

# **Freshwater Security, Conflict and Cooperation: the Case of the Red Sea-Dead Sea Conduit Project**

## **Abstract**

This study examines the challenge of freshwater security faced by Israel, Jordan and Palestine, and mechanisms for multilateral collaboration that have been developed in order to create a Red Sea-Dead Sea Conduit. This paper outlines the proposed conduit as a major collaborative project which hinges on the engagement of both state and non-state stakeholders. The argument presented here is that the feasibility and planning process has so far been successful and that the mechanisms for collaboration developed as part of this project are the reason why. Overall conclusions suggest that the importance of freshwater security and the agency of international state and non-state actors are largely responsible for these collaborative successes.

Keywords: Jordan, Israel, Palestine, freshwater scarcity, cooperation

## **Introduction**

Resource security is a fundamental aspect of international relations. In some respects this issue both pre-dated and informed the creation of the modern state system. Territorial claims and access to strategically important resources drove imperial expansion and remains a central dynamic within the international system. Moreover, the combination of increased interdependence between national economies, growing levels of consumption and resulting pressure on finite resources has led to the availability of resources becoming a key aspect of both domestic and international policies. This paper focuses on the issue of freshwater scarcity in the Israel, Jordan and Palestine region with particular reference to the proposed canal link between the Red Sea and the Dead Sea. It engages with and draws upon an established literature on resource scarcity and security. In particular this paper reflects on existing debates on the influence of resource scarcity on the agency of both state and non-state actors and how this can lead to either conflict or collaboration. The role of various stakeholders in the Red Sea-Dead Sea Conduit project will be examined and the

potential mechanisms for collaboration between the stakeholders will also be investigated.

The proposed Red Sea-Dead Sea Conduit project is an example of the emerging and evolving international agenda regarding freshwater security. Access to freshwater resources is a potential zone of conflict, or possibly collaboration. We first explore freshwater security as an international development issue and the recognition of this at both regional and global levels. This is followed by an overview of the common processes of modernity which exacerbate demands on freshwater resources and consideration is given to theoretical and policy approaches in relation to resource scarcity as well as multi-stakeholder dialogue. The second section of this paper moves beyond this global context, drawing on the issues and processes considered in the first section, to evaluate freshwater scarcity in Israel, Palestine and Jordan. The third section discusses the specifics of the Red Sea-Dead Sea Conduit project and the planning and feasibility study process and explores how this project is intended to ease the freshwater security issue for these three territories and communities. Finally, we turn to an analysis of the mechanisms for collaboration to facilitate the coordination of various stakeholders' agendas and the future practical implementation of the project.

### **Water Security as an International Issue**

In 2005 the United Nations (UN) declared an international decade for action with regards to water security issues. Under the heading 'Water for Life' it is stated that with regard to water security "increasingly coming to the forefront are the holistic approaches, methods and skills needed to enable successful cooperation and collaboration, including those communication techniques which enable stakeholders to improve their performance, exchange knowledge, views and preferences and act collectively with a feasible vision of the future, promoting effective implementation" (UN, 2005) This quote from the UN highlights the potential and desirability for collaborative action, water scarcity is clearly also a potential area of conflict. The Stockholm International Water Institute (SIWI) hosts an annual international forum for international water issues. Such events indicate the manner in which water security has emerged as a crucial issue with respect to achieving the Millennium Development Goals and managing sustainable development more generally. The

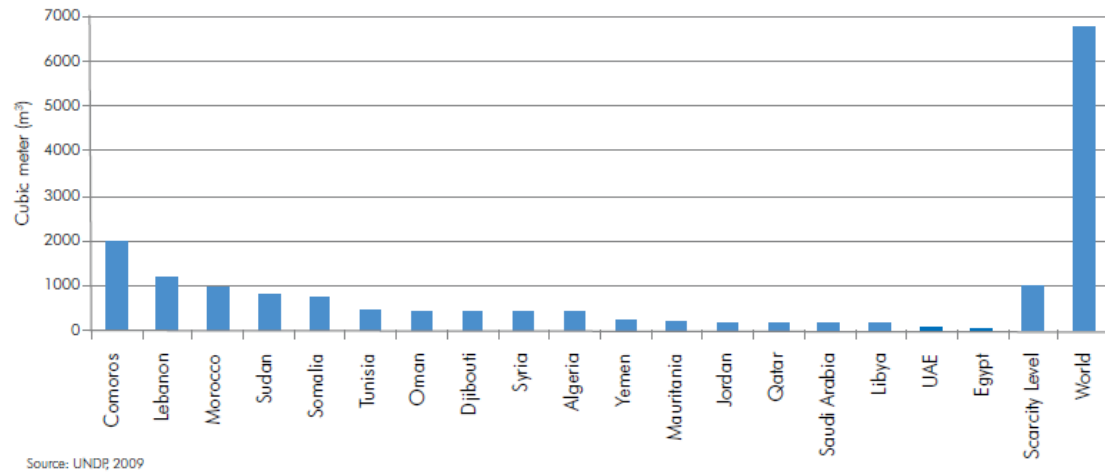
International Water Management Issues (IWMI) was established in 1985 and demonstrates that international water issues have long been recognised. However, concerns surrounding freshwater scarcity and international water management issues has spread throughout the intergovernmental sector. For example, the UN's Food and Agriculture Organisation (FAO) now has a designated 'Water Development and Management Unit'.

