

**THE DEAD SEA – A LIVING TREASURE
THOUGH STILL WILD AND BREATHTAKINGLY
BEAUTIFUL WILL IT SURVIVE?**

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The ancient Madaba mosaic, famous for its map of the city of Jerusalem, depicts the area of the Near East of the 7th Century AD with its human settlement and activities. It is no coincidence that the Dead Sea appears at the center of the mosaic. For thousands of years the resources of the Dead Sea Basin have not only been a source of economic development for the region but the natural beauty of the basin has been a source of religious and cultural inspiration for the many civilizations that have lived around its shores. It is the unique characteristics of the basin, topographical, climatic and biotic that have been the reason for the basin's importance. Today, however, we are nearing a point of no return, where we risk losing key characteristics of this unique basin. Due to destructive development, uncoordinated planning between governmental authorities and unchecked competition between the various economic sectors that exploit the Dead Sea's resources, the uniqueness of the Dead Sea Basin risks irreversible degradation.

The Uniqueness of the Dead Sea Basin

- The Dead Sea, located in the Great Rift Valley, is the lowest place on earth; its surface is 417 meters below sea level.
- The Dead Sea is the world's saltiest large water body -- its salt concentration is ten times higher than the Mediterranean.
- The entire basin is a spectacular landscape characterized by high mountain cliffs, deep canyons, and green oases, which are in stark contrast to their desert surroundings.
- The basin is the home of rare plants and wildlife including leopards (already greatly diminished), Ibex and hundreds of bird species.
- It is a cradle of human culture with sites of high value for the three monotheistic religions Islam, Christianity and Judaism such as Mount Nebo, the Qumran caves, the Baptism site of Jesus and Islamic fortress of Karak.
- The region is a unique, world-recognized location for medical and health treatment due to the Dead Sea's mineral composition, the medicinal mud, the hot springs, and the climatic conditions.

A POTENTIAL WORLD HERITAGE SITE

The Dead Sea basin is a unique ecosystem to the world. The Dead Sea, a terminal lake, is the lowest place on earth and the saltiest large water body on the planet. Dead Sea waters are recognized for their medicinal and health treatment. The areas complex geological form has created a spectacular landscape characterized by high mountain cliffs, deep canyons and green oasis. The springs that feed the green oasis attract unique biodiversity, in stark contrast to the desert surroundings. The Basin is a cradle of cultural heritage of utmost value to the three monotheistic religions of Judaism, Christianity and Islam. For all the above reasons the Dead Sea Basin is treasured by people the world over and is a major site of pilgrimage, tourism and industry.

EXISTING POLICIES THAT THREATEN THE BASIN

Despite its uniqueness there exists no integrated development plan for the Dead Sea Basin. The competing sectors, the mineral extraction industry, the water supply sector, tourism, local agriculture and urban development exploit the Dead Sea's resources without consideration of the areas natural carrying capacity. Due to present unsustainable development policies the Dead Sea is a living example of a 'tragedy of the commons.'

Current Demise at the Dead Sea

- An alarming drop of the sea level- currently falling at 1m in depth per year. Over the past four decades the water level fell by over 25 meters.
- Shrinking of the sea's length (north to south) -- from over 75km earlier in this century, to 55 km at present.
- Land deterioration (sink holes) along the shorelines.
- Pollution from untreated or inadequately treated domestic, agricultural, tourist facility, and industrial waste.
- Destruction by industry of landscape and ecologically sensitive habitats for flora and fauna.

Over the last forty years, the Dead Sea water level has dropped by over 25 meters. The current yearly water level decline is by over one meter in depth, and the rate is constantly increasing. This is due to both water diversion of the Jordan and Yarmuk Rivers by Israel, Jordan and Syria upstream and industrial mineral extraction activity in Israel and Jordan at the southern basin of the Dead Sea, which account for 75% and 25% of the sea level decline respectively. With

the disturbance of the water balance, a sinkhole phenomenon has developed with catastrophic impacts on all kinds of development in the region. Sinkholes have damaged roads, parking areas, industrial and tourist facilities. It is not possible to predict the location, scale and extent of new sinkholes, which places real threat to people's lives and assets.

Primary Economic Competitors for the Dead Sea Basin's Resources:

- The water sector and its continuous expansion of water diversion projects mostly to supply the demand of the agricultural sector.
- The mineral extraction industry and its increased production and mining activities.
- The tourism industry and its planned construction of thousands of new hotel rooms all along the Dead Sea shores.

Edited excerpts from, 'Let the Dead Sea Live' Friends of the Earth Middle East, 2000.

