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## **WATER KNOWLEDGE IN AFGHANISTAN: WEAK BUT GROWING STRONGER**

By

**Dr. John Shroder and Sher Jan Ahmadzai** (/en/author/dr-john-shroder-and-sher-jan-ahmadzai),

On Oct 25, 2017 - 13:34

Water is absolutely critical to woefully arid **Afghanistan** (/en/afghanistan), yet few people really know very much about their precious fluid. The natural physics and the different chemistry of water is complicated but well understood by scientists. Other aspects of the use of water resources are yet to be explained for those who are not scientists or don't have interest in the scientific aspect of water. New efforts are underway to help multiple levels of Afghan **society** (/en/society) to better understand all the hidden aspects of water in its many hiding places where it may be misused, over-used, or used up until it is all gone, or filled with garbage and poisons so that no one can use it without special precautions. The past four decades of fairly unceasing war in Afghanistan have largely destroyed not only many of the **water-delivery systems** in the country, but also the **water-educational means** by which young children to older university students can learn all that they need to know about their life-blood water. At the same time, the increase of the gas - carbon dioxide (CO<sub>2</sub>) - which comes mainly from the burning of coal, oil, and gas all over the **world** (/en/world) for the past several hundred years, has accumulated in the air that everyone breathes. This increasing accumulation of CO<sub>2</sub> allows sunlight to pass through the air easily in one direction down to Earth, but the heat that the sun produces then is trapped and cannot go back out through the air again. This **greenhouse effect** is raising temperatures all over the Earth, which is a bad thing for our world because it is making drought times in so many places, especially in Afghanistan. Afghanistan actually has quite a lot of water that comes into the country from the sky that forms the glacier ice, the winter snows, and the summer rains that flow off in the small and large rivers, or that percolates or infiltrates down underground where it can be later tapped by **karez** (/en/karez) and borehole wells. The problem is that in Afghanistan, this water is not distributed evenly, and in some places where the precipitation may fail from time to time, water shortages may occur so that people are terribly affected.



**Sustainable development** to maintain all life on Earth is a highly desirable goal, without which we humans will not survive on this planet for much longer. Clean water, good sanitation, healthy underwater life, action on climate change, and a good **education** (/en/education) about water are all requirements. The **education for sustainable development (EDS)** is a critical part of this process.

**Water education**, or the teaching about all aspects of water in **water school** are absolutely essential from childhood onward into higher education. Such education must be established for professional people in the mass media (radio), television, newspapers, as well as for community

members, the primary and secondary schools, universities, technical schools, engineering colleges, as well as for scientists, business managers, and decision makers. A host of many printed resources and websites exist on the international internet that can be used to help with this water education. Different education strategies and teaching aids exist in Dari and **Pashto (/en/pashto)** that can be easily adapted for conditions that typically occur in Afghanistan.

**Multiple perspective approaches (MPA)** have been developed for teaching about water from the many important points of view that may differ greatly from each other, but if which thought about carefully and used appropriately, can bring great enlightenment to any society. These multiple approaches are the **scientific, historical, geographic, human rights, gender equality, values, cultural diversity, and sustainability**. These points of view for teaching about water have been organized into separate instructional strategies with different questions for each point of view, which greatly help students at any level to become better educated about water in the areas of their greatest interest. For example, in the **scientific approach** students might be asked to study a named diagram of the hydrological cycle of the Earth in their own language that has been developed for most of the major languages from everywhere and then quizzed on it with a blank version of the cycle. Or in the historical approach, students can create multiple-tier timelines of significant water events in their own lives (when occurred droughts, floods, big snowfalls, etc.), and then answer questions about how such events were important to them and their families. In the **geographic approach**, the students would draw their own local hydrologic cycle that they can see with their own eyes or guess about it where they can't see it, but can reasonably infer it with the teachers help. From the point of view of **human rights**, everyone is entitled to drink clean water, but students can be asked if they or their families have always had such a right. In terms of **gender equality**, exercises on equal access to water by men, **women (/en/women)**, and children can be discussed at length because of the variable treatment of different people. The perspectives of different **values** about water can be discussed in a type of town hall or **jirga (/en/jirga)** way so that different ideas about how people may value water. Cultural diversity about water can be brought into the schools in the form of discussions concerning how different groups of people may or may not think about water. Lastly, ideas of water sustainability can lead to many questions about how best to think about the long-term availability of water and the quality of the **environment (/en/environment)** in Afghanistan. Many other sets of questions and activities relevant to the Afghanistan condition have been developed for all the other possible approaches to learning about water as well.

