)
Too much	Flooding and inundation (e.g. health hazards)
	Food production interrupted
	Infrastructure destroyed (e.g. electrical energy generation or transport )
Too little	Draught & wildfires
	Shortage of drinking water
	Impact on electrical energy generation (e.g. lack of cooling water)
	Negative impact on river navigation
Too dirty	Water born diseases
	Negative impact on drinking water supply (expensive treatment required)
	Negative impact on food production

# The Obvious: A need for water storage - Available options

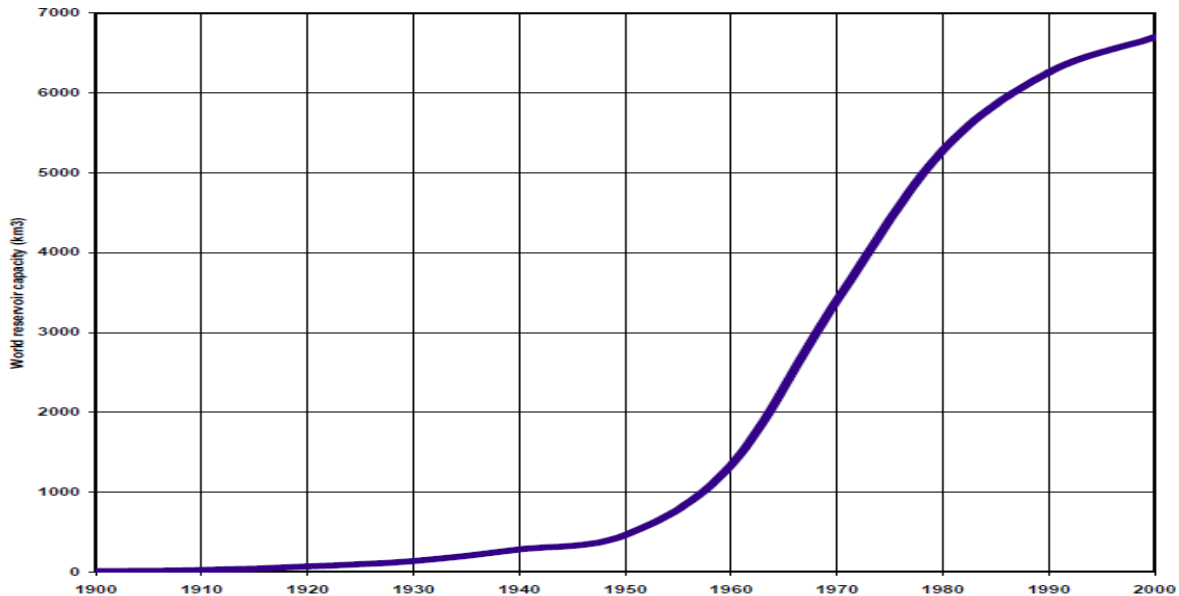


To increase water storage the only feasible option is the construction of large reservoirs; as important is the protection of existing wetlands

Source: Water Storage in an Era of Climate Change by Matthew McCartney and Vladimir Smakhtin, IWMI

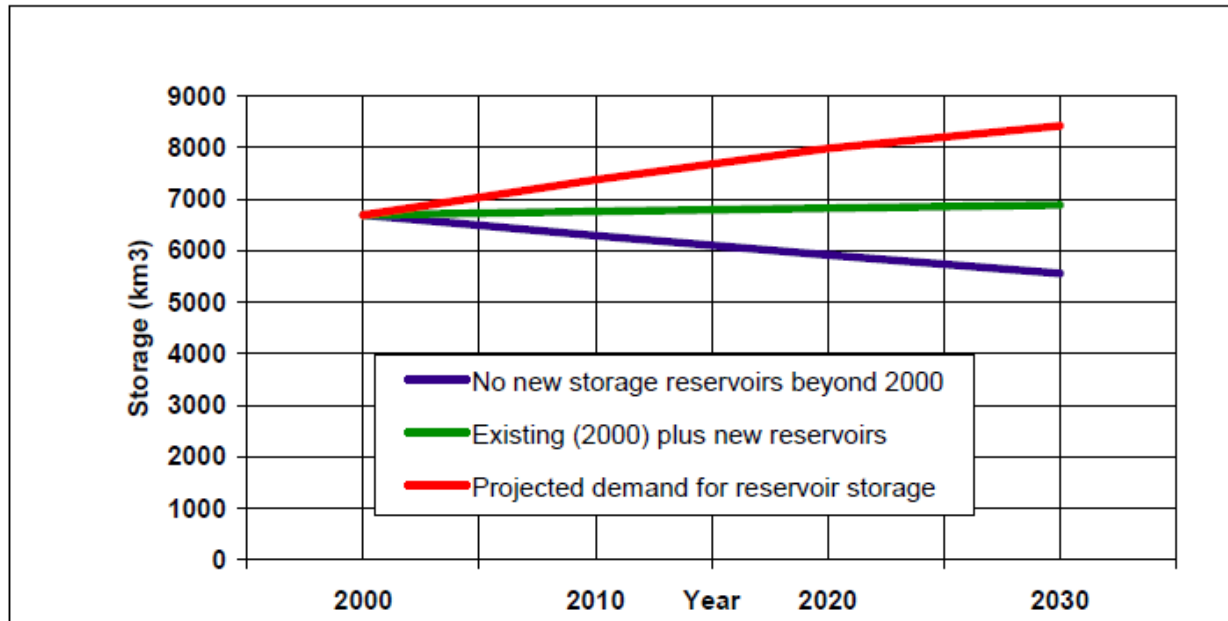
# Development of worldwide storage capacity in the last century