RECENT GOVERNMENT ACTION.

The governments in the Basin have started responding to the situation. In Israel, the World Heritage Committee placed the Dead Sea Basin on its tentative multinational list. The Israeli Cabinet, lead by the Ministry of the Environment, approved the launch of a major research project investigating options to rehabilitate the Basin. Research is in progress with participation of Ministries, Universities, and NGOs. In Jordan, King Abdullah II, declared protecting the Dead Sea a national priority issue. At the Johannesburg Summit in 2002 and at the World Economic Forum held in 2003 Jordan lead the call to build a canal to bring sea water to the Dead Sea. Subsequently, Jordan requested the World Bank to prepare terms of reference for a proposed conduit from the Red Sea to the Dead Sea. In the Palestinian Authority both the Minister of Environment and the Mayor of Jericho expressed support for World Heritage listing. The Palestinian Water Authority has emphasized the need to link Dead Sea issues with the rehabilitation of the River Jordan. The UNESCO World Heritage Center held an experts meeting in 2003 on the potential listing of the whole Great Rift Valley of which the Dead Sea Basin is a central feature. In March 2004 representatives of Jordan, Israel and the Palestinian Authority attended together one of several FoEME events at the Dead Sea discussing all these very issues.

For the first time governments are recognizing that they created the environmental problems now facing the Dead Sea and that they have the responsibility to solve them. Significantly the governments have even acknowledged that the demise of the Dead Sea is so serious that they need to undertake measures cooperatively despite the political instability and lack of comprehensive peace in the region.

The plan that has received the most attention is that led by Jordan to build a conduit from the Red Sea to the Dead Sea. This plan however only attempts to deal with one of the multiple problems facing the Dead Sea Basin that is the decline in water level. There is a need to broaden the issues involved in saving the Dead Sea to more than the water level. Raising the water level will do little towards preserving the rich cultural heritage of the basin, nor will it protect the unique topography. Unsustainable tourism development with plans to build thousands of new hotel rooms along the ecologically sensitive corridors of the Dead Sea is threatening the cultural heritage of the area today. Raw sewage flowing from surrounding cities untreated into the Dead Sea is polluting ecosystems and threatening the tourism value of the Dead Sea as a natural spa and place of healing.

More so the proposed conduit raises many environmental questions related to the Dead Sea and Red Sea hydrology, water chemistry and impacts on the natural biota. The RDC project components need careful and detailed investigation that involves sophisticated environmental modeling. A thorough and independent environmental assessment is required to consider the overall impact of any proposed project on the Dead Sea, the Araba Valley and the Gulf of Aqaba.

THE CALL OF FRIENDS OF THE EARTH MIDDLE EAST - BALANCING THE NEEDS OF MAN AND NATURE

In 1998, FoEME produced a concept document titled: "Let the Dead Sea Live" that outlined a comprehensive plan to protect the Dead Sea. The concept document calls upon the governments of Jordan, Israel and the Palestinian Authority to recognize the importance of listing the Dead Sea Basin as a Man And Biosphere reserve (MAB) and World Heritage site. The Dead Sea Basin is currently characterized by a few nature reserves with little or no connection to each other and no framework of how developments proposed outside declared reserves impact the protected areas. Hence in the currently proposed

tourism development plans for example, hotels are planned in a linear fashion along the Dead Sea shoreline, outside reserves but with very probable negative impacts on the habitat of the reserves. In contrast to individual protected areas with little connection to their surroundings the concept of a Biosphere Reserve aims at a wider ecosystem approach. The DSB Biosphere Reserve would contain several protected **core areas** surrounded by **buffer zones** of limited development which themselves are encompassed by -- or linked to -- **transition areas** where most development would occur. This idea of gradation and integration of man and nature makes the Biosphere Reserve concept so attractive and effective. The Dead Sea Basin still encompasses highly sensitive areas of rich biodiversity (potential core areas), open spaces with very limited development (potential buffer zones) and concentrated industrial areas and rural and tourism settlements (potential transition areas). Areas and features outside the Basin, but which are critical to its protection and sustainability – such as the Jordan River and other water sources – need to be further studied and planned as **influences**.

Reconsidering Economics at the Dead Sea

Because economic benefits such as satisfaction from hiking, from preservation of natural areas and ecosystem services, and from avoided damages to infrastructure, are not traded in a market, and are therefore difficult to quantify, they have largely been left out of policy analyses. These benefits, however, are no less real than the more obvious economic benefits of sectors such as agriculture and mineral extraction, and they should be included into policy decision-making if overall social welfare is at interest.

