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***** Turkey to complete water project to Turkish Cyprus in four stages

Mr. Prime Minister asked us to complete the construction on March 7, 2014," Eroglu said.

Turkey's forestry & water works minister said on Saturday that Turkey would complete the water project regarding Turkish Republic of Northern Cyprus (TRNC) in four stages.

Veysel Eroglu said the idea to transport water to TRNC from Turkey was developed when Turkey's Prime Minister Recep Tayyip Erdogan was Istanbul metropolitan mayor.

"The water project was launched in 2003, and we will complete the project in four stages," Eroglu told TRNC's Bayrak Radio and Television (BRT).

Eroglu said the first stage was construction of Alakopru dam in Turkish southern town of Anamur, and Turkey laid the foundation of the dam on March 7, 2011.

"Mr. Prime Minister asked us to complete the construction on March 7, 2014," Eroglu said.

Eroglu said the pipeline that would carry water to Gecitkoy dam would be 107 kilometers long, and it would carry 75 million cubic meters of water.

"75 million cubic meters of potable water can be provided to 750,000 people, and some of it will be used as potable water and some of it for irrigation purposes," he said.

Eroglu said, "this water can be peace water."

The minister said he would visit TRNC this year to discuss efforts to counter forest fires and to plant new trees.

Moreover, Eroglu said 2012 could bring peace to the island, and Turkey would continue to support Turkish Cypriots.

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[&]quot;Turkey to complete water project to Turkish Cyprus in four stages", 07/01/2012, online at: http://www.worldbulletin.net/?aType=haber&ArticleID=84001



* Municipal Level Water Pricing in Turkey and WFD Requirements: An Uneasy Case

In Turkey, water tariffs for domestic, industrial and other uses at local level are set by the individual municipalities. The "municipal assemblies" are responsible organs for deciding on the water tariffs.

Most of the water administrations within municipalities' structures do not have budgets specific to water services. The main reason for this, according to some experts, lie in the financial or institutional lack of capacities within municipalities.[1] Operation and management, amortization, rehabilitation and expanding costs are generally taken into account in setting of the drinking water and waste water tariffs. However, the environmental and resource costs generated are not considered in real terms. This fact appears to be one of the major gaps between the WFD proposed pricing schemes and municipal practice of water pricing in Turkey.

On the positive side, many municipalities charge waste water in order to support the costs of treatment. This practice appears to be in line with the principle of polluter-pays. Charging waste water could also be seen as an approach which takes into account of the environmental cost.

Beside the problems associated with the formation of the price of water, the problem of collecting the declared fee is a serious concern. That is to say, the administrative capacities of many municipalities lack the necessary personnel and tools enabling the collection of the charges in full. One of the reasons behind this lies in the fact that many smaller municipalities are not able to generate sufficient amounts of funding for effective water charge collection systems. One additional problem is related with the losses in the water infrastructure. These factors exacerbate the already existing problems related with the cost-recovery problems at municipal level.

In some countries, with a view to protect water resources for sustainable use, water users who are using more water than their needs do pay higher water prices. However, this practice is very uncommon in Turkey.[2] Nevertheless, some municipalities -particularly metropolitan municipalities- via applying increasing block tariff structures, seek to provide incentives for water saving.[3]

The pricing practices in municipal level in Turkey fell short of realizing the full-cost-recovery principle as demanded by the WFD. While in many municipalities the water prices are not sufficient to recover financial costs of water services, the practice of recovery of environmental and resource costs are nearly nonexistent. Therefore, application of full-cost-recovery principle of the WFD would necessitate increases in municipal water tariffs in varying degrees. For the determination of water price increases, first, inventory works need to be done which would calculate the generated environmental and resource costs. Also, in order to efficiently collect the designated fees, the administrative capacities of the municipalities should be developed. Minimizing the costs could support the recovery ratio. Therefore, reducing the water losses in the networks could be thought of.



Realizing all these efforts would entail some additional costs, which would ultimately put extra pressure on water tariffs. On the other hand, the users at the municipal level are relatively better off than, for instance, farmers, in terms of "ability to pay".

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***** Water Resources Management in Iraq and Studies for Forthcoming Period

Iraq holds Turkey and the dams, which were built on the Euphrates-Tigris basin by Turkey, responsible for the water problem she has been going through. As it was seen on the press last summer, Iraq frequently mentions this claim of hers. The primary question that should be asked is: What is the water resources of Iraq? And what is the status of water resources management?

First of all, I should state that we have difficulty in reaching fixed data about water resources. When we multiply the annual average precipitation with the surface area of Iraq, the average figure we obtain is 94,68 billion cubic meters. According to the FAO datum, the annual average precipitation rate in Iraq is 216 mm, and her surface area is 438,320 square kilometers. According to the figures of FAO, the aforesaid figures belong to year 2000, and its annual amount is 2632 cubic meters per capita. According to the World Bank, this figure is over 2500 cubic meters, as the report of year 2006 indicates. In the publication entitled, "Water in Iraq Factsheet", prepared by the UN, this value is 2400 for the year 2010. While the annual average precipitation in Iraq was indicated as 154 mm/year in the work entitled, "Water Resources and war in Iraq", which was published in 2011; the renewable amount of water per capita was indicated as 3287 cubic meters/capita/year. The inconsistency in datum constitutes a major problem on its own.

The intense use of ground water in Iraq is another issue that draws attention. The fact that he control and management of aquifers are at minimum levels threatens the ground water in terms of quality and quantity. The existence of an important ground water throughout the borders of Syria, Jordan, Saudi Arabia and Iraq has been mentioned by my Iraqi colleagues. While they state that this water is not used by Iraq, they also indicate that they do not have any information on the illegal use of this water. I believe that this resource is intensely used by Saudi Arabia.

Particularly Diyala, which is one of the tributaries of Tigris coming from Iraq, is an important water resource. The fact that the waters of Alwand River, which is one of the tributaries of Diyala river whose source country is Iran, are cut from time to time, especially in the summer months, poses problem in the region, particularly for farmers. This situation, which became chronic, is brought up to the agenda especially during the summer months.

The water storage structures and water transportation systems of Iraq, who had been in war for many years, were damaged to a great extent. In addition to this, the troubles in management, which stem from the lack of productive use of water resources, increase the current water problem. According to the data of World Health Organization (WHO) and UNICEF in 1995, before the war, safe water supply was provided to cities at the rate of 96 per cent; and to rural areas at the rate of 48 per cent. The 93 per cent of the city population and 31 per cent of the rural population can reach clean water through different sanitation methods. As a result of the bomb attacks of the U.S. on March 2003; dams, pumping stations, canals, sea water desalination plants and wastewater treatment plants were



damaged. According to the datum of the year 2004, 73 per cent of the city population, and 43 per cent of the rural population can have access to clean water. And 25 per cent of the population, who lives in Baghdad, is not included in water distribution network. According to the datum of the year 2007, only 17 per cent of the wastewater is treated and discharged into rivers. As a result, waterborne diseases increased among children, and quality problem started to be observed in surface waters and aquifers. According to the datum of the Water in Iraq Factsheet, which was prepared by the UN, 884.000 diarrhea cases, among whom 57 per cent is children under the age of 5 years, were detected in 2010. Because of waterborne diseases, 41 children out of 1000 die before the age of 5 years. In Iraq, where the water quality also became a major problem, the quality of water, which is used for drinking and agricultural purposes, remain way below the values of Iraqi National Standards and the World Health Organization.

According to UN, it is predicted that Iraq will have difficulty in fulfilling the amount of domestic use of water, which is targeted to be 91 per cent, in 2015. The Iraqi Ministry of Irrigation has started to work on 20 year Strategy for Water and Land Resources in Iraq, which covers the years between 2015 and 2035, in order to find a solution for the problem of water management that will increase in the forthcoming years. The evaluation and detailed mapping of 121 irrigation projects, 7 major dams and 18 barrages across the country are found within this plan, which firstly focuses on collecting data and collecting analytic tools, which are necessary to implement the plan. While the first 5 years of the plan is planned as a busy period, it is planned to update the plan every 5 years until 2035.

The content of the plan of "Strategy for Water and Land Resources in Iraq" is as follows;

- Current and Forthcoming agricultural development and productivity
- The efficiency of the current irrigation and relevant water structures.
- The appropriation of water for domestic, rural and industrial purpose; waste water treatment, its recycle, and reuse of water turning back from drainage.
- Ground waters (connection between ground water and surface water)
- Current situation for each irrigation project, and appropriation of water for the future
- Drainage system
- Salinity and its effect on agriculture
- The status of pastures
- Hydroelectric
- Transportation and transfer
- Fishery
- Flood control
- Basra Marshes
- Searching effects of the projects of upper riparian countries
- Desertification and its effect on agricultural lands
- Other factors such as climate change, which could affect water management and sustainable utilization



This plan will be conducted by the assistance of the management committee, decision-makers and technical committee, which are selected from ministries, and also by the assistance of shareholders. With the approach of integrated water resources management, a master plan will be prepared for the years 2015, 2020, 2025 and 2035. The water structures will be privatized within this integrated approach, and capital will be invested by different sectors for sustainable development.

In addition to this, the comprehensive strategy of this plan is based on international law, and this plan also includes conducting negotiations by recognizing the principles of a "secure-efficient" and equitable use of water with the Euphrates-Tigris basin riparians and the principle of not causing significant harm. It is foreseen that this plan will be completed within 42 months with a consortium, created by three companies from Italy and Jordan.

In its statement on World Water Day, the UN indicated that 50 per cent of water at the level of usage is lost in Iraq. The current water loss stems from mismanagement of water resources and damaged water structures (dams, canals, water networks, irrigation systems etc.), as indicated above. If this aforesaid plan can be implemented and succeeds, it is believed that it will provide a major benefit for Iraq in terms of the efficient use of water resources, and will reduce the current water problem.

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* Iraq's former 'watery heaven' still turning into barren land

Despite efforts by various nature and government groups, Iraq's southern marshes, thought by many to be the original 'Garden of Eden', continue to degenerate. And former residents' hopes of returning home are dying with the environment.

An irritating fly was driving him mad. It bit him on his cheek and kept him from oiling the barrel of the hunting rifle he hadn't used in 20 years.

Jabbar Hatem, an older man living in the southern city of Basra, began to rant and curse, waving his hand angrily: "May God damn the flies. And the regime that displaced us. And those responsible for burying us in this dump of place as though we were dead birds."

Hatem's wife wondered why he was shouting. Then she asked why he was oiling his rifle. "Are we returning home?" she questioned her husband.

By home she meant Iraq's <u>southern marshlands</u> – they are also known as the Mesopotamian Marshes and are thought by some to be the original Garden of Eden, as referenced by the Bible. And her question is one that many former residents of the marshlands are asking after the current Iraqi government's declaration of a plan to revive the marshlands.

Observers have been warning of a potential environmental disaster in the marshlands due to receding water levels and increased salinity in the area for some time. The marshes are also incredibly important to millions of migrating birds, which stop there on their way between hemispheres. Between the late 1980s and up until the mid 1990s, the former Iraqi government, led by Saddam Hussein, had tried to dry the marshlands out by rerouting rivers that fed the mid and southern marshlands. Hussein's government justified this move because it said it was pursuing its political opponents in the region; it also conducted military campaigns in the area.

After the 2003 US-led invasion of Iraq that toppled Hussein, plans were made for the revitalisation of the marshes and some of the area did regenerate. Reports indicate that in 2007, at the peak of the success of the regeneration project, almost half of the marshes looked to be recovering. However only a few years later, less than a third of the marshes were still looking good. Traditional water cycles had been disrupted so that salt water was not being flushed out of the marshes the way nature intended it to and drought meant the marshes were drying up again.

The politics of water as played out by neighbouring Middle Eastern countries have also had a devastating effect on Basra. To the east, Iran has built dams on rivers that bring fresh water into the Shatt al-Arab waterway. The less fresh water flowing into the Shatt al-Arab, the saltier – and less useable - the water gets on Basra's farms.

The peak of migration out of the marshlands occurred in the mid 1990s and Hatem himself recollects the time he and his family were forced to leave the marshlands: "We carried some of our belongings after selling the animals and headed to Basra city. Because we thought our departure would only be temporary." That was two decades ago.

"After 2003, with the collapse of the former regime which displaced us, we were confident of returning home to revive the marshlands. But this confidence has gone. Our marshlands are still barren and dry." Hatem added that he still dreamed of returning home one day.

Alaa Hashim al-Badran, head of the union of agricultural engineers in Basra, told how currently low levels of water in the marshlands constitute an environmental disaster. The lack of water was worsened when neighbouring Iran diverted branches of the river that feeds the Shatt al-Arab waterway. Al-Badran warned of further disaster as the result of increasing salinity in the water there.



"Flooding into the marshlands in early 2003 was at around 40 percent. When farmers broke down damns to revive the marshlands it increased to around 80 percent between 2005 and 2006, only to drop again in 2007 to 24 percent," Al-Badran explained.

"The capacity of the River Tigris dropped from 20,930 billion cubic meters per second to 7,660 billion cubic meters per second. This has had a direct impact on the marshlands," he continued. "The ph percentage is now at 5,500 TPC [note: Total Phosphorus Content] which means that the salt concentration has increased to unprecedented and catastrophic levels."

And Al-Badran only expects this to worsen because once the salt has penetrated into the ground, it is very difficult to remove.

Meanwhile a spokesperson at the Water Resources Authority said that 97 percent of the marshland was now turning into barren land. It has gone from spanning between 150,000 and 20,000 square kilometres to 2,000. The number of residents in the area dropped from 400,000 to 85,000, and then to only 30,000 in 2003.

This watery heaven area will turn into salt lakes unless the situation is quickly remedied," the spokesperson said.

"Before they dried out the marshlands back in the 1980s, our lives were easier and more beautiful," Hatem recalls sadly. "We had everything we needed and we lived in peace, hunting fish and birds, growing rice and milking the animals we bred around our floating reed houses. Now I fear my rifle will rust before I use it again. But we must return some day," he said, trailing off into his own nostalgic thoughts.

"iraq's former 'watery heaven' still turning into barren land", 04/01/2012, online at: <u>http://www.niqash.org/articles/?id=2965</u>

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Mid-term Implementation Evaluations: The WFD in vain?

