CRITICAL ROLES OF WATER IN ACHIEVING THE PROPOSED SDGs: A NEXUS PERSPECTIVE [WATER-ENERGY-FOOD-CLIMATE CHANGE]

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OUTLINE

1. Water and the MDGs
2. “Nexus”: What does it mean?  
   Attention to Planetary Boundaries
3. The Proposed SDG on Water and Sanitation
4. Water and the Other SDGs
5. Conclusion: Adopt a Systems Approach
6. Recommendations

Source:
The Critical Role of Water in Achieving the Sustainable Development Goals: Synthesis of Knowledge and Recommendations for Effective Framing, Monitoring, and Capacity Development
Water & sanitation constituted one target under the Environmental Sustainability MDG (7):

- “Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation”
- Received strong emphasis only after WSSD in Pretoria, 2002
- WSSD also led to a focus on IWRM—but much of it was aimed at environmental conservation; planning but not implementation capacities strengthened
**Some Key Lessons from MDGs:**

1. Need to address multiple roles of water -- synergies
2. Address inequity of access: countries achieved targets by focusing on “low hanging fruits”, neglecting the poorest
3. Despite improvements, more work on data collection, analysis & use
   - Base SDGs on sustainability in the context of planetary system changes & emerging “nexus” perspectives
   - Prioritize policy & institutional reform & capacity strengthening at all levels
TO ACHIEVE EQUALITY, PROGRESSIVE REDUCTION OF INEQUALITIES

UNICEF-WHO JMP
A FRAMEWORK FOR INTEGRATING ECONOMIC GROWTH AND SDGs FROM UNCTAD
“NEXUS”: WHY IS IT IMPORTANT?

- “Normal” professional thinking is narrowly focused within sectors

- Reinforced by institutional silos that arbitrarily separate domains
  - E.g. specialized ministries, departments with narrow mandates

- Critical interdependencies water, energy, food security; & underlying natural resources – water, soil and land and related ecosystems
  - Ignoring these leads to contradictions [e.g. mobilizing water for energy at the expense of food production], resource degradation, & reduces systemic efficiency
WATER-FOOD-ENERGY NEXUS [AFTER HOFF 2011]

**Action Fields**

- **Society**
  - Accelerating access, integrating the bottom of the pyramid

- **Economy**
  - Creating more with less

- **Environment**
  - Investing to sustain ecosystem services

**Finance**

**Governance**

- Enabling factors/incentives

**Innovation**

**To promote:**

- Water/energy/food security for all
- Equitable & sustainable growth
- Resilient, productive environment

**Available water resources**

- Nexus perspective

**Global trends**

- Urbanisation
- Population growth
- Climate change
A “nexus” approach tries to reduce trade-offs and enhance the efficiency of the entire system rather than increasing the productivity of specific sectors, often at the expense of other sectors.

Essentially an approach based on a systems perspective.

Larger context—Planetary Boundaries
**Exceeding Planetary System Boundaries [Climate Change, Biodiversity, Nitrogen Cycle Exceeded]**

Rockström et al. 2009

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*Figure 1 | Beyond the boundary.* The inner green shading represents the proposed safe operating space for nine planetary systems. The red wedges represent an estimate of the current position for each variable. The boundaries in three systems (rate of biodiversity loss, climate change and human population) have already been exceeded.
It is predicted that by 2030 the world will need to produce around 50 per cent more food and energy, together with 30 per cent more fresh water, whilst mitigating and adapting to climate change.
“Nexus” applies broadly to interactions, tradeoffs, potential synergies

Relates directly to several proposed SDGs:
- **Goal 2**, achieving food security & promoting sustainable agriculture
- **Goal 6**, ensuring the availability & sustainable management of water & sanitation for all
- **Goal 7**, ensuring access to affordable, reliable energy for all
- Impinges on others, e.g. transboundary water sharing

Climate change → uncertainties, inter-sectoral tensions
- Negative impacts through water: droughts, floods rising seas
ACHIEVING ONE GOAL AT EXPENSE OF OTHERS?

- Rapidly rising demand for energy & water
  - 90% of energy now produced is water-intensive
  - Agriculture largest user of water
  - Agriculture & food chain account for 33% of energy demand
  - Biofuels = largest source of growing agricultural water demand

- Renewable energy [solar, wind] not water-intensive [IRENA]
  → potential positive synergies

- Inherent tensions among proposed SDG Goals & Targets as currently formulated
  - E.g. water and sanitation (Goal 6), the energy Goal (7), & food security (Goal 2)
  - Achieving these without compromising natural resource base & planetary systems on which life depends will be a daunting challenge

**In summary, need to integrate a nexus perspective into proposed SDGs and Targets**
ADOPTING A “NEXUS” PERSPECTIVE ON SUSTAINABLE DEVELOPMENT AGENDA REQUIRES:

- Broad conceptual framework integrating SDGs and nexus perspective
  - Including links to “safe operating space” within planetary system and social boundaries
- Pragmatic use of the framework to identify potential trade-offs and synergies among Goals and Targets
- Indicators that monitor systemic, not only sectoral, progress
- Maintain focus on improving lives of poor people
A SAFE AND JUST SPACE FOR HUMANITY [RAWORTH 2012]
THE PROPOSED SDG ON WATER AND SANITATION & TARGETS