One of the defining aspects of the process of modernisation has been the greater per capita use of water. This relates to both direct personal use of water and also the indirect pressure on water resources in the context of the manufacture of goods that are consumed in ever-greater numbers each year as the world's population moves away from relatively low-impact subsistence lifestyles to becoming a predominantly industrial, urbanised species. 2008 saw the tipping point of the majority of humanity living in urban rather than rural or semi-rural environments UNFPA (2007). One of the consequences of this shift is that people are increasingly part of a cash-based system where payment is required for the very basics of life, in terms of both food and water. Food security is becoming of such concern for some states that they are actively seeking out access to fertile land in other states to ensure a supply of agricultural products. For example, in September 2010 the Egyptian government signed an agreement with the Sudanese government which gives Egyptian companies exclusive access to Sudanese farmlands. The purpose of this agreement is to allow Egypt to grow cereals and other crops *extra-territorially* in order to meet its population's growing demand for basic food stuffs (Anon.a, 2010). Similarly access to water is an equally crucial issue for water-scarce areas. Transport of foodstuffs is relatively straightforward and can be met by existing patterns of freight logistics via established trade routes. Water is more problematic as it is not cost-efficient to employ airlifts or tanker deliveries for the enormous quantities of water that some areas are in need of. For this a physical connection is required, either in the form of extensive pipelines or a canal.

Transport of water is fundamental to the irrigation of arid areas for agricultural production, in addition to the basic requirements of drinking, washing and sewage systems. When access to water is restricted this is a potential point of conflict, or possibly cooperation depending on the parties involved and the manner in which water security relates to other aspects of their relationship. The Middle East and North Africa (MENA) region has a long history of water security politics and this issue

alone would lead to potentially competing interests and agendas, regardless of any religious differences or territorial disputes (Allan, 2007). The below table demonstrates the extreme water scarcity of the Arab states in the MENA region with all but two of the Arab states facing extreme freshwater shortages (Israel and Palestine which are not on this graph are discussed below).

Figure 1: Arab Internal Freshwater Resources (cubic metres per capita).



### Theoretical and Policy Approaches to Resource Scarcity

There is yet to emerge a complete, clear and coherent theory of resource scarcity. Writers such as Peter Gleick (1993), Thomas Homer-Dixon (1993, 1994, 1999), Mark Zeitun (2009) and Ole Magnus Theisen (2008) have produced important work on resource scarcity and related conflicts. The emphasis of these scholars' work has been on the relationship between competition over, and access to, environmental resources and the management of conflict and collaboration over this access. In some respects there is nothing new about competition over environmental resources, however, growing interdependence, increased urbanisation and rates of consumption have intensified competition in certain areas. Water security in the MENA region as a whole is a case which highlights the need for a multi-disciplinary and multi-stakeholder approach. Traditionally, environmental resource security has tended to be thought of in terms of competition and conflict. They have also tended to be relatively discrete conflicts over the specifics of resource competition. Now, with growing interdependence as well as issue and interest inter-linkage there is greater potential for

conflicts to escalate and impact on other aspects of relations between the actors involved.

A state/government may be able to militarily defend freshwater resources in a particular territory – either their own or a territory under occupation. However, this is likely to lead to resentment and potential for conflict with other states or political authorities with a claim to this resource. Furthermore, issues of resource security often influence other aspects of bilateral or multilateral relations. Contemporary International Relations is arguably less state-centric than in previous periods, for example, freshwater security issues are informed by geologists, hydrologists, agriculturalists, climatologists and environmentalists more generally. Beyond the scientific community there are a range of civil society actors and interests that can be seen as stake-holders in any water security regime. Major infrastructural projects requiring investment of many millions of dollars will only proceed with the active involvement and support of national governments but the processes leading to such policies being implemented also require the active involvement of other stake-holders. Forums for stake-holder dialogue now routinely include scientific experts, members of civil society, financial advisers, banks, venture capitalists and public relations personnel as well as government officials.