In 2007, the European Commission issued a report^[1] evaluating the implementation performances of Member States. As it can be perceived from this document, the implementation of the WFD involves real challenges for Member States, as well as for different segments of European societies, more than previously expected. As of 2007, the European Commission declared that while "the actual percentage of water bodies meeting all the WFD objectives is low" on the whole; with regards to some of Member States it is as low as 1%.[2] It is interesting to note that even the requirement of "legal transposition" by 22 December 2003 was not satisfied by most of the Member States (EU-15 at that time)[3]. In this context, the Commission started eleven infringement cases in front of the European Court of Justice.^[4] Additionally, the transpositions are reported be in "poor" quality overall, with nineteen Member States' transpositions are identified to have "serious shortcomings" with respect to Articles 4, 9 or 14, in particular.[5] With regards to the requirement of "reporting", the Commission launched nine cases of infringement for delayed reporting. The Commission exposed its satisfaction with the capabilities of administrative arrangements (Article 3) in guaranteeing "proper implementation", yet with a reservation on the issue of coordination within Member States: "[I]t is, however, often unclear how the coordination arrangements between different authorities within the Member States are functioning."[6]

In this context, the monitoring programs for the assessment of the status of surface water and groundwater aiming at establishing a comprehensive and coherent overview of water status in each RBD should have become operational by December 22, 2006.[7] The European Commission, relying upon the information provided by the Member States, prepared a Report on programs of monitoring of water status, on April 1st, 2009.[8] The technical evaluation conducted by the Commission has found out "a number of gaps and deficiencies" in the design of monitoring programs.[9] With regard to requirement of reporting, apart from the particular cases of Greece and Malta, the former of which did not report at all, and the latter did not report on monitoring programs concerning surface waters; there are gaps existing in individual RBDs or individual water categories.[10] With respect to monitoring programs in transboundary river basins, the Commission emphasized the fact that only a very few countries reported that they were using the international coordination mechanisms in establishing their monitoring programs (these include Germany, Ireland, the Netherlands, Romania and the United Kingdom)[11]. Concerning the substance of the monitoring programs, the Commission upholds the argument that the methods for biological quality elements remain non-existent in many RBDs. This is particularly so with respect to those Member States joined in either in 2004 or in 2007[12]. In general, the Commission declares its dissatisfaction with the level of precision and confidence of monitoring programs in Member States. The issue whether the monitoring programs will provide a coherent and comprehensive assessment of water bodies' status in RBDs and contribute to the development of programs of measures remains to be ambivalent.[13]

Furthermore, following a series of quantitative comparison analyses, a snapshot report by the EEB in July 2010 concluded that "this snapshot has raised serious doubts over the effectiveness of the WFD implementation to change specific and well-known unsustainable water management practices".[14] All these evidence suggest that the challenge of implementation of the WFD is a real one. Given the history of non-compliance in EU water policy, which resulted in the present



situation in Europe with detrimental results; and if Member States fail to satisfy the requirements, the WFD implementation process may become another exemplar of this characteristic of the EU water policy.

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(2) Ibid., p. 4.

(3) Only 4 out of 15 Member States transposed the WFD in accordance with the deadline.

(4) Ibid., p. 6.

(5) Ibid.

(6) *Ibid*.

(7) Article 8.1 and Article 8.2.

(8) The Report is accompanied by a "Commission Staff Working Document" on the same topic. This Working Document gives details on the results and on the methodological approach of the Commission in analyzing the information received from Member States.

(9) European Commission, op. cit., "Communication from...", p. 5.

(10) *Ibid*.

(11) Ibid., p. 6.

(12) Ten countries joined the EU on May 1, 2004. These include Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. Bulgaria and Romania joined the EU on January 1, 2007.

(13) European Commission, op. cit., "Communication from...", p. 6.

(14) European Environmental Bureau (EEB), 10 years of the Water Framework Directive: A Toothless Tiger?, p. 4.

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Water, Agriculture and Food Security With Figures

The deficiency of fresh water in the world, and the reasons triggering this deficiency have been mentioned both in analyses and reports for many times. The deficiency of water and its consequences are understood more clearly with figures. The statistics on water, agriculture and food safety, which are published on the web site of "United Nations Water", reflect the facts related to water and predictions on the future.

While daily water need per person is 4 liters, the amount of water spent for the daily food need per person ranges from 2000 to 5000 liters. Water resources, which are one of the primary resources of human life, are largely used for food production, not for the water need of human body. While 1000 to 3000 liters of water is spent in order to produce a kilo of rice, approximately 13000 to 15000 liters of water is used to produce a kilo of beef (fed with grain).(1) Comparing to the amount of water used for the food production in general, the amount of water used for the production of beef has the highest value; and the production of beef is at high levels in the world, especially in developed countries. While the U.S. ranks first with 12.226.000 tons (%20,81), Brazil and China come next. And with 381.000 tons (%0,65), Turkey is the 28th on the list.(2)

In the world, water is used approximately at the rate of 80 per cent at the most for agricultural purpose. In the areas, where water shortage and drought is effective, famine appears. According to the research conducted, the number of people, who were undernourished in 2007, is 923 million. (3)

The world population is increasing with each passing day. And the water resources would be intensely used in order to meet the majority of food need of the increasing population. Within the process towards 2050, water will have to support the agricultural system, which feeds and give life to 2,7 billion people.

The size of the irrigation area in the world is 277 million hectares, and this figure composes 20 per cent of the fields. Rainfed agriculture is carried out in 80 per cent of the cultivated areas.

It is estimated that irrigation will increase the productivity of most of the products from 100 per cent to 400 per cent, and that the share of irrigated farming in the global food production will be 40 per cent. On the other hand, the "Intergovernmental Climate Change Panel" envisages that the agricultural productivity depending on rainfall will decrease at the rate of 50 per cent as of 2020.

Poor drainage and implementations on irrigation will lead to salinization and waterlogging in 10 per cent of the irrigated areas across the world. Traditional irrigation methods lead to salinization in land and thus water resources in semi arid-arid geographies, where especially evaporation is seen a lot. According to datum of the UN, the same scenario will take place in the forthcoming years.

As a result of the Climate Change, it is expected that ice masses, which compose the major amount of water that is found in Himalayas and used for agricultural purpose in Asia, will have declined at the rate of 30 per cent by 2030. The 68,7 per cent of fresh water, which composes 2,5 per cent of the total body of water in the world, is reserved in glaciers. (4) It is stated that there will be losses of mass in glaciers, where fresh water resources are stored, because of the climate change. It is also mentioned



that shrinkage is expected in glaciers in the Central Asia, especially in Kyrgyzstan, at the rate of 30-40 per cent. It is estimated that this shrinkage will result in decrease of water resources at the rate of 25-35 per cent.

The figures, which were published by the UN, draw a frame for the status of water resources in the forthcoming days. In this respect, in utilization and management of water resources, which are perceived as an unlimited resource, the efficient use of water should be focused on in terms of quality and quantity by preventing waste of water.

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Israel Faces Official Drought for Year 8

Israel is being hit with another official drought for the eighth year in a row, according to the country's Water Authority.

Israel is being hit with another official drought for the eighth year in a row, according to the country's Water Authority.

Figures released Monday by the government's executive branch in charge of Israel's water economy classified this year as "arid."

At present, Israel's water supply stands at roughly 2 billion cubic meters.

The winter season, which normally should be filled with rain, has measured up to only 72 percent of the multi-year average rainfall thus far, state-run Voice of Israel radio reported.

At the beginning of December 2011, it appeared as though early winter rains might have saved the situation, slightly reducing the drop in the water level in Lake Kinneret (Sea of Galilee).

But last year's season, even with one month of relatively heavy rains, was still fairly dry and did not escape the official drought that has wracked the entire Middle East for a decade.

Nevertheless, if January through March 2012 are filled with rain, Israel might yet luck out, and break the cycle.

"Israel Faces Official Drought for Year 8", 02/01/2012, online at: http://www.israelnationalnews.com/News/News.aspx/151330#.TwlU-lbheDQ

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***** Dry me a river: Israeli experts expect 8th consecutive arid winter

Hydrological Service data show that the rainfall from October through December came to only 72 percent of the average for this period.

Israel is experiencing its eighth consecutive dry winter, according to statistics for the first part of the rainy season.

Hydrological Service data show that the rainfall from October through December came to only 72 percent of the average for this period. Moreover, what are usually some of the wettest areas of the country have been especially dry this year. The Upper Galilee and the Golan Heights saw only 57 percent of their average rainfall. The central mountains got only 60 to 70 percent of their normal precipitation, and the central coastal plain - 80 to 85 percent.

However, as a result of last year's rains, the Jordan River is still flowing strong at the point where it enters the northern Kinneret - at only 9 cubic meters less per second than the average.

The lack of rainfall has not yet affected the level of the Kinneret, which rose 3 centimeters in December, the same amount as it rose last year at this time. As in the past seven winters, the lake is 36 centimeters below the upper red line (at which point the dam at the southern end of the lake is opened). of 208.8 meters below sea level.

The level of the Dead Sea is continuing to drop. In early December it stood at 425.5 meters below sea level, 26.5 meters lower than October 1976, when the level began to fall.

In a few weeks the World Bank is to release the main points of a plan for a pipeline that would bring 1.2 billion cubic meters of water annually from the Red Sea to the Dead Sea through Jordan, in order to address the problem of the shrinking Dead Sea. The plan is contingent on the approval of Israel and Jordan as well as an environmental impact report.

"Dry me a river: Israeli experts expect 8th consecutive arid winter", 08/01/2012, online at: <u>http://www.haaretz.com/print-edition/news/dry-me-a-river-israeli-experts-expect-8th-consecutive-arid-winter-1.406037</u>

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Thirst for water a sinking point at Israel-Palestine talks

Talks this week between Israeli and Palestinian officials end a 16-month long stalemate between the two parties.

These stalled in 2010 after Israel refused to renew a partial freeze on Jewish settlements in the occupied West Bank, but as talks begin looking to renew the process, water scarcity could prove to be another sticking point.

Israel and the West Bank are served by the Jordan River, along with Syria, Jordan and Lebanon, ensuring water scarcity is a highly contentious political issue in the area. Nowhere is this felt more than in the Israeli-Palestine conflict.

Both sides rely heavily on two aquifers for their water supply, much of which lies underground the West Bank, and is used for drinking as well as agriculture.

Research indicates that global warming will cause the region to become <u>even more arid</u>, placing extra pressure on water resources and increasing the chances of massive forest fires similar to the ones that engulfed Carmel in 2010.

Israel uses more water per capita than any other country in the region, and its government has long recognised the dangers of running out of water. In 2002 the country's Ministry of Foreign Affairs labelled it a 'chronic problem'.

Under the 1993 Oslo Accord, Israel recognised the water rights of Palestinians, although this did not always directly translate into policy.

While Israel extracts large amounts of water from the underground aquifers, Palestinians face bureaucratic restrictions and delays on their own projects – leaving many thousands in the West Bank unconnected to a water network.

Palestinians say that the occupation by Israel has meant they are denied of their water rights, living on 50 litres of water a day, while Israeli settlers enjoy 280 litres.

In 2009 Amnesty International <u>accused Israel</u> of maintaining control over shared water resources and denying Palestinians the right to access adequate water – a conclusion Israeli officials labelled "simply preposterous".

Regional expert Dr Polly Pallister-Wilkins, a fellow at the School of Oriental and African Studies, told RTCC this disagreement was a source of longstanding disagreement between both parties.

"The average Israeli lives on three times the amount of water of the average Palestinian, with the average Palestinian consuming less water than recommended by the World Health Organisation," she said.

"Water is already an issue preventing the end to the Occupation as Israel will wish to maintain its control of water as a material resource from which it materially benefits.



"The Palestine national movement as a whole is unlikely to see water scarcity as an issue over which to come together and negotiate. The question they will ask is why there is a water scarcity in the first place?"

Environmental NGO Friends of the Earth Middle East (FoEME) however, believe that the shared threat of water security could be a way of bringing countries in the region together rather than further exacerbating conflict.

Since 2001, their "<u>Good Water Neighbours</u>" project – aimed at raising awareness of shared water problems – has brought together 29 cross-border communities.

Speaking to Al Jazeera last July Nader Al-Khateeb, Palestine director of FoEME said it was a "shame that water is being used as a form of collective punishment when it could be used to build trust".

This sentiment was echoed by the Israeli Minister for Environment Gilad Erdan in December when speaking at the Ashdod Sustainability Conference he said: "There is need for cooperation and joint work on environmental issues. When our water sources are contaminated, your water resources are contaminated, and vice versa.

"I believe that the issue of water needs to stay out of the conflict; water can, and should, be the basis for cooperation."

Water scarcity could also be the foundation for more conflict, increasing the pressure on negotiators at both the Israeli-Palestinian talks and at the UN climate discussions to work on long-term solutions to prevent resource wars becoming commonplace.

"Thirst for water a sinking point at Israel-Palestine talks", 03/01/2012, online at: <u>http://www.rtcc.org/living/thirst-for-water-a-sinking-point-at-israel-palestine-talks/</u>

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Soing Green Ends With Water from the Sea

Desalinated water is costly for Israel, and practically no one is talking about the hidden costs.

Making drinking water from sea water has been touted as a solution for water shortage in the Middle-East and elsewhere. In southern Israel, near Ashkelon, a small pilot project has been pumping out 24 million cubic meters of fresh drinking grade water into Israel's water system since 2005. Currently expanding its output to add another 45 million cubic meters a year, the facility is planning to produce 120 million cubic meters of fresh drinking water annually by 2013. And <u>Gaza's about to get its own plant too</u>!

When the Ashkelon plant went on the grid in 2005 using groundbreaking technology, the eyes of the world were watching with great interest. In an effort to deal with the challenges facing water management today, the Ashkelon facility offered an untried but hopeful solution. By applying a reverse osmosis system that had not yet been used on such a large scale the pilot project has proven to be extraordinarily successful.

With an on-site power plant operated by natural gas, the desalination facility pumps water from a point half a mile off the coast of Israel, filters it and then removes the water from the salt by running it through specially designed membranes. The water pumped by the Ashkelon plant currently supplies approximately 5% of Israel's fresh water demand.

The reverse osmosis technology is considered to be the most effective technique available for the desalination of water. It's long been in the middle of a persuasion campaign by Friends of the Earth Middle East in the Dead Sea, where they believe that installing such a system would benefit the rapidly falling water level in the Dead Sea.

However, while the fresh water plant in Ashkelon may represent a sort of utopian dream, sources in Israel's Ministry of Environmental Affairs report that without proper supervision such interference in Israel's natural resources will in the long run incur a steep price.