Source: White W. R. "Review of Current Knowledge, World Water: Resources, Usage and the role of man-made reservoirs", 2010



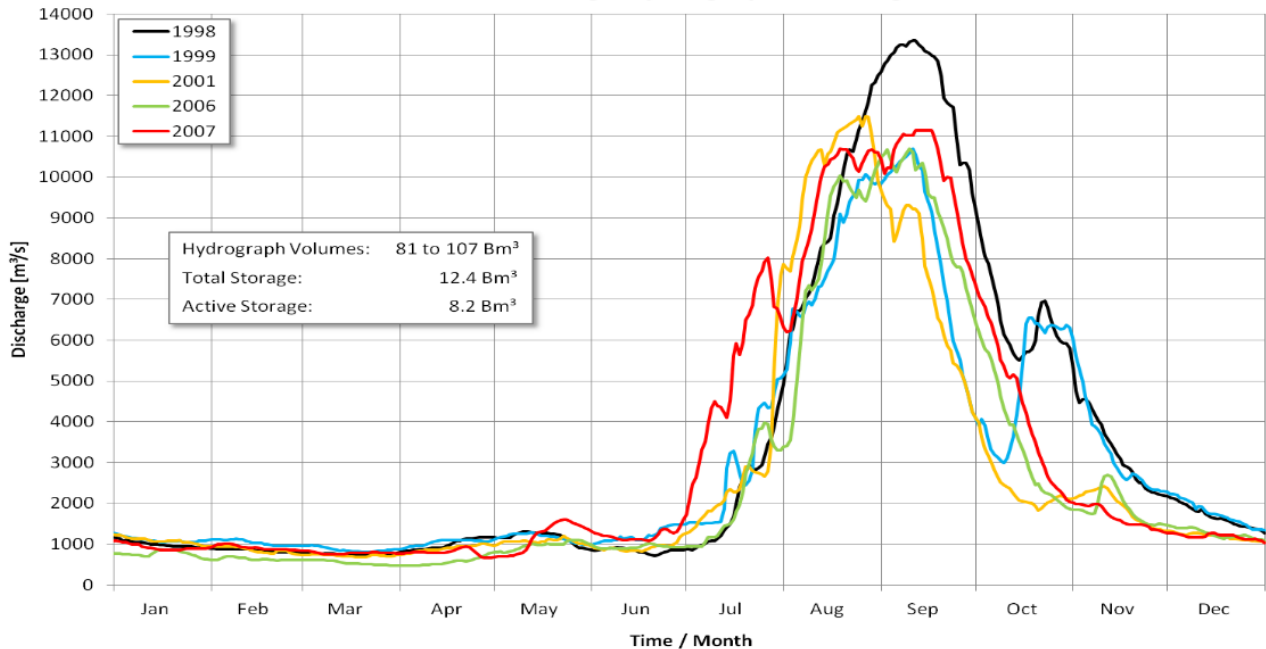
# Worldwide storage capacity needed in the future

Source: White W. R. "Review of Current Knowledge, World Water: Resources, Usage and the role of man-made reservoirs", 2010



# Example Nile river: Variance in annual flow

Selected Annual Discharge Hydrographs at Dongola Station





## Example Nile river: Impact of Aswan High Dam



### Aswan High Dam:

Completed:  
1970  
Height: 111 m  
Length: 3830 m

Reservoir (Lake Nasser): 169  
Bm<sup>3</sup>

Satellite image from  
2000

## Water Nexus to SDGS (1/3) – positive impact of reservoirs

SDG	Target	Water related impact
Goal 2 – Hunger	All targets	No water – no food production
Goal 3 - Health	Target 3.3 & 3.9	Water borne diseases from inundation; water pollution & contamination after flooding
Goal 5 – Gender Equality	Target 5.4	Provide water supply infrastructure to avoid unpaid domestic work for women
Goal 6 – Water & Sanitation	Target 6.1 & 6.5	Provide access to drinking water; Prerequisite for reservoir planning is IWRM and transboundary cooperation (“in theory”)

## Water Nexus to SDGS (2/3) – positive impact of reservoirs

SDG	Target	Water related impact
Goal 7 – Energy	Target 7.1 & 7.2	No cooling water – no thermal power generation; Hydropower important element of renewable (clean) energy & energy storage in Pumped Storage Plants
Goal 8 – Economic growth	Target 8.1 & 8.9	Affordable water infrastructure is one important element of economic development; sustainable tourism along reservoirs
Goal 9 – Resilient Infrastructure	Target 9.1 & 9.2	Protect infrastructure from flooding and draughts; provide affordable water for industrialization

## Water Nexus to SDGs (3/3) – positive impact of reservoirs

SDG	Target	Water related impact
Goal 10 – Reduce inequality	General	Fair distribution of international water bodies (Nile versus Colorado river)
Goal 11 – Resilient Cities	Target 11.1 & 11.5	Affordable basic water supply services: Reduce water related diseases from inundation
Goal 13 – Combat Climate Change	General	Strengthen resilience and adaptive capacity regarding water resources

# Summary

***Integrated water resources management will be one key element of achieving the SDGS and increasing storage volume in reservoirs is without alternatives!!!***

***Thank you for your attention***