The concept of multi-stakeholder dialogue and cooperation has developed, in part, in association with the Earth Summit process following the UN Conference on Environment and Development held in Rio de Janeiro in 1992. At that time there remained quite stark delineations between official government delegations, the private sector and other non-governmental organisations (NGOs). This was illustrated by the NGO Global Village located several miles from the official meetings. There was limited interaction between the campaign groups and the official delegations. Some MNCs did host receptions and other events which allowed for greater ease of access to lobby government officials. However, in the main there remained clear distinctions between the public and private sectors. In addition to the two Conventions that were agreed at the Rio conference, on Climate Change and Biodiversity, one of the key outcomes was the UN Commission on Sustainable Development's designation of Major Groups. There are nine such groups with each representing a particular set of perceived stakeholders. They are: Business and Industry; Children and Youth; Farmers; Indigenous Peoples; Local Authorities; NGOs; Scientific and Technological Community; Women and Workers and Trade Unions. Subsequent UN meetings on

sustainable development issues have attempted to engage with various aspects of civil society via these groups. It should be noted that none of these groups are entirely homogenous and there is tremendous diversity within all of them, sometimes with competing and conflicting issues and interests within each group. That said, this remains an important development within the international community and provides a useful framework for engaging with the concept of stakeholders and how various aspects of international relations are now conducted via a complex matrix of issues, interests and actors (McIntos et al, 2004).

With regard to the issue of water security it is apparent that each of the above groups has interests in enhancing such security, and minimising potential insecurities. For business and industry they are likely to be involved in the provision of major water infrastructure projects. The tendency towards the privatisation of the water sector is also directly relevant to this group. Farmers are reliant on access to water for irrigation of crops and to grow feed for their livestock. The scientific and technological communities are important in terms of providing the scientific underpinning for what is required to be undertaken and the practical expertise for project management. Local authorities have planning regulation interests. Indigenous peoples will have concerns for ensuring their own water security, which may be an issue if projects are aimed at extracting water resources from one area for the benefit of those living potentially many miles away. Workers and trade unions are clearly interested in the job creation of major projects, but also ensuring suitable pay and other working conditions. Women children and youth, and indeed all people, have water security interests as end users of this vital resource. Finally NGOs are involved in relation to a broad array of campaigning issues ranging from health to the broader ideological aspect of the commoditisation of water.

Stephen Krasner has long recognised the importance of non-state actors and their input into the management of international affairs. He has used the phrase 'regimes' to describe the relationship between state and non-state actors with regard to the management of complex international multi-stakeholder issue areas (Krasner, 1983). For example, security, financial and trade regimes. Krasner's model has subsequently been adopted and adapted in relation to many other aspects of international relations including climate change (Yamin and Depledge, 2004), energy (Pradhan, 2008) and water regimes (Kibaroglu, 2002). Krasner's work builds on the 'form follows function' ideas of Ernst Haas (1964) and David Mitrany (1975). This

concept argues that institutions and related working relationships reflect the interests and agendas of a range of stakeholders. It is important to note that such regimes go beyond official government bodies, although such bodies may hold the determining legitimacy for policy decision-making. By definition stakeholders have concerns and interests which they wish to promote in any discourse relevant to them or their constituents. Using this approach and particular understanding of international relations we now turn to the issue of water security in Israel, Jordan and Palestine and the stakeholder interests associated with the Red Sea-Dead Sea Conduit project.

### **Freshwater Scarcity in Israel, Jordan and Palestine**

Israel, Jordan and Palestine are among the world's most freshwater-poor territories and communities. This is strikingly exemplified by the increasingly dramatic and significant fall in the water level of the Dead Sea in the past three decades. The water level of the Dead Sea is declining at the rate of one metre per year and its total surface area has been reduced by approximately 30% since the late 1970s (Douglas, 2008: 40). Pressure on scarce water resources has been cited as both a source of conflict and potential cooperation. While the sharing of freshwater resources between these three actors is only one potential point of tension and conflict among many it is increasingly one of the most pressing examples of interdependence between them. The history of freshwater sharing between these territories and communities has largely been characterised by competition and conflict. The scarcity of freshwater resources, and the growing demands placed upon them, fuels a security dilemma (in the non-traditional sense) for each of these actors and their respective societies and economies (Haddadin, 2002: 324-340). However, as some scholars such as Tony Allan (1996) and Mohammed Abu-Taleb (1994) have argued, while the potential for conflict increases so does the need for cooperation. The area from the headwaters of the Jordan River to the Dead Sea has predominantly seen water politics played out via conflict (sometimes violently) and competition. Yet there are also examples of collaboration between them which may offer solutions to the problem of freshwater scarcity in the region as well as providing insights into mechanisms for conflict resolution and future cooperation (in particular between Israel and Palestine).

