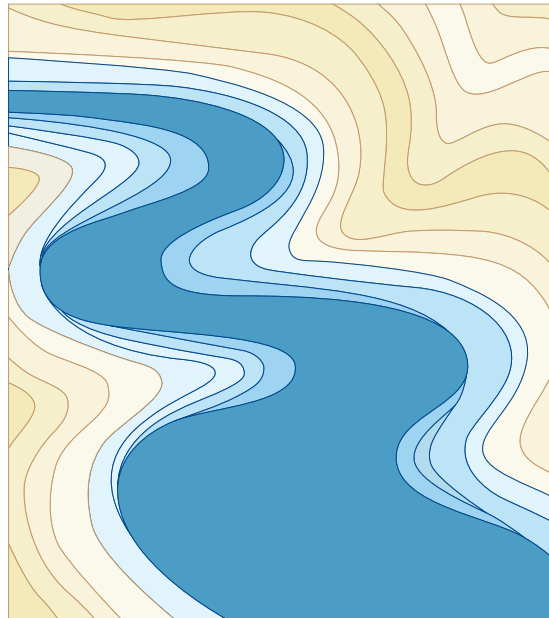


# THE BLUE PEACE

Rethinking Middle East Water



**With support from**

Swedish International Development Cooperation Agency, Sweden

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# PREFACE

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The objective of this report is to provide a comprehensive, long-term and regional framework for thinking about water in the Middle East, which can be implemented with specific policy decisions, beginning in the immediate future, by individual countries or small groups of countries without waiting for all the countries in the region to move forward.

Such a framework recognises the potential of water to deliver a new form of peace – the blue peace – while presenting long term scenarios of risks of wars and humanitarian crisis.

The report takes a comprehensive view of rivers, tributaries, lakes and underground water bodies. It is based on the recognition of linkages between watercourses. It is not only impossible for any one country to manage a water body in isolation from other riparian countries but it is also impossible to manage a water body without examining its linkages with other watercourses in the region.

The report takes a long-term view. The countries that are friendly today may be antagonistic tomorrow and the ones which are enemies today may be friends tomorrow. The history of merely last ten years in the Middle East demonstrates how quickly the geopolitical scene changes. The political equations of today cannot be assumed to remain constant during the next decade and beyond. Our vision, therefore, should not be imprisoned by the current context. We have to anticipate alternative political trajectories for the next couple of decades in order to find solutions that are sustainable in the long run.

The report provides a regional perspective. Since watercourses, both surface and underground, do not understand political boundaries, it would be natural to have a regional approach to water management. The nation centric approach is unnatural and therefore unsustainable.

The use of water for farming, settlements and socio-economic development began in the Middle East some 10-12000 years ago. This region today is at the epicentre of a mega arch of hydro insecurity that spreads from Vietnam in the East to Turkey in the West and Kenya in the South. The same region can be a harbinger of a new form of peace – the blue peace – a concept that has to be distinguished from conventional peace, which is normally a state of harmony between wars, and green peace that relates to ecological imperative for constructive relationship between societies. The blue peace concept assures that no two countries that have access to adequate, clean and affordable water would ever go to a war in the twenty-first century.

This report is being presented at a promising time despite appearance of stagnation or even failure in reconciliation initiatives in the region. The relationship between Turkey, Syria, Iraq and Lebanon has dramatically improved in 2-3 years prior to the publication of this report. New interface in trade, transit and telecommunications has benefited poor people in these countries. It can be extended to watercourses. Israel, Jordan and the Palestinian Authority are negotiating with international partners ideas for cooperation including in the water sector. The choice is to build on these positive developments or to focus on unresolved conflicts.

Another choice is to leave water to be managed by the relevant ministries or to recognise its central role in the future of human security and welfare. If the latter choice is made, it would be essential to shift water from the files of ministers of water, irrigation and environment to the agenda of Heads of Governments and States, just as it has happened in the case of terrorism, climate change and international finance. This is essential at the global level, and not merely in the context of the Middle East.

This report is therefore as much about paradigm shifts in global thinking as about the specific details of seasonal variations in the discharge of rivers and demand management with new methods of irrigation and conveyance. It is as much about big ideas as about small actions.

