



ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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10 December – 16 December 2012

- ❖ Turkey and the Politics of Water
- ❖ Maliki calls for general negotiation strategy on water questions
- ❖ MP calls government to support agriculture sector
- ❖ Iraq invites NESPAK for East Gharaf Project
- ❖ NIC Predicts Water Shortage, Oil Glut for Iran in 2030
- ❖ Iranian, German Companies to Cooperate in Water, Wastewater Industry
- ❖ Middle East water conflicts from climate change studied by CLICO research project
- ❖ Waters part for industry parley in Israel
- ❖ Israel promotes water technology
- ❖ Israeli delegation brings urban water expertise to India
- ❖ EBRD funnels funds to Jordan to boost availability of quality water
- ❖ Planning authorities block Interior Ministry's attempt to speed up construction in Israel's green areas
- ❖ Israel green agency backs Palestinian farmers on West Bank wall
- ❖ Israel, Canada to promote int'l wastewater reuse
- ❖ Disruptions in water supplies continue
- ❖ Drying out the Palestinians
- ❖ UN Climate Summit Ends with Modest Agreement
- ❖ 'Israel's Triangle area plagued by environmental terror'
- ❖ 'Innovators to focus on sustainable development'
- ❖ South Africa: Chile Follows South Africa's Lead in Climate Change Mitigation

-
- ❖ **European Reconstruction Bank Seeks Water Experts in Kyrgyzstan**
 - ❖ **Second Environmental Performance Review of Tajikistan highlights lack of access to clean water and sanitation and need for improved waste management**
 - ❖ **China Plans to Invest \$6 Billion in Water Projects, Journal Says**
 - ❖ **Self-help is the best, Jharkhand villagers tell the world by building a dam themselves**
 - ❖ **Grabbing at Solutions: Water for the Hungry First**
 - ❖ **Haiti: More pressure needed to get clean water**
 - ❖ **The Farming Forecast Calls for Change**
 - ❖ **Diverting the Missouri River to the West: 'Can' Does Not Mean 'Should'**
 - ❖ **Major Federal Study Sets Foundation for Colorado River Basin's Future**
 - ❖ **Cloud forest trees drink water through their leaves**
 - ❖ **City seeks \$82m for water projects**
 - ❖ **Weather extremes push Sri Lanka to adopt crop insurance**

❖ Turkey and the Politics of Water

Turkey's AK Party government has long described itself as the pivotal power of the Middle East. However, the country's power is less than it is cracked up to be — and, paradoxically, more than it is often assumed. Robert D. Kaplan, the author of "The Revenge of Geography: What the Map Tells Us About Coming Conflicts," explains the tension among Turkey's water, land and politics.

Turkey's position as a land bridge bracketed between the Mediterranean to the south and the Black Sea to the north makes it, in part, an island nation.

While Turkey influences its surrounding areas, it is not geographically pivotal in the way that Iran is to its neighbors. Turkey's influence in the Balkans to the west and Syria and Mesopotamia to the south is primarily economic.

Only in the Caucasus, and particularly in Azerbaijan, where the language is very close to Turkish, does Turkey enjoy the level of diplomatic influence that can dramatically affect daily politics.

However, the fact that Turkey controls the headwaters of the Tigris and Euphrates gives it, literally, a terrific geographical advantage. It has the ability to cut off the supply of water to Syria and Iraq.

If Turkey were actually to do this, it would constitute the equivalent of an act of war. Thus, Turkey must be subtle in pressing this advantage.

It is the fear that Turkey might reduce the water flow, through upriver diversions for its own agricultural development purposes, that can give Turkey considerable influence over Arab politics.

A relatively new geopolitical fact that is often overlooked is the Southeast Anatolia Project, whose centerpiece is the Ataturk Dam, 25 miles north of Sanliurfa near the Syrian border.

Almost 2,000 square miles of arable land in the Harran plateau is being irrigated via gravity-flow water diverted from this dam.

The whole Euphrates River dam system, planned in the 1970s and built in the 1980s and 1990s, which actually has the capacity to pump water as far as the water-starved West Bank in Palestine, will make Turkey a greater power in the Arab Middle East in the 21st century than it was in the 20th.

The heightened political profile that Turkey has adopted of late should be seen in the context of this new geographical reality.

While recent headlines show Turkey turning its attention to the Middle East, this was not always the case. From the rise of the Ottoman Turkish Empire in the 13th century, the Ottomans were mainly focused on their northwest, toward Europe, where the wealth and lucrative trade routes were.

This was a pattern that had begun in the late Middle Ages, when the ascent of Central Europe and of the Carolingian Empire acted like a magnet for Turkish tribes, who themselves had gravitated westward across Anatolia to the Balkans, to the most fertile agricultural lands in Asia Minor's immediate vicinity.

Turkey may be synonymous with the entire Anatolian land bridge, but (as with Russia) the nation's demographic and industrial heft has for centuries been clustered in the west, adjacent to the Balkans, and relatively far from the Middle East.

But though the Ottomans were clustered near Europe, Anatolia's exceedingly high and rugged terrain, with each mountain valley separated from the next, hindered the creation of tribal alliances that might have challenged Ottoman control in the areas closer to the Caucasus and the Middle East.

Indeed, because geography made for social "disruption" in eastern Anatolia, organized dynasties like the Seljuks and Ottomans could rule for hundreds of years at a time from their base in faraway western Anatolia (i.e., European Turkey) without worrying about unrest in the east.

Thus, Turkish demography has accentuated Turkish geography. Anatolia is further removed from the Middle Eastern heartland than the Iranian plateau, and the move toward a northwestern spatial arrangement of the Turkish population in recent centuries has only made it more so.

Ottoman military forays into Central Europe, which had the flavor of nomadic wanderings and culminated in 1683 with the siege of Vienna, were eased by Europe's own political fragmentation.

Arising from this geography came a sprawling, multinational empire that by the late 19th century was in its death throes, with the Ottoman Sultanate only giving up the ghost in the aftermath of its defeat in World War I.

Mustafa Kemal Atatürk (Father Turk), the only undefeated Ottoman general, who forged a modern state in Anatolia following the imperial losses in the Balkans and the Middle East, was an authentic revolutionary. That is, he changed his people's value system.

He divined that the European powers had defeated the Ottoman Empire not on account of their greater armies, but on account of their greater civilization, which had produced the greater armies. Turkey would henceforth be Western, he said, marching culturally and politically toward Europe.

Thus, he abolished the Muslim religious courts, forbade men to wear the fez, discouraged women from wearing the veil, and replaced the Arabic script with the Latin one. But as revolutionary as these acts were, they were also the culmination of a Turkish obsession with Europe going back centuries.

Though Turkey remained neutral during most of World War II, Kemalism — the pro-Western, secularist doctrine of Kemal Atatürk — guided Turkey's culture and particularly its foreign policy right up through the end of the first decade after the Cold War.

Indeed, for years Turkey entertained hopes of joining the European Union, a fixation that Turkish officials made clear to me during many visits to the country in the 1980s and 1990s. But in the first decade of the 21st century, it became apparent that Turkey might never gain full membership in the EU.

The reason was blunt, and reeked of geographical and cultural determinism. Though Turkey was a democracy and a member of NATO, it was also Muslim, and thus not wanted.

The rejection was a shock to the Turkish body politic. More important, it merged with other trends in society that were in the process of issuing a grand correction to Turkish history and geography.

Ataturk's definition of nationality was strikingly modern. He often declared that whoever says he is a Turk, speaks Turkish and lives in Turkey is a Turk. He moved the capital to Ankara, in the heart of Anatolia, from Istanbul (Constantinople) in European Turkey.

His strategy was to build a uni-ethnic Turkish state out of the heartland of Anatolia, which would be firmly anchored toward Europe and the West. The problem was that by focusing on Anatolia, he unwittingly emphasized Islamic civilization, which was more deeply rooted in Asia Minor than in the European Turkey of Constantinople.

*Editor's note: This essay is adapted from **The Revenge of Geography: What the Map Tells Us About Coming Conflicts and the Battle Against Fate** (Random House) by Robert D. Kaplan. Published by arrangement with Random House. Copyright © 2012 by Robert D. Kaplan.*

“Turkey and the Politics of Water”, 15/12/2012, online at: <http://www.theglobalist.com/storyid.aspx?StoryId=9841>

BACK TO TOP

❖ **Maliki calls for general negotiation strategy on water questions**

BAGHDAD / Aswat al-Iraq: Premier Nouri al-Maliki today called to draw a general negotiation strategy on water resources.

In a statement issued by the Premiership and received by Aswat al-Iraq, it noted that Maliki chaired the Higher Water Commission, where he stressed that it would be changed into a Higher Water Council.