Water Goal: Ensure availability and sustainable management of water and sanitation for all

6.1 Drinking water for all
6.2 Sanitation and hygiene for all
6.3 Improve water quality
6.4 Increase water-use efficiency
6.5 IWRM and transboundary cooperation
6.6 Restore water-related ecosystems

6a Effective international cooperation & capacity-building support to developing countries
6b Participation of local communities
**Water and the Other SDGs**

- Much discussion → how to frame water’s role in the sustainable development agenda
- UNU & UNOSD (2013):
  - Water as a sector
  - Water as an enabler of other goals
  - Water as supporter of economic & social development
- Currently, aside from Goal 6, limited roles of water identified
  - Focus on environmental protection, not on positive roles in productivity and human well-being
MENTSIONS OF WATER IN CURRENT SDGS AND TARGETS [OPEN WORKING GROUP]
**Indicative Roles of Water in Proposed SDGs**

- **Goal 1: End Poverty**
  - Water access reduces poverty

- **Goal 2: Hunger, Food and Agriculture**
  - Water is key for sustainable agricultural productivity and resilience
  - Agriculture affects water resources

- **Goal 4: Education**
  - Water access promotes girls' education

- **Goal 5: Gender, women and girls**
  - Equal rights and access to water key for empowering women

- **Goal 7: Energy**
  - Water is key in all forms of energy production & energy is critical to food systems
  - Water is key in energy production & energy is critical to food systems

- **Goal 8: Economic growth and employment**
  - Water security as driver

- **Goal 9: Infrastructure and industrialization**
  - Water infrastructure necessary

- **Goal 10: Reduce inequalities**
  - Equal access to and productive use of water

- **Goal 13: Climate Change**
  - Renewable energy reduces water demand
  - Achieved through restored terrestrial ecosystems

- **Goal 14: Oceans, seas and marine**
  - Transboundary benefit sharing in river basins

- **Goal 16: Peace, justice and institutions**
  - International cooperation to managed shared water resources

- **Goal 17: Means of implementation**
  - International cooperation to managed shared water resources
GOAL 2. END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION, AND PROMOTE SUSTAINABLE AGRICULTURE

- Water critically important to achieve this Goal & most Targets, but improving access to & productivity of water is missing, e.g.:
  - Ending malnutrition in all its forms (Target 2.2)
  - Target 2.3, doubling agricultural productivity and the incomes of smallholders
  - Target 2.4 on sustainable, resilient and productive agro-ecosystems

- The major threat to food security, especially of smallholders, is drought. **Reliable, secure access to water is a necessary condition for achieving food security**

- “Sustainable agriculture” may be too narrow—need “food systems” [food value chain] perspective
MULTIPLE LINKAGES OF WATER WITH FOOD AND NUTRITION SECURITY

HLPE COMMITTEE ON WORLD FOOD SECURITY 2015

[Diagram showing the multiple linkages of water with food and nutrition security.]

- Natural water cycle
- Water resources: Availability, Quality, Access, Stability
- Other uses: Industry, etc.
- Ecosystems
- Impacts on ecosystems
- Ecosystem services
- Anthropic uses
- Energy
- WASH

Food security:
- Availability
- Access
- Stability
- Utilization/quality

Nutrition

Economic development

Food flows

Impacts

Water flows
- Natural
- Anthropic uses (quantity/quality/variability)
- Return flows (or waste)
CONCLUSION

- Water is an enabler – requirement – for achieving all of the core SDGs
- Significant water investments necessary condition to end poverty, hunger, ill-health, etc.
- Water could be given more emphasis in future agenda
- Two suggestions:
  1. Include a target to improve access to water for agricultural and other productive purposes [Goal 2]
  2. More attention to policy & institutional reforms
Replace narrow sectoral perspective with systems perspective

- Humans are integral part of complex ecosystems and planetary systems
- Destroying these systems will threaten “The Future We Want”
RECOMMENDATIONS

Water & Other SDGs

1. Investments in water as enabler & entry point for equitable and sustainable socio-economic development should be explicit.
   - Enhancing access to water for productive use should be strongly emphasized in addition to access for domestic use and ensuring ecological sustainability.

2. Revise Goal 2: “end hunger, achieve food security and good nutrition, and promote sustainable agriculture and food systems”, and include water in its Targets

3. Water professionals should continue working to ensure that water is explicitly included in final SDG targets, & appropriate indicators are included
RECOMMENDATIONS

Water & Nexus Issues

4. Frame a broad but easily communicated conceptual integrative framework drawing attention to critical nexus issues.
   - Include specific linkages to planetary, social boundaries
   - Use this nexus framework to critically proposed SDGs & targets to identify both serious trade-offs & potential synergies

5. Identify measurable useful indicators that can be used to monitor *systemic* as well as sectoral progress
"IF THERE IS MAGIC ON THIS PLANET, IT IS CONTAINED IN THE WATER."

LOREN EISLEY