Strategic Foresight Group is immensely grateful to the Governments of Sweden and Switzerland for their sponsorship of this initiative, national institutions in Turkey and Jordan for their additional support, Bibliotheca Alexandrina for translating a shorter version in Arabic and over 100 leaders and experts from across the region for making this report possible. We have acknowledged specific government departments, institutions and individuals in annexes. While expressing our gratitude to all, we take the sole responsibility for its contents, including unintended errors and omissions that cannot be ruled out in a complex document of this nature.

The very fact that so many catalysts and scholars from across the Middle East contributed to this report, and the strong international support that was offered for the process, proves that there is a massive reservoir of goodwill. People of the Middle East do want pragmatic and peaceful solutions to manage one of the most significant humanitarian issues of our time. The challenge before all of us is to tap this latent goodwill and transform it into active and viable canals of constructive policies.

January 2011

**Sundeep Waslekar**  
President, Strategic Foresight Group

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# Summary of Recommendations

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## Rethinking Middle East Water

It is known that the Middle East is a water scarce region. It is easy to build scenarios of acute water stress in the future due to population pressures, economic growth, pollution, drought and climate change. It is also possible to anticipate conflict between countries due to disagreements over shared water resources. Indeed, conventional thinking about water in the Middle East tends to be pessimistic and alarmist. The challenge is to rethink water in the Middle East to treat it as an opportunity for peace and development.

The objective of this study is to redefine the water paradigm in the Middle East, so that water can be harnessed in a way that satisfies the social and economic needs of people. In doing so, water can also transform into an instrument of peace and cooperation. There is a cause and effect relationship between water and peace. While peace is needed for cooperation in water, a collaborative and sustainable approach to water management can build peace.

Any effort to rethink water in any region must begin with an understanding of the current realities. Watercourses, surface as well as underground, do not recognise borders. There are many rivers and aquifers in the Middle East which are spread across two or more countries. However, the management of water resources is essentially a national task. There is no integrated basin or aquifer management system overriding national sovereignty, irrespective of the trans-boundary nature of some of the watercourses. A national approach to the management of water resources often proves inefficient and inadequate when a basin is shared by two or more countries. Also, decision-making at the national level leads to

conditions in one basin having an impact on another basin or aquifer. Therefore, an ideal approach would be a regional one, but the political realities at the end of the first decade of the 21st century pose difficult questions about the definition of 'the region' and existence or lack of trust between its constituent states.

The most pragmatic approach would therefore need to be based on something between a nation and a region as a unit of cooperation. It can best be defined by groupings or circles of countries, which have either demonstrated some appreciation of their common future or, whether they like it or not, are so intrinsically linked by the flow of watercourses that they have to take into consideration factors beyond their borders. An approach focussed on circles of countries should be clearly distinguished from an approach based on basin or aquifer management, though circles of cooperation can facilitate integrated basin management for basins within the given circle.

The study limits its scope to cover Israel, the Palestine Territories, Jordan, Lebanon, Syria, Iraq and Turkey. Critics may argue that this is an arbitrary choice of countries, as some other countries in the neighbourhood are closely linked to some of the selected countries. This is a valid argument. However, our objective is to present a set of proposals, which might not meet all criteria for perfection, but which would enable political decision makers to break the current deadlock and enable them to harness water resources for peace and socio-economic development in the region. Therefore, our choice of countries is governed by the potential of opportunities to rethink water. The study reflects our intention to achieve a blend between perfection and pragmatism at the highest possible common denominator. In order to lift

the highest possible common denominator even to a higher level, we propose to treat countries covered by the study in distinct Circles of Cooperation.

The concept of Circles of Cooperation has been crafted in the Middle East. HRH Prince Hassan bin Talal of Jordan proposed it at a high level plenary involving senior decision makers and opinion makers from several countries in the region in May 2010. The first such circle would include the northern countries - Turkey, Syria, Iraq, Lebanon and Jordan. The second circle would include Israel and the Palestinian Territories, eventually expanding to Jordan. Cooperation can be introduced in each circle separately. The two circles may choose to intersect, if and when they find the political context appropriate and feasible to do so. At a later stage, the two circles may be together or separately widened to include other countries in the Middle East. In this process, a beginning to construct building blocks of peace and hope can be made without delay.