He added that a general water map should be withdrawn in all parts of the country, calling to have negotiation policy with adjacent countries.

“Maliki calls for general negotiation strategy on water questions“, 11/12/2012, online at: [http://en.aswataliraq.info/\(S\(t4uzu555kznlg55bujw1k55\)\)/Default1.aspx?page=article_page&id=151368&l=1](http://en.aswataliraq.info/(S(t4uzu555kznlg55bujw1k55))/Default1.aspx?page=article_page&id=151368&l=1)

BACK TO TOP

❖ **MP calls government to support agriculture sector**

Baghdad (AIN) –The secretary of the agriculture and water committee, Itab al-Duri, warned the government from neglecting the agricultural sector and depending totally on Oil revenues to support national income.

She mentioned in statement received by AIN on Sunday ”The agriculture is the most useful source for national income since most of the countries depend on agriculture as a basic income to promote its economy.”

“Iraq is considered the most convenient country for agriculture because of its fertile territories and distinctive farmers and thus supporting agriculture sector will promote Iraq economy and will provide strategic food reserves that satisfy Iraqi needs rather than being dependent on any other country,” she added.

“MP calls government to support agriculture sector”, 09/12/2012, online at: <http://theiraqidinar.com/news/mp-calls-government-to-support-agriculture-sector-184765>

❖ Iraq invites NESPAK for East Gharaf Project

LAHORE: Ministry of Water Resources of Government of Iraq has extended a direct invitation to National Engineering Services Pakistan (Pvt) Limited (NESPAK) on Thursday to participate in the process of taking up East Gharaf Project.

The project aims at strengthening the war torn economy of Iraq by providing sustainable irrigation and drainage facilities to about 390,000 acres of land in Nassiriya and Kut Governorates, the area between Tigris and Euphrates rivers. NESPAK retains its registration with Ministry of Water Resources and was already contemplating to enter into Iraq before this direct invitation was received.

Another war torn country, Republic of Yemen has already seen the footprints of NESPAK where it is already engaged in a Fisheries and Grain Silos Project.

Recently, the NESPAK has also been awarded three multi-purpose dam projects and two irrigation/agriculture in Afghanistan.

The NESPAK had worked on a number of Irrigation Projects in early 1980's, such as Euphrates East Drains Project, Saddam Dam Project, North Jazira Irrigation and Drainage Project, Rumaitha Irrigation and Drainage Project.

"Iraq invites NESPAK for East Gharaf Project", 14/12/2012, online at:
http://www.dailytimes.com.pk/default.asp?page=2012%5C12%5C14%5Cstory_14-12-2012_pg5_12

BACK TO TOP

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❖ NIC Predicts Water Shortage, Oil Glut for Iran in 2030

Iran by 2030 may be perilously short of water and find it even harder to market its major export, oil, in a world with a substantial surplus of crude and more extreme weather patterns, according to a new report by the National Intelligence Council.

Unveiled on Monday [Dec. 10], [the report, “Global Trends 2030: Alternative Worlds,”](#) posits a variety of scenarios and best and worst cases for the planet going forward.

The challenges for the Middle East are particularly acute. According to the report, “The world’s major belt of water stress lies across northern Africa, the Middle East, central and southern Asia and northern China.” Countries such as Iran are “heavily dependent on fossil and imported water” and could become embroiled in conflicts with neighbors over dwindling water from shared river basins, the report says.

At the same time, the world may have a surplus of oil in part as a result of new discoveries of so-called tight oil in the United States.

“A dramatic expansion of US production could ... push global spare capacity to exceed 8 million barrels per day,” the report says, “at which point crude oil prices would drop, possibly sharply. Such a drop would take a heavy toll on many energy producers who are increasingly dependent on relatively high energy prices to balance their budgets.”

Already, Iran is struggling to support itself in the face of draconian economic sanctions. Growing production by other countries has kept the price of oil relatively stable even as Iranian production and exports have plunged.

A major game-changer has been the discovery and exploitation of shale oil and other unconventional energy sources in the US. By some estimates, the [United States will be self-sufficient in oil](#) in a few years and an oil exporter by 2020. Meanwhile, [Iraqi oil production now exceeds that of Iran](#) for the first time in more than two decades, rising last summer above 3 million barrels a day. Iranian production has sunk to less than 3 million barrels a day and its exports have dropped precipitously

from 2.5 million barrels to under 1 million since European Union members stopped signing new contracts for Iranian oil in July and tighter US sanctions on Iran's financial sector went into effect.

[The International Energy Agency, a Paris-based organization that studies world energy markets, reported recently](#) that Iraqi oil production, which already exceeds that of Iran, will top 6 million barrels a day by 2020 and eight million barrels in 2035, making it the world's second largest oil exporter after Saudi Arabia. Countries such as China, which had been major purchasers of Iranian crude, are turning increasingly to Iraq.

The growing economic pressures on Iran could have important political and strategic ramifications.

While it is possible that Iran will continue its pursuit of a nuclear weapons capability — a development that the National Intelligence Council said would be profoundly destabilizing — the report said that under a second scenario, “growing economic pressure from its public” could lead to a change in the Iranian regime due to “elite infighting and mass demonstrations. Under this scenario in which Tehran focused more on economic modernization, a more pro-Western, democratic Iran — and a more stable region — would emerge.”

The report, the fifth quadrennial exercise by the intelligence community's in-house think tank, also discusses trends in the Middle East more broadly. It suggests that the region will have to become more economically diversified to make up for discovery of oil in other places and a possible collapse in oil prices. It also says that political Islam, now on the rise throughout North Africa and into Syria, will have to moderate to empower a “more entrepreneurial younger Muslim Brotherhood ‘new guard’ and others who can grow the economy” and meet the demands of young, better-informed and more socially connected populations.

A baby boom that has produced a large youth bulge in the Middle East will dissipate by 2030. At the same time, however, “an aging population by 2030 may face a health-care crisis absent a better-provisioned welfare system,” the report said.

The report did not predict a resolution of the Arab-Israeli crisis by negotiations but through an independent Palestine might emerge from a series of “unofficial independent actions ... incrementally leading to statehood.” It said the possibility for Palestinian reconciliation would increase as Hamas moves away from Syria and Iran and re-orientes firmly in the “Sunni Arab fold.”

The United States and Western countries more generally will not be able to dictate change in this volatile region but can take advantage of their continued relative dominance to lead the search for solutions, those associated with the report said.

“The United States has a second chance at molding the international system,” said Fred Kempe, president of the Atlantic Council, which worked with the NIC to facilitate the research for the report, “but its margin of error is smaller than after World War II.”

Mathew Burrows, the principal drafter of the NIC report, said the US could share technologies that would help the Middle East cope with declining water supplies, such as drip irrigation and other ways to reduce waste. European countries that are now aging at record rates may need to accommodate “climate refugees” from North Africa and the Middle East, he said.

Chuck Hagel, the chairman of the Atlantic Council, said it was the responsibility of Western leaders to help find solutions and to listen to the needs of the developing world.

“We need to turn our receivers on and some of our transmitters off,” Hagel said. “Great powers have the responsibility to engage and that means to listen.”

“NIC Predicts Water Shortage, Oil Glut for Iran in 2030”, 10/12/2012, online at: <http://www.al-monitor.com/pulse/originals/2012/al-monitor/nic-iran-water-oil.html>

BACK TO TOP

❖ Iranian, German Companies to Cooperate in Water, Wastewater Industry

TEHRAN (FNA)- The Iranian and German companies inked a Memorandum of Understanding (MoU) to cooperate in the fields of water and wastewater, infrastructural and environmental engineering.

"According to the MoU which is comprised of four paragraphs, the two sides will have consulting cooperation in the fields of water and wastewater, infrastructural engineering and environment engineering," Managing-Director of Iran's Lar Consulting Engineering Company Mohammad Ranjbar told FNA on Monday.

Ranjbar said that after signing the MoU with the German Schlegel Company, Lar intends to transfer and import new technologies and run marketing services for the Germans in Iran.

Germany is an important trade partner of Iran. Berlin has long been ignoring the US-led sanctions against Iran.

Earlier reports said that the volume of the bilateral trade exchanges between Iran and Germany is on the rise despite the US-led western sanctions on Iran, adding that the volume of trade transactions between the two countries is getting close to the eye-catching figure of 4bln euros for 2012.

Germany is on the course to increase its bilateral trade volume with Iran to 4bln euros for 2012, the Jerusalem Post reported late October.

The volume of trade transactions between the two countries also reached 4bln euros in 2011, it said, noting that the new sanctions have not affected Iran's economy.

The German banking system has also reportedly ignored the US-led western sanctions against Iran several times thus far, it said.

The daily said that the German foreign ministry had green-lighted a 1.5 billion-euro oil payment from India to Tehran via the Europaisch-Iranische Handelsbank (EIH).