The desalination process by means of reverse osmosis is done in two steps.

First, a variety of chemicals are added to the seawater to help filter the floating particles. Before the filtering process, iron, phosphorus and other minerals are added to the water to identify foreign material. Then, the water is separated from all other materials and added directly into Israel's water supply. The excess material is then pumped back to the sea.

The excess material includes all of the foreign chemicals added in the desalination process as well as all of the excess salts left over at the end of the process and hot water.

These materials are all returned to the Mediterranean, about a half-mile off shore, near the point from which the sea water was originally pumped out.



Right now, Israel's Ministry of Environmental Affairs seems perhaps rightfully worried. With several other desalination plants under construction on the shoreline south of Tel Aviv, we can expect major changes in the marine environment, if careful existing safety measures aren't enforced.

With the major changes being led by business conglomerates, that see water as a valuable resource in the future, they're not sure these business groups have the marine environment high on their list of priorities. With so much money to be made it is highly doubtful their plans take the preservation of Israel's delicate marine environment into account.

The Ashkelon Desalination Plant offered no comment in response.

"Going Green Ends With Water from the Sea", 05/01/2012, online at: <u>http://www.greenprophet.com/2012/01/israel-desalination-pollution-marine/</u>

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✤ Sewage threatens Jordan River due to imminent closure of treatment plant

Plant operator announces it cannot continue operating due to debts owed by various communities it serves in the region.

Unpaid debts may force the closure within days of the Beit She'an waste treatment plant, which would cause sewage to flow into the Jordan River and threaten the livelihood of farmers in the area.

The operator of the plant has announced it cannot continue operating due to the debts owed by the various communities it serves in the region.

The Beit She'an Municipality owes the plant NIS 2 million, according to the environmental group Tzalul. The Emek Hama'ayanot Regional Council, comprising the small towns in the region, owes NIS 1 million for treating industrial sewage, according to Kal Binyan, the company that operates the plant.

If the debt is not paid, the plant could close as early as Thursday, causing the region's sewage to flow into the Ein Harod stream and from there into the Jordan River.

However, the northern district of the Environmental Protection Ministry warned Kal Binyan that the ministry would not permit the plant to close because of the environmental damage that would result, and would take legal steps against it if it shut down.

The Beit She'an sewage treatment plant was established under a concession by the Beit She'an Municipality, and the regional councils of Emek Hama'ayanot and Gilboa. Under the terms of Beit She'an's agreement with Kal Binyan, the city was to have deposited the money it collected from residents for sewage service in a special bank account to pay the plant for the service.

However, according to the environmental group Tzalul, no such account was ever opened and no money was transferred.

The case reached the Nazareth Magistrate's Court, which ordered the city to pay, but to no avail.

Tzalul says that the Emek Hama'ayanot Regional Council pays regularly for sewage treatment, but has not paid money it owes the plant for treating industrial waste.

The plant has already stopped removing sludge from its premises, and the material has begun to pile up.

If the plant closes, it will also mean that surrounding farming villages will not receive the purified water that they use to irrigate their produce, which could cripple them economically if the current drought continues.

"The state should shoulder the burden, and then worry about collecting the money from the local government," Dalia Tal of Tzalul said on Wednesday. "It's intolerable that government ministries



know that sewage could flow into the streams and they are blaming each other. Nature is again going to pay the price for the incompetence of the authorities," Tal said.

MK Dov Khenin (Hadash), who chairs the Knesset Environment and Health Committee, asked the interior minister and environmental protection minister to act to stop the pollution.

Tzalul asked Environmental Protection Minister Gilad Erdan and Water Authority director Alex Kushnir to intervene.

The Beit She'an Municipality said in response that it is working with Kal Binyan toward a payment plan and hoped the matter would be resolved soon. The municipality also said it is in the final stages of having its economic recovery program approved by the state, after which it will receive grants to pay its bills, among others, to Kal Binyan.

Emek Hama'ayanot Regional Council said it pays all its bills as required by law.

The Interior Ministry responded that the contract between the plant and the Beit She'an Municipality is a local matter.

"Sewage threatens Jordan River due to imminent closure of treatment plant", 05/01/2012, online at: <u>http://www.haaretz.com/print-edition/news/sewage-threatens-jordan-river-due-to-imminent-closure-of-treatment-plant-1.405518</u>

ВАСК ТО ТОР



Straeli-Palestinian Talks in Jordan: Working Hard at Treading Water

.. [T] he talks in Amman had the theater of absurd quality to them. Why then this willingness to maintain the charade? And why this enthusiastic pursuit of restarting talks by the outside players -- the U.S., the Quartet, and Jordan?

On January 6, 2011, then Egyptian President Hosni Mubarak invited Israeli Prime Minister Benjamin Netanyahu to Sharm el Sheikh in an effort to resuscitate the flagging peace process. Egypt for many years played the role of regional protector of an Israeli-Palestinian peace process, which was extremely heavy on process while being ever-more transparently light on delivering peace. It is a role that the new Egypt is unlikely to volunteer for.

Almost exactly one year later, Jordan has gone some ways toward assuming that role by convening Israeli-Palestinian exploratory talks in Amman on Tuesday. Israeli and Palestinian negotiators did not meet officially or publicly throughout 2011 at the Palestinian insistence that Israel first stop settlement activity. It took a considerable effort to make yesterday's meeting happen, given ongoing settlement construction, land seizures, and home demolitions. The meeting, hosted by Jordanian Foreign Minister Nasser Judeh on behalf of King Abdullah II, brought together Quartet envoys, Yizhak Molcho, legal adviser to Benjamin Netanyahu, and the indefatigable chief Palestinian negotiator Saeb Erekat, awkwardly pictured at the table's head as he presented positions on border and security (proposals well known to his interlocutors). Following the meeting, Judeh sought to manage expectations while announcing that a series of talks will follow. Preserving an old school peace process is going to be very hard work in the new realities of the Middle East.

Make no mistake: this peace process is very much a creature of the old Middle East -- a place in which pretense was everything, from make-believe parliaments and elections to a make-believe peace industry. The resumed peace talks are not going to lead anywhere -- that is probably the safest bet that can be placed for 2012. It would even be fair to say that an inverse relationship exists between sustaining the peace process and advancing actual peace (by which one would presumably mean ending the occupation and securing a democratic future for Israelis and Palestinians alike), as the situation on the ground continues to worsen under cover of more process.

In 2011, the PLO appeared close to breaking out of the status-quo of "peace processing" -- flirting with alternative diplomatic strategies at the United Nations and elsewhere, building a unified national movement, and exploring the unarmed popular struggle associated with the so-called Arab Spring -- strategies which now appear to be indefinitely stalled. PLO actions were -- and continue to be -- characterized by strategic confusion and indecisiveness, ensnared by interim agreements and external dependencies.

Given the positions of the negotiating parties, their respective political realities, and their actions over the last months, the talks in Amman had the theater of absurd quality to them. Why then this



willingness to maintain the charade? And why this enthusiastic pursuit of restarting talks by the outside players -- the U.S., the Quartet, and Jordan?

Of course, the peace process is what people know: it offers a familiar comfort zone in a time and place of change. It has also been a surprisingly resilient tool for managing and bringing a degree of stability to the Palestinian file for almost two decades. It may not have advanced Palestinian rights and freedoms, and that same period has witnessed a weakening -- not strengthening -- of any two-state possibility, and indeed of Israel's own security, democracy and standing. But it has largely prevented the emergence of alternatives that some regional or international actors might find inconvenient -- a popular Palestinian revolution, the sanctioning of Israel, a one-state struggle, etc., while avoiding forcing hard questions on whether to maintain the Oslo arrangements.

Each of the principal players had their own calculations and reasons for showing up in Amman on Jan. 3. To the Jordanian hosts, the new Middle East is a treacherous place to be carefully navigated. While taking too much ownership of the Israeli-Palestinian process would be risky (and King Abdullah is unlikely to do a Full Monty in assuming the Mubarak role, for a variety of reasons), leaving the Palestinian file totally neglected would be equally foolhardy as Jordan's future may well depend on the creation of a Palestinian state. Jordan has also recently been rebuilding bridges with both Hamas and its own Islamists (the Islamic Action Front). Convening talks could be read as confirmation of its more traditional relations (with Fatah, America, and Israel), notably in advance of an anticipated visit of King Abdullah to the U.S. Theatre is also important for Jordan as it faces growing domestic dissent over its own peace accord with Israel.

The U.S. administration has a particularly limited appetite for drinking from the Israeli-Palestinian chalice in an election year. With Obama keen to avoid surprises, the most convenient parking place for the Israel-Palestine issue in 2012 would be a schlepped out series of talks about talks (about talks about talks, or however it goes). A resumed process would also distract from the Palestinian application for U.N. membership gathering dust in the Security Council files and make it easier to secure continued Congressional funding for the Palestinian Authority. That would facilitate continued U.S. influence and discouragement of a power-sharing deal with Hamas, and ideally make Israel less troublesome as an issue in 2012. (At least when it comes to the Palestinians -- on Iran, all bets are off).

The Netanyahu government has long expressed its preference for unconditional negotiations. Assuming the Israeli government can avoid being cornered on substance, which would cause coalition headaches for Netanyahu, Israel can then benefit from an improvement to its image by conducting peace talks while continuing to expand and entrench its control in the territories, and maintain at least one ally in the region.

PLO leader Mahmoud Abbas perhaps has the most to lose by resuming talks without securing either a settlement freeze or clear terms of reference (hence the Palestinians have called the Jordan meeting, "talks about talks.") Yet Abbas is clearly hesitant about pursuing alternatives -- diplomatic and other paths. He needs good relations with the Jordanian regime, and will require American and European support to keep the Palestinian Authority solvent and paying salaries. Abbas also wants to avoid being blamed for any inability to advance the latest Quartet initiative, thus Erekat's reiteration of their proposals on borders and security in Jordan.



The case will of course be made that if the parties are at least talking something might come out of it, and that Netanyahu might yet surprise -- perhaps at some level this is what motivates the Quartet and the E.U. However, the broader dynamics all point in the opposite direction. It is likely that the moments of resumed peace processing will be shorter lived and harder to sustain than in the past. The Palestinians may be repeating old and bad habits by offering their own maps in the absence of Israeli counter-proposals -- continuing the tradition of Israel then negotiating them down from wherever the starting point was -- while naively waiting for the U.S. and Quartet to lay the blame on Israel's door and continuing to postpone the development of their own new strategy.

Still, under current circumstances, the Palestinians will not be able to stay in the room for long. Israel will not offer even the minimal dignified palliatives to keep them in the room, and the Jordanians cannot go much further out on a limb -- the US is unlikely to push hard for progress.

Until there is a major shift in the outlook and strategy of at least one of the key protagonists, the defining motif for these talks will be the law of diminishing returns, as more and more effort will need to be expended to achieve an ever-more miniscule peace-process product. It is clearly time for a re-think, but for all involved the distractions are too abundant and the temptations of the status quo too convenient.

"Israeli-Palestinian Talks in Jordan: Working Hard at Treading Water", 05/01/2012, online at: http://www.newamerica.net/publications/articles/2012/israeli_palestinian_talks_in_jordan_working_hard_at_treading_wa ter_62073

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Despite rains, southern dam storage 'disappointing'

AMMAN — Water storage at the southern dams remains disappointing, as the reservoirs have not received any rainwater since the start of the wet season, an official said on Tuesday.

Although the southern and eastern parts of the country were affected late last week by unstable weather conditions that brought heavy rain, water storage levels in the southern dams remained unchanged, according to Ministry of Water and Irrigation Spokesperson and Assistant Secretary General Adnan Zu'bi.

"No water was channelled into the southern dams. Storage levels at the country's dams remain disappointing, especially as marbaniyeh started without sufficient rain," he told The Jordan Times yesterday.

The southern dams include the 8.18 million cubic metre (mcm) Waleh Dam, the 29.82mcm Mujib Dam, the 16.80mcm Tannour Dam and several smaller dams.

During marbaniyeh, the local name given to the 40 coldest days of winter, the country typically witnesses several depressions, while average temperatures in the capital range between a maximum of 12°C and a minimum of 3°C.

Jordan usually gets 30 per cent of its long-term annual average rainfall of 8.3 billion cubic metres during marbaniyeh, which started late December and ends on February 1.

"The Kingdom has received only 14.6 per cent of its long-term annual average rainfall of 8.3 billion cubic metres. By this time last year, 18 per cent had been recorded," Zu'bi noted.

The country's major dams currently hold 58.3mcm or 27 per cent of their total capacity of 215mcm, according to the ministry's figures.

Dams are a key means for the Kingdom to secure its water needs, according to experts. Jordan is among the four most water-poor countries in the world, with an annual water deficit of approximately 500mcm.

Approximately 91 per cent of the country's total area of 97,000 square kilometres is arid, with an annual rainfall average of 50-200 millimetres, while 2.9 per cent of the country's land is semi-arid, with an annual rainfall average of 400-580 millimetres.

"Despite rains, southern dam storage 'disappointing'", 06/01/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=4053

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Citizens urged to vote on water billing system

AMMAN — The Ministry of Water and Irrigation will decide next month on which water billing system to apply after giving citizens an opportunity to weigh in, an official said on Saturday.

The ministry's decision whether to maintain the current monthly billing system or return to a quarterly system will be primarily based on what consumers want, the ministry's spokesperson and assistant secretary general Adnan Zu'bi said yesterday.

"We will know which system the consumers want and feel is in their best interest once results of the public survey are out within two or three weeks," he told The Jordan Times.

Earlier this month, Minister of Water and Irrigation Mousa Jamani said ballot boxes were placed in all water directorates across the Kingdom for subscribers.

Zu'bi noted that citizens can go to their local water directorates and vote to help the ministry decide on whether to keep or change the monthly billing system.

Since the ministry switched to the monthly billing system late last year, many consumers have complained that their water bills have gone up.

The decision was coupled with a rise in water tariffs, which went into effect early in 2011 with the aim of reducing water consumption among large water consumers. The rise in water prices ranged between a minimum of 600 fils and a maximum of JD11 per month depending on consumption patterns.

Hussam Halaweh, a resident of Amman's Hashemi Al Shamali neighbourhood, said the value of his bill increased when water billing became monthly.

"Our water consumption did not increase, but now I'm paying more money, although they [the ministry] said that the change in water prices will not affect small consumers," the father of four told The Jordan Times.