This approach is based on the hypothesis that water and environment are critical to stability, resilience and progress of societies in the Middle East. It is aimed at developing a common political framework for the future, for sustainable management of water resources across several basins and not a negotiating platform for dividing water resources in any individual river basin or aquifer. This approach treats water as an instrument. It considers peace, human security and socio-economic development as the objectives.

Rethinking water as an opportunity, rather than a problem, is not only necessary but also possible. Instead of waiting for the most perfect political paradigm to appear on one morning, instead of feeling threatened by the enormity of scientific and natural challenges, if decision makers in the Middle East create stepping stones of hope, they will be able to move towards a sustainable future for their people. The report enables such rethinking with

its recommendations for short, medium and long term. In this context, it sees short term as a period of five years, medium term as a period of 5-10 years, and long term as ten years and beyond. These recommendations have resulted from wide ranging consultations in the region. They are, therefore, essentially ideas of people in the Middle East. The report merely transforms regional ideas into recommendations for the convenience of decision makers in the Middle East so that they may translate recommendations into actions. Their actions will improve the standard of living of common people, protect the environment, and introduce a new type of peace in the world – the Blue Peace.

### **1. Cooperation Council for Water Resources in the Middle East for the Northern Circle (Short Term):**

The idea of Circles of Cooperation would become operational if each circle has a political mechanism to define a common vision, identify priorities to translate the vision into a reality and an institutional architecture to follow up on and implement decisions taken at the political level.

One such Circle of Cooperation could comprise of Turkey, Syria, Iraq, Jordan and Lebanon. Such a grouping would focus on water as a resource in a holistic perspective, rather than treating it as an issue of trans-boundary concern to any particular basin. In the future, if and when peace prevails on terms acceptable to all parties, it may expand horizontally in phases to cover other countries in the region. The European institutions, ASEAN, SAARC were all born with limited number of member countries and later on expanded in a gradual fashion.

It is envisaged that the Cooperation Council may undertake the following and similar functions:

- ≡ To evolve a consensus on principles of cooperation.

- ≡ To create regional protocols, guidelines and practical measures for standardising measurements of quality and quantity of water resources by upgrading gauging stations, developing common approaches to interpret the data collected from equipment pertaining to water flows, climate and relevant environmental indicators.
- ≡ To set goals for restoration and long term sustenance of water bodies from an ecological perspective, similar to EU Framework Directives.
- ≡ To develop specific means of combating climate change and drought in a collaborative manner.
- ≡ To promote research, development and dissemination of environmentally sensitive and energy efficient water related technologies.
- ≡ To facilitate negotiation and creation of joint projects at basin or regional level including common early warning and disaster management systems.
- ≡ To prepare the ground for integrated water resource management at the basin level.

In order to implement some of the above mentioned functions, it would be necessary to understand the legal frameworks in all participating countries, attempt to streamline legal architecture within countries, and introduce commonalities between countries. This is not to propose a new international law but rather an agreement on certain principles, which can be used as standard parameters by all countries to render their own laws effective. It may be also necessary to undertake either joint or independent assessment of availability of resources, long term supply and demand projections, and needs of consumers in the region. The Cooperation Council may decide on the importance of such tasks and authorise appropriate bodies to implement them. The Cooperation Council may also decide if such tasks

are viable in short term or if they would be better addressed in the distant future once the member countries gain experience in working together in easily agreeable issues.

The Cooperation Council as envisaged here should be supported with funds from the member countries, as well as international partners. The quantum and proportion of the contribution by the countries in the region may be determined through mutual agreement. International donors may contribute agreed proportions in the early phase to enable neutrality and independence of the endeavour but there should be an in-built mechanism to reduce their contribution in a gradual manner.