The flourishing trade transactions between Iran and Germany have frustrated Israeli, American, British and French officials, the newspaper said.

"Iranian, German Companies to Cooperate in Water, Wastewater Industry", 10/12/2012, online at:

<http://english.farsnews.com/newstext.php?nn=9107125943>

BACK TO TOP

❖ **Middle East water conflicts from climate change studied by CLICO research project**

Dec. 12, 2012 -- International researchers from 14 institutions met in Nicosia (Cyprus) on the Dec. 10-11 to present and debate the results of studies on [water](#), conflict and [security](#) conducted in the past three years in a variety of locations in the Mediterranean, Middle East and Sahel under the CLICO research project. The CLICO project explored the social dimensions of climate change and in particular, conflicts related to water, and the threats this may pose for national and human security. The project was led by the Institute for Environmental Science and [Technology](#) (ICTA) of the Universitat Autònoma de Barcelona (UAB) and financed by the Socio-economic Sciences and Humanities (SSH) Theme of the European Union's Seventh Framework Programme.

The effects of climate change on water are expected to intensify in the Mediterranean and surrounding regions in the coming years. This raises potential threats to the security of populations, particularly those most vulnerable to droughts or floods. Prominent people have talked about the danger of "water wars" and about climate change as a threat to national security. The results of the CLICO project, however, found that such discourses oversimplify a complex reality. Climate and [water resource](#) changes are important, but play only a secondary role -- at least for the time being -- in the causation of conflict and insecurity compared to political, economic and social factors. According to the research, countries with good institutions are unlikely to experience violence because of water, and populations in countries with strong welfare and civil security systems will suffer much less from climate disasters, compared to those in countries without.

CLICO's final conference in Cyprus, which was held at the same time as the high-profile EWACC 2012 (Energy, Water and Climate Change) conference, presented the project's results, established policy recommendations to raise the security of populations and proposed new ideas on public policies and institutional arrangements needed to promote peace and security under [changing climate and water conditions](#). Among other aspects, the meeting served to debate the relation between droughts, floods and sea level rise and social conflict, the role of institutions and international agreements and adaptation policies for human security.

The CLICO studies found that political stability and the welfare state reduce the likelihood of social conflict. The vulnerability of populations stems from deeper causes which precede disaster events, such as poverty, lack of access to education, and corruption in political and administrative institutions. CLICO researchers found that development reduces violent domestic conflicts over water, though in some cases, such as with the expansion of large-scale agriculture, it might also be a source of social tensions and conflicts.

A key conclusion is that political discourses must not reiterate simplistic models which link climate change directly to social conflict and insecurity: a better distribution of wealth, greater social protection, universal access to justice and higher levels of democracy can largely help to improve human security and reduce outbreaks of social conflict.

CLICO also warns about the weakening of social protection and support systems in cases of natural disasters in northern Mediterranean regions due to the economic crisis, and strongly advises reversing this tendency in order to improve human security.

The policy analysis of CLICO highlights the need for institutional collaboration and integration of climate change adaptation policies into already existing structures, such as those related to human development and poverty reduction. A review of existing policies in a number of countries found that good policies already exist, but they are not implemented.

Moreover, in many cases the knowledge and experience of the populations affected by water phenomena is not taken adequately into account, and as a result government policies end up being counterproductive. A greater social participation would need to go hand-in-hand with social and economic policies to empower vulnerable groups to have a meaningful role in participatory processes.

“Middle East water conflicts from climate change studied by CLICO research project”, 12/12/2012, online at: <http://www.waterworld.com/articles/2012/12/water-conflicts-considered-with-climate-change.html>

BACK TO TOP

❖ Waters part for industry parley in Israel

Four dozen water industry executives, venture capitalists and others from across Massachusetts will meet over the next week in Israel to develop partnerships with a country that has become a global leader in water innovation.

The mission, which runs from Dec. 15 to Dec. 20, is believed to be the largest business delegation of any kind to visit Israel.

“Water is obviously the most important compound on the planet, and yet a huge number of people in the world lack clear access to it,” said John Harthorne, founder and CEO of MassChallenge, a startup competition and business accelerator that expects to announce an Israeli branch early next year. “Massachusetts and Israel are already good at this. So it makes a lot of sense to build this expertise out together.”

Israel recycles 75 percent of its water, and much of its water comes from the sea, said David Goodtree, the mission’s co-chairman.

The world’s first desalination system, the process by which salt is removed from sea or ocean water, was designed and engineered in Massachusetts, Goodtree said, while Israel invented drip irrigation to give crops only the amount of water they need.

“Israel is a center of advanced water technologies, and we want to make sure we’re up to speed with all the latest in advanced water treatment,” said Bill Staby, CEO of Resolute Marine Energy, Inc., a Boston company that is developing the world’s first ocean-wave-driven desalination system that will allow water production in places where there’s no electrical grid.

On Dec. 18, several promising Israeli water technology companies also will compete in the first Water Export Technology Revolution Competition, sponsored by the Massachusetts delegation.

The winner will receive a trip to Massachusetts next spring to check out opportunities for expansion here.

“Waters part for industry parley in Israel”, 12/12/2012, online at: http://bostonherald.com/business/technology/news/2012/12/waters_part_industry_parley_israel

BACK TO TOP

❖ Israel promotes water technology

How can Israel extend the way it communicates its message about its capabilities with regard to water? Is there a more effective way to help companies that have unique water-related solutions bring them forward to a market beyond Israel?

Perhaps a lesson can be taken and modified from the recent conflict between Israel and Hamas. One of the new fronts that appeared during the conflict was the use of social media by various Israeli organizations.

Israel was trying to influence a new generation of advocates by providing information in short bursts through Twitter, and then in more detail on other socialmedia channels and supporting videos on YouTube that gave even more details.

This “air cover” approach influenced the direction of some of the stories that eventually appeared in traditional mainstream media such as television, radio and newspapers. The information was also used by speakers at traditional rallies organized by Jewish organizations in support of Israel. The story about Israel and water could leverage some of the lessons learned in this recent conflict.

It is important that people who support Israel gain a high level understanding of what drives Israel when it comes to water. When the right opportunity presents itself with the right people, communicating a small amount of information about Israel’s capabilities can open up a door of opportunity that might otherwise have remained closed.

I recently used my own network to work with a number of social-media groups on LinkedIn to track down a number of short videos that would provide air coverage about Israel and water. Through online discussions with other like-minded advocates for Israeli technology and sustainable water practices we identified a number of videos that could get a clear message across.

Israel NEWTech, Novel Efficient Water Technologies, has been responsible for making Israel’s case in the cleantech space, and opening the way for Israeli companies to gain recognition and business on the world stage.

Israel – Cleantech in the Making, is a two-minute YouTube video produced by Israel NEWTech. It highlights Israel’s capabilities in both water and renewable energy. If you want to get a general idea about water the first minute of this video gives you that information.

Israeli Water Technology is a five-minute video that then goes slightly deeper into Israel’s water capabilities. The video provides examples of how Israeli water technology and know-how have been deployed in Israel and around the world to provide solutions for water management, water flow control, drip irrigation, recycling and reclamation, purification and water treatment and desalination.

An eight-minute video by Mekorot, Israel’s National Water Company brings the story together in the context of how solutions referenced above not only plug into the national water system but serve as a research and development hub and a proving ground to help with technology and know-how export. <http://bit.ly/Ug3tKq>

This sets the stage for a more targeted business discussion, where you match the specific water needs of a client with the water capabilities that the Israeli companies can offer. Next month, a look at traditional water-related conferences and new collaborative approaches to bringing people together around water.

“Israel promotes water technology”, 11/12/2012, online at: <http://www.cjnews.com/index.php?q=node/98739>

BACK TO TOP

❖ Israeli delegation brings urban water expertise to India

“There is a an almost uncanny fit between India’s needs in the urban water arena, and what Israeli companies are able to offer,” so says Abraham Tenne, VP Desalination at [Israel’s Water Authority](#) following a visit last week to India. The visit was one implementation of an agreement signed this past February between the two nations aimed at fostering cooperation, with a focus on urban water management.

The delegation of Israeli water experts included, in addition to Tenne, Oded Distel, head of [Israel NewTech](#), [Zohar Yinon, CEO of the Jerusalem Water Authority “Hagihon”](#), and Elisha Arad of the [Standards Institute of Israel](#).

The experts toured the Raipur water system, as guests of Taran Prakash Sinha, Commissioner, Municipal Corporation Raipur. Raipur is the capital city of the state of Chhattisgarh, with a population of over a million, and its urban water system is in need of a major transformation. The Indian participants in the Raipur visit were very interested in learning from Israel’s experience in the management of water systems and urban wastewater.

