

Bridging Science and Policy in the Domain of Water: A Middle-Eastern Perspective

H.E. Dr. Abdel Salam Majali, FIAS

Former Prime Minister of Jordan

President, Islamic World Academy of Sciences, Amman, Jordan

*Excellencies and Eminent Guests,
Ladies and Gentlemen*

Water is vital for the life and health of people and ecosystems and is a basic requirement for the development of countries. Muslims believe that water *is* life. The Qur'an declares: "We made from water every living thing." But around the world, women, men, and children today lack access to adequate and safe water to meet their most basic needs. Water resources, and the related ecosystems that provide and sustain them, are under threat from pollution, unsustainable use, land-use changes, and climate change.

Nearly a third of the world's population will face severe water shortages in 25 years' time, increasing the danger of conflict over water supplies. Unless we change our ways, we will soon be facing a more serious water crisis. Consequently, competing claims to water between users within countries and between countries must be managed in a cooperative rather than a confrontational fashion. *Integration* rather than *segregation* should be the key policy. The needs of future generations must be safeguarded and issues of quantity and quality of water must be addressed.

Let me first talk about the Middle East.

The Middle East is one of the most water-insecure regions in the world. This already scarce natural resource has the potential to spark local and interstate conflicts, particularly as many of the region's central waterways

are shared by several riparian states. In this respect, the most likely hotspots are the Nile drainage basin, the Tigris-Euphrates Rivers, and the Jordan River basin. Jordan, of course, ranks eleventh out of twenty states in "extreme risk."

All of these potential sites of conflict involve several countries. For the development specialists, the three regions represent three models of water-related development phenomena: water management for poverty eradication, as in the case of the Nile; water management for food security, as in the case of the Tigris-Euphrates river system; and water management to halt environmental degradation (and, more important, to promote regional peace), as in the case of the River Jordan.

From the outset, disputes related to water resources have formed part of the Arab-Israeli conflict. In 1949, peace negotiations after the first Arab-Israeli war broke down, in response to Israeli demands to keep control over the economically important Lake Tiberias and the Jordan River. The water issue resurfaced again in the early 1960s after Israel announced plans to divert water from Lake Tiberias to the Negev. The Arab states strongly denounced the plans, which would have reduced the share of Israel's Arab neighbors of water for drinking and for agriculture. The Arab response was a counter-plan that aimed to considerably reduce the amount of water reaching Israel from the tributaries of the Jordan River.

The above conflicting water-diversion projects by Israel were a significant contributor to the 1967 Six-Day War.

More recently, there is evidence to suggest that the long-standing political dispute between Israel and Syria could have been effectively addressed if water rights were discussed during the peace negotiations between the two countries after the Madrid peace conference in 1991; in fact, the last outstanding issue in the negotiations was whether Syria should have access to Lake Tiberias or not.

Moreover, water disputes contributed also to the failure of peace talks between Tel Aviv and the Palestinian Liberation Organization (PLO).

On the other hand, a successful example exists of two adversaries in the region sharing the precious little they have in terms of water resources for the sake of peace. Israel and Jordan signed their famous peace treaty in 1994. It was signed by Abdel Salam Majali on behalf of Jordan and Yitzhak Rabin on behalf of Israel. The treaty had a major water-sharing component that addressed one of the most lingering difficulties between Jordan

and Israel. The treaty guaranteed Jordan an equitable share of water from the Yarmouk and Jordan Rivers, and outlined an elaborate arrangement whereby Jordan and Israel will share the Yarmouk and Jordan River waters. Moreover, Jordan and Israel agreed to cooperate in finding sources for the supply to Jordan of an additional quantity of 50 million cubic meters (MCM) per year of water of drinkable standard.

This led to Israel agreeing to transfer additional water supplies to Jordan.

Nevertheless, water is still one of the central problems facing Jordan. A problem that many successive governments of the country have had to deal with, including two governments which I have headed. Military conflicts in the region have resulted in the movement into Jordan of people from Palestine, Lebanon, Iraq, and Syria. This human flood places increased strain on the already meager water resources that Jordan has. It was recently announced that Jordan was hosting over 1 million Syrian refugees within its borders. This is equivalent to the UK hosting 7 million refugees or the US hosting 30 million. You can imagine the nightmare that agencies responsible for the provision of safe drinking water have to put up with, and indeed, those extra finances that have to be found by the government for the purpose.

Today, in Jordan and the region, we face the challenge of saving the Dead Sea, which is vanishing with severe negative consequences on the area. For years, Israel and the Arab governments have diverted up to 95% of southward flow of the Jordan River, which replenishes the Dead Sea. A very creative solution is suggested today to save the sea: a project to create a pipe-canal system connecting the Red Sea to the Dead Sea through building a 180-km pipeline across Wadi Araba. This three parties project (Jordan, Israel, and the Palestinian Authority) could restore most of the Dead Sea water level over time. Moreover hydroelectricity generated from the water coursing down the gradient would power large desalination plants.