Ahmad Salman, a retired serviceman, also said his water bill has increased with the monthly billing system, attributing the rise in costs to problems in the way household water meters are read.

"Water meter readers are not punctual. They don't check a household's water consumption precisely at the end of the month; they come a few days later," the Hay Nazzal resident charged.

He noted that the water bill becomes higher when consumption increases.

"Citizens urged to vote on water billing system", Jordan Times, 04/01/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=4035

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✤ Green groups take deal between Israel and Dead Sea Works with pinch of salt

Company will pay for most of the salt-harvesting project that aims to protect hotels at the southern end of the Dead Sea from flooding, a project whose cost is estimated at NIS 3.8 billion. By Zafrir Rinat

The cabinet is set to approve an agreement today in which the Dead Sea Works will pay for most of the salt-harvesting project that aims to protect hotels at the southern end of the Dead Sea from flooding. The agreement between the state and the Israel Chemicals-owned company also doubles the royalties that the mining company will pay the state on the sale of potash.

However, disputes are likely to continue between the Dead Sea Works and environmental groups over the way the project is carried out, over concerns that facilities connected to it will damage the environment.

Dead Sea

The hotels on the Dead Sea's shore may be saved from inundation. Photo by: Michal Fattal

Until now, earth berms have been built to keep the pool – which is half the size of Lake Kinneret – from overflowing due to an accumulation of salt on the bottom and flooding adjacent hotels.

The cost of the project, which will be implemented by the Dead Sea Works, is estimated at NIS 3.8 billion, of which the company will pay NIS 3.04 billion.

The Dead Sea Works will submit its salt-harvesting plan to the state's planning bodies, along with plans for the establishment of a new pumping station for the Dead Sea water. The company sees the pumping station as essential because of the declining water level of the Dead Sea and its recession from the current pumping station site.

The Dead Sea Works is also moving ahead with plans for another evaporation pool, into which more Dead Sea water will be pumped.

The government decision approving the salt-harvesting plan includes a clause directing the Commission for National Infrastructure to approve both the salt-harvesting and the pumping station by June 2013.

However, environmental groups are concerned that the construction of the new pumping station will require extensive work that will damage the landscape and ecology of its proposed location, the Tze'elim streambed. They may demand an alternative be sought to that site, one of the region's most significant wadis.

The salt-harvesting project may also damage the surrounding landscape, as the salt is to be removed via a conveyor belt planned to pass through the wadi.



Green groups are opposed to the new pool, which they say will worsen the current decline in the level of the Dead Sea. They also argue the construction of berms around it will require the extensive quarrying of earth from desert areas, which will damage the landscape.

However, the Society for the Protection of Nature in Israel hailed today's expected government decision as "a significant environmental achievement."

There is also opposition among environmental groups over the size of royalties the Dead Sea Works is to pay the state.

The Union for Environmental Defense and the Movement for Quality Government said late last week they would go to court if the royalties agreement passes today, arguing that the Finance Ministry has conceded it presented the state's part in the company's profits as much greater than it actually is.

"Green groups take deal between Israel and Dead Sea Works with pinch of salt", Haaretz, 03/01/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=4029

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* Rain!! Rain!! Go Away!! Go And Come Another Day, Little ...

"Rain is grace; rain is the sky condescending to the earth; without rain there would be no life". John Updike (1932 -) US writer (Self-Consciousness: Memoirs)

The world's population grew enormously in the 20th century. According to UN estimates, 1.65 billion people lived on Earth in 1900. By 1999 the world's population had passed to 6 billion, and the UN estimates that it will reach 9 billion people by 2050. But the annual supply of renewable fresh water will remain constant. The amount of water available to each person decreases as the population grows, raising the possibility of water shortages and crisis. This leads to higher prices and cost of its supply.

Our world today is presently going through one of its worst economic moments, and I personally think it was due to bad decisions by the "powers" that be, greed, ignoring "very little but important things", lack of foresight and over a million "financial and economic" factors which I personally don't care about. There is this school of thought who believes that, the world will experience the worst crisis not economically but environmentally specifically "water crisis" which will affect its supply, climate, vegetation etc. There is another school of thought who believes that, water shortages could also lead to international conflict as countries compete for limited water resources. In 1995 Ismail Serageldin, a top official at the World Bank, declared, "The wars of the next century will be over water" (credit; Encarta 2009).Conflicts over water, for example, have sprung up in the volatile Middle East between Jordan and Israel over The Jordan River which forms part of the border between both countries. The issue of water in Ghana can be compared to the situation where "in the mist of plenty, people still thirst". Ghana is endowed with so many water resources, but unfortunately every day in and out there has been cries, noise and at times agitations on water, its management and utilization both in rural and urban areas.

A quick look at the title of this article, one will think it was a rendition of the old and very popular kindergarten rhythms which we were forced to memorize and recite every morning. Anyway as to whether kids of these days know this rhythm, is another topic for another discussion. I chose this title, to take our minds back to how we tend to forget very little and very important things which we forget but can make very big difference and impact positively on our environment.

Rainfall is one of the very 'important' and 'cheapest' commodities and resources in our tropical region and It is surprising to note that season in and out, we experience heavy rainfall resulting in floods and yet both urban and rural communities still complain of water shortage or no water supply at all. One of the ways through which I think Ministries, Departments and Agencies responsible for water management and utilization can solve the problem of water shortage is to harness Rainwater through harvesting.

The need for rainfall harvesting has been necessitated by the need to use a more community based,



flexible, sustainable and inexpensive approach towards water supply. The failure of the other traditional approaches of water supply has been due to mismanagement, high implementation cost, expensive technology, decrease quality of ground and surface water, poor operation and maintenance etc.

Rainfall harvesting, has been with humanity since the beginning of time. Since the earliest days of human history, people have collected rainfall and its runoff. At the same time, they developed laws to guide the use of this precious resource. For instance the code of Hammurabi, a set of laws attributed to an ancient Babylonian king, contains several passages concerning water used for irrigation.

More recently, an innovative rainwater collection system allowed the National Wildflower Research Center near Austin, Texas, in the United States of America to amass up to 450,000 gallons (1,700,000 liters) of water annually.

In Ghana, apart from the long trenches made of aluminum sheets attached to roofing sheets of most buildings and directed to a tank, rain water isn't taken seriously as a major source of water supply. This technology is very popular in the rural communities to collect water.

Every year, the meteorological department records very high rainfall amounts and warns of heavy rains. One wonders why we can't come up with any initiative or program which is comprehensive and sustainable to make good use of this abundant resource but instead only think of how its damaging effect can be curbed.

Ghana, as per its location in the tropics experiences very heavy rainfall annually. It a well-known fact that Aqua Vitens & Rand Ltd & Ghana Water Company Ltd could not provide water to even half of consumers in the capital city due to varied reasons which are well known and I personally do not see the newly established Ghana Urban Water Limited performing better either. Community Water and Sanitation Agency (CWSA) which is mandated to provide water and sanitation to rural communities, formed and trained water and sanitation (WATSAN) committees and water and sanitation development boards (WSDBs) to properly operate and maintain (O&M) their facilities to ensure sustainability, unfortunately the agency is battling with lazy and dormant WATSAN committees and WSDBs, which has resulted in many broken down water and sanitation facilities. The cost of providing boreholes fitted with hand pump and mechanized borehole is becoming expensive to install and not to talk of the high cost of O&M. For instance, on March 17th of this year, Daily graphic reported of a mechanized borehole project which cost a whopping GH¢43, 000 was inaugurated by the Tom Herderman family from the Netherlands and AVRL to serve 2000 people in the Avutubisis community near Bolgatanga in Northern Ghana. The question that comes to mind is how many communities can have this project? And even if they can, do they have the capacity to operate and maintain it? So one will realize that, most of the conventional approaches to supplying water has not been very effective, thus the need for us to look at other approaches which will be economical, cost effective, simple, environmentally friendly and sustainable.

Rainfall harvesting has proven to be a very effective and cost effective source of water supply in most of our senior high schools. Bishop Herman College in the Volta region is one example of an institution that has made good use of this technology. Underground tanks are scatted around the



campus which collects water for use in the kitchen and for student's personal use. The school as at 2002 had only one (1) borehole with hand pump which serves a population of over 1,500. A mechanized borehole was later installed in 2002 though. Water from these underground tanks complement what we got from the other sources.

This technology can be replicated in all second cycle and tertiary institutions, ministries district & agencies (MDAs), communities and other establishments. Rain water if treated can serve these institutions and will save us a lot of water wasted by these institutions and also reduce cost. Rainfall harvesting is very easy and simple to implement in any establishment be it offices, communities, schools etc. It has also proven to be inexpensive and affordable to the poor. The increased availability of low-cost tanks goes to prove its cost effectiveness. There is also the reduction in water related diseases as water quality is usually better than water from traditional sources like rivers, streams etc. Less time is spent in collecting water (particularly women and children) as it is readily available. Rainwater use also reduces the high demand on the conventional source of water supply like the boreholes (hand pumps or mechanized), rivers, streams etc. The need to chemically treat and deodorize toilet water is eliminated because of the acidic composition of rainwater. Rain water is also very economical, since a lot of savings will be made. Excess rainwater can also be used to water vegetables, other crops and other economic activities.

Due to the flexibility and adaptability of the technology of rainfall harvesting the following can be adopted to harness the potential of rain water and ensure the smooth supply of water;

Government through its MDAs responsible for water resources management and utilization should identify area mechanics (there are some existing ones trained by the CWSA to help communities operate and maintain water and sanitation facilities) in communities and train them on the technology of rainfall harvesting. CWSA should ensure that partner organization (POs) engaged as consultants to train and build the capacity of WATSAN committees and WSDBs in rainfall harvesting technology and how it can be effectively and sustainably implemented. GUWL should also start an intensive sensitization campaign through the print, online social networks and electronic media on the need for consumers to save water and rainfall harvesting technology. GUWL can also adopt this technology, considering the fact that it has the technology to store and further treat the rain water for urban supply. This will complement its conventional water supply and ensure that, the high demand it is presently experiencing is reduced. Incentives like affordable tanks, bags of cement and other inputs should be provided to institutions, public and private establishments and communities to encourage them to adopt this strategy. Appropriate MDAs should institute byelaws and accompanying sanctions to ensure that establishments like washing bays, hotels, restaurants, government offices, tertiary institutions etc. whose activities and operations are known to waste water submit quarterly and annual plans to appropriate authorities which they will adopt and implement to save water in their establishments. Finally there should be an effective monitoring and evaluation (M&E) system to check their consumption level.



In as much as this article glorifies rain water and how it can be harnessed to solve Ghana's water supply challenges, it does not in any way negates in totality other approaches and strategies which are presently being implemented to ensure that water is provided to all and sundry in the country. The main objective of this article is to project rainwater harvesting as a more flexible, adaptable, cost effective, economical, sustainable and an alternative approach which will complement existing approaches towards water supply. It is also to let consumers know they have a crucial role to play in water supply instead of always depending on the institutions mandated by government.

So the next time you hear your kids singing the popular "rain rain go away little children want to play", you should keep in mind how very important it is to your survival as a human being. You should rather be singing "rain rains don't go but if you go, come another day for us to harvest you". "The rain begun sprinkling on the dry earth, I wished it could wash away my (our) sin(s) but it (came) on the cold breath of the Southern Ocean there were no forgiveness there" Peter Carey (1943 -) Australian novelist. He won the 2001 Booker Prize for "True History of the Kelly Gang"

"Rain!! Rain!! Go Away!! Go And Come Another Day, Little ...", 06/12/2012, online at: http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=227061

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Global Warming and water shortage

(HealthNewsDigest.com) - Climate change promises to have a very big impact on water supplies in the United States as well as around the world. A recent study commissioned by the Natural Resources Defense Council (NRDC), a leading environmental group, and carried out by the consulting firm Tetra Tech found that one out of three counties across the contiguous U.S. should brace for water shortages by mid-century as a result of human induced climate change. The group found that 400 of these 1,100 or so counties will face "extremely high risks of water shortages."

According to Tetra Tech's analysis, parts of Arizona, Arkansas, California, Colorado, Florida, Idaho, Kansas, Mississippi, Montana, Nebraska, Nevada, New Mexico, Oklahoma, and Texas will be hardest hit by warming-related water shortages. The agriculturally focused Great Plains and arid Southwest are at highest risk of increasing water demand outstripping fast dwindling supplies. While the mechanisms behind this predicted dwindling of water supplies is complex, key factors include: rising sea levels and encroaching ocean water absorbing lower elevation freshwater sources; rising surface temperatures causing faster evaporation of existing reservoirs; and increasing wildfires stripping terrestrial landscapes of their ability to retain water in soils.

Researchers have already begun to notice dwindling water supplies across the American West in recent years, given less accumulation of snow in the region's mountains as temperatures rise. According to a 2008 study out of the Scripps Institute for Oceanography and published in the journal Science, Western snowpack has been melting earlier than it did in the past thanks to global warming, leading to markedly longer dry periods through the late spring and summer months in states already suffering from extended droughts. Given that the length and strength of these changes over the last 50 years cannot be explained by natural variations, researchers believe human induced climate change is the culprit.

The upshot of these changes is that Americans of every stripe need to curtail their water usage—from farmers irrigating their crops to homeowners watering their lawns to you and I taking shorter showers and turning off the tap while brushing our teeth. Even more important, water and resource policy managers need to conceive of new paradigms for the management of freshwater reserves to make the most of what we do have. And all of us need to work together to cut down on the emissions of greenhouse gases that have led to global warming in the first place.

Analysts also worry that warming-related water shortages could erupt into conflict, especially in parts of the world where one country or group controls water resources needed by others across national borders, such as the Middle East where already five percent of the world's population relies on just one percent of the world's fresh water. Parts of Africa, India and Asia are also at risk for water-related conflicts. American policymakers hope that the situation won't get that dire in the U.S., but only time will tell.

"Global Warming and water shortage", 07/01/2012, online at: http://www.healthnewsdigest.com/news/Environment_380/Global_Warming_and_Water_Shortages.shtml

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* Middle-East Countries Attracting Huge Investments in Power Sector

According to our latest research report, "Middle East Power Sector Analysis", the power sector in the Middle-East countries has been witnessing strong growth over the past few years. Rising residential electricity consumption, rapid industrialization, and the government support are the main factors responsible for growth in this region. Of all the middle-eastern countries, Qatar emerged as the nation with remarkable growth in power demand in 2010. Rapidly growing economy and increasing residential demand have surged the growth of the power sector in the country. The developments in the Qatar electricity sector are expected to augment in the coming years with the electricity consumption anticipated to grow at a CAGR of around 15% during 2010-2014.