Following this visit, the delegation continued on to Delhi, for a seminar sponsored by the [Indian Ministry of Urban Planning](#). The seminar was attended by 50 representatives of urban water utilities from all over India.

We spoke with Oded Distel just after the event. “India presents huge challenges in urban water planning. First and foremost, a change in ‘concept’ is needed, one in which people begin to perceive water as the precious resource that it is.” Distel continued, “Once this change in perception occurs, then changes can be achieved in urban water supply, management, measurement, pricing and collection. This is a very dramatic change, but the community of Indian urban water professionals appears poised to make it.”

Abraham Tenne of the Israel Water Authority also told us about the Delhi conference. “India today is roughly in the situation in which Israel was 10 or so years ago, with 12 different government ministries responsible for urban water. This created a lot of confusion and inefficiency, which was

solved when water treatment was placed under the leadership of the Water Authority. The Indian water community looks to Israel as a sort of guru, they know the Israeli water industry very well and hold it in very high regard.”

The Delhi conference included one on one meetings between the many Indian water professionals and water utility heads who attended, and the Israeli water technology companies who came to India on the delegation: [Bermad](#), [Ari](#), [Amiad](#), [Mekorot](#), [Tahal](#), [Powercom](#), LR, [Mira Holdings](#), [Aqwise](#) and [Arad](#).

Yoni Ben Zaken, the [Israeli Economic Attache in India](#), concluded, “Raipur is a starting point, but there are 600 more cities in India with a similar urban water situation and needs, so the market potential is very significant.”

“Israeli delegation brings urban water expertise to India”, 09/12/2012, online at:
<http://www.israelnewtech.com/2012/12/india/>

BACK TO TOP

❖ EBRD funnels funds to Jordan to boost availability of quality water

The FINANCIAL -- The EBRD, as Implementing Support Agency, along with the Jordanian government, will manage technical cooperation funds to help the country improve the quality and reliability of water provision to Jordan.

This will also prepare the way for involvement by the private sector in the overall management of water services in the country.

Jordan has particularly low levels of water resource availability and water scarcity is a major problem.

This US\$ 1.5 million grant is the first allocation approved by the Steering Committee of the Transition Fund managed under the Deauville Partnership, which was set up in October 2012 as part of the international community's response to support economic development in emerging Arab democracies.

The aims of the funding are to increase monitoring and awareness of both water quantity and quality issues, to improve the regulatory framework for better water provision, which includes moving to cost-recovery, and also to pass on lessons from Romania's water sector, which has successfully dealt with similar challenges in the past.

Specific projects financed from the technical cooperation funds include the establishment of a Unit of Excellence for the Water Authority in Jordan. As European Bank for Reconstruction and Development said, this authority will be responsible for assisting in designing public-private partnerships; as well as proactively engaging with the private sector to identify opportunities for future energy efficiency projects in the water sector.

Water companies in Romania once faced similar problems to the authorities in Jordan but have now developed what are viewed as best practices in the municipal water and wastewater sector. This financing will provide the opportunity for Romania to pass on the positive lessons it has learnt to Jordan.

This last step is in the context of the EBRD's Transition 2 Transition Initiative, where experts and officials from transition countries in central and eastern Europe share experiences with their counterparts in the southern and eastern Mediterranean region. Building on this exchange, the funds will be also used to share knowledge gained through the Arab Countries Water Utilities Associations (ACWUA).

This financing is also a prelude to an investment the EBRD is considering for Jordan's Yarmouk Water Company. This company serves over 1.4 million people living in four governorates in the north of the country. A feasibility study funded by the EBRD SEMED Multi Donor Account is currently underway.

The Deauville Transition Fund has 10 donors: Canada, France, Japan, Kuwait, Qatar, Russia, Saudi Arabia, United Arab Emirates, United Kingdom, and the United States of America.

“EBRD funnels funds to Jordan to boost availability of quality water”, 12/12/2012, online at:

http://finchannel.com/Main_News/Banks/120941_EBRD_funnels_funds_to_Jordan_to_boost_availability_of_quality_water/

BACK TO TOP

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❖ **Planning authorities block Interior Ministry's attempt to speed up construction in Israel's green areas**

National Planning and Building Committee decides to slow down the approval process following stiff opposition from the Environmental Protection Ministry and local government heads, who say it would harm green spaces in the crowded center of the country.

The planning authorities have stymied the Interior Ministry's attempt to rush through the approval of building plans in open spaces.

Following stiff opposition from the Environmental Protection Ministry and local government heads, the National Planning and Building Committee decided Tuesday to slow down the approval process. It's conferring with planning committees at the local and district levels and with the Union of Local Authorities in Israel, as is standard procedure in approving building plans.

This blocks the Interior Ministry's Planning Administration's attempt to complete the process Tuesday and send the plans to the national committee after only one session.

The Interior Ministry's plan would allow expanding built-up areas in the center of the country into open spaces not included in National Master Plan 35, letting another 80,000 housing units be built and reaching the government's target.

Environmental organizations and the Union of Local Authorities attacked the Planning Administration's ideas, saying they would harm green spaces in the crowded center of the country.

MK Dov Khenin (Hadash) asked the state comptroller on Tuesday to stop the approval process for the changes endorsed by the Planning Administration. He said the administration's ideas do not follow proper planning processes and would disturb the balance between the need for homes, nature protection and safeguarded open spaces for recreation.

Following the criticism, the National Planning and Building Committee referred the plans to the local and district planning and building committees.

The Planning Administration says its plans do not harm open spaces and the landscape, and only refer to areas in urban areas under National Master Plan 35. Officials at the administration said the changes would allow construction on military bases that will be evacuated and industrial areas that will be rezoned as residential areas.

For example, a housing complex can be built on the Sirkin base in the Petah Tikva area after its operations have been moved south. And residential areas can be developed next to industrial zones in cities such as Ra'anana, Rishon Letzion and Petah Tikva.

But these claims ignore that the Planning Administration itself said it's possible to expand urban construction into land previously zoned as rural landscapes or city recreation areas.

"Planning authorities block Interior Ministry's attempt to speed up construction in Israel's green areas", 13/12/2012, online at: <http://mideastenvironment.apps01.yorku.ca/?p=6551>

BACK TO TOP

❖ Israel green agency backs Palestinian farmers on West Bank wall

A letter of support from the Nature and Parks Authority was part of a petition heard by the High Court to order the ministry to reroute the planned barrier away from Battir village, south of Jerusalem.

An Israeli government environmental agency challenged the Defense Ministry in court on Wednesday over a section of the controversial West Bank wall that threatens an ancient Palestinian farming community.

A letter of support from the Nature and Parks Authority was part of a petition heard by the High Court to order the ministry to reroute the planned barrier away from Battir village, south of Jerusalem.

While the court has issued such rulings in the past to reduce Palestinian hardship from the seizures of occupied land involved in erecting the vast barrier, it is unusual for such cases to pit Israeli officials against each other.

Battir, which abuts the boundary with Israel, is famed for its terraced agricultural fields, irrigated with methods dating back millennia. The United Nations Educational, Scientific and Cultural Organization (UNESCO) honored the village for its landscape last year.

Authority director Shaul Goldstein described its involvement in the case as unprecedented.

“It’s not every day that we come out against the Defense Ministry in court,” he told Reuters.

“We don’t object to putting up obstacles to stop terrorists, it’s just that we believe here that other methods can be used.”

The Tel Aviv to Jerusalem train runs near the village, along the 1949 armistice line and no man’s land which today demarcates the West Bank.

Some 30 percent of Battir’s farmland is located beyond the Israeli railway, with Palestinians secured free access under a decades-old arrangement with the Jewish state.

Citing fear of armed Palestinian infiltrators who have struck inside Israel since 2000, the Defense Ministry plans to fortify a fence protecting the train line at Battir with a wall.

Villagers say this will irreversibly disrupt agriculture and wildlife at the site, and were supported in petitioning the High Court by Israeli sympathizers including from Friends of the Earth Middle East and the Nature and Parks Authority.

The International Court of Justice ruled in 2004 that the wall was illegal and that Israel should cease construction.

Israeli army colonel Ofer Hindi, representing the state in the Battir case, argued for the security benefits of the planned section by saying that two villagers were jailed in 2008 for planning to bomb the railway line.

The area is also an access point for Palestinians seeking to work illegally in Israel, and whom the military regards as security threats, Hindi told the High Court.

Wednesday's session ended without the court setting a new date for further hearings nor for a ruling. In such cases rulings are generally delivered within days, a court spokeswoman said.