The United Nations designated water poverty line is 1000 cubic metres (m<sup>3</sup>) per person per year (UN, 2005). Any country which has a supply of less than this

level is deemed to be resource-poor with regards to this particular resource. This includes domestic renewable and non-renewable supplies as well as supplies which cross national borders and refers to both over-ground and under-ground sources. For the three countries studied here the UN methodology defines them as water-poor countries. If we consider the data we can see that Israel has 1.78bm<sup>3</sup>/year of internal and external renewable freshwater and 252m<sup>3</sup> per capita per year (AquaStat, 2010). At the same time, Jordan has supplies of 1.62bm<sup>3</sup>/year of internal and external renewable freshwater and only 164m<sup>3</sup> per person per year. The situation in Palestine is very similar with a total of 0.76bm<sup>3</sup>/year internal source and 215m<sup>3</sup> per person per year (El-Ashry et al, 2010: 3). These are obviously very low levels of freshwater overall and per person. Jordan and Palestine both featured prominently in a 2006 UN Development Programme's Arab Development Report study which focused on water scarcity in the region (Tropp and Jagerskog, 2006). The problem of scarcity is worsened by the fact that what resources are available are not sovereign but are for the most part shared between at least two of these countries. While supplies are small and demand is ever-increasing more pressure is being placed on existing renewable resources and this is having a negative effect on the stability of these sources. The Jordan River, for example, is the most significant above-ground source of freshwater yet over-use of its waters upstream has reduced its flow downstream to the extent that by the height of summer in August each year it has virtually dried up by the time it ends in the Dead Sea. In a study conducted by Jean-Philippe Venot, Francois Molle and Remy Courcier (2008: 247-263) it was found that in the past five decades growing demand due to population growth and increased agricultural and industrial activity have resulted in the over-exploitation of this source. Damming of smaller tributaries to the Jordan River and the Dead Sea in the side valleys (wadis) has further reduced the level of water in both cases (this is discussed in more detail below).

In order to understand the pressing nature of the challenges posed by access to freshwater sources we must consider a number of developments which have occurred in the past few decades in the region. Some of these developments relate to structural or systemic changes specific to this part of the Middle East and others relate to changes in the patterns of production and consumption witnessed around the developing world but each impact on water supply and demand (Lipchin et al, 2010). Each issue can be seen as equally important in the process of resource scarcity and insecurity that Israel, Jordan and Palestine are faced with, and these issues are



interconnected in a myriad of ways. In the first instance, the collapse of the old Ottoman system in the Middle East and the emergence of the modern state system in the region led to the erection of new territorial and administrative borders between sovereign actors (Cleveland and Bunton, 2010). This led to the disruption of environmental management mechanisms in place in the geographical area which now make up Israel, Palestine and Jordan and the societies therein. These mechanisms included provisions for access to and usage rights to freshwater sources. The disintegration of the regional economy into national markets also contributed to the disruption of these mechanisms. Following the 1948-49 war between the emerging state of Israel and its Arab neighbours the West Bank fell under the administrative, and later the sovereign, control of Jordan and management of freshwater sources in the Jordan valley and the West Bank remained relatively coordinated. However, coordination between Jordan and Israel over the Jordan River system as a whole from the Sea of Galilee/Lake Tiberius down the Jordan Valley was prevented by the state of war between the two countries as was much inter-state management of water resources in the region (Beschoner, 1998). The 1967 Six Day War and the Israeli occupation of the West Bank further impeded internationally coordinated freshwater management in the area. The dislodging of the West Bank and its freshwater sources from Jordan and the increased Israeli access to these waters and the Jordan River further divided these resources between the three neighbours. While the state of war between Israel and Jordan and Israel and the Palestinians remained new mechanisms for freshwater management were not possible. However, the signing of the 1994 Treaty of Peace between Jordan and Israel and the peace process begun by the Palestinians and the Israelis in the early 1990s allowed for channels of communication to open between the three countries over many issues, including freshwater.