As per our findings, the Middle-East countries are attracting huge investments in power and water desalination projects. At present, there exists transmission, power generation, and distribution projects planned or underway. Power generation also plays a significant role in water supply. Governments across the region face severe water shortages as demand begins to outstrip supply. The countries are also focusing on renewable sources for power generation so that significant quantity of oil and gas can be used for exports. The countries are striving hard towards utilizing their available renewable energy potential.

Our report also covers the future growth potentials in the power sector in Qatar, UAE, Saudi Arabia, Jordan, etc. The governments in these countries have liberalized the policies pertaining to the electricity sector and are currently in the process of formulating privatization strategies. As a result, private sector investments are being attracted in most of the middle-east countries.

Our report, "Middle East Power Sector Analysis", is an outcome of extensive research and objective analysis of the Middle East power industry, mainly focusing on potential regional markets. It provides country-level statistics and analysis on electricity installed capacity, supply-demand, and consumption trends. A separate GCC grid interconnection analysis along with country-level renewable developments facilitates an all-round market understanding. Additionally, the future projections included in the report have been cautiously made after analyzing current market scenario, past trends, and ongoing developments in the market. Thus, our report presents the most unbiased picture of the industry.

"Middle-East Countries Attracting Huge Investments in Power Sector", 27/12/2011, online at: <u>http://www.industrytoday.co.uk/energy_and_environment/middle-east-countries-attracting-huge-investments-in-power-sector/8779</u>

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* Aldar And EPIC Green Solutions To Tackle Water Scarcity With 80% Water Savings

In an effort to address the pressing issue of scarce water resources in the Middle East, ALDAR are working with EPIC Green Solutions, a UAE-based international water management solutions company specialising in highly efficient sub-surface irrigation and drainage systems, to set up a demonstration site at Yas Island in Abu Dhabi.

The demonstration plot, provided by ALDAR has allowed EPIC Green Solutions to showcase the EPIC (Environmental Passive Integrated Chamber) system's water saving capabilities of up to 80%.

Holding the world-wide rights to the EPIC system, EPIC Green Solutions provide sustainable water solutions for urban landscapes, green roofs and parking areas, golf and equestrian facilities and most notably, advanced methods for highly-efficient water usage within the agriculture sector.

The company's innovations and patented applications have been independently tested and proven at various reputable locations around the world. Locally, water saving capabilities have been previously verified at a demonstration site on Al Sammaleah Island in Abu Dhabi, UAE, which compared the sub-surface EPIC system to a conventional top-surface irrigation system. Data showed a 80% savings of water compared to the traditional system. This was also the first site in the region to utilise sea water in an EPIC system installation.

Results from the Yas Island plot which have been collected to date convey similar results as data shows the average consumption of the various plants has been 2.46 liters a day per square metre as compared to the 12-14 litres a day per square metre that would normally be consumed using traditional irrigation systems. Water usage and foliage growth will be monitored on a regular basis.

The demonstration site will also illustrate the dynamic capabilities of the EPIC system to utilise treated sewage water and seawater to irrigate a wide variety of vegetation including grass, ground covers, bushes, flowers and trees. This is made possible through the non-clogging distribution pipe that allows for the use of various forms of water to irrigate, rather than sole reliance on fresh water.

Charlie Fleifel, Chairman & CEO of EPIC Green Solutions, commented, "The growing desire for the ultimate 'green city' must come coupled with an equal conviction for sustainable steps to reach this desired outcome, especially when taking into account that irrigation is by far the largest use of water around the world."

The increased attention towards water conservation is even more evident in the region as relayed by Estidama's regulations which place 'precious water' as one of the six main categories. Estidama is a government initiative that was developed by the Abu Dhabi Urban Planning Council, and is a vision for achieving a sustainable way of life in the Middle East. The Pearl Rating System for Estidama recognises developers who pursue a higher level of green building based on the pillars of sustainability, one of which is water savings. Innovations and technologies that can help to reduce water usage in developments are a key factor to earn a higher rating for a project.

"The EPIC system is an innovative technology that is revolutionising conventional approaches to irrigation by providing solutions that are cost effective, sustainable, profitable and instrumental in



addressing water scarcity in the region," said Bart Rehbein, Managing Director of EPIC Green Solutions.

The Test plots demonstrate a variety of conditions in order to find solutions that will allow developers to implement significant areas of green space while still aligning with sustainable water principles that respect water scarcity in the region

Geoff Turnbull, Planning and Landscape Architecture Representative for Aldar commented, "We are proud to join forces with EPIC Green Solutions to find sustainable solutions to better manage scarce water resources in the region. This initiative aligns with Aldar's continuing efforts to promote green technologies that meet the long-term demands of Abu Dhabi and demonstrate performance that blend functionality, environmental demands and aesthetics."

"Aldar And EPIC Green Solutions To Tackle Water Scarcity With 80% Water Savings", 07/01/12, online at: http://www.abudhabicityguide.com/news/news-details.asp?newsid=8820&newstype=Local%20News

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Srand Ethiopian Renaissance Dam: Egypt's enemy or a blessing in disguise?

Preliminary construction of the Grand Ethiopian Renaissance Dam (GRD) began in April 2011 on the Blue Nile River near the Sudanese border. Scheduled for completion in 2014, it is planned to be the biggest hydropower dam in Africa, with more than twice the generating capacity of the Aswan High Dam. But long before the completion date, the project is already generating significant concern amongst the nine other countries that share the Nile, especially Egypt.

Over the past century many treaties have been signed in an attempt to assure each riparian country a right to Nile water, with Egypt generally receiving the lion's share. But sub-Saharan African counties have long argued that the old treaties deny their modern right to livelihood, and after a decade of political to-and-fro between these countries and Egypt, the GRD is now underway.

Most recently, the Egyptian government protested that no quantitative studies have been conducted with regard to the dam's effects, a complaint that resulted in a trilateral ministerial meeting being held in November between Ethiopia, Egypt and Sudan. During this meeting, it was announced that an independent technical committee of experts from each country would be formed in six months time to produce such a study.

But at the same meeting, Alemayehu Tegenu, the Ethiopian minister of water and energy, declared that regardless of the study's outcome, the construction of the dam will continue unabated due to high confidence that the GRD will ultimately benefit all parties.

Adel Darwish, a British journalist and historian who co-wrote the 1994 book "Water Wars: Coming Conflicts in the Middle East," told Egypt Independent that Egypt never should have ruled out the option of military intervention, because the stakes are so high for the country's livelihood.

While Egypt Waits

Various experts have recently shared with Egypt Independent their own input on the potential pros and cons of the GRD.

Sherine al-Baradei, an AUC professor in the department of construction and architectural engineering with a focus on hydraulics, points out a number of major issues with the dam.

"Obviously, dams provide both good and bad effects," she says. "But with Egypt being so dependent on the Nile, serious agreements must be made to ensure that the bad effects are minimized, and in advance."

According to Baradei, hydropower dams create immense turbulence in the water, where chemical reactions such as dissolved oxygen can destroy fauna and flora. While the water will return to its normal state before reaching Egypt, the damage to these populations will be permanent. In addition, many nutrients and silt, which are essential for agriculture, will be retained in the large dam.



"When the Aswan High Dam was built, farmers, fisheries and many others were seriously affected for decades by the lowering of nutrients, silt, flora and fauna in the water," she says.

Baradei explains that these levels will certainly drop further with the GRD, not to mention many other unforeseen problems that will likely occur.

Perhaps the most significant concern is that Egypt may no longer receive its appropriate share of water. But according to Baradei, issues of water regulation can be solved through negotiations with Ethiopia, whereas there is no solution for the loss of flora and fauna.

The Nile Basin Core Group (NBCG), a team of Nile specialists, has a more positive analysis of the situation. In their view, the GRD is an opportunity to create strong ties between Egypt and sub-Saharan countries, and there may also be many positive effects of the dam.

"The right question is not what the effects of the GRD will be, but how the Nile basin's water can be used to integrate all riparian countries in a stable and efficient way," says Mohamed al-Mongy, an environmental development specialist from the NBCG. "Instead of looking North, East and West for our solutions, we need to begin looking South, where the source of our livelihood lies."

One of Mongy's colleagues at NBCG, Haytham Awad, a hydrologist from the University of Alexandria, has conducted research that indicates the GRD may actually increase water flow to Egypt.

Awad's research shows that during the flood season in late August and early September, the majority of Egypt's water arrives in Lake Nasser, where it is stored for approximately ten months until peak agriculture season in July the following year. During this period, approximately twelve percent of the stored water evaporates.

However, with the water being stored in the GRD, where there will be less evaporation and that will help conserve water.

Another finding is that the GRD is expected to produce power surpluses which, assuming cooperation, could be exported to Egypt, leading to strengthened ties between the two countries.

"Collaboration is key," says Lama El Hatow, a member of the NBCG doing her PhD research on water governance of the Nile basin. "When we negotiate with the riparian states, it is vital that we understand all the facts and science holistically.

"Good science should lead to the right political negotiations, as opposed to jumping to haphazard conclusions based on partial understandings that may lead to Egypt's own detriment," she concludes.

"Grand Ethiopian Renaissance Dam: Egypt's enemy or a blessing in disguise?", 05/01/2012, online at: <u>http://www.almasryalyoum.com/en/node/585731</u>

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Dealing with the issue of Tipaimukh Dam

M. A. Muid Khan in the first of a two-part article

"Guided by the principles of equity, fairness and no harm to either party both the Governments agree to conclude water sharing Treaties/ Agreements with regard to other common rivers".

(Article IX of the 1996 thirty-year Ganges Water Sharing Treaty)

By ignoring all bilateral agreements, international laws and conventions on the customary international law of Trans-boundary Rivers and Lakes, India has decided unilaterally to construct Tipaimukh Dam for so-called "hydro-electricity" on the Barak River in its north-eastern Manipur state; without considering the adverse effect the dam would have upon the environment and biodiversity of the lower riparian Bangladesh. By taking this decision unilaterally, India has also violated her international obligation under the expressed provisions of the 1996 thirty-year Ganges Water Sharing Treaty signed by the heads of state of Bangladesh and India valid until 2026. India is under an international obligation to respect the provisions of this Treaty in the light of the 1969 Vienna Convention on The Law of Treaties, as it was signed by the heads of state of Bangladesh and India.

Question arises can Bangladesh restrain India from constructing the proposed Tipaimukh Dam on the Trans-boundary River Barak? In our opinion, if India wishes to construct proposed Tipaimukh Dam unilaterally in breach of the principles of equity, fairness and no harm policy to Bangladesh, then Bangladesh would be entitled to wage an international legal war against India before the International Court of Justice (ICJ) to refrain India from constructing such a dam on the Barak River.

Therefore in this article an attempt would be made to clarify the possible adverse impact this dam would create upon the environment and bio-diversity of the lower riparian Bangladesh. It will also discuss the international legal rights and remedies available to Bangladesh under international law to wage an international legal war against India for justice.

India has decided to construct the proposed dam on the trans-boundary Barak River which flows between India and Bangladesh. In Bangladesh, it enters through Amalshid of Sylhet and becomes divided at Amalshid onto two branches and flows as the Surma River (right branch) and the Kushiara River (left branch). Both become united in Habiganj district and flow down as the Kalni River. The Kalni River joins with Ghorautra River near Bajitpur of Kishoreganj district to become the Meghna River. It then flows to the Padma River near Chandpur district and falls into the Bay of Bengal, constituting a big estuary in Bangladesh. This estuary is the spawning place of Hilsa and other fishes as well as marine lives. The estuary is a part and parcel of ecology of Bangladesh which cannot be measured in terms of money.



Despite the assurance given by the Indian Prime Minister, Dr. Manmohan Singh on September 08, 2011 at a Dhaka University Conference saying that, "I wish to make a public statement and make it clear that India will not take steps that will adversely affect Bangladesh", yet the Indian government betrayed their friendship with Bangladesh by signing an agreement on October 22, 2011 for forming a joint venture to construct the dam on the Barak River in Manipur to produce "so-called 1,500-MW Tipaimukh hydroelectric project" keeping Bangladesh in dark.

History will testify that India has never kept her promise before erecting any dams on the common rivers. Before constructing the Farakka Dam, India did not provide any information regarding it to the newly independent Bangladesh and constructed it, despite receiving strong protests against its construction from Bangladesh. India initiated bilateral talks with Bangladesh and signed a bilateral agreement only after the completion of the project when the government of newly independent state of Bangladesh took India before the International Court of Justice.

Experts opined that the proposed dam would be "a dangerous death trap" for Bangladesh as over 30 million people of the country and its biodiversity would face negative impacts for it. Many water experts in Bangladesh expressed that the construction of the dam on the Barak River is expected to dry up the flow of the Surma and Kushiyara, source of the Meghna River and would bring negative ecological and environmental changes in vast areas of Bangladesh. This would ultimately destroy the big estuary of Bangladesh - the spawning birth place of our national fish "Hilsa" and other fishes.

In a research paper titled "Hydrological Impact Study of Tipaimukh Dam of India on Bangladesh", published by the Institute of Water Modelling, Bangladesh, 2005, it was revealed that the erection of this dam would bring disaster to Bangladesh and "...cause long and short term effects of multiple dimensions - eco-hydrological, morphological, geological, biodiversity and environmental, climatic change and desertification, socio-economical, and finally political...".

The research paper at page 61 further stated that if India was allowed to erect the Tipaimukh dam, the average annual monsoon inflow from the Barak River at Amalshid to the Surma-Kushiyara River system would be reduced by around 10 per cent for the month of June, 23 per cent for July, 16 per cent for August and 15 per cent for September. The water level would fall by more than a metre on an average during the month of July at Amalshid station on the Kushiyara River, while this would be around 0.25 metre, 0.15 metre and 0.1 metre at Fenchuganj, Sherpur and Markuli stations respectively. On the other hand, at Kanairghat and Sylhet stations on the Surma River, the average water level would drop by 0.75 metre and 0.25 metre respectively during the same month. Moreover, flows in the month of July, August and September would be reduced by as much as 27 per cent, 16 per cent and 14 per cent respectively - 4.0 per cent, 2.0 per cent and 2.0 per cent higher than the volume reduction found for an average monsoon year".