<http://www.haaretz.com/news/national/israel-green-agency-backs-palestinian-farmers-on-west-bank-wall-1.484381>

Court to rule if security barrier endangers Battir – JERUSALEM POST

By YONAH JEREMY BOB

12/12/2012

The High Court of Justice will hear on Wednesday a petition that asks for court intervention to prevent the West Bank security barrier from being built in a way that petitioners say could destroy the shared Palestinian-Israeli Battir cultural landscape site.

Battir is a village in the Palestinian Authority, and is southwest of Jerusalem, situated just above the railway to Tel Aviv.

Friends of the Earth's Middle East (FOEME) division filed the emergency petition on December 2.

FOEME reported that, in an unprecedented development, the Israel Nature and Parks Authority has taken FOEME's side against the Defense Ministry, the IDF and the rest of the government.

The government says that the placement of the barrier along its planned route is necessary for security reasons and that it will not do any irreversible damage to the site.

But according to FOEME, the Nature and Parks Authority said that when the route was planned in 2005, significant environmental concerns were pushed aside for security reasons.

The authority reportedly said that the site constitutes an important public interest that is special and valuable for the benefit of the public and future generations, and that the route of the barrier should be reconsidered.

Also, the fact that since 2005, the barrier in this area was never erected suggested that the project of building it was no longer operating in an emergency environment, the authority reportedly said.

Gidon Bromberg, Israel director of FOEME, said, "The NPA should be congratulated for keeping true to its mission and clarifying to the court that the barrier, if built, would indeed lead to irreversible damage, highlighting the need to reassess the impact of the barrier even beyond Battir.

"We find it odd that the military is stating an opinion pertaining to environmental and cultural heritage values – issues on which it has no expertise – contrary to the opinion of the NPA, known to the military in advance, and without attaching a single expert opinion to support its position," continued Bromberg.

In addition, a letter from the PA from November 27 indicates that the Palestinians listed the site on their Tentative List for World Heritage.

The PA application to UNESCO was accepted on October 31, 2011, making it the first UN agency to accept "Palestine" as a member, over a year before the recent UN General Assembly vote recognizing "Palestine" as a non-member state.

The PA also hired an international expert to survey the site sometime later this month, in order to submit an official application regarding the site to UNESCO by January 31.

Bromberg added, “The Israeli government is obliged to protect heritage sites on the basis of various international obligations including the UNESCO World Heritage Convention and the Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict.”

FOEME said that following the UN General Assembly admission of Palestine as a non-member observer state, this case raises concern that any destruction of cultural property associated with the building of the barrier could lead to criminal proceedings against Israelis under international law.

FOEME also claimed that the site is 4,000 years old and that then OC Central Command Maj.-Gen. Moshe Dayan had carefully preserved the site in a 1949 armistice agreement.

The IDF Spokesman responded that it had no comment at this time other than to state that the issue was before the court for it to make a decision.

The Justice Ministry was not able to provide an official response by press time.

<http://www.jpost.com/NationalNews/Article.aspx?id=295580>

Petitioners say barrier could destroy the shared Palestinian-Israeli Battir cultural landscape site.

“Israel green agency backs Palestinian farmers on West Bank wall”, Haaretz / Jerusalem Post, 13/12/2012, online at: <http://mideastenvironment.apps01.yorku.ca/?p=6553>

BACK TO TOP

❖ Israel, Canada to promote int'l wastewater reuse

Energy and Water Minister Uzi Landau meets Canadian counterpart Kent, agree promote UN resolution on wastewater.

Canada and Israel have agreed to work together going forward to promote a United Nations resolution that would double the percentage of wastewater reused across the world, the Energy and Water Ministry said on Sunday.

The agreement is a result of a meeting on Sunday between Israeli Energy and Water Minister Uzi Landau and Canadian Environment Minister Peter Kent, in Landau's Jerusalem office. During their meeting, the ministers discussed a wide array of topics, including political, economic and environmental issues, according to the ministry. Landau particularly thanked his colleague for Canada's vote against the Palestinian bid for UN non-member observer status, stressing that that negotiations can only be achieved without preconditions and without unilateral bids.

"We remember the times that the UN passed a resolution equating Zionism to racism," Landau said. "Even then, Canada stood by our side."

Because of the "long-standing, warm and strong relationship" that stands between Israel and Canada, countries that espouse share values and beliefs, the country is a natural partner to Israel in its ongoing effort to develop natural resources, according to Landau.

"By means of working relations forged last year between the two countries, we have even used Canadian knowledge in formulating new procedures," Landau said, referring to new regulations on marine drilling that the ministry is currently establishing.

Landau briefed Kent on the efforts invested by Israel in improving the environment, which have had a particular emphasis on water and have given the country the "world record" in terms of amount of treated wastewater reused in irrigation, according to the ministry. A total of 90 percent of Israeli sewage is treated, and 75% of the treated wastewater is used in agriculture, he explained.

“It would be great if we could work together to promote the subject, with an emphasis on assistance to third world countries,” Kent responded.

From this discussion, the ministers then agreed that as part of the UN’s 2013 International Year of Water Cooperation, the two offices will jointly to advance a UN resolution that calls for a doubling of wastewater reuse across the world by 2025. Landau first presented this aspiration at the Sixth World Water Forum held in March in Marseilles, according to the ministry.

“Wastewater treatment as a resource rather than as waste is a change in thinking that we’ve made in Israel, and it is important for us to lead this [change] across the world,” Landau said.

Kent added, “Canadian residents have much to learn from this country’s citizens about intelligent water use and conservation.”

“Israel, Canada to promote int’l wastewater reuse”, Jerusalem Post, 10/12/2012, online at:
<http://mideastenvironment.apps01.yorku.ca/?p=6513>

BACK TO TOP

❖ Disruptions in water supplies continue

AMMAN — Pumping from several water resources remained suspended on Sunday after heavy rain last week raised the turbidity levels of water, according to the Ministry of Water and Irrigation.

Since the Water Authority of Jordan (WAJ) ceased pumping from these sources last week, the water distribution programme was disrupted in Amman and several governorates, including Madaba and Jerash.

Minister of Water and Irrigation Mahir Abul Samin said in a statement to the press on Sunday that the ministry and water companies are closely monitoring the water supply after the suspension of pumping.

“The WAJ has discontinued pumping water from some resources, such as the Heidan wells in Madaba and Ain Al Deek spring in Jerash, as a precautionary measure to safeguard public health,” Abul Samin said in a statement e-mailed to The Jordan Times.

The minister noted that the authority stops pumping water from a particular source if the quality doesn’t meet certain standards.

“The Ministry of Water and Irrigation will only resume pumping when lab tests by the Ministry of Health and WAJ confirm that water is safe and matches our standards,” he added.

Pumping was discontinued from several sources after heavy rain last Tuesday and Thursday raised turbidity levels. Turbidity refers to a liquid’s clarity. If more particles are found in the water, its turbidity is said to have increased.

Jordan Water Company (Miyahuna) Operations Director Ghazi Khalil said pumping from the Zara-Maen Water Treatment and Wadi Seer plants, as well as the Ruseifa, Waleh and Heidan wells was suspended because the water was muddy.

The suspension affected the water distribution programme in Amman because these resources supply 40 per cent of the capital’s water needs.

Under the water distribution programme, households receive water once during a certain period, usually between 7-10 days on a rotating basis.

Scarce water resources in the country compelled the Kingdom to initiate the programme in the early 1980s to conserve limited resources whilst ensuring a sustainable supply of water.

“Disruptions in water supplies continue”, Jordan Times, 10/12/2012, online at:
<http://mideastenvironment.apps01.yorku.ca/?p=6520>

BACK TO TOP

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❖ Drying out the Palestinians

Basic moral principles require that Israel cease destroying cisterns that are essential for the existence of dozens of Palestinian communities.

Since the beginning of the year, Israel has destroyed 35 rainwater cisterns used by Palestinian communities, 20 of them in the area of Hebron and the southern Hebron Hills. In 2011, Israel destroyed 15 cisterns, and in the preceding 18 months, 29. In many of these cases ancient cisterns were destroyed that had served the forefathers of the inhabitants of these communities. Recently, they have been restored with European assistance. The cisterns show the continuity of Palestinian habitation long before 1948. Usually, the communities whose cisterns were destroyed are a short distance from settlements and unauthorized outposts that enjoy a regular water supply. At the same opportunity the Civil Administration almost always destroys Palestinian tents, animal pens and food storage facilities.

This information is based on data from the UN Office for the Coordination of Humanitarian Affairs, Rabbis for Human Rights and the Association of Civil Rights in Israel. The spokesman for the military Coordinator of Government Activities in the Territories did not respond to Haaretz's queries about the number of cisterns destroyed over the past two years, or why the restoration of an ancient cistern is considered an offense. The spokesman did explain (Haaretz, December 7) that "the digging of cisterns – which constitutes infrastructural change – requires the receipt of a permit from the authorized planning institutions." But from the outset, Israel did not include in its master plans the Palestinian communities that now depend on cisterns, and therefore they cannot expect to receive a legal permit.