## **2. Integrated Water Resource Management (IWRM) for Small Cross Border Rivers in the Northern Circle (Medium Term):**

Once a Cooperation Council for sustainable water management is established and it succeeds in creating common measurement standards and common goals for ecological sustenance of all rivers, the countries sharing specific cross-border rivers can consider advancing their cooperation to the basin level. Several smaller rivers are shared by two or more countries, and are used extensively by all riparians for irrigation purposes and domestic water supply. This results in a strain on water sources due to increased development activity and discharge of untreated wastewater into the river by upstream countries, making downstream use problematic. There is a need for basin wide joint watershed development programmes. Areas for coordination and cooperation, where information is currently lacking are - ground water mapping, wastewater treatment facilities, implementation of modern irrigation methods, joint projects for rain water harvesting and early warning systems.

The inception stage (2-3 years) can create integrated

data management systems for the basin, from all the countries involved. This should include a comprehensive and coordinated database considering all socio-economic aspects of water use. Mathematical modelling could be used to evaluate the surface and groundwater resources. An assessment of the situation prevailing in the basin from all sides regarding water use, water quality, and water legislation would need to be carried out.

The development phase (3-5 years) would involve projects on the ground such as introduction of modern irrigation practices and efficient management of water flows and quality.

The institutional phase (beyond 5 years) would involve establishing a joint river basin commission, with representatives of governments and local authorities creating an institutional architecture in the form of an umbrella organisation supported by various joint technical committees for the participating countries to manage the basin jointly.

Some of the rivers for early action in this context could be the El Kebir River between Lebanon and Syria, the Yarmouk River between Syria and Jordan, or the Orontes (Assi) between Lebanon, Syria and Turkey.

Any proposal for integrated basin management should essentially originate jointly from the riparian countries, and not from external actors. The riparian countries may decide to approach international organisations for technical or financial input once they have assessed the available resources with them and identified the gaps in management and technical know-how. For instance, Lebanon and Syria, as well as Jordan and Syria have several bilateral mechanisms for discussing trans-boundary rivers. They can decide at any stage, and particularly once common goals and standards are introduced through a regional institution or entity, to explore the joint management

of a shared river basin. Once they have bilaterally conducted preliminary talks and need assessments, they can approach external supporters.

### **3. Cooperation in the Euphrates Tigris Basin (Medium Term):**

Once common goals, measurement standards, and gauging equipment are agreed to by all countries in the northern circle, it will be easy for Turkey, Syria and Iraq to introduce measures for basin level cooperation for long term sustenance of the Euphrates Tigris Basin (ET Basin) in a way that protects the interests of the three countries, their future generations and their environment. Once measures have been decided upon, any treaty will have to be ratified by parliaments and formalized by governments in each country. There are several mechanisms for bilateral and trilateral interaction between the three countries. The governments have used these mechanisms for exploring collaborative ideas in principle, reaching agreements of an ad hoc nature, and to build confidence. In the past many of these agreements and decisions have remained only on paper. However, there are three reasons for hope in the future.

First, political relations between the three countries have been improving since 2008 with several cooperation agreements on trade, transit and telecommunications.

Second, there is a growing awareness in the governments and civil societies of all the three countries that the threat of climate change and drought is serious, and combating climate change needs a collaborative approach.

Third, if a Cooperation Council is established for collaborative and sustainable water management, it will provide a politically convenient framework for basin level cooperation.

#### **4. De-centralized Water Management in the Palestine Territories (Short Term):**

Technology is evolving at an extremely fast pace. Small scale water treatment and desalination plants, including some run by solar power or other alternative fuels, are being developed and introduced in many parts of the world. Some of them can be introduced for the Palestinian Territories, considering the financial and political constraints on operating large plants in these territories. The West Bank currently has one functional wastewater treatment plant (out of 5 plants in total) but this plant, located in Al-Bireh, produces poor quality effluent which cannot be re-used in agriculture.

Decentralized wastewater treatment plants provide small-scale solutions to wastewater management and simultaneously prove to be a source of income for the poorest of the poor. They reduce freshwater consumption, as well as the costs associated with cesspit discharge. Other advantages include savings in freshwater purchase, insecticides and fertilizers. The main cause for concern is that any decentralized system will require a proper regulatory framework and regular maintenance and monitoring to minimise risks. It will be necessary to establish a mechanism to monitor and manage the discharge of sewage, something relatively easier to do for a large plant at one location, rather than several small plants at multiple locations.