It is also to be mentioned here that the proposed Tipaimukh Dam would be constructed by India at a place on the Barak River which is highly vulnerable to earthquake. "...If an earthquake of the magnitude 7.0 or above jolts the region..." Mr Akbar Ali Khan, an independent observer and a former advisor to the caretaker government, opined that, "...it would damage the dam causing the risks of flood in Sylhet region of Bangladesh".

In the past, many dams were damaged by earthquakes. Due to an earthquake in 1925, the Sheffield dam at Santa Barbara in the USA collapsed. In 2008, Japingo dam in China caved in due to an earthquake. The most serious threat to this dam arises from the possibility of overtopping of water from reservoir caused by unusually excessive rainfall during the flood season (Akbar Ali Khan, "The Proposed Tipaimukh Dam: Search for Eternal and Perpetual Interests of India and Bangladesh" in The Journal of Asiatic Society of Bangladesh, June 2010).

"Dealing with the issue of Tipaimukh Dam", 08/01/2012, online at: <u>http://www.thefinancialexpress-bd.com/more.php?news_id=92995&date=2012-01-08</u>

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MENA mountains and sustainable development

By MK Santhosh - SQU is an official member of the Mountain Partnership at FAO Rome, Italy and has been a focal point for the Sultanate of Oman on Mountain Issues. This partnership is an honour conferred on SQU because of its contribution to the mountain research through "Al Jabal al Akhdar Initiative" a multidisciplinary landmark research that has become a reference for mountain studies in arid and semi-arid regions.

Sultan Qaboos University serves as the focal point for preparing the mountains' development regional report for the Middle East and North Africa (MENA) region, the draft of which was presented at the Lucerne World Mountain Conference held in October 2011. This important mountain conference was successful in providing important elements to ensure mountains to be included in the Rio+20 Summit, the United Nations Conference on Sustainable Development, which will be held in June 2012.

Prof. Reginald Victor, reputed environmental scientist and Dean of Research at SQU, who has done a series of research on the mountains of Oman, is entrusted with the task of leading the team that prepares the regional report covering mountains in 19 MENA countries from Morocco to Iran. According to Prof Victor, the key issues in the MENA mountain region are climate, water resources, wildlife and biodiversity, agriculture, livestock and land use, and tourism. "Others include specific issues like the establishment of biosphere reserves, special programmes like those of Global Diversity Foundation (GDF), disasters, natural hazards and disaster risk reduction (DRR) and socio-economic and political issues.

The discussion of each issue in the regional report includes information known from specific MENA countries. For example, the issue of water resources includes management of water resources in Morocco, water stress in Lebanon, overexploitation of groundwater in Oman, revitalisation of traditional water harvesting in Iran, water scarcity in Yemen and the famous water conflict of Palestine and Israel", he said.

This report is presented in three parts: the first sets up the stage for the discourse on MENA Mountains; the second provides an evaluation of sustainable mountain development discussing progress, changes and lessons learnt; and the third addresses challenges to green economy and issues relevant to Rio+20 in the MENA region.

Of the19 countries in the MENA region, three do not have significant mountain systems and of the remaining 16, only seven have enough data warranting detailed discussion.

In the report prepared by Prof. Victor and team, major mountain ranges in the MENA region have been identified and the major themes relevant to the MENA Mountains recognised. The ten themes considered are (1) the effects of oil-boom economy; (2) technological development; (3) improvement in road networks; (4) political changes; (5) climate change and natural disasters; (6) epidemics; (7) impacts and threats on biodiversity; (8) expanding tourism; (9) mining activities, and (10) monitoring and research.

The institutions and governance supporting sustainable mountain development have been noted and the absence of a central hub to foster partnerships within the MENA region has been indicated. The report says that evaluation of sustainable mountain development in the whole MENA region is an extremely difficult task. "However, it is possible to attempt a discussion on the basis of what had happened in the MENA countries over the past 20 years assuming that mountains are firmly embedded in the governance systems and are subject to impacts both positive and negative, affecting the countries as a whole. The nature of governance is an important driver that has impact on



sustainable mountain development. The present political climate in the region is likely to have a negative impact on sustainable development initiatives including those in mountains. Ecosystem services of these mountains are discussed in the report under (a) provisioning, (b) regulating and supporting and (c) cultural services following the Millennium Ecosystem Assessment for mountains.

Supply and demand for ecosystem services in the MENA Mountains are poorly understood. The status of green economy in the MENA Mountains and challenges faced are presented in line with millennium development goals. Actions needed include regulatory frameworks; a shift in government spending priorities to support green economy initiatives; financial incentives to green investment and innovation; capacity building through training and education; and strong links to international governance.

Prof. Victor said that mountains of the MENA region are important for sustainable development in national, regional and global contexts. "All mountains in this region with the exception of a few do not supply fresh water to fulfil the needs of the entire population, but the goods and key ecosystem services provided by these mountains are vital for the sustainable development. These goods and services are under increasing pressure from urban expansion and environmental changes", he said. The report recommends the following actions for the sustainable mountain development (SMD) in the region:

1. Protect natural resources and assist with strategies for their sustainable use to improve the socioeconomic well being of the mountain communities.

2. Involve mountain communities in decision making processes and political representation to ensure best use of resources, environmental protection, and food security.

3. Facilitate mountain communities to gain fair access to resources and share benefits of their use equitably.

4. Strengthen and develop national and regional institutions and establish links with global institutions to address highland-lowland interactions and trans-boundary co-operation, support capacity building, generation and dissemination of knowledge, technical expertise and innovation for sustainable mountain development.

5. Provide enabling conditions and incentives for investment in sustainable development in mountain areas and include appropriate funding in national budgets in order to enhance wellbeing and reduce disparities.

6. Evaluate how mountain issues were handled within the three Rio conventions and identify reasons that can be attributed to the action plans, their success and failure.

7. Recognise the vulnerability issues of the mountain ecosystems that still exist within the three Rio conventions, based on the experience of last 20 years, and recommend implementation strategies that must be adopted to achieve sustainable development goals.

8. Promote the transition of these mountains' dependence from Brown Economy to Green Economy 9. Identify special issues that impact MENA mountain communities such as illegal drug production, terrorism and political disputes, and establish intervention procedures at international level to alleviate these problems.

10. Make best use of all new and existing funding mechanisms to address issues related to Sustainable Mountain Development and challenges of environmental changes in the MENA region. Prof. Victor revealed that the final report will be presented at the Rio+20 Summit which will mark the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED), in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg.



Sultan Qaboos University is an official member of the Mountain Partnership at FAO Rome, Italy and has been a focal point for the Sultanate of Oman on Mountain Issues. This partnership is an honour conferred on SQU because of its contribution to the mountain research through "Al Jabal al Akhdar Initiative" a multidisciplinary landmark research that has become a reference for mountain studies in arid and semi-arid regions.

'All mountains in Middle East and North Africa, with the exception of a few, do not supply fresh water to fulfil the needs of the entire population, but the goods and key ecosystem services provided by these mountains are

vital for the sustainable development. These goods and services are under increasing pressure from urban expansion and environmental changes'

"MENA mountains and sustainable development", 07/01/2012, online at: http://main.omanobserver.om/node/78276

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✤ A multi-faceted undertaking

Meeting the energy and water demands of countries and communities across Australasia and Southeast Asia is a multi-faceted undertaking. John Hardcastle from Aurecon reports on the trends in dams and hydropower across the region.

Global capital expenditure on water infrastructure was estimated at US\$90B in 2010, rising to US\$131B by 2016. This being the case, there is no doubt that the Australasian marketplace will be subject to significant expansion over the next decades.

Looking to the future, three global megatrends are set to impact the regional water sector: scarcity, urbanisation and environmental protection. Added to these, is the acceleration in capital investment in water infrastructure, with China shortly to overtake the US as the largest market in the world in terms of capital expenditure on water projects.

Securing sufficient water and energy sources will demand greater initiative from the market with regard to its approach to energy generation, transmission and distribution. Assuming there are no major shifts in governments' policies, statistics from the <u>International Energy Agency</u>'s World Energy Outlook indicate that global energy demand is predicted to increase by 40% by 2030. Energy use and conservation are at the forefront of the sustainability challenge, with renewable energies gaining increasing credibility as markets around the globe begin to invest in viable industries in this space. The challenge is to successfully provide innovative, high value technical and advisory services to harness alternative sources of energy such as hydro, wind and solar.

Regional snapshots

The Australian water market experienced unparalled change and expansion from 2000 to 2009. This was primarily due to a mixture of drought, ageing assets, outsourcing, environmental regulation and population growth. Across the New Zealand water industry, there are challenging issues surrounding water management and seasonal water shortages, as well as quality issues.

In Southeast Asia, demand for improved water quality and security is driving projects such as the US\$2.8B water infrastructure programme underway in Vietnam to improve access to clean water for three million people. In Singapore, more water supply infrastructure is being built (approximately US\$1B annually) so that the island can become self-sufficient.

International development assistance projects focusing on water in Southeast Asia are typically funded by large donor organisations (such as the World Bank, Asian Development Bank, etc.). Increasingly, such projects will form a larger portion of the dams and hydro projects that are planned or being delivered across emerging regions and economies across the Southeast Asian zone. "The challenge is to bring innovative methods to each dam and hydro project to maximise the benefits while managing any adverse environmental or community impacts," says Peter Blersch, Competency Leader, Bulk Water and Dams at Aurecon.

"In Asia, the planning, design and construction supervision for projects in areas where local infrastructure may be less than ideally desired is an ever-present issue, just as it can be across Africa and the Middle East. Apart from delivering engineering solutions," he says, "it is also critical to



understand the importance of sustainability considerations during the decision making process for each component of the project."

"Dam and energy projects increasingly require that consultants pay particular attention to carbon emissions, from planning through to operation," Blersch adds. "Measures such as carbon accounting, carbon sequestration systems and construction timetables tailored to minimise carbon emissions must be a part of each project.

"Typically, we develop sustainability plans for the entire dam lifecycle to ensure that sustainability remains in focus throughout the lifespan of the project. While in the case of potential environmental issues, we are managing these by designing such things as sophisticated outlet structures that mimic natural flow temperatures using height-selective discharge."

Economic drivers and development projects

Meeting the energy and water demands of countries and communities across the regio is a multi-faceted undertaking.

In the case of one of the largest hydro projects recently delivered in Southeast Asia, the Nam Theun 2 hydroelectric project in Laos, the industrial potential was derived from abundant water on the Nakai Plateau in Khammouane Province, central Laos. With a 350m height difference between the Plateau and the Gnommalath Plain below, the power of water available was able to be channelled down a tunnel drilled through the Karst mountain, ultimately generating an average 6000GWh of electricity per year.

The majority of the electricity generated is exported to Thailand, earning the Lao government an average of US\$80M per year over the first 25 years of the project's operation. This revenue, in addition to the investments made by the Nam Theun 2 project developers, will allow the Lao government to fund poverty reduction efforts not just in Khammouane, but across the whole country.

"On this project, Aurecon's integrated team of hydraulic specialists, structural and civil designers, geotechnical engineers and geologists worked with geomorphologists and international dam experts to deliver an innovative, effective design for the project," says Blersch.

Aurecon was engaged to undertake tender, preliminary and detailed design and documentation of the downstream channel works. The works were designed to convey an operating discharge of 315m3/sec and flood discharges of up to 600m3/sec.

Works included the regulating dam outlet and stilling basin, 27km of open channel, an aeration weir, an inverted siphon to convey the full channel discharge, a km long tunnel, a triple-layered viaduct structure and numerous control weirs, irrigation off-takes and road crossings.

"On Nam Theun 2, we applied a programme of numerical modelling (one-dimensional, twodimensional and computation fluid dynamics), and physical model testing to facilitate the hydraulic design of the channel, rock protection, hydraulic structures and river confluences. The modelling was



also used to investigate air entrainment and ensure that water quality criteria would be satisfied," says Blersch.

Meanwhile, in the world's newest nation Timor Leste, Aurecon is delivering the Australia-East Timor Community Water Supply and Sanitation Programme (CWSSP).

As part of a long term engagement in the water and sanitation sector by the Australian Government within Timor Leste, the AusAID funded CWSSP aims to improve rural health by increasing access to clean water and sanitation, and through environmental health awareness at grass roots level.

In addition, Aurecon assisted the implementation of the CWSSP in three districts. In total, 59,946 people gained access to safe water supplies and 11,964 to improved sanitation. CWSSP implemented 96 community sub-projects to improve average coverage in these districts by 40% for water supply, and 9% for sanitation.

Looking to the future

Projects such as Nam Theun 2 are representative of the opportunities for future dam and hydro development across the Asian region.

"The geographical concentration of the world's poor is now in South Asia and Africa. Countries such as Afghanistan, Cambodia, Indonesia, Laos, Philippines, PNG, Thailand, Timor Leste and Vietnam all present locations where donor funded projects can bring economic and social benefits to developing nations and their people," says Blersch.

Donors are among the biggest global clients for both governments and technical consultants, particularly in the water and power sectors. By providing water and energy solutions to developing countries across Asia, the resultant economic growth has a 'trickle down' effect on growth development and ultimately stability.

Across Asia, issues such as urbanisation, population growth, climate change adaptation, water scarcity, sustainable development, energy supply and demand, mega cities and congestion will all influence the way in which dams and hydro projects are conceived, designed and delivered. As developing nations come to better understand the nature of the resources at their disposal, particularly around water resource planning, dam and hydro projects will be seen as opportunities to foster economic growth across the region.

"A multi-faceted undertaking", 04/01/2012, online at: http://www.waterpowermagazine.com/story.asp?sectionCode=46&storyCode=2061508

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Mullaperiyar: joint control for water regulation only

Officials sources clarified here on Friday that Kerala's expression of willingness for joint control of the proposed new dam on the Mullaperiyar was about water regulation only.

The proposal placed before the Empowered Committee of the Supreme Court earlier was that the ownership, control and maintenance of the new dam would vest with Kerala. A joint water regulatory board could be in charge of water regulation.

The only change that had been proposed to this position was that the representatives of the Centre too could be included in the regulatory board. The details were subject to negotiation.

Chairman of the Mullaperiyar Special Cell M.K. Parameswaran Nair said that the proposal was in consonance with the arrangements with Tamil Nadu over the Parambikulam Aliyar Project (PAP) and the Siruvani Water Supply Scheme. In case of the PAP, the dams were under control of Tamil Nadu. Kerala was controlling the Siruvani dam. In both cases, a joint water regulatory board oversaw water regulation.

