

Sustainability and the Water Cycle



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Millennium Development Goals

- **Goal 1:** Eradicate extreme poverty and hunger
- **Goal 2: Achieve universal primary education**
- Goal 3: Promote gender equality and empower women
- **Goal 4:** Reduce child mortality
- **Goal 5: Improve maternal health**
- **Goal 6:** Combat HIV/AIDS, malaria and other diseases

Goal 7: Ensure environmental sustainability

Target 7.C:Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation

Indicator 7.8 Proportion of population using an improved drinking water source

Goal 8: Develop a global partnership for development

(8 goals with $18 \rightarrow 21$ targets and $48 \rightarrow 60$ indicators)



Developed from "Progress on Drinking Water and Sanitation: 2012+2015 Update (UNICEF/WHO JMP)" with some estimations.





Figure 2 from Fukuda, Noda, and Oki (2019, Nature Sustainability)

How and Why achieved?





 Understanding how MDG-7C water was achieved is critical to replicating success.

http://hydro.iis.u-tokyo.ac.jp/

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- Their findings are particularly significant for the SDGs, succeeding the MDGs as a global agenda from 2015 to 2030 and applicable to both developing and developed countries.
- Fukuda et al. found an approximate logarithmic relationship between economic growth and water coverage amongst almost all developing countries experiencing growth in real GDP per capita.
- As correlation does not prove causality, further research exploring other contributory factors is necessary.
- Findings by Fukuda et al. are significant not only for physical and economic access to safe drinking water, but also linkages with all SDGs including the intention to leave no one behind…



Lessons from MDG 7-C Water

The target was achieved for the 1st time in the long history of global targets on drinking water.

- Indicator (classified by facility type) was achieved, but overestimated the coverage levels
- * with a less ambitious level ("halve")
 - leaving the most vulnerable behind
- # "Low hanging fruit"?
 - > SDGs → "no one will be left behind"



Significant progress in China (urban) and India (rural) accounted for halving the proportion.

Progress in drinking water supply targets will continue to be closely associated with economic development and poverty reduction, as observed during the MDG target period of 1990–2015.