Leaving Palestinian communities disconnected from infrastructure, declaring large areas as firing zones and destroying cisterns are part of an intentional policy since the early 1970s. Its goal is to leave as few Palestinians as possible in the majority of the West Bank (today's Area C, under Israeli civil and military control), to expedite Jewish settlement and thus make it easier to annex these areas to Israel.

The European Union opposes Israel's policies in Area C, which the EU believes sabotages the two-state solution. It also bases its position on international law, which prohibits the demolition of structures that would leave a protected population without food and water and result in their forced dislocation. Basic moral principles, as well as avoiding another head-on collision with our friends, requires that Israel cease and desist from destroying cisterns that are essential for the existence of dozens of Palestinian communities

"Drying out the Palestinians", Haaretz, 10/12/2012, online at: <http://mideastenvironment.apps01.yorku.ca/?p=6526>

BACK TO TOP

❖ UN Climate Summit Ends with Modest Agreement

UN summit extends Kyoto Protocol to 2020 – YNET (Associated Press)

Weak plan to save Kyoto pushes climate talks to brink – DAILY STAR

Deal reached in Doha to extend Kyoto protocol – AL JAZEERA

UN summit extends Kyoto Protocol to 2020 – YNET (Associated Press)

Qatar climate change summit defies rumors of failure, ratifies 1997 greenhouse gas emission reduction pact for next seven years – but barely

Almost 200 nations extended on Saturday a weak UN plan for fighting global warming until 2020, averting a new setback to two decades of UN efforts that have failed to halt rising world greenhouse gas emissions.

The extension of the Kyoto Protocol keeps it alive as the only legally binding plan for combating global warming even though it will cover developed nations whose share of world greenhouse gas emissions is less than 15%.

The world's poorest countries, inundated by rising seas and worsening disasters, made a last ditch plea for financial help early Saturday as negotiators at United Nations climate talks struggled to reach an ambitious deal to combat global warming.

The two-week UN conference in the Qatar capital of Doha was never meant to yield a global climate pact to curb emissions of greenhouse gases – that has been put off until 2015.

But many developing nations said they were increasingly frustrated with the lack of ambition from rich countries on everything from climate aid to the emissions cuts they will make until 2020.

Talks were set to end Friday but they continued into early Saturday with negotiators set to meet in several hours to assess progress.

“The expectations we had for a great deal in Doha is no more. That is dust,” said Mohammed Chowdhury, a Bangladeshi who is a lead negotiator for a coalition of poor nations called the Least Developed Countries or LCD.

“We are facing day in and day out the adverse effects of climate change,” he said. “Nobody is nearby to rescue them. You see President Obama asking for huge funding for Hurricane Sandy ... But we won’t get that scale and magnitude of support.”

The biggest fight early Saturday swirled around what is called “loss and damage,” a relatively new concept which relates to damages from climate-related disasters. Island nations and LCD have been pushing for some mechanism to deal with this but the United States has pushed back over concerns they might be held liable for the cleanup bill since they are the world’s second biggest emitter behind China.

Many scientists say extreme weather events, such as Hurricane Sandy’s onslaught on the US East Coast, will become more frequent as the Earth warms, although it is impossible to attribute any individual event to climate change.

“It’s becoming the last straw for the small island states, the least develop countries,” said Alden Meyer, of the US-based Union of Concerned Scientists.

“Seasoned negotiators are coming out of that room in tears, very emotional. They are starting to say what are we doing here? What is the point of these negotiations?”

Giving up on tough measures?

The tough negotiations, which were rumored to be on the brink of failure, activists said they were giving up hope that any deal would include tough measures to protect the planet from the effects of global warming.

“The deal in Doha is a recipe for disaster. The deal in Doha is a coffin for the planet,” said Michael Dorsey, a professor at Wesleyan University in Connecticut, speaking outside the negotiations.

“We will see the failure to have emission targets sufficiently high enough. We are going to see the failure to move critical resources to countries on the margin in the developing world who desperately need resources to get out ahead of the unfolding climate catastrophe that is playing out around the planet.”

Most of the key disputes revolved around money.

Poor countries, especially a coalition of island nations and African countries, came into the talks demanding a timetable on how rich countries will scale up climate change aid for them to \$100 billion annually by 2020 – a general pledge that was made three years ago – and how they will raise the money.

But rich nations, including the United States, members of the European Union and Japan remain in the midst of a financial crisis and were not interested in detailed talks on aid at this meeting.

‘Kyoto Protocol extension barely reached’

The current text on financing agrees only to continue “scaling up” aid until 2020 and delays most detailed decisions until 2013. It includes no midterm targets or mechanisms — such as a tax — for raising the revenue.

One of the sticking points was whether to allow countries to carry over surplus emissions allowances into the next phase as well as to extend it for five or eight years and whether there would be a trigger requiring countries to commit to more ambitious emissions targets at a certain date.

The US never joined the Kyoto accord, while Japan, New Zealand, Canada and Russia don’t want to be part of its extension, meaning it would only cover about 15% of the world’s emissions of greenhouse gases.

Governments have set a deadline of 2015 to agree on a wider deal that would include both developed and developing countries, which now produce a majority of the world’s emissions. As part of that, delegates were also trying to make progress on the 2015 work plan and close loopholes that would bring all countries into one negotiating path.

The negotiations were also hampered, delegates and activists said, by a lack of leadership from Qatar. Draft agreements were not ready until the last second and Qatar did nothing to bring together key ministers to hash out a grand deal as past presidents have done.

The goal of the UN talks is to keep temperatures from rising more than 3.6 degrees Fahrenheit (2 Celsius), compared to preindustrial times. Temperatures have already risen about 1.4 degrees Fahrenheit (0.8 Celsius) above that level, according to the latest report by the UN's top climate body.

“There is a huge lag between the international policy response and what science is telling us,” UN climate chief Christiana Figueres told The Associated Press. “We know that science tends to underestimate the impacts of climate, and so if anything, that gap continues to grow.”

Reuters contributed to this report

<http://www.ynetnews.com/articles/0,7340,L-4317088,00.html>

Weak plan to save Kyoto pushes climate talks to brink – DAILY STAR

DOHA: Weak proposals to extend until 2020 a shrivelled U.N. plan to fight climate change pushed marathon talks to the brink of collapse on Saturday.

Delegates from nearly 200 nations spent hours poring over a package deal put forward by the host, OPEC member Qatar, that would also postpone until 2013 a row over demands from developing nations for more cash to help them cope with global warming.

Developing nations were divided over the modest deal that all sides said fell short of recommendations by scientists for tougher action to try to avert more heatwaves, sandstorms, floods, droughts and rising sea levels.

“They face two unpalatable options – accept a weak text or risk the collapse of the entire talks,” said Alden Meyer of the Union of Concerned Scientists. The draft deal would extend the Kyoto Protocol for eight years. It had obliged about 35 industrialised nations to cut greenhouse gas emissions by an average of at least 5.2 percent below 1990 levels during the period from 2008 to 2012.

Kyoto will expire at the end of 2012 if it is not extended and has been weakened by the withdrawals of Russia, Japan and Canada. The United States never ratified it, and its backers, led by the European Union and Australia, account for just 15 percent of world greenhouse gas emissions.

Expiry of Kyoto would leave the world with no legally binding deal to confront global warming, merely a patchwork of national laws to rein in rising carbon emissions.

The two-week U.N. meeting in the Qatari capital had been due to end on Friday but the talks went on past midday on Saturday.

“I believe this is a package we can all live with,” conference president Abdullah bin Hamad Al-Attiyah said as he presented the Qatari proposal early on Saturday.

Most importantly, the proposal would keep alive hopes for a new, global U.N. deal to fight climate change due to be agreed by 2015 and enter into force by 2020 after past failures.

The 2015 deal would set goals for all nations, including emerging economies led by China and India that have no targets under Kyoto.

Qatar proposes that parties to Kyoto would have to revisit their targets for cuts in greenhouse gas emissions by 2014, perhaps to make tougher goals, a concession to developing nations that had wanted Kyoto extended by only five years.

In a blow to the demands of developing nations for a clear timetable for a promised tenfold increase in aid to \$100 billion a year by 2020, the draft deal merely agreed to put off decisions to 2013.

“The only thing that negotiators seem to be able to agree on is to defer difficult decisions to the next meeting,” said Kumi Naidoo, head of environmental group Greenpeace.

The United States, Europe and other developed nations, facing an economic slowdown at home, have refused to set a timetable for a rise in aid.

The document also outlined possible ways to meet developing nations' demands for a new mechanism, including insurance, to help them confront losses and damage caused by rising sea levels or storms linked to climate change.