Access to and rights to use the freshwater sources in this area have complicated the environmental security of these countries. However, in some ways the absence of effective water management is magnified by (and in turn magnifies) other processes. The territory being discussed here is, in relative terms, rather small and the population levels in this area have historically been among the lowest in this part of the Middle East. By the 1940s, the United Nations Special Committee on Palestine calculated the total population of this area was approximately 2 million (UN, 1947). Demographic growth since the 1940s though has transformed this area into one which has a much higher total population and the population density is particularly

high in the lands of north-western Jordan, the West Bank and the central and northern parts of Israel. Total population in these three countries is now approximately 16 million (CIA, 2010). The impact of this quite rapid population growth has been profound in a number of ways for these countries but the increasing pressure on environmental resources in particular has been extremely problematic. Demographic growth is a process which affects much of the developing world and the causes have been the subject of much academic research. The causes of demographic growth in Israel, Jordan and Palestine overall are not unique to these countries and can be summarised as in line with global historic trends for developing countries of urbanisation, capitalist production and increasing access to medical treatment – resulting in greater life expectancy.

In this case inward migration has also been important in much the same way as it is important in the more developed world. For Israel this is the inward migration of members of the Jewish Diaspora from around the world but in particular the Middle East in the 1930s and 1940s and then from Eastern European countries following the end of communism there. In Jordan, this inward migration was experienced in very short periods of crisis; namely the 1948 and then 1967 wars in the region when Palestinian refugees fled parts of historic Palestine and then the West Bank and settled in Jordan. For the West Bank inward migration is an ongoing and steadily paced process of Israeli settlers moving into settlements and East Jerusalem. The nature of the demographic growth witnessed in these countries is, therefore, relatively steady but at quite a high pace and in other ways it has been (and remains so for the West Bank) manifested in short periods of time. This latter experience perhaps puts most strain on existing freshwater resources as supplies are not developed rapidly enough. Israel (19 births per 1000 people per year), Jordan (27 births per 1000 people per year) and Palestine (25 births per 1000 people per year) (Ibid) all still have relatively high birth rates which suggest that demographic growth and the increase in pressures it places on freshwater resources will continue for some time.

In much the same way as demographic growth, the process of industrialisation and the move to more advanced economies has also played a part in magnifying the freshwater scarcity problem. Industrialisation requires greater amounts of freshwater and more advanced capitalist economies (whether service or production based) consume larger quantities of freshwater than less developed economies. Israel's economy is classed as developed and a significant amount of industrial production

and high-value added service production takes place in Israel. The move towards a more advanced economy has been steady throughout Israel's history as has the increasing demand this economic transition has put on freshwater supplies. The Palestinian economy is characterised by much less industrial production and high-value services, largely because of the impediments of Israeli occupation but also because the Palestinian economy is at an earlier stage of development. Nevertheless, the nature of the Palestinian economy has changed in the past few decades to some extent and this has led to an increase in overall demand for freshwater. A similar experience is found in the Jordanian economy, which is still at an earlier stage of industrialisation but economic growth and in particular manufacturing has been steadily increasing in the past three decades. As this process is likely to continue demand for freshwater for industrial production is also likely to increase.

It is clear from the current patterns of freshwater consumption, growing demand and shrinking or static freshwater supply that Israel, Jordan and Palestine are experiencing that this type of resource scarcity will continue to pose a serious security challenge for the foreseeable future. The need for greater collaboration with regards to the management of freshwater supplies and coordination over the division of these supplies is evident and appears to have been a key issue in inter-governmental relations between these countries since the mid-1990s.

### **The Red Sea-Dead Sea Conduit Project**

The Red Sea-Dead Sea Conduit project has the potential to alleviate the freshwater security challenges in Israel, Jordan and Palestine. It must be noted, however, that there are concerns regarding the project and its potential environmental and social impacts and inter-state cooperation has not been entirely without problems. Nevertheless, the conduit project does present an opportunity to approach freshwater security in a more cooperative manner. It must be highlighted that the conduit project has a number of dimensions and is quite complex. The project can be divided into five main categories for consideration, the first three of which relate to the objectives of the project while the latter two relate to the implementation of the project. Perhaps the most important aspect of the project is the objective of producing freshwater through desalination of sea water taken from the Red Sea. This in turn relies on the generation of electricity via hydro-electric power stations to be built on the conduit alongside a

series of dams. Raising and stabilising the level of the Dead Sea by pumping water from the Red Sea to replace the reduced flow from the Jordan River and wadi tributaries is a third key objective of the project. In order to complete the project and achieve these three aims international cooperation between Israel, Palestine and Jordan as well as other state and non-state actors such as the United States and the World Bank, in order to manage and build the conduit are essential. Raising the funds is the final area of consideration and presents interesting examples of international processes of fund-raising.

