In Conversation with Naser Faruqui: A 'Next Generation Water Leader'

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In 1999, Naser Faruqui, a Senior Program Specialist at IDRC, was chosen as one of the "next generation of water leaders" (NGWL) by the International Water Resources Association (IWRA) and the Stockholm International Water Institute (SIWI). The NGWL program was launched by IWRA and SIWI to identify water professionals from all over the world who are under 40 years of age and show considerable promise of becoming a future water leader. Faruqui was one of 14 professionals selected out of more than 250 candidates, and is the only Canadian in the group.

Since joining IDRC in 1995, Faruqui has overseen several applied research projects related to water resources management, water supply and sanitation, and the environment in the Middle East, India, and Pakistan. Through an urban water management study, he developed a vision focussing on basin-level efficiency instead of sectoral efficiency as a means to improve water equity. Current initiatives include the pilot-testing of small-scale, decentralized, low-cost natural waste treatment systems in low-income communities for reuse in urban agriculture, and an examination of cultural obstacles to water demand management policies in the Middle East. The latter project has led to a soon-to-be published book on Water Management in Islam.

During the upcoming Second World Water Forum, which will be held from March 17-22 in The Hague, Faruqui will meet with the other "next generation water leaders" for the first time. *IDRC Reports* recently interviewed Faruqui about his past achievements and future goals.

Q) What are the highlights of your career at IDRC?

A) One highlight has been the opportunity to work in different communities, meeting villagers and spending some time with them to talk about both their water problems and other issues.

Another highlight was the Snow and Ice Hydrology project in Pakistan, which I managed from 1996 to 1998. The Indus River, which forms 80 % of Pakistan's water supply, originates as ice and snow melt in the remote Himalayas. Those regions are so remote that the Pakistanis don't know from day-to-day how much water will enter their two main reservoirs in the plains, because they don't know what the weather conditions are up in the mountains. We installed 29 measuring stations that collect data on how much snow is falling, how much rain is falling, the wind, temperature, atmospheric pressure, and a host of other variables that govern how quickly the snow and ice melt. All of that data is now transmitted remotely down to a receiving station in Lahore, and downloaded into a flow forecasting model. Basically, with the help of IDRC and BC Hydro international, the Pakistanis have designed a computer model of the Indus River.

When I joined the project, other than increased irrigation, no one had really thought much about the downstream uses of this computer model. In fact, although the system had been built and the model was being calibrated, there was a real chance that it might never be used, because most decision-makers were unaware of it and most Pakistani water-management institutions were weak. I told the main water utility in Pakistan that once the model was calibrated, they had a tool to optimize water at a national level. Very few countries can do this, but Pakistan can because almost

all of its water is stored in one place — the two reservoirs — and because the major cities and agricultural areas are interconnected through a vast canal network, the biggest in the world. Irrigating more efficiently is important, but the model can also help them decide how much of their water overall should go to irrigation. Once the Pakistanis know how much water is entering their reservoirs, from day-to day, they can decide how much water to release for irrigation, for drinking, and for other purposes in urban areas. For instance, they can now say: 'We think it's most cost effective for 70% of the water to go to irrigation and 20% to domestic purposes and 10% to industry,' or whatever is most socially and economically feasible. And they probably will have to do some reallocation and apply more water to urban uses because in the big cities the poor have very little water, and because like all developing countries, they are trying to transform their agricultural-based economy to one with more industry.

Initially, the Pakistani decision-makers weren't very receptive to the idea of water reallocation, but as we held seminars about the project and what this technology can do for them, they started to consider this more. Once the model is calibrated, they will have a tool that lets them think about water optimization and do so in a very coherent way.

Q) What was the genesis of your upcoming publication on Water Management in Islam?

A) IDRC received a proposal to hold a workshop on this subject, which was handed over to me to take a look. I'm a Muslim. I was very receptive to this idea because, based on work we've done in various program initiatives that touches on water demand management, there appear to be some obstacles within the social cultural context of the Middle East to certain proposed policies or approaches to water demand management — in particular, the idea that [water utilities] should increase the tariffs on water. Even the idea that you can sell water is believed by some Muslims to be incorrect because water is a gift from God, it doesn't belong to anybody, and therefore you can't sell it. A second issue concerns waste water reuse, which is another water demand management tool: preserving fresh water for the most important and highest value uses and reusing as much waste water as possible for uses that require lower quality water or that can take lower quality water without ramifications. Because these issues touch on my work and the work of others at IDRC, I wanted to find out what Islam says about them.