“On balance it seems to be fair,” Brazilian negotiator Luiz Alberto Figueiredo said of the package. “I think everybody won.”

World carbon dioxide emissions are set to rise by 2.6 percent this year, and are more than 50 percent higher than in 1990. Recent growth has come mostly from emerging nations, led by China and India.

Read more: <http://www.dailystar.com.lb/News/International/2012/Dec-08/197712-still-no-deal-as-un-climate-talks-go-into-extra-time.ashx#ixzz2EhmUcDCB>

(The Daily Star :: Lebanon News :: <http://www.dailystar.com.lb>)

Deal reached in Doha to extend Kyoto protocol – AL JAZEERA

Delegates end conference with agreement to keep alive legally binding plan limiting greenhouse-gas emissions until 2020.

UN climate talks in Doha have come to a point of agreement on the extension of the Kyoto protocol, despite an objection from the Russian Federation.

After 36 hours of non-stop negotiation, delegates from nearly 200 nations in the Qatari capital agreed on Saturday to extend the protocol limiting greenhouse-gas emissions until 2020.

Almost immediately after Qatar's energy minister announced the agreement, Russia stated its objection.

Al Jazeera's Nick Clark, reporting from the conference venue, said Russia's objection showed that despite the agreement, “not everybody is totally happy” with the outcome of the two-week-long conference.

The extension of the 1997 UN-backed Kyoto Protocol will keep it alive as the only legally binding plan for combating global warming even though it will cover developed nations whose share of world greenhouse-gas emissions is less than 15 per cent.

The 27-member European Union, Australia, Switzerland and eight other industrialised nations agreed to the binding emission cuts by 2020. Each signatory had already legislated individual targets.

The US has refused to ratify Kyoto. The protocol also excludes major developing polluters like China, the nation with the highest rate of pollution, and India.

‘Modest but essential’

“It is a modest but essential step forward”, Connie Hedegaard, European climate commissioner, said at the conclusion of Doha Climate Gateway.

A statement released by the office of Ban Ki-moon, UN secretary-general, said while he supported the outcome of the Doha conference as a positive step, he “believes that far more needs to be done and he calls on governments, along with businesses, civil society and citizens”.

Kumi Naidoo, executive director of the environmental activist group Greenpeace, said civil society was especially disappointed with the outcome of the talks.

Follow our in-depth coverage of Doha COP18 negotiations

Speaking to Al Jazeera in Doha, he said with “no emissions targets anywhere near what the science” is calling for, what the agreement delivered was “at best, baby steps”.

He said that despite the presence of delegates from key global players, “the winners have largely been” the fossil-fuel industries – oil, coal and gas companies.

The talks, scheduled to end on Friday, were extended into Saturday as delegates from rich and poor nations disagreed on funding.

Finance remains an issue as “the United States and the bigger states don’t want to make concessions for poorer states”, Al Jazeera’s Clark said.

Qatar, the conference’s host, had originally introduced the idea of extending the Kyoto Protocol, which would have expired by the end of the year.

Question of funding

It also suggested putting off until 2013 a dispute about demands from developing nations for more cash to help them cope with global warming.

The issue of funding to help poor countries deal with the fallout from global warming and convert to clean energy sources complicated the haggling by envoys.

“We cannot close the [negotiations] without ... finance,” Pa Ousman Jarju, Gambian negotiator, said on Friday.

Developed countries are being pressed to show how they intend to keep a promise to raise climate funding for poorer nations to \$100bn per year by 2020 – up from a total of \$30bn in 2010-2012.

Developing countries say they need at least another \$60bn between now and 2015 – starting with \$20bn from next year – to deal with a climate change-induced rise in droughts, floods, rising sea levels and storms.

But the US and the EU have refused to put concrete figures on the table for 2013-2020 funding, citing tough financial times.

“UN Climate Summit Ends with Modest Agreement “, YNET / Daily Star / Al Jazeera, 10/12/2012, online at:
<http://mideastenvironment.apps01.yorku.ca/?p=6517>

BACK TO TOP

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❖ **‘Israel’s Triangle area plagued by environmental terror’**

Residents of eastern Hasharon region say pirate dumpsters in adjacent Arab villages cause massive air pollution; area’s Arab residents join complaint, say enforcement virtually nonexistent

The Israeli and Arab residents of Israel’s Triangle area, who have been complaining for years about various environmental hazards in the area, mainly air pollution, now have a new thing to worry about: Plans to build a new industrial zone in Qalansuwa.

The Triangle is a concentration of Israeli Arab towns and villages adjacent to located in the eastern Hasharon region. The area falls under the jurisdiction of both the Central District and Haifa District. The Lev Hasharon Regional Council, which is most affected by the area’s pollution, has filed a petition against the move.

The area’s residents – Jews and Arabs alike – have been complaining about massive air pollution plaguing the area, due to charcoal production kilns and illegal trash burning. They now fear that the new industrial zone, which has been earmarked for heavy industries, will make a bad situation worse.

“We suffer from environmental terror. No one cares and there’s no law enforcement,” Danit Klein, who lives in one of the council’s communities, told Ynet.

Klein said that the Lev Hasharon Regional Council has teamed with the Qalansuwa municipality in effort to thwart the plans to build an industrial zone.

The issue of pirate trash burning has been bothering the area’s residents for years. “We’ve become experts on garbage,” said one of them. “We can tell the trash apart by the smell it emits when they burn it.”

Klein said that when it comes to illegal trash burning, the area seems to be lost in red tape: “The stench is unbelievable. The agricultural lands nearby have become trash burning sites for everything – construction waste, asbestos and everything else.

“The council says it can’t do anything because it’s not within its jurisdiction, and the Environmental Protection Ministry, the police and the fire department can’t deal with it. We live in Israel, but we feel like we’re in a Third-World country,” she said.

The Arab residents of the area echoed the distress: “It’s hard to understand why authorities don’t enforce the law,” Ali Issa, a resident of Kafr Qassem, told Ynet.

“They burn trash here every day, with no regards to our health. The situation is intolerable.”

Issa’s neighbor, Malik Farij, added: “Trucks come from all over to dump their trash here. Instead of increasing awareness (authorities) give them the green light to dump trash illegally.”

Kafr Qassem’s mayor’s office said that “The village has been suffering from both Arabs and Jews illegally dumping trash for years. We do what we can to prevent this phenomenon, but we lack the resources to fight it.

“The main issue here is that we lack enforcement and our finances don’t allow us to fund a private inspector to enforce the law. We believe the Environmental Protection Ministry should do that.”

The City of Qalansuwa was unavailable for comment.

The Environmental Protection Ministry issued the following statement: “The Environmental Protection Ministry’s Green Police has increased its patrols of the area in question.

Environmental Protection Minister Gilad Erdan is promoting legislation to make illegal trash burning a criminal offense.

“The ministry has asked the Interior Ministry to weigh in on local authorities’ trash collection protocols, especially in the inefficacious municipalities, which lack the proper waste disposal infrastructure. Without the Interior Ministry’s intervention, solving the problem is impossible.

“Additionally, the Environmental Protection Ministry has launched an awareness campaign in Arabic , with aim of raising awareness to the health and environmental hazards associated with trash burning.”

The ministry added that no environmental impact study was filed prior to the beginning of construction of the Qalansuwa industrial zone and that the local zoning committee is pursuing the work's suspension.

The Interior Ministry said it will address the petition in court.

“Israel’s Triangle area plagued by environmental terror”, Ynet, 10/12/2012, online at:
<http://mideastenvironment.apps01.yorku.ca/?p=6531>

BACK TO TOP

❖ **‘Innovators to focus on sustainable development’**

Mekorot vice president says because Israeli market is small, Israeli innovators must adopt an international perspective.

Because the Israeli market is small, Israeli innovators must adopt an international perspective, and some of their best opportunities may now be in sustainable development around the world, experts agreed at a panel on Tuesday.

“Israel is designed to be global. Israel has no market,” said Sophie Blum, founder and president of the Proctor and Gamble Israel House of Innovation and vice president for marketing at Proctor and Gamble Eastern Europe Middle East Africa. “Israeli entrepreneurs have understood that and they think globally as of day one.”

Blum was speaking at a panel entitled “The Startup Nation Takes on the Sustainable Growth Challenge” at the annual convention of corporate responsibility organization Maala, held in Tel Aviv on Tuesday and sponsored by a relatively new project called the Appropriate Innovation Initiative.