The idea of creating a conduit between the Red Sea and Dead Sea has emerged out of the plan for the integrated development of the Jordan Rift Valley which followed the 1994 Israel-Jordan peace treaty (Harza, 1997; Anon.b, 1998) The evolution of this development plan has been quite slow and the conduit project was only formally agreed on the 9<sup>th</sup> of May 2005 when representatives from the Israeli (Binyamin Ben-Eliezer, the Infrastructure Minister), Jordanian (Raed Abu Soud, the Water Minister) and Palestinian (Ghassan Al-Khatib, the Planning Minister) governments signed an agreement to conduct feasibility studies for the project. According to the Jordanian Ministry of Water and Irrigation and the World Bank the plan includes a complex set of infrastructure to convey sea water from the port at Aqaba on the Gulf of Aqaba extension of the Red Sea through the Wadi Araba in southern Jordan, along the border with Israel and down to the Dead Sea. The initial ascent from Aqaba will be 220 metres until a gradual descent through the Jordan Valley covering just over 200 km. The descent to the Dead Sea will be facilitated by the fact that it is the lowest land point on Earth at around 430 metres below sea level. There are expected to be seven main elements to this infrastructure: a sea intake and pumping station in Aqaba; a pressure pipeline to carry the water up to highest point of its flow north of Aqaba; the main conveyance system consisting of a canal and tunnel network; a desalination plant; a hydroelectricity plant near the village of Fifa; pipelines to Amman and into the West Bank and Israel; and reject brine carriers (Coyne et Bellier and World Bank, 2010).

The costs of constructing the conduit project itself as well as the costs of the feasibility studies are high and while estimations vary, these are likely to total well over US\$5 billion. The cost cannot be met by Israel, Jordan and Palestine individually or all together. In order to help secure funding and expertise for the project the World Bank has been working with the Israeli, Jordanian and Palestinian governments to

manage the feasibility studies since the study programme began in June 2008. This programme consists of five elements. These are: a feasibility study to the project, an environmental and social assessment of the scheme, a study of alternatives to the project, a Red Sea modelling scheme, and a Dead Sea modelling scheme (World Bank, 2010a). The engineering company Coyne et Bellier was selected to carry out the feasibility study in July 2008 and according to the feasibility study team leader David Meehan, the activities carried out so far the sea water conveyance capacity of the conduit has been identified at between 1 and 2 billion m<sup>3</sup>/year while the capacity for desalinated water is expected to be up to 850 million m<sup>3</sup>/year (Namrouqa, 2010). This desalinated water would be divided between Israel, Jordan and Palestine according to demands, but it is likely that Jordan would receive a larger share, followed by Palestine and Israel. The potential electricity production of the hydroelectricity plant is estimated to be between 150MW and 250MW per year while the level of the Dead Sea is expected to be raised to around 410 metres below sea level after a number of years (Coyne et Bellier and World Bank, 2010).

Concerns about the project have been voiced from well before the project moved into the feasibility study phase. These include economic and environmental concerns. Basel Asmar and Peter Ergenzinger (2010: 647-664) have studied the potential environmental impacts of the conduit project on the Dead Sea and its surrounding area. They conclude that while the sea level will be raised to its 1930s level there is a strong possibility that fresh groundwater sources will be contaminated by sea water, the growth of micro-organisms in the sea itself and seasonal precipitation of chemicals in the surrounding area. Writing in 2006 Tom Pepper cites a consultant working on the early stages of planning as stating that concerns exist about the ability to control how high the level of the Dead Sea gets and how to manage the waste brine from desalination (Pepper, 2006: 39). As far back as 1996 Gidon Bromberg, then executive director of a consortium of Mashriq environmental groups called Ecopeace, argued that the cost of the project was too high and more expensive than sea-side desalination and that the environmental impacts were not sustainable (Cooperman, 1996: 60). Other criticism have focused on the period of time it would take for the project to be completed and for its aims to be met, with some highlighting that raising the Dead Sea would take up to twenty years from the start of construction (Anon.c., 2005: 243). While there are some concerns about the sustainability, cost and environmental impact of the conduit project, planning it is still

on going and inter-governmental cooperation between Israel, Jordan and Palestine continues. Masahiro Murakami and Katsumi Musiake (1997: 403-414) have highlighted the political and economic benefits of developing an internationally organised project of this kind and the potential for further mechanisms for cooperation in other areas.

