WASHplus Weekly

Supportive Environments for Healthy Communities

Issue 148 | May 30, 2014 | Focus on the Future of Water

Several books and studies have been published recently that discuss water resources in the 21st century and beyond. Resources in this issue include links to studies by the Intergovernmental Panel on Climate Change; Pacific Institute; USAID; The World Bank; and country articles on Iran, South Africa, and others. If you know of other recent studies or resources that can be added to the bibliography below, please contact WASHplus.

WASHplus welcomes your topic suggestions for future issues of the Weekly.

GLOBAL

The Future of Global Water Stress: An Integrated Assessment, 2014. C Schlosser, MIT. (Link)
This report assesses the ability of global water systems, represented by 282 large river basins, to the meet water requirements over the coming decades under integrated projections of socio-economic growth and climate change. It finds that for many developing nations water-demand increases due to population growth and economic activity have a much stronger effect on water stress than climate change. By 2050, economic growth and population change alone can lead to an additional 1.8 billion people living in regions with at least moderate water stress.

The World's Water, Vol. 8, 2014. Pacific Institute. (Link/order info)
The World's Water, Vol. 8 features chapters on hydraulic fracturing (fracking), water footprints, sustainable water jobs, and desalination financing, among other issues. Water briefs provide concise updates on topics including the Dead Sea and the role of water in the Syrian conflict.

Climate Change 2014: Impacts, Adaptation, and Vulnerability, 2014. Intergovernmental Panel on Climate Change. (Complete Report) | (Freshwater Resources Chapter) | (Summary for Policymakers) |
Climate change is projected to reduce renewable surface water and groundwater resources significantly in most dry subtropical areas. This will exacerbate competition for water among agriculture, ecosystems, settlements, industry, and energy production, affecting regional water, energy, and food security. In contrast, water resources are projected to increase at high latitudes. Proportional changes are typically one to three times greater for runoff than for precipitation.

USAID Water and Development Strategy, 2013. USAID. (Link)
USAID's first global Water and Development Strategy refines and focuses USAID's approach to water programming. This five-year strategy provides an increased focus on sustainability, scale, and country selectivity; uses emerging science and technology; and embraces partnerships for long-term impact.

2014 Update: Progress on Drinking Water and Sanitation, 2014. WHO; UNICEF. (Link)
Although the world met the Millennium Development Goal drinking water target, 748 million people—mostly the poor and marginalized—still lack access to an improved drinking water source. Of these, almost a quarter (173 million) relies on untreated surface water, and over 90 percent live in rural areas. If current trends continue, there will still be 547 million people without an improved drinking water supply in 2015.

Global Water Governance in the 21st Century, 2013. H Cooley, Pacific Institute. (Link)
This paper describes several key elements of global water governance, including the conceptual frameworks and policy priorities developed to address major water-related challenges and the organizations and organizational networks that conceive of and/or implement those conceptual frameworks and priorities.

World Water Development Report 2014—Water and Energy, United Nations. (Link)
This report provides a comprehensive overview of major and emerging trends from around the world, with examples of how some of the trend-related challenges have been addressed, their implications for policy-makers, and further actions that can be taken by stakeholders and the international community.

Thirsty Energy: Securing Energy in a Water-Constrained World, 2013. The World Bank. (Infographic) | (Working Paper) |
While a global water crisis could take place in the future, water shortages are already having an impact on energy supply. Water constraints have already adversely impacted the energy sector in many parts of the world. Despite these concerns, current energy planning and production is often made without taking into account existing and future water constraints.

A Journey in the Future of Water, 2013. T Tvedt. (Preview/order)
The author explores the impact of growing water concerns. In a journey that takes him to more than 25 countries and across all continents he talks with water experts, politicians, and local people to find out more about the ways in which different nations are seeking to respond.

Blue Future: Protecting Water for People and the Planet Forever, 2014. M Barlow. (Order info)
In this new book, Barlow draws on her extensive experience and insight to lay out a set of key principles that show the way forward to what she calls a "water-secure and water-just world." She argues that water must not become a commodity to be bought and sold on the open market. Focusing on solutions, she includes stories of struggle and resistance from marginalized communities, as well as government policies that work for both people and the planet.

Water 4.0: The Past, Present, and Future of the World's Most Vital Resource, 2014. D Sedlak. (Order info)
The author starts by describing Water 1.0—the early Roman aqueducts, fountains, and sewers

that made dense urban living feasible. He then details the development of drinking water and sewage treatment systems—the second and third revolutions in urban water. He offers an insider's look at current systems that rely on reservoirs, underground pipe networks, treatment plants, and storm sewers to provide water that is safe to drink, before addressing how these water systems will have to be reinvented.