About a year ago, the Appropriate Innovation Initiative began in order to create an ecosystem in Israel devoted to providing sustainable solutions for developing countries, according to information from the project. The initiative is a joint venture of three partners, the first being Maala, an umbrella organization of 130 of Israel’s largest companies that promotes corporate social and environmental responsibility (CSR). The second partner is Praxis, a consultant agency specializing in creating cross-industry cooperative ventures, and the third partner is the Heschel Center, a non-profit thinktank that focuses on sustainability leadership. The Appropriate Initiative aims to position Israel as a leading beta site for “appropriate, simple and sustainable innovations,” targeted to the needs of developing countries, the partners said.

“It’s very difficult to speak with Israeli companies about doing well by doing good when you only think about a local market,” said Momo Mahadev, CEO of Maala.

As people increasingly enter the lower rungs of the middle class in developing nations, they continue to be underserved in basic areas, such as energy, water, agriculture and education, explained Steve J.

Puig, vice president for the private sector and non-sovereign guaranteed operations at the InterAmerican Development Bank. In all of these arenas “at the base of the pyramid,” Israeli cleantech innovators would find ample opportunities, he explained. Looking at Latin America, his own area of expertise, Puig said that rather than looking at giant markets like those of Mexico and Brazil, Israel should look to smaller countries where it “can be a big player.”

“Food is obviously the biggest portion of consumption that people have at the base of the pyramid,” he said. “Agricultural supply chains are very important.”

Likewise, many rural areas in India are also fertile ground for Israeli cleantech innovators, according to Sachin Joshin, director of the Center of Excellence for Sustainable Development (CII-ITC) in New Dehli. Around the world there are still 2.6 billion people who lack sanitation facilities and could benefit from waterless toilets that have the ability to recycle human waste into useable energy, Joshin said.

“For me 2.6 billion people around the world not having toilets – it’s not a market for a sanitary manufacturer, it’s a market for an energy company because it gives an energy source,” Joshin said.

Aside from such sanitation innovation, India could benefit from increased collaborations with Israeli entrepreneurs on agriculture and on water – particularly on managing water resources effectively, according to Joshin. Equally ripe opportunities include decentralized solar energy production modules, so that the so-called bottom of the pyramid, with no access to electricity, can begin to receive power, he added.

Israel’s national water company, Mekorot, is aiming to make its mark in these sustainability efforts abroad, and is already involved with many projects, including water decontamination in Buenos Aires’s La Plata River and desalination plant construction in Cyprus.

“I can say today that we solved the problem of the water in Israel,” said Rafi Ifergan, vice president of engineering and technology at Mekorot. “We solved it with a lot of know-how, a lot of knowledge, a lot of technology that we have especially from the Israeli industry.”

Transferring that know-how abroad not only helps populations in need but also is beneficial for Israeli “blue and white” promotion, according to Ifergan.

To make sure that Israeli cleantech entrepreneurs are really able to promote sustainable development both in the country and abroad, the Environmental Protection Ministry is more and more working with the industry and business sectors to stimulate green growth, added Alona Shefer-Karo, director-general of the Environmental Protection Ministry.

“We didn’t realize that our ministry is considered to be one of the biggest barriers to innovation,” she said, noting that industry members were exhausted from hearing the ministry say “no” to permit requests. “The whole ministry is now thinking how to make our regulation much more efficient, how to give to the industry long distance insurance so that the industry can plan its actions and development for the long-term.”

Shefer-Karo stressed that the ministry is eager to learn from industry stakeholders what areas of research are needed and what fields of knowledge are lacking, so that the office can direct research funds appropriately.

““Innovators to focus on sustainable development””, Jerusalem Post, 13/12/2012, online at:
<http://mideastenvironment.apps01.yorku.ca/?p=6536>

BACK TO TOP

❖ South Africa: Chile Follows South Africa's Lead in Climate Change Mitigation

Chile is turning to South-South cooperation to help define the most effective strategies and options for reducing its greenhouse gas (GHG) emissions in the face of global climate change.

The Mitigation Action Plans and Scenarios (MAPS) initiative, being promoted in Chile by the government of Sebastián Piñera, is a collaboration among developing countries to explore each individual nation's options for mitigating climate change while fostering economic development and poverty alleviation.

The aim is to develop "a solid base of evidence and information on what the country can do to reduce GHG emissions in different sectors of the economy," Hernán Blanco, who is leading the MAPS process in Chile, told Tierramérica*.

MAPS grew out of the experience of the government-mandated Long Term Mitigation Scenarios (LTMS) process that took place in South Africa between 2005 and 2008.

The LTMS informed South Africa's position for negotiations at the 15th meeting of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 15), held in 2009 in Copenhagen.

"It was very successful, because it allowed them as a country to develop their position in a way that was solidly based on scientific research and on a process involving the participation of all of the relevant stakeholders from the South African economy," said Andrés Pirazzoli, the executive coordinator of MAPS Chile.

This success gave rise to MAPS International, directed by the University of Cape Town's Energy Research Centre in partnership with the NGO SouthSouthNorth, and with financial support from the Children's Investment Fund Foundation, based in the United Kingdom.

In the search for developing countries interested in solutions for mitigating their GHG emissions, the initiative came to Latin America, and MAPS country projects are now underway in Brazil, Colombia and Peru, as well as Chile.

Although Chile is a minor contributor to global GHG emissions (0.2%), the country's emissions have grown at an alarming rate, increasing by 232 percent between 1990 and 2006, according to the Ministry of Environment.

In response, the South American country made a voluntary commitment at the COP in Copenhagen to reduce its emissions by 20 percent by 2020.

The "exponential growth" in GHG emissions is a result of the expansion of the energy sector. "There has been very high development of thermoelectric power generation, while the share of hydroelectric power in our energy mix has decreased for various reasons," explained Pirazzoli.

For environmental activist Juan Pablo Orrego, president of the Chilean NGO Ecosistemas (Ecosystems), this trend "is very troubling and is due to an extreme lack of caution, but also, and above all, to the sharp rise in the carbon intensity of the energy mix."

"Obviously, Chile's emissions are insignificant compared to those produced by countries like the United States and China," said Orrego. Nevertheless, "we all know that the central region of the country is suffering from desertification, that there are 104 municipalities facing emergency situations in terms of water supply, and that the glaciers in the south are melting," he said.

Orrego, who holds a Master's degree in environmental studies and was the winner of a 1998 Right Livelihood Award (considered the "Alternative Nobel Prize"), believes that MAPS does not reflect "a sense of urgency proportional to the problem we are facing in terms of climate change."

"I don't see alarm, I see a very superficial level of concern," he stated.

Pirazzoli, for his part, stressed that MAPS Chile involves the participation of seven different ministries (environment, foreign relations, energy, mining, finance, transportation and agriculture), "something unprecedented in the country, which demonstrates the political importance that the government has given to it."

For the moment, MAPS Chile is focusing on laying the groundwork for the project, assessing potential emissions trajectories under two possible scenarios.

The first is the "business as usual" scenario, in which no changes are made to the current situation. The other is the "required by science" scenario, which would entail following the most stringent recommendations of climate experts to limit and reduce GHG emissions.

Orrego criticised the fact that a business as usual scenario is being assessed as a potential option, because he believes that the situation is much more complex than it seems.

"These types of projects are totally out of synch with the views of the scientific community. What is being done is still very superficial, and is presented as if there were different options, when there are none," he maintained.

During the first phase of MAPS Chile, these two trajectories are being studied to establish an emissions baseline.

"In addition, and in order to gather essential background, we have commissioned two preliminary studies, one of which evaluates the state of development of climate models to determine what will happen with the climate in the particular case of Chile, and this work has been completed," said Blanco.

The second study theoretically estimates future volumes of Chilean GHG emissions based on data from the Intergovernmental Panel on Climate Change.

The second phase of the project will involve the development of alternative pathways to the mitigation of emissions.

Finally, the third phase, scheduled for late 2013, will focus on the dissemination of the findings and the analysis of mitigation initiatives, both public and private, with decision makers in the government, private sector and civil society.

"MAPS Chile is not a binding project, it does not constitute an obligation and will not be converted into a public policy or new legislation," explained Pirazzoli.

It is essentially "an exploratory exercise" aimed at "generating relevant information so that decision makers can adopt the measures they deem appropriate in the future," he added.

The project also provides space for participation, in which different stakeholders can form part of a group for the development of scenarios and a working group.

"The level of complexity, of the information and knowledge required, has led us to design a process in which specialists and representatives from different productive and institutional sectors actively participate," said Blanco.

But participation should begin at the grassroots, with prior consultations, because it is the Chilean people who live with the devastating impacts of climate change, stressed Orrego.

** This story was originally published by Latin American newspapers that are part of the Tierramérica network. Tierramérica is a specialised news service produced by IPS with the backing of the United Nations Development Programme, United Nations Environment Programme and the World Bank.*

“South Africa: Chile Follows South Africa's Lead in Climate Change Mitigation”, 12/12/2012