### **Mechanisms for Collaboration**

There have been a number of joint projects which require significant collaboration between Israel, Jordan and Palestine (or at least two of the three) since the early 1990s and the start of the Israeli-Palestinian peace process and the 1994 peace treaty between Israel and Jordan (Article 7). For example, after 1994 a series of Qualifying Industrial Zones (QIZs) were established in Jordan. All goods produced in these QIZs enjoyed free access (no tax, tariff or quota limits) to the United States' market (subsequently superseded by the 2001 Jordan-US Free Trade Agreement (El-Anis, 2011)) under the condition that a minimum of 8% material input comes from Israel and 35% value-added occurs in Jordan (Kardoosh and Al-Khouri, 2004). The aim of this project was to help promote cooperation and economic integration between Israel and Jordan while providing jobs and economic activity in the latter as a peace dividend.

The lack of cooperation and dialogue between the Israelis and Palestinians in particular (and indeed the reality of some measure of conflict between Israel and Palestine and in other areas of the relations between these three actors) does represent a reason for the failure of some joint projects. This impediment has made the realisation of large joint projects very difficult in the past. This would suggest that a project which is economically and technologically ambitious and one that relies on a high level of collaboration between the three governments with each other and with other actors, would not be pursued. However, the planning and coordination process for the Red Sea-Dead Sea Conduit project is underway with progress on the feasibility, environmental and economic impact studies which have been carried out. Private sector actors including MNCs have been involved in these studies and have also begun to plan for the construction of the conduit infrastructure while the World Bank has invested significant resources in the development of this project. The Israeli, Jordanian and Palestinian governments have established the channels for

communication and planning necessary to work with each other, as well as with other governments and non-state actors. The progress of the planning and feasibility study process of this project suggests that there are elements in the stakeholders' interests and agency which can promote its further development.

The nature of the security challenge posed by freshwater scarcity and the interdependence which is evident between Israel, Jordan and Palestine with regards to their freshwater sources is a key factor here. As outlined above, freshwater scarcity poses a serious economic, political and socio-cultural challenge to the security of Israel, Jordan and Palestine. National security considerations, therefore, have focused on resolving this issue in the past, but this has traditionally relied on unilateral actions. There seems to be a realisation now that the long term sustainable management of freshwater supplies and the ability to meet current and future demands for freshwater require multilateral actions. Thomas Homer-Dixon (op cit) has argued that resource scarcity can lead to conflict or cooperation depending on the interests and capabilities of the actors sharing such a resource. Israel, Jordan and Palestine find themselves in a situation where their national interests are similar in that they all need to ensure adequate supplies of freshwater to meet their domestic demands. It is likely the case that many decision-makers in this region would prefer domestic sovereign means of ensuring that this goal is achieved, however, in the context of the freshwater scarcity and the shared nature of the resources of this region, the most sustainable (and stable) policy is to pursue regional freshwater management. Unilateral military action to seize available freshwater sources is highly unlikely due to the lack of power capabilities in the cases of Jordan and Palestine, or subsequent international political and economic ramifications in the case of Israel. The remaining policy option is, therefore, some form of multilateral cooperation and collaboration to manage existing freshwater sources and develop new ones.

While the driving force behind the Red Sea-Dead Sea Conduit project is primarily a pressing security issue, the potential for the development of mechanisms of collaboration between Israel, Jordan and Palestine (particularly with regards to bilateral cooperation between Israel and Palestine) which could be developed in other areas of their relations, is quite significant. As Arnon Medzini and Aaron Wolf (2006) argue, while negotiations over shared freshwater sources begin with assessments of 'rights' and then move to 'needs' it is also important to view these negotiations as 'baskets of benefits' (Ibid: 134). When viewed in this way links between the issue of

freshwater scarcity and other political and economic issues emerge in which more creative solutions to the challenges of freshwater scarcity *and* other problems can be developed (Ibid: 135). Here it is also important to consider non-state stakeholders who have an interest and/or a role in the devising, planning and implementing of projects aimed at solving multilateral and domestic problems. For example, an Israeli-based international architect firm, Gertner Architects and Urban Planners, have developed a plan for the economic and environmental development of the entire border area between Israel and Jordan, and with the West Bank and Jordan with the Red Sea-Dead Sea Conduit project as only one project among many. Importantly, the plan includes the development of joint economic ventures including the manufacturing of goods such as cars (in collaboration with Toyota and Renault), agricultural produce (in particular winter fruit and vegetables for export to other markets), as well as the creation of several hotels and tourist attractions (Gertner Architects, 2008).