The chairman said the Siruvani dam, supplying water to Coimbatore, was funded by Tamil Nadu. In the case of new Mullaperiyar dam, Kerala had agreed to bear the cost.

Reports denied

Mr. Nair said that reports that had appeared in certain media that he, as Chief Engineer of the State Electricity Board, had advised the then Kerala Chief Minister K. Karunakaran to create a scare over safety of the Mullaperiyar dam in 1979 were baseless. The allegation was that this advice was given so that the then Tamil Nadu Chief Minister M.G. Ramachandran could be persuaded to lower the Mullaperiyar reservoir level so that the Idukki reservoir which was short of water could get water from the Mullaperiyar.

He said that he was not even in the country at that time. He was on long leave from the Electricity Board, and was working as Assistant Executive Engineer in the State Organisation for Industrial Design and Construction under the Ministry of Industries of Iraq in Bagdad from 1975 to 1980. He became Chief Engineer of the Electricity Board only in 1991. He was associated with the Mullaperiyar issue only from 1996 when he was named to head a technical committee, after his retirement from the Board.

Mr. Nair added that the Idukki project was designed excluding the catchment of the Mullaperiyar. The project had a catchment area almost equal to that of the Mullaperiyar reservoir.

"Mullaperiyar: joint control for water regulation only", 06/01/2012, online at: <u>http://www.thehindu.com/news/states/kerala/article2780907.ece</u>

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Sirst Sea Water Pumped Hydro Proposed – Staggering 2,400 MW Potential

Could the ocean make pumped hydro power? In the Middle East, it could.

A brilliant proposal has been made to build a massive 2,400 MW sea water hydro project using the Mediterranean Sea, and the Dead Sea, which is below sea level. <u>The Dead Sea Power Project</u> would use the ocean to make hydro power, in a world first.

The ambition and scope of the project would be on a scale almost like terraforming Mars – <u>and the</u> <u>environment is not much more hospitable.</u>

Sea water has never been used in pumped hydro power, because sea water is all level at sea level, and hydro power requires higher reservoirs to work. Here's how this completely new way to make hydro power using an ocean would work.

Normally hydro power is created by simple gravity as rushing water falls down from higher ground.

The idea behind normal hydro power *storage* is that it uses excess electricity to provide the off-peak power to pump water back up a hill into a vast reservoir. Then, when it is needed, it is released to rush down through turbines below, churning out electricity. Normally that electricity is provided by excess unwanted wind power at night and utilizes a reservoir at the top to hold the water (potential energy) till needed.

How this project would work:

A tunnel below sea level from the Mediterranean Sea would funnel sea water through a 10 meter diameter (30 foot) wide concrete tunnel 72 km (45 miles) to a very deep indentation in the rocky landscape about half way across land towards the Dead Sea. No energy would be needed to move the Mediterranean water to the inland sea water reservoir, because the water does not need to go uphill the whole distance.

Then, when needed during peak electrical demand; water would be released down to power turbines 423 meters below sea level on the shores of the Dead Sea which is 1,387 feet below sea level - generating up to 2,400 MW as needed.

The fresh Mediterranean Sea water spilling out on top of the Dead Sea would replenish and revitalize it with much less salty water, which would tend to float on top, while generating substantial power. The <u>Dead Sea has been shrinking, and needs more water</u>. Saving the Dead Sea would have tourism benefits. (<u>Time Running Out for Saving Dead Sea Hotels</u>)

The project would help ease power and water shortages in the region as hydro power could be used to power desalination.



It would have geo-political benefits as well. Crossing the borders of three entities, Jordan, the Palestinian Authority and Israel – this project leverages shared regional needs to provide a platform for shared problem solving.

All three areas would have access to this Mediterranean water for desalination plants to help ease the chronic water shortages, and the electric power would be sold into the existing electrical grids of all three regions to pay the cost of the Project.

"First Sea Water Pumped Hydro Proposed – Staggering 2,400 MW Potential", 05/01/2012, online at: http://www.greenprophet.com/2012/01/first-sea-water-pumped-hydro-proposed-staggering-2400-mw-potential/

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***** Water News: What's Ahead in 2012

News headlines are often dominated by the big, unexpected events — BP's Deepwater Horizon oil spill in 2010, for example, or Japan's earthquake, tsunami, and nuclear catastrophes in 2011 — but some events come with advance warning. Here is a preview of the water news to look for in 2012.

Food

The food crisis in the Horn of Africa will continue this year, according to a <u>famine early warning</u> <u>system</u> funded by the U.S. Agency for International Development (USAID). Though the famine early warning system has global forecasts, the Horn of Africa is the only emergency spot forecasted in the near term.

In response, the United Nations, which said in a statement that the situation is "expected to get worse", has called for <u>more than \$US 2.3 billion in aid</u> to help Somalia, Ethiopia, Kenya, and Djibouti to cope with refugee settlement and the short-term effects of the drought. At the same time, the executive director for the United Nations Children's Fund (UNICEF) says that <u>a million children in Africa's Sahel region are at risk of malnutrition</u> in 2012 because of poor harvests caused by insufficient rain.

Health

Global health leaders are hopeful that 2012 is the year that <u>Guinea worm</u>, a water-borne parasite, will be eradicated. Infections have fallen from 3.5 million in 1986 to 1,056 during the first 10 months of 2011. Following small pox, Guinea worm would be the second-ever human disease to be eradicated. Polio, another water-borne disease, is <u>next in line</u>. Advocates anticipate a polio-free world in 2013.

Energy

Thanks to the payroll tax cut compromise, U.S. President Barack Obama has 60 days to approve or deny a permit for the Keystone XL pipeline. The 2,700-kilometer (1,700-mile) oil conduit from the Canadian tar sands to refineries in Texas would have an initial capacity of 700,000 barrels per day. The president's decision should come by the end of February.

The U.S. Environmental Protection Agency (EPA) will make several final decisions this year that could have consequences for water resources, and the agency will start the rule-making process for several new regulations. In the spring, the EPA will decide what pollution controls are necessary for the <u>Navajo Generating Station</u>, a coal-fired power plant that provides nearly all the electricity to move Arizona's annual share of the Colorado River, 3.5 billion cubic meters (912 billion gallons).

The EPA will also submit a draft rule, expected to be released in January, to <u>regulate greenhouse gas</u> <u>emissions</u> from new and existing power plants.



By the end of 2012, preliminary results from the EPA's investigation into <u>drinking water</u> <u>contamination from hydraulic fracturing</u> will be available. Already this year, <u>Ohio has suspended</u> <u>operations at five deep wells</u> used to dispose of fracking-related fluids, citing concerns of a possible link between well activity and nearly a dozen quakes in the area.

Governments could determine the fate of several large dams on major rivers this year: the Grand Inga on the Congo River in the Democratic Republic of the Congo; the Xayaburi on the Mekong River in Laos; the Mphanda Nkuwa on the Zambezi River in Mozambique; and a cascade of dams on the Nu River in China.

Barring any delays, two <u>World Bank-funded studies on Tajikistan's proposed Rogun Dam</u> will be completed by the end of the year. The studies are a prerequisite for possible World Bank financing for the project. One study assesses the dam's technical and economic merits; the other looks at potential environmental and social effects. At 336 meters (1102 feet), Rogun would be the world's tallest dam, trumping the Nurek Dam, also in Tajikistan.

Policy

In Australia, water management officials are expected to release <u>the final version</u> of the Murray-Darling Basin Plan, a <u>controversial policy</u> that will reduce the amount of water withdrawn from the basin's rivers.

During the first half of the year, the U.S. EPA will hold public meetings to formulate a draft version of its new "<u>integrated planning</u>" policy, which will reduce the cost of complying with water quality violations. In October 2011, the agency's acting assistant administrator for water used a <u>three-page</u> <u>memo</u> to introduce the concept.

March 31 is the target deadline for the U.S. Secretary of the Interior to decide whether or not to approve a plan for removal of four dams in the <u>Klamath River Basin</u> in Oregon and California. The Klamath agreements also include projects for environmental restoration, fisheries, water conservation, and tribal programs.

The Chinese government is expected to release its latest <u>Five-Year Plan for the energy sector</u>. The plan is expected to guide the country's next phase of hydropower development.

Law

On January 9, the U.S. Supreme Court will hear arguments about landowner rights and government power. The case, *Sackett v. Environmental Protection Agency*, began when the EPA claimed an Idaho couple was building their home on a wetland — in violation of the Clean Water Act — and threatened fines of \$US 32,500 per day until the couple complied. The Supreme Court will decide



whether the EPA violated due process laws. If so, the agency may have to seek permission from a judge before using compliance orders, its most common enforcement tool.

The Nevada state engineer will decide by March whether to <u>grant groundwater rights in four rural</u> <u>valleys to the Southern Nevada Water Authority</u>, the wholesale provider for the Las Vegas area.

In August the International Court of Arbitration will submit its final decision on <u>India's Kishanganga</u> <u>hydroelectric project</u>, a point of contention between India and Pakistan since construction began five years ago. In the fall of 2011, the court issued an interim decision that ordered India to halt construction of works that would permanently affect the river's flow.

This could be the year that the International Maritime Organization's <u>convention on ballast water</u> <u>management</u> is approved. The convention would reduce the risk of invasive aquatic species by requiring cargo ships to manage the water they use to balance their loads. For the convention to enter into force, it must be ratified by countries representing 35 percent of the world's merchant shipping tonnage. To date, the convention is 9 percentage points below that threshold.

Meetings

The sixth edition of the water-sector's largest gathering, the <u>World Water Forum</u>, will take place March 12 through 17 in Marseille, France. The fourth <u>World Water Development Report</u> will be released that week.

In June, <u>sustainable development advocates will come together in Rio de Janeiro, Brazil</u>, to mark the 20th anniversary of the Earth Summit, a landmark conference that produced agreements on climate change and biological diversity. This iteration will focus on the green economy and poverty.

Arts

Several water-themed documentaries will be released in 2012. The global water crisis is the subject of *Last Call at the Oasis*, while actor and director Robert Redford narrates *The River Red*, a film that considers a new "water ethic" for the Western United States. Hidden history is the topic of *Under the City*, in which filmmakers go underground to explore rivers buried by urban development in London and New York City, among others.

"Water News: What's Ahead in 2012", 05/01/2012, online at: <u>http://www.circleofblue.org/waternews/2012/world/water-news-whats-ahead-in-2012/</u>

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PIPES: South Sudan, Israel's new ally

Five decades of solidarity cement relations

It's not every day that the leader of a brand-new country makes his maiden foreign voyage to Jerusalem, capital of the most besieged country in the world, but <u>Salva Kiir</u>, president of <u>South</u> <u>Sudan</u>, accompanied by his foreign and defense ministers, did just that in late December. Israeli President <u>Shimon Peres</u> hailed his visit as a "moving and historic moment." The visit spurred talk of <u>South Sudan</u> locating its embassy in Jerusalem, which would make it the only government anywhere in the world to do so. This unusual development results from an unusual story.

Today's <u>Sudan</u> took shape in the 19th century, when the Ottoman Empire controlled its northern regions and tried to conquer the southern ones. The British, ruling out of Cairo, established the outlines of the modern state in 1898 and for the next 50 years separately ruled the Muslim north and Christian-animist south. In 1948, however, succumbing to northern pressure, the British merged the two administrations in Khartoum under northern control, making Muslims dominant in <u>Sudan</u> and Arabic the official language. Accordingly, independence in 1956 brought civil war as southerners battled to fend off Muslim hegemony. Fortunately for them, Israeli Prime Minister <u>David Ben-Gurion</u>'s "periphery strategy" translated into Israeli support for non-Arabs in the Middle East, including the southern Sudanese. The government of <u>Israel</u> served through the first Sudanese civil war, lasting until 1972, as the primary source of moral backing, diplomatic help and armaments for the southern Sudanese.

<u>Mr. Kiir</u> acknowledged this contribution in Jerusalem, noting that "<u>Israel</u> has always supported the South Sudanese people. Without you, we would not have arisen. You struggled alongside us in order to allow the establishment of <u>South Sudan</u>." In reply, <u>Mr. Peres</u> recalled his presence in the early 1960s in Paris, when then-Prime Minister <u>Levi Eshkol</u> and he initiated <u>Israel</u>'s first-ever link with southern Sudanese leaders. <u>Sudan</u>'s civil war continued intermittently from 1956 until 2005. Over time, Muslim northerners became increasingly vicious toward their southern co-nationals, culminating in the 1980-90s with massacres, chattel slavery and genocide. Given Africa's many tragedies, such problems might not have made an impression on compassion-weary Westerners except for an extraordinary effort led by two modern-day American abolitionists.

Starting in the mid-1990s, John Eibner of Christian Solidarity International redeemed tens of thousands of slaves in <u>Sudan</u>, while Charles Jacobs of the American Anti-Slavery Group led a Sudan Campaign in the United States that brought together a wide coalition of organizations. As all Americans abhor slavery, the abolitionists formed a unique alliance of left and right, including Democratic Rep. Barney Frank and Republican Sen. Sam Brownback, the Congressional Black Caucus and Pat Robertson, black pastors and white evangelicals. In contrast, the Nation of Islam's Minister Louis Farrakhan was exposed and embarrassed by his attempts to deny slavery's existence in <u>Sudan</u>. The abolitionist effort culminated in 2005 when the George W. Bush administration pressured Khartoum to sign the Comprehensive Peace Agreement that ended the war and gave southerners a chance to vote for independence. They enthusiastically did so in January 2011, when 98 percent voted for secession from <u>Sudan</u>, leading to the formation of the Republic of <u>South Sudan</u> six months later, an event hailed by <u>Mr. Peres</u> as "a milestone in the history of the Middle East."



<u>Israel</u>'s long-term investment has paid off. <u>South Sudan</u> fits into a renewed periphery strategy that includes Cyprus, Kurds, Berbers and, perhaps one day, a post-Islamist Iran. <u>South Sudan</u> offers access to natural resources, especially oil. Its role in Nile River water negotiations offers leverage vis-a-vis Egypt. Beyond practical benefits, the new republic represents an inspiring example of a non-Muslim population resisting Islamic imperialism through its integrity, persistence and dedication. In this sense, the birth of <u>South Sudan</u> echoes that of <u>Israel</u>. If <u>Mr. Kiir</u>'s Jerusalem visit is truly to mark a milestone, <u>South Sudan</u> must travel the long path from dirt-poor, international protectorate with feeble institutions to modernity and genuine independence. This path requires the leadership not to exploit the new state's resources or dream of creating a "New <u>Sudan</u>" by conquering Khartoum, but to lay the foundations for successful statehood.