Two non-market valuation methods were used to assess consumer welfare from conservation: the contingent valuation (stated preference survey) method, in which Israeli, Jordanian and Palestinian population samples were asked their willingness to contribute to a fund for the preservation of the Dead Sea basin, and the travel cost method, which assessed benefits derived by those visiting the Dead Sea based on market expenditures and opportunity costs sacrificed in order to make such visits. All three peoples had a positive willingness to pay (WTP) for conservation, despite low incomes, with total WTP topping US\$ 59 million yearly. From the travel cost study, the best estimate of consumer welfare of domestic tourists from visiting the Dead Sea is US\$ 193 million per year. Doubling this figure to account for the benefits derived by international tourists would produce a value of US\$ 386 million per year.

In sum, the economic benefits to conservation are clearly substantial: in the hundreds of millions of dollars per year. The value of the current uses of water diverted from the Dead Sea, i.e. the producers' surplus from current resource exploitation in agriculture and mineral extraction, were examined to provide context. The annual return on water in agriculture was estimated to be close to US\$ 377 million for the region as a whole. The profitability of the Dead Sea mineral extraction was estimated at US\$ 143 million per year.

The significant economic benefits from conservation of the Dead Sea basin, when added to the already strong ethical, environmental, and cultural arguments, make it imperative that the economics of current practices taking place at the Dead Sea Basin be reconsidered. Without re-evaluating the economics of current activities, decision makers would be acting contrary to the best interests of the region as a whole.

Edited excerpt from 'Advancing Conservation and Sustainable Development of the Dead Sea Basin – Broadening the Debate on Economic and Management Issues', Friends of the Earth Middle East, 2004.

Since the FoEME concept document's publication, FoEME has led a campaign to bring the issue of the protection of the Dead Sea to the highest national, regional and international levels. Developing a regional integrated master plan involving Jordanians, Israelis and Palestinians under the framework of a UNESCO Biosphere and World Heritage registrations are immediate measures that could be undertaken by all three parties together. Developing a management plan requires the consideration of all the competing interests

exploiting the Dead Sea region and balancing those interests according to the natural carrying capacity of the area. FoEME recently undertook a first study involving the broader economic value of the water resources that naturally should be available to the Dead Sea including the fresh water currently being diverted. See Text Box above. Alternative solutions should be reviewed including the possibility of increasing the flow of freshwater sources to the Dead Sea by limiting diversion from the River Jordan and promoting public and private water conservation.

Immediate actions are required to save the Dead Sea. Even if the RDC project were to be implemented, water would still not be expected to reach the Dead Sea for another 10 to 15 years. The Governments therefore need to put in place policy directives that will deal with the current crises and in so doing consider all possible alternatives and solutions.

The World Bank and donor states such as the US, European Union, Canada and Japan have an important role to support the protection of the Dead Sea Basin. The World Bank prepared terms of reference for any study to be commissioned should be comprehensive to meet all the challenges that the Basin faces and advance a government policy document that would look into all the causes for present unsustainable practices and all their possible solutions. Measures should include short and long term planning considerations both national and regional. Planning should address all management elements and should include measures to both improve the efficiency of the current water infrastructure in the region and investigate the current water uses such as agriculture and decide if these uses at present levels are even economically desirable let alone sustainable. Civil society groups must be fully and meaningfully involved in all stages of this process and where relevant independent third party experts should conduct assessments and evaluations.

All is therefore not lost at the Dead Sea despite its current dramatic demise. The respective national Environment Ministers in Israel, Jordan and the Palestinian Authority are active but still require greater political courage to have their voices heard more loudly. Notably the Tourism Ministry in Israel recently joined the call for comprehensive analysis of the problems facing the Dead Sea Basin, recognizing the

real threat to current tourism industry revenues if sustainable solutions are not found. The Israeli government must allow for the full participation of the Palestinian Authority in the Dead Sea basin discussions given that much of the basin is in the West Bank and Jericho, a Palestinian city is the largest city in the basin. The more politically powerful Water and Infrastructure Ministries in Jordan and Israel respectively need to accommodate the legitimate concerns of all interested parties and will themselves benefit if they are more inclusive in the process. The international community should support this real opportunity for regional cooperation that is already taking place but in the process also guarantee that any funds they invest further their commitments made to promote sustainable development at the Dead Sea and not advance its further demise.

Friends of the Earth Middle East a unique non-profit regional organization that brings Jordanian, Israeli and Palestinian environmentalists together for the promotion of sustainable development. Friends of the Earth Middle East have offices and staff in Amman, Bethlehem and Tel-Aviv.