We asked some top notch water scientists, most of whom also happen to be Muslims, to research these issues in the original sources of Islam We invited papers on various topics: water as a social good, the importance of water within Islam, the rights of humans to water, the rights of other creatures to water, the rights of the environment to water, economic instruments for water demand management (selling water and owning water, etc.), non-economic instruments like waste water reuse, and water conservation.

We ultimately concluded that there is absolutely no problem to recovering costs for providing water services within Islam. If it falls in its natural state in a lake, nobody can stop anyone from dipping a cup in that lake and drinking it. If it falls in a glacier in the form of snow, or if it falls on your head or on your house, you can collect that water and nobody can charge you for it. But if someone goes to the trouble of going and getting that water, storing it, treating it, and then distributing it, it's a service and they can certainly recover the costs — including earning a profit — according to the Islamic sources. What Islam actually said about this issue was very different to the common perception. I was surprised to find how much Islam supports a free market approach as long as the overriding issue of equity is addressed. Equity is stressed over and over in Islam, like in other religions. That is good to hear because in some of the places I visit, the poor pay incredible prices for water — sometimes 50 or 100 times more than the middle class or the rich pay for a

given volume — because they're not connected to the municipal system. This suggests that, to a certain extent, you could raise prices for the middle class and the rich, and with that additional money, you could provide more services to the poor and bring their costs down.

With respect to waste water reuse, we discovered that Saudi Arabia had studied this in depth in the 1970s, and its religious leaders had issued an opinion: a 'fatwa'. They concluded that waste water reuse was perfectly acceptable as long as the waste water was treated to the extent that is necessary to protect health, which is a perfectly reasonable statement. [It turns out] that Saudi Arabia is reusing almost 20% of their treated municipal waste water. In Iran, they're reusing their waste water and private water companies are allowed to charge the full cost of providing the water, including a profit. These are countries that base their entire constitutions on Islamic law. So if they do it, then you can be reasonably certain that it's not against Islam. By providing these examples and publishing them in this book that will be released this year, I think we can help promote the introduction of some of these policies in countries with large Muslim populations.

Q) What vision would you like to promote as one of the 'Next Generation of Water Leaders'?

A) For me, it just comes down to one thing: equity, increasing equity. Basically you want sustainable water use, you want good health, you want the poor to have access to water at a fair price, you want the poor to have access to sanitation, you want to ensure that there is enough food either being produced within the country or being imported so the poor have access to nutritious food.

How do you go about doing that? Water demand management is one way. Instead of looking for additional sources of water, we need to use our existing water more effectively. In developed societies like the southern United States and Israel, they have a very high standard of living with very little water, so it is definitely possible. There are lots of things you can do: flushing your toilets with waste water instead of fresh water — you go to all this trouble to treat water and then use it to flush your toilets, it just doesn't make sense — reusing waste water for growing crops, reusing waste water for cooling processes for big industries like steel production, for instance.

I'm hoping that rather than further defining the water problem, or even articulating a vision, the Next Generation of Water Leaders program will focus more on what steps we need to take to implement the vision. For instance, I think we need to reduce the amount of water agriculture receives, somewhat, and move the excess into urban areas, particularly in the Middle East, where water is so scarce. This idea may not seem to make sense intuitively, but it is to ensure that water is used where it has the greatest social and economic benefit. This reallocation is already happening in informal water markets, all over the world, but policy makers have to accept that this is happening, regulate it, and take steps to reduce the negative impacts and ensure that the poor really benefit from the potential positive impacts. For example, as water is taken out of rural agriculture and you have less crop production there, one way to offset this is to increase urban agriculture, using treated wastewater to produce nutritious vegetables for the poor, so they don't have to buy expensive canned or imported vegetables. Although some work has been done on these types of urban treatment and gardening systems, the ideas haven't been tested enough.

During the Second World Water Forum, the "next generation of water leaders" will meet as a group for the first time and figure out everybody's individual interests and whether we can organize them into collective interests and form working groups. There are three things that I would like to work on: 1) the use of cutting-edge technology to improve water management; 2) waste water treatment and reuse; and 3) social cultural obstacles — gaining a better understanding of the socio-cultural context wherever we work to improve water management. Based on my

experience with the Islam and Water Resources Management project, I think this can be done in a way that is sensitive and that doesn't create more problems than you're trying to solve.

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