Water and the Future of Humanity, 2014. Gulbenkian Think Tank on Water and the Future of Humanity. (Order info)
This book makes recommendations for changes needed in the way society accesses, provides, and uses water. It further shines a light on changes needed in the way we use food, energy, and other goods and services in relation to water, and offers projections and recommendations, up to the year 2050, that apply to water access challenges facing the poor and the common misuse of water in industry, agriculture, and municipalities.

REGIONAL/COUNTRY REPORTS

Review of Ancient Wisdom of Qanat, and Suggestions for Future Water Management. *Environ Eng Res*, 18(2) 2013. M Taghavi-Jeloudar. (Link)
This paper demonstrates that ancient methods of water management, such as the Qanat system, could provide a good example of human wisdom to battle with water scarcity in a sustainable manner. The purpose of this paper is to: review the old wisdom of Qanat—the history of this ancient wisdom from the beginning until now—study the Qanat condition at the present time to explore why it will no longer be used, and suggest future water management methods based on new materials and technology to refine and protect Qanats.

Water Governance in the Arab Region: Managing Scarcity and Securing the Future, 2013. UNDP. (Link)
This report provides the Arab countries and the international community, donors, and other stakeholders with an extensive understanding of the water situation in the region. In laying out the building blocks of good water governance needed to manage increasing water scarcity, it seeks to strengthen dialogue, raise awareness, and advance progress toward water-related development goals across the region.

The Future of Water Resource Management in the Muslim World. *Journal of Futures Studies*, Mar 2013. S Absar. (Link)
This article provides insight into water availability and usage in the Muslim world, based on the global data of water consumption and availability with respect to specific geographical regions and an extensive literature review to categorize the regions with similar socio-economic and hydro-geological make up into distinct water zones.

Iran's Water Crisis Threatens its Future. *Voice of America News*, Apr 2014. M Manzoori. (Link)
A looming water crisis in Iran has officials warning of water rationing for the capital Tehran. The Mehr news agency quotes Khosro Erteghaei, the head of Tehran's regional water company, as saying water levels at the four reservoirs that serve Tehran are at a critical level. He warns that if residents of Tehran and nearby provinces do not reduce their consumption "we will have a problem."

South Africa—Improving Crop Yield and Water Productivity by Ecological Sanitation and Water Harvesting in South Africa. *Env Sci Technol*, Mar 2013. J Andersson. (Link).

The results indicate that both nutrient and water availability limit smallholder maize yields in South Africa. The ability of Ecosan to meet some of the nitrogen demand increased the yields in most conditions. In so doing, Ecosan improved the ability of the crops to use the available soil moisture (improving the water productivity), without requiring additional water or significantly affecting downstream river flows. On this basis, Ecosan could be a useful policy option for generally improving smallholder food production in the region. Ecosan may also be beneficial beyond South Africa, since other water-stressed regions require similar water productivity improvements.

Balancing Water Resources Development and Environmental Sustainability in Africa: A Review of Recent Research Findings and Applications. *Ambio*, Sept 2013. M McClain. (Link)
Sustainable development in Africa is dependent on increasing the use of the continent's water resources without significantly degrading ecosystem services that are also fundamental to human well-being. This is particularly challenging in Africa because of high spatial and temporal variability in the availability of water resources and limited amounts of total water availability across expansive semi-arid portions of the continent.

Options for Water Storage and Rainwater Harvesting to Improve Health and Resilience against Climate Change in Africa, 2013. E Boelee. (Link)
Water harvesting and storage can mitigate the adverse effects of rainfall variability. But past studies have shown that when investments in water storage are not guided by environmental health considerations, the increased availability of open water surface may increase the transmission of water-related diseases.

Palestine—Water in Palestine, 2013. The Ibrahim Abu-Lughod Institute of International Studies. (Link)
Taking the papers presented in this volume as its starting point, this chapter analyzes some of the strategic challenges facing the Palestinian water sector. In part, it provides a basic introduction to some of the major challenges as well as identifies future scenarios under which Palestinian policy-makers will likely have to contend in the future.

USA—National Climate Assessment Predicts a Challenging Future for Water Resources. NRDC Switchboard, May 2014. R Moore. (Link)
It's time to take serious action to prepare for the impacts of climate change, so warns the newest National Climate Assessment report. Some of the biggest impacts will be felt along rivers, lakes, and ocean coastlines as rainfall patterns continue to shift toward periods of extreme wet and extreme dry, and as sea levels continue to rise. These projected impacts add up to a very challenging future for water resources in the United States.

WASHplus Weeklies will highlight topics such as Urban WASH, Indoor Air Pollution, Innovation, Household Water Treatment and Storage, Hand Washing, Integration, and more. If you would like to feature your organization's materials in upcoming issues, please send them to Dan Campbell, WASHplus Knowledge Resources Specialist, at dacampbell@fhi360.org.

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