For Israelis and other Westerners, this means helping with agriculture, health and education and urging Juba to stay focused on defense and development while avoiding wars of choice. A successful <u>South Sudan</u> could eventually become a regional power and a stalwart ally not just of <u>Israel</u> but of the West.

"PIPES: South Sudan, Israel's new ally", Daniel Pipes, 02/01/2012, online at: http://www.washingtontimes.com/news/2012/jan/2/south-sudan-israels-new-ally/

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Pakistan to challenge UN decision in world court

ISLAMABAD: Pakistan has decided to challenge in the international court of arbitration a decision of the UN Framework Convention on Climate Change (UNFCCC) to grant carbon credits to India on a controversial hydropower project without mandatory clearance of its trans-boundary environmental impact assessment.

Simultaneously, the water and power ministry has sought the opinion from the establishment division if Pakistan's former commissioner for Indus Waters (PCIW) could be proceeded against after his retirement for not vigorously pursuing cases to stop India from construction of the controversial project and getting carbon credits from the UN forum, a senior official told Dawn on Sunday.

Earlier, the law ministry had informed the establishment division and the water and power ministry that a former retired government official could only be proceeded against if his actions were found to be of criminal nature. The water and power ministry has now asked the establishment division to determine the nature of the case so that proceedings could be initiated if these were of criminal nature.

The government has stopped the payment of retirement benefits to Syed Jamaat Ali Shah, the former PCIW, pending an inquiry. An official said the pension and retirement benefits were now being released to the former official who had served as the PCIW for 18 years.

Officials said an enquiry conducted by Mohammad Imtiaz Tajwar, secretary of Wapda, as inquiry officer appointed by the ministry of water and power, confirmed a Dawn report of July 2010 that India had secured carbon credits for the controversial 45-MW Nimoo-Bazgo hydropower project from the UN agency without mandatory clearance from Pakistan. It was, however, strange how India could secure carbon credits when Pakistan had not seen, let alone clear, the cross-boundary environmental impact assessment report.

Therefore, Pakistan has now decided to challenge the UNFCC's decision in the international court of arbitration because legal requirements were allegedly not fulfilled by the UN agency. These officials said either the Indian government misled the UN agency through fake and fictitious documents that might have shown Pakistan's consent to the project because there was no such record available in Pakistan.

India applied for carbon credits for the project which was a "long-term process and must have spread over 4-5 years", the inquiry officer wrote.

"It is still not established how India was able to get carbon credit benefits for the Nimoo-Bazgo project which is located on trans-boundary water and for which ratification of the parties concerned should have been procured before hand by it under clause 37(b) of UNFCC. Although it is too difficult to get carbon credits on a trans-boundary project such as Nimoo-Bazgo, due to lack of contest by PCIW, India was able to get carbon credits on this project," he said.



The inquiry report available with Dawn suggests the former PCIW insisted that the matter relating to the carbon credits or environmental impact "was not covered under the Indus Waters Treaty 1960, therefore, the issue can be taken up with India by the ministry of environment".

He is reported to have told the enquiry officer that he had been vigorously pursuing with his Indian counterpart Pakistan's technical and engineering related objections and reporting its feedback to the government of Pakistan. The issue was discussed several times at various forums of the government without a major decision being taken to take the matter to the international court of arbitration.

The inquiry officer held that information about the project was received in Pakistan in 2002 and Pakistan's PCIW had repeatedly sought information from his Indian counterpart and its inclusion in the agenda items, but it took several years till 2009 when the project was finally taken up by the Permanent Indus Commission (PIC) because India kept on dodging Islamabad through stereotype responses and delaying tactics. "These letters indicate that PCIW was in the knowledge of the issue and could have approached authorities to approach the court of arbitration/neutral expert at that stage, however, that initiative was not availed and opportunity was missed (sic)."

In December 2010, the ministry of foreign affairs said there were enough credible ground to refer the project to a neutral expert or court of arbitration, but it was obvious that the project was at the stage of fait-accompli, not due to the India's design but careless attitude from Pakistan side and it was difficult to get a favourable outcome from the arbitration. It remained, however, unclear why ministries of law, foreign affairs and other related institutions failed to know about the Indian success at the UNFCC during 4-5 years of carbon credit approval process.

The inquiry officer, while suggesting strengthening of the PCIW office, concluded that it was astonishing that "disputes/differences on design/carbon credit benefits were handled in a casual manner" when the media and intelligence reports were carrying sufficient information to raise objection with India.

Attempts to contact Mr Jamaat Ali Shah, the former PCIW, could not materialise as informed sources said he had already travelled abroad to spend time with his family in Canada.

Officials said the issue was of an institutional lapse in raising objections over India's aggression on the country's water rights and securing international carbon credits on hydropower projects disputed by Pakistan and could not be shelved after completion of an inquiry against an individual.

They said the ministry of water and power had said it was not responsible for the lapse because it was the job of the Pakistan Environmental Protection Agency to conduct an environmental impact assessment. The ministry said it had no role in ratification of trans-boundary impact assessments, whose documents had not been shared with it.



On the other hand, the environment ministry washed its hand of the matter, too. It said that since the Indian projects were of a strategic nature, it could not have intervened unless its attention had been drawn to the issue and professional advice sought.

The project was approved by the UNFCCC in August 2008 and India had applied for it in March 2006.

"Pakistan to challenge UN decision in world court", 02/01/2012, online at: <u>http://www.dawn.com/2012/01/02/pakistan-to-challenge-un-decision-in-world-court.html</u>

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* No Clear Studies on Impacts of Merowe Dam

KHARTOUM, Jan 2, 2012 (IPS) - The multi-billion dollar Merowe Dam on the Nile River more than doubled Sudan's electricity supply, but its environmental impacts are still unknown to the public, and communities whose villages were flooded have not yet received compensation.

The Merowe Dam, which was completed in 2010, will affect the aquatic ecology of the Nile River in Sudan by blocking fish migration and degrading water quality. It will also cause at least eight percent of Sudan's annual share in the Nile Water Agreement to evaporate and will produce carbon dioxide and methane, two harmful greenhouse gases. "Sudanese people are unaware of the devastating environmental impact of the Merowe Dam," said Ali Askouri, a human rights activist and the representative of the Hamdab Affected People, a group fighting for compensation and accountability for the populations affected by the dam, told IPS.

No detailed study of the <u>Merowe Dam</u> impact on downstream communities has been published and Askouri is worried that when the effects become clear, it will be too late to take action.

"No one knows what the impact will be on downstream communities, but from other similar projects, we can anticipate a catastrophic impact that may take some time to materialise," Askouri told IPS.

The Merowe Dam or Merowe Multi-Purpose Hydro Project is the largest contemporary hydropower project in Africa. Located in the town of Merowe in northern Sudan, its main aim is to provide electricity for Sudan's growing population.

Ahmed Saad*, who worked on one of the projects constructed for the Merowe community by the contractors, believes that the residents of the town are torn between appreciating the new positive changes the dam has brought to their community, through the construction of a hospital and schools, new services and the renovation of the university campus, and realising the negative impact the dam has had on their livelihoods.

"People have complained that humidity from the dam's lake has affected the production of dates, one of the important items in their diet and one of their main exports," said Saad, who added that it rained in Merowe when he was there and rain is a very rare occurrence in that area.

The residents of Merowe even started to observe the changes during the construction of the dam. Saad, who was stationed there for a few months, noted observations on fish output as it continued to dwindle and dryness in areas that were wet or flooded before the dam - a change that affected agriculture in the area.

The dam was built on the Nile's fourth cataract between 2003 and 2009 by Lahmeyer International, a German engineering consulting firm; <u>two Chinese companies</u>, China International Water and Electric Corp and Harbin Power Engineering Co; and the French energy company, Alstom. It was funded by the Sudanese government, China Export Import Bank and Arab banks and development organisations.

Lahmeyer International, one of the contracting companies, was tasked with producing the Environmental Impact Assessment Report (EIAR) and the document was produced in April 2002.



"The companies behind the Merowe Dam have never prepared a proper Environmental Impact Assessment Report, and the government has never published the shoddy study that was prepared," stated Peter Bosshard, policy director at <u>International Rivers Network</u> (IRN).

The IRN, an organisation that support sustainability and aims at stopping destructive dams while promoting environmentally-conscious water and energy solutions, has written about the environmental impacts of the Merowe Dam since 2005.

In 2005, the international organisation received a copy of the confidential EIAR produced by Lahmeyer International and handed it over to <u>EAWAG</u>, the Swiss Federal Institute of Aquatic Science and Technology, to review.

The review, published in 2006, revealed that the report does not follow World Bank or World Commission on Dams Guidelines on writing EIAR for dam projects. IRN then asked the contractors to suspend the project until further inquiry into the environmental impacts could be made.

"The riverbanks are the most fertile grounds in the region, they are now flooded and new lakeshores are developing and due to the fluctuations in water levels, the lake shores are difficult to use for crop production," Professor Bernhard Wehrli, who co-authored the EAWAG report, told IPS.

He added that productive fisheries rely on stable riverbanks and lakeshores, and that fluctuations in water levels caused by the dam will harm the reproduction of fish and the growth of juvenile fish.

The report brought up the Aswan High Dam of Egypt, also on the Nile River, as an example since it has been studied numerous times, and pointed out that the Merowe project's EIAR did not mention the High Dam and did not look into steps taken to solve the growing environmental problems there.

"The High Dam of Egypt revealed that there are serious consequences for the population and the lifesupport systems in the downstream part," said Wehrli.

The EAWAG team used their experience looking at dams in different countries, such as the High Dam, to assess the possible consequences of the Merowe Dam and suggest options to help minimise the environmental harm.

"To preserve water in reservoirs, you minimise the surface area of a lake for an effective dam design. Also, the outlet to the turbines should be variable in order to use oxygen-rich water," said Wehrli, adding that oxygen-rich water curbs serious harm to downstream fisheries and the deterioration of water quality.

IRN calculates that the Merowe project will produce two harmful greenhouse gases, carbon dioxide and methane, when plant matter, algae and soil decompose. The dam's production of greenhouse gases is equivalent to a natural gas project that generates the same amount of electricity.

"African countries have a huge potential of renewable energy such as wind and solar, which in many cases is not more expensive than large dams," Bosshard said.



He added that government officials, corporations, financiers and bureaucrats continue to favour projects like big dams. "Such projects provide huge contracts, prestige, political control and often kickbacks under the table," he said. (END)

"No Clear Studies on Impacts of Merowe Dam", 02/02/2011, online at: http://www.ipsnews.net/news.asp?idnews=106351

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* Govt decides to arrest former Water Commissioner

KARACHI: The government has finally decided to make arrangements for the arrest of former Indus Water Commissioner, Jamat Ali Shah.

Pakistan has to decide now to appoint patriotic and real water management experts to take up its case before International Court of Arbitration (COA) against India over construction of hydropower project in violation of the 1960 Indus Waters Treaty.

"Jamat Shah's opposition fails to fulfil government government's expectations on water issues with India," Sindh Agriculture Forum (SAF) water expert, Shakeel Ahmad said.

Even on Exit Control List (ECL), Jamat Ali slipped abroad and Rehman Malik, Federal Interior Minister assured his arrest on Monday. The country is heading towards the worst water shortage in the next couple of years due to insufficient water management practices and storage capacity, agriculture and water experts said.

In the backdrop of the arrest of permanent Indus Water Commissioner, Shah, the government has hard job of justifying its earlier actions.

Pakistan has right to oppose to the Kishanganga project because its diversion will reduce 16 percent of the power generation capacity of the 969-MW Neelum-Jhelum power project on the same river downstream Muzaffarabad in Azad Kashmir, an official of Ministry of Water and Power told.

"How can a person on an important seat opposed the facts and shoulder with the opponent side, as on many a occasions Mr Jamat could not come up with the government's expectations on water issues with India," according to Sindh Agriculture Forum (SAF) water expert, Shakeel Ahmad. He said due to the poor handling of case with India as well as in International Court of Arbitration (COA), Pakistan could not gain points in favour of its case, only because of a team of jurists, not sincere from the start.

A report by the Washington DC based Woodrow Wilson Centre described Pakistan's water shortage as deeply troubling.

He said Neelum-Jhelum power project case in COA, Pakistan would face a loss of energy more than Rs 6 billion every year. Pakistan and India have agreed on the selection of two arbitrators each for the seven-member court of arbitration, but have failed so far to agree on the appointment of three arbitrators belonging to engineering and law to complete the adjudication forum for more than seven months

The Indus Water Treaty with India remained just on papers. India had diverted Pakistani water and constructed more dams, which would further worsen the water situation in Pakistan.

Most independent analysts including expert said all Pakistanis agree that Pakistan faces a severe water shortage and that some form of water management should be implemented soon.



The Senate Committee on Food and Agriculture said underground water in Punjab province was going down due to provision of free electricity to Indian Punjab province for tube wells.

The farmers were taking excessive water through tube wells, which resulted downward trend of water in Pakistan Punjab province.

If the process on Indian side continued then the underground water situation in Pakistan Punjab would further worsen that would badly affected main crops producing province of the country.

The underground water level went down from about 70-100 feet to up to 1,000 feet and termed it as a worsening situation.

An Indian water management expert has conceded many of Pakistan's concerns on the Baglihar dam in occupied Kashmir are 'legitimate and carry weight.' However, he said Bagliar dam was in no way a contravention of the 1960 Indus Basin Treaty, which allowed India to take up projects on three Pakistani rivers provided they did not serve to divert the flow of water into Indian Territory or to create water storage. Under the treaty, three western rivers, Chenab, Jehlum and Indus are allocated to Pakistan and India is not allowed to build storages on them.

"We concluded Indus Treaty with Pakistan in 1960 and so far it has withstood stress and strains," he said. India had also concluded water agreements with Bangladesh and Nepal, "There are still some problems and these are being addressed."

"Govt decides to arrest former Water Commissioner", 03/01/2012, online at: http://www.dailytimes.com.pk/default.asp?page=2012%5C01%5C03%5Cstory 3-1-2012 pg7 20

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