The result of all this analysis by Dr. Shroder and Mr. Ahmadzai, is a number of essential recommendations that if acted upon by Afghan teachers and the government in a timely fashion, will help greatly to advance water knowledge in Afghanistan. These water recommendations will most importantly help alleviate the problematic physical and political situations in Afghanistan, especially in helping Afghans who must increasingly face up to negotiating about water with neighboring **Pakistan (/en/pakistan)** and Iran, who are quite **hydro-smart**, diplomatically and in engineering. These water recommendations include: (1) Help to write a national economic development vision for the country of Afghanistan; (2) Prioritize the national water sector; (3) Help clarify the roles and improve coordination amongst all water personnel in the country; (4) Help establish and strengthen the knowledge base on water-resource development and management in the country; (5) Write text on how to address water within the broader context of climate change and associated natural hazards for use in schools of Afghanistan; (6) Help to improve legal and policy mechanisms for national water governance in Afghanistan; (7) Help Afghanistan to recognize the benefits of regional cooperation, hydro-diplomacy, and compliance with international conventions on the development and use of water; (8) Work out the rationales and procedures to promote a long-term, regional-program approaches to water management in Afghanistan and surrounding countries; (9) Use the media and develop possible new web portals on the internet and other means of communication to engage civil society, media, academia, and the private sector about water in the region; (10) Help advocate through media efforts for increased engagement of civil society, media, academia, and the private sector in water

development and management; (11) Help support and facilitate continuous indigenous Afghan research through use of electronic media on all water issues; (12) Help advocate for improved legal and policy contexts of transboundary water resources of Afghanistan by enlisting the assistance of legal scholars on world water law; and (13) Help expand Afghanistan's knowledge base on transboundary water resources through translations of several papers and books on water resources in the region for use in the schools. These could include parts or all of materials such as Horvath's (2016) [Educating Young Children through Natural Water](#), Jairath and Ballabh's (2008) [Droughts and Integrated Water Resource Management in South Asia](#), or [Transboundary Water Resources of Afghanistan](#) by Shroder and Ahmadzai (2016).

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- **John (Jack) F. Shroder**, Ph.D. has been actively pursuing research on landscapes and natural resources in the high mountain environments of **Afghanistan** (</en/afghanistan>) and **Pakistan** (</en/pakistan>) for over a half century. He has some 50 written or edited books to his credit and more than 150 professional papers, many of them on glaciers, water, floods, landslides, mineral resources, and the natural **environment** (</en/environment>) of Afghanistan. Dr. Shroder taught geology at **Kabul** (</en/afghanistan/kabul>) University in 1977–78 and at Kabul Polytechnic University for a short

time in 2014. His two best known books in recent years are Natural Resources in Afghanistan, and Transboundary Water Resources of Afghanistan.

- Shirjan Ahmadzai serves as the Director for the Center for Afghanistan studies at the University of Nebraska at Omaha.

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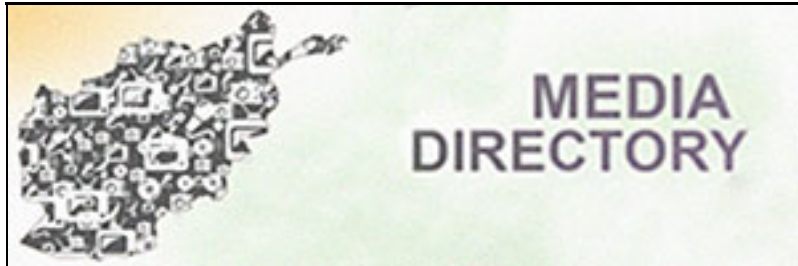
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