#### **5. Confidence Building Initiative between Israel and the Palestinian Authority (PA) (Short Term):**

There is a fundamental misunderstanding between water experts in Israel and the Palestinian Territories on the data pertaining to the availability of water, withdrawal of water from aquifers by both the parties, functioning of the Joint Water Committee (JWC), water infrastructure and pollution control.

The experts from both sides have been presenting conflicting perspectives and information with regards to these issues.

However, some experts from Israel and the Palestinian Territories agree to certain principles in the form of the Geneva Initiative Annexure 2. The Annexure calls for fair management of water resources by equitable participation of both parties in the management process. It is now recommended to build on the Geneva Initiative Annexure, and to move from a non-governmental framework to a formal interaction between heads of the Water Authority of Israel and the PA, along with senior political representatives on both sides. Such an interaction should be authorised by both the Prime Ministers for it to be meaningful. The objective of the interaction should be to have a frank and transparent discussion on differing perspectives, assessment of the real situation on the ground and clarity on the functioning of the JWC. Such an interaction for achieving clarity on major policy issues is to be distinguished from interactions on operational issues that in any case take place under the auspices of the JWC or under a trilateral technical level forum between Israel, PA and the United States which was strengthened to a quarterly meeting in late 2010. The proposed interaction should be observed by the Quartet and other members of the international community and treated as a Confidence Building Initiative.

If the two parties are in agreement on the facts, they may then decide to move to a discussion on the solutions, if and when the official peace process allows them to do so. If the peace process establishes another type of mechanism for addressing the water issue, or upgrades the Israel-PA-US technical forum to a political level, the confidence-building measure proposed here, along with the Geneva Initiative Annexure 2, will provide a sound foundation for the mainstream talks.

## 6. Red-Dead Sea Canal (Long Term):

The Red-Dead Sea Canal (RDC) is a joint Israeli-Palestinian-Jordanian venture that aims to build a 112 mile pipeline from the Red Sea to the Dead Sea. The pipeline will transfer an estimated 1.8-2 BCM of seawater annually. Half of this water is intended to replenish the fast depleting Dead Sea, where the water level is dropping by one metre every year. The other half will be used in a desalination plant constructed at the Dead Sea and will serve as an additional supply of water for all three of the partner countries mentioned above. The desalination plant will use hydro-power generated by the 400 metre drop from the Red Sea to the lowest point on earth. Much information on this project is available in the public domain. While there is an immediate interest in the project by some of the key stakeholders, financial and environmental implications render it to be a medium to long term measure.

Several feasibility studies to assess economic and environmental aspects of the RDC project are underway and should be completed by end of 2011. The World Bank is the co-sponsor and coordinator of the feasibility studies. Other donors include France, Sweden, Japan, Italy, Netherlands, USA, Greece and South Korea.

In September 2009, Jordan announced that it would embark on a unilateral large-scale desalination project without Israel and the Palestinian Territories, as its water problems were worsening. Jordan's National Red Sea Project (JRSP) would bring 70 MCM of water annually to Jordan. The cost for the first stage of the project alone is estimated at \$2 billion and Jordan is still in the process of acquiring funding for the first phase. Sometimes analysts fail to distinguish between the RDC Canal and JRSP. These are two separate projects. While the former is proposed to be a trilateral venture, the latter is a Jordanian national endeavour. However, the comparison between the

two projects is relevant to the extent that financing difficulties for JRSP indicate potential financial problems for the much more ambitious RDC Canal.

## 7. Joint Desalination Plants (Long Term – All Circles):

Most of the countries covered in this study are exploring the option of desalinated water that will supplement their freshwater supply, but their plans are mostly confined to national plants. Joint desalination projects, owned by two or more countries, will allow for an exchange of information and cooperation; facilitate the process of funding and provide a strong disincentive to the destruction of water infrastructure in times of conflict. Joint ownership of desalination plants makes sense from a financial and technical perspective, but it will encounter political obstacles.

