The Malta Conferences:

Science Research and Education as a Bridge to Peace in the Middle East

by Morton Z. Hoffman

Director-General of UNESCO, Irina Bokova, and HRH Prince Hassan of Jordan.

Instability and uncertainty in the Middle East, combined with water scarcity, global climate change, nuclear proliferation, and the lack of civil societies, create a growing threat to the world. To address these challenges, the Malta Conferences Foundation organizes biennial conferences that brings scientists and science educators from 15 Middle Eastern countries (Bahrain, Egypt, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Libya, Palestinian Authority, Qatar, Saudi Arabia, Syria, Turkey, and the United Arab Emirates) together with six Nobel laureates and U.S. and E.U. scientists for five days. Most of these Middle Eastern scientists cannot easily meet face-to-face to exchange information and discuss possible collaboration and cooperation because the governments of their countries are hostile to each other. The Malta Conferences are the only platform where scientists from these 15 countries can work together on solutions for regional problems.

Five of these conferences have been held since 2003, the last one in December 2011 by invitation at the headquarters of UNESCO in Paris. Malta-V was opened by the Director-General of UNESCO, Irina Bokova, and HRH Prince Hassan of Jordan, the brother of King Hussain, who gave a talk on his vision of the new Middle East. The President of the Board of Directors of the Foundation, Dr. Zafra Lerman, was invited to talk about the Malta Conferences at the Nobel Peace Institute in Oslo, Norway, in September 2009. The Malta Conferences consists of plenary lectures by the Nobel laureates and five workshops that involve all the participants: (1) Environment: Air and Water Quality, (2) Energy Sources, (3) Education at All Levels, (4) Nanotechnology and Material Science, and (5) Medicinal Chemistry and Natural Products.

Environment: Air and Water Quality

Pollution by leaching wastewater in Gaza.

The region's extremely poor air quality and severely insufficient high quality water can be successfully assessed and addressed by environmental science. However, the solutions have to be international because the badly polluted airsheds and watersheds are regional in nature and cross many national boundaries.
A working group on Regional Water Quality Assessment in Jordan, Palestinian Authority, and Israel was conceived at the Malta-III conference. During Malta- IV, this group defined and launched an ambitious research program, involving hydrologists and environmental chemists from Jordan, Palestinian Authority, Israel, Egypt, and Kuwait (with advisors from the U.S. and EU). The working group plans to expand its activities to include Syria and Lebanon as soon as additional funding can be obtained.
There is no clean drinking water in Gaza. As a result of the Malta Conferences, a collaboration is underway between scientists from Al-Azhar University in Gaza and scientists from the Technion-Israel Institute of Technology for the analysis of heavy metals (ICP analysis) in water samples brought from Gaza and analyzed at the Technion.

Energy Sources

A solar panel collaboration between Israelis, Jordanians, and Palestinians.

These workshops focus on establishing collaborations toward the development of renewable energy sources. The future action group has already furthered the concept that strong regional activity on solar, wind, wave, and other renewable resources would reduce the attractiveness of nuclear energy with its inherent proliferation potential and political destabilization effects.
It is a fact that the amount of solar energy received by the surface of the Earth in one hour is approximately equal to the current total energy consumption of the entire planet in one year; the Middle East is blessed with abundant sunshine with its obvious potential for meeting growing energy requirements in the region. Collaboration is occurring between countries on issues of solar energy. As a result of Iran's push to develop nuclear capabilities, countries throughout the region feel pressured to acquire nuclear technology of their own. The workshop encourages the participants to concentrate on renewable sources of energy – solar in particular – instead of the direction many of them (Jordan, Egypt, Saudi Arabia, United Arab Emirates, etc.) are taking in moving toward nuclear technology.

Education in All Levels

Global climate change, insufficient potable water and food, chemical warfare, and the proliferation of nuclear technology are problems that span the region. In order to build civil societies, these problems must be addressed; they can only be solved by scientists within the region using cross-border collaboration and cooperation. But in order to have scientists who are capable of solving these problems, we need to develop science education at all levels.

The demographics of most Middle Eastern countries make education a pressing challenge for the entire region. Since science is inherently international, we formed multinational working groups within the Malta Conferences to devise more effective science curricula and low-cost laboratory materials for all levels of education. Green chemistry and chemistry safety and security are integral parts of the workshops on education. The working group has designed different methods of teaching, learning, and assessing students, and a website is being designed for the exchange of ideas. The common language of science helps to overcome chasms of distrust by building tolerance and understanding, improving the relationship among Arabs, Iranians, and Israelis, and serving as a bridge to peace in the Middle East.

More information can be found at the Foundation's website: www.maltaconferencesfoundation.org.