By 2007 the idea of developing a ‘Valley of Peace’ with its centrepiece being the Red Sea-Dead Sea Conduit was endorsed by the Israeli President (and long-time functionalist-in-practice) Shimon Peres (Schenker, 2008). It had also garnered the support of a number of MNCs and businessmen within Israel including Yitzhak Tshuva (Ibid), the owner of El-Ad Group and one of the richest Israeli citizens, who by 2008 had expressed a keen interest in the wider economic possibilities that could emerge out of the conduit project. If the intention of the QIZs project between Jordan and Israel that emerged out of their 1994 peace treaty was to encourage bilateral economic integration in order to foster economic growth and greater inter-state cooperation, then the Valley of Peace plan holds potential in the pursuit of these goals also.

The World Bank has also played a key role in the evolution of the conduit project so far and has been pivotal in facilitating inter-governmental dialogue between the Israeli, Jordanian and Palestinian authorities, as well as helping to bring in private sector actors to carry out the initial project planning and feasibility studies. For example, in 2007 the World Bank issued international tenders to study the environmental, technical and economic feasibility of the project (Beyth, 2007: 365). These tenders were subsequently issued by the World Bank to Coyne et Bellier (feasibility study), Environmental Resources Management (environment and social assessment), Thetis S.P.A. (Red Sea modelling), and Tahal Consulting Engineering



(Dead Sea Modelling Study) (World Bank, 2010). The organisation of public consultation reports, held in Israel, Jordan and Palestine, by the World Bank has also been key in disseminating information to the public in the three countries. The influence of a range of state and non-state stakeholders in the conduit project and the potential for collaboration in related projects can be seen to encourage what Mohammed Obidallah (2008: 117) terms the 'equitable utilization' of freshwater sources shared by Israel, Jordan and Palestine, including new sources which may be developed through desalination of Red Sea waters. Obidallah also argues that future cooperation in resource management could draw upon existing mechanisms for collaboration (Ibid).

## **Conclusions**

The potential for future international cooperation significantly increases if the experiences of collaboration in one issue area can be reflected upon and the key elements of shared interests, similar national security considerations, and the role of multiple stakeholders (both state and non-state) can be replicated. With this in mind the current progress of the planning and feasibility process of the Red Sea-Dead Sea Conduit project is encouraging. The key elements for successful collaboration appear to be the fundamentally interdependent nature of the issue being addressed and that all of the national and international stakeholders have a vested interest in the success of this project. A successful outcome could feed in to the development of their respective economies and the well-being of their populations through greater freshwater and electricity supplies, and related economic initiatives. Private sector stakeholders are also looking for a successful, and therefore profitable, return on their investment. The World Bank, the major international institutional driver of this project, will have met its goals in relation to its peace building and development agenda if the conduit is fully implemented. It would also be seen as a successful return to World Bank support and investment in major water-related projects following well-publicised criticism of their investment in large-scale hydro-electric dam building projects in places such as India.

Despite these potentially positive outcomes, there remain some stakeholders who adopt a more cautious, critical and dissenting standpoint. Some of their concerns cannot be confirmed one way or another until after the project is well-advanced or

nearing completion, for example, potential negative environmental impacts. Beyond these practical concerns there is also deep-rooted ideological and political resistance to the normalisation of relations between the three territories and communities. For some of these stakeholders this is likely to remain an intractable position as this oppositional stance is such a fundamental part of their identity. These stakeholders are likely to be resistant to collaborative projects involving those they see as on-going adversaries. It is hoped that if the Red Sea-Dead Sea Conduit does bring about shared benefits this would act as a positive example for collaboration in other aspects of regional affairs.

Interestingly, what appears to be of key importance in driving the feasibility studies and planning process is that the national governments are not the dominant actors in this process. The role of the World Bank and the international private sector has played a more significant role in driving this project forward. These international actors are less constrained by the factional politics that each of the national governments have to contend with. The World Bank and the private sector actors may have differing agendas with respect to development and profit maximisation. However, both sectors are more focused on economic development per se and this is less politically contentious than the domestic and regional politics between Israel, Palestine and Jordan. As such this suggests that the stakeholder diversity and inclusivity in the conduit project is also a key characteristic driving the feasibility studies and related collaboration.

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