Desalination technology is fast evolving. The present technology is highly energy intensive. There are indications that in a few years new technology driven by solar power or conversion of garbage into energy might be available. Developments in nano-technology may reduce the cost of desalination plants by more than 50 per cent. It would be profitable to investigate development and application of new technologies jointly rather than individually at least within each circle.

National governments alone may not agree to joint plants. Donor agencies should urge the World Bank to convene a meeting of all financing institutions to discuss the manner in which international funding can be made conditional to joint ownership and management of desalination plants in the region to the maximum possible extent, without compromising the technical merit of projects. Since the new energy efficient, low cost desalination plants will depend on external technology and financial assistance, donors can play a constructive role in fostering a

collaborative agenda.

## **8. Export of Water of Turkish National Rivers to the Jordan Valley (Long Term – Intersection of Circles):**

Turkey and Israel have examined the export of water from the Manavgat River in Turkey to Israel. Separate pipelines and receiving stations have already been built from the river to the coast where the water can then be loaded onto tankers, ready for export. An alternative option to the tankers could also be to build a low lying underwater pipeline, since the average depth of the Mediterranean Sea is only 1500 metres.

In January 2004, an agreement in principle was signed for Israel to purchase 50 MCM of water annually for 20 years from the Manavgat River; however the deal fell through due to disagreements on the cost of water and transportation.

Until the Gaza crisis of December 2008, Turkey and Israel enjoyed cordial relations when an agreement of this nature was possible. However, since then relations between the two countries have been strained and much worsened following a conflict over a Turkish humanitarian aid shipment to Gaza in June 2010. It is possible to envisage an improvement in the relationship which would make discussion on the export of Turkish national water to Israel possible sometime in the future. However, any substantial amount of export would attract media attention. The Turkish public opinion, despite improvements in the relationship in future, may not allow the export, unless Israel agrees to enter into a fair water sharing agreement with the Palestinian Authority and Jordan.

Also, a scientific feasibility study needs to be undertaken that will examine the approximate availability of water for export from the Seyhan-Ceyhan, Manavgat and other national rivers beyond 2020. This study would have to take into account

growing demand, climate change, snow melt, and cost of the water if water stations are to be built. The study should particularly examine water budget of national rivers in the lean season. The water discharge in the nine lean months from June to February almost equals the water discharge in three wet months from March to May. Therefore, it would be necessary to determine if the water discharge in the winter months (especially around December-February) would be sufficient to enable Turkey to export water, whereas there may not be much problem in the wet months. The study will need to examine the best method and route for transport of water from Turkey to the Jordan Valley countries. The feasibility study could be conducted by the State Hydraulic Works (DSI) in Turkey with technical support from external experts.

## **9. Lake Kinneret (Tiberias) as Regional Commons (Long Term – Intersection of Circles):**

Israel occupied the Golan Heights in Syria in the 1967 war. In the last several years, there have been many secret talks between Israel and Syria to normalise relations. There have been near agreements but they have always floundered on the issue of control of Lake Kinneret (Tiberias). In order to break the deadlock, it would be essential to declare Lake Kinneret (Tiberias) and connected water bodies as Regional Commons, to be governed jointly by Israel and Syria with the objective of long term preservation of water resources and environment. It would be unrealistic to expect that Israel will voluntarily withdraw from Syria. It would be equally unrealistic to expect that Syria would normalise relations with Israel unless and until Israel frees the shoreline of the Lake Kinneret (Tiberias) on the Syrian side. The status quo is bound to lead to gradual depletion of water resources and with it, prospects for peace and stability. Alternatively, joint management of water resources and environment should be introduced so that neither side has to give up its core interests and both sides compromise in

the interest of their future generations and environment. The international community can support such an agreement with diplomatic support and financial and technical input.

Declaration of the water bodies as Regional Commons would involve introducing goals for restoration and sustenance of water bodies within a certain time frame, with agreed responsibilities for all parties. This is an ambitious political task for both sides. However, both Israel and Syria have attempted exploring a compromise on many occasions.