The project represents an innovative—yet calculated—leap forward in the region's attempt to address its water and energy needs as well as create an ecosystem in which the involved countries have a stake in its longevity. The project is thus as important for food and energy security as it is for human security: the security of the Israelis, Palestinians, and Jordanians. Unlike other national proposals, the Red-Dead Canal will not only save the Dead Sea from extinction but also provide desalinated water to Israel and the Palestinians, as well as Jordan. Further, such an undertaking has been

stipulated in Article VI of the Jordan-Israel Peace Treaty that Jordan and Israel shall cooperate in developing plans for the purposes of increasing water supplies and improving water use efficiency, within the context of bilateral, regional, or international cooperation.

As a decision-maker, I think that this project is innovative and forward looking and is a potential peace asset that contributes to regional interdependence and security.

The 1997 UN Watercourses Convention is a global framework agreement with the goal to “ensure the utilisation, development, conservation, management and protection of international watercourses” (see the Convention’s website, www.unwatercoursesconvention.org). Achieving sustainable and peaceful management of the more than 500 international watercourses in various parts of the world is one of the major challenges in the immediate and long-term future. The three central issues that arise in this context are legal entitlement, framework for allocation, and compliance with the agreed watercourse regime. Such complex issues require more than a legal response. I think they need a political response as well as a scientific one. The input of the water experts, across the entire horizon of water resources management, including engineers, hydrologists, economists, and social scientists, is equally important.

New concepts such as “green” water and “virtual” water could be further developed and employed effectively in the response to transboundary water problems. But at the very end it is the will of politicians that will have the final word. The legal response to water scarcity has a solid foundation in the UN Watercourses Convention. However, years after the adoption of this Convention, it is not yet in force, a fact that endorses the point of view of those who say that water crisis is a crisis of governance, not one of scarcity.

Clearly, there is a problem when it comes to the relationship between scientists and technologists on the one hand and politicians on the other. Few politicians appreciate the possibilities of science. They do not understand the limitations of science or the long time scales it can take to develop an idea into a product or a service. Nor do the majority of scientists understand the restrictions of political office or have a clear idea of political processes. They do not appreciate the pressures or the time scales politicians work to. Both sides, the scientists and the politicians, recognize the importance of each other. But there is no natural dialogue between the two sides, because they come from different worlds.

We need to bridge the gap and make politicians understand the importance of science by creating better communications between the science and non-science worlds, between the scientific and the political communities.

Politicians judge the policy position action first and foremost on its policy merits, not on its morality. So if we want a politician to adopt a position relative to supporting science or scientists, or the incorporation of science into some other decision, it is not enough to present the research that supports this position or to spell out the policy administrative or legislative terms. The message must be framed first and foremost in its politically communicable form.

I think this is one of the reasons why the InterAction Council has taken a serious interest in water issues. IAC Members are eager to learn about the water-related problems afflicting the world today. This was evident at the last two meetings of the IAC, in Quebec city and in Tianjin (China), as well as the earlier preparatory meeting, which took place in Toronto in March 2010.

So what can we do to bridge the gap between the two parties? As a scientist turned politician, I can propose some ideas:

1. Scientists must take an interest in politics and must understand the particular challenges politicians face. We must aim at a social relationship developed over time between scientists and politicians.
2. Scientists should not view politicians as mere media or PR experts, because they can really help. The communication staffs of science organizations (academies of sciences in particular) and political offices can help. More could be done to "pre-test" science messages being delivered to political receivers and to teach effective follow-up. Some scientists are good communicators (Bruce Alberts, of the U.S. National Academy of Sciences, and Ahmad Zewail, winner of the Nobel Prize in chemistry, are good examples) and they could be held up as role models and encouraged to share their expertise with others.
3. Finally, perhaps the best place to begin bridging the divide is to get more of those with scientific expertise working in political positions of influence. For this to happen, politics has to become a more acceptable trajectory for young people in science and less of an "alternate career choice."

Due to the fact that politicians are still far from understanding the water problems the world is facing, some experts believe that the world water crisis is a crisis of governance, not one of scarcity.

For the majority of the developing countries of the South, water is a matter of survival. Countries of the North, which happen to be industrialized and developed, are richly endowed with this precious resource; thus, it is seen as a secondary problem despite the sincere efforts of caring environmentalists and politicians to address the issue.

Only until we realize that we are all in the same boat—that is, politicians and scientists, and people from the South and people from the North—and that we all face a transnational water crisis, will we be able to realize a water-secure future for our children and grandchildren.

Thank you.