There is a latent political will on both sides, though the current political climate is not ready to accept such a concept. This study proposes that instead of waiting for the correct political moment, it would be ideal to create a network of experts and prepare a set of policy recommendations which can be presented at the political level at an opportune moment. The network of experts at a high level with informal endorsement by the policy makers, can also prepare alternative master plans and a menu of solutions.

There will be legal and political difficulties for Syrian and Israeli nationals to engage in dialogue even of an academic nature. However, if the authorities see a merit in expert-level exploration, Syrians resident overseas can engage with Israeli experts. This method has been used in the past. Therefore, empirical evidence suggests that methodology is not a problem, if there is sufficient political will.

Creating such a network may not serve any immediate purpose. However, it will help save time when a political opportunity arises. When the parties are ready to make peace, intellectual infrastructure in the form of plans and trajectories will be ready and available to policy makers. It is a question of harnessing political will at the opportune time to transform it into an opportunity for the people and ecology of the region.

## 10. Demand Management (Short Term - All Circles):

Most countries in the Middle East have some of the highest population growth rates in the world. Growing population combined with an increased standard of living will lead to a growing demand for water. Hence there is a need to put in place measures that will mitigate or control some of this growing water demand.

Some of the measures included in this paper are:

- ≡ Modernization of irrigation methods including drip irrigation, changing cropping patterns and the use of treated wastewater.
- ≡ Better and more efficient water infrastructure to reduce water losses through pipe leakages.
- ≡ Measures to reduce water pollution by the industrial and urban sectors.
- ≡ Implementation of a tariff structure in the domestic sector.
- ≡ Comprehensive and total retro-fitting of water infrastructure.

This is not an exhaustive list and further measures are included in the paper. Demand management measures can reduce total demand substantially and can make a huge difference to future water deficit, water pollution and water conservation efforts.

## Conclusion:

The recommendations made above are presented in sequential order in each Circle of Cooperation. Recommendations 1 to 3 are for the Northern Circle, respectively short and medium term. Recommendations 4 and 5 are for the Israel-Palestine-Jordan Circle, for the short term. Recommendations

6 to 9 are for within circles or for the intersection of circles and viable only in the long term, though feasibility studies and track two dialogues can be initiated in the short term. Recommendation 10 is for all circles and can be implemented in the short term.

A gradual implementation of most or all recommendations will help create a virtuous cycle of peace and cooperation. Several of the recommendations depend on the political will of the parties in the region.

This study looks at the future assuming the numerous ways in which political equations prevailing in 2011 can change, and therefore proposes solutions on a number of different hypotheses. While short term solutions will depend on the current political and environmental dynamics, medium term and long term solutions are crafted taking into account possibilities that may seem impossible today. Only 15 years ago, in the aftermath of the Oslo Accords and half a decade before the emergence of Al Qaeda, the kind of relations that existed in the Middle East, as well

as between some of the states in the region with important external players were significantly different from the nature of these relations at present. Indeed relations between some of the countries in the broader region have undergone fundamental changes in a matter of last two years. It would be naïve to assume that the political dynamics of 2011 will remain static until 2016 or 2021. Climatic factors are also prone to changes, sometimes much faster than expected. Therefore, consideration of solutions to water security, which depends on ever changing politics and climate, should consider the realities of 2011 as those that may or may not prevail in the next decade. It would be therefore useful to consider strategies that are not trapped in the existing political and environmental prism. The leaders who have the vision to design options that are not confined to the present realities often tend to influence the future of their societies. Such leaders are known as statesmen. If the Middle East addresses its statesmanship deficit, it will automatically solve the problem of water and peace deficit.

## Recommendations

Short Term Intra Circle	Medium Term Intra Circle	Long Term Intra Circle	Long Term Inter Circle
Cooperation Council in the Northern Circle	Integrated River Basin Management in the Northern Circle	Joint Desalination Plants	Turkish National Water for Jordan Valley
Decentralised Water Management in the Palestine Territories	Cooperation in Euphrates-Tigris Basin	Red-Dead Sea Canal	Lake Kinneret (Tiberias) as Regional Commons
Confidence Building Initiatives between Israel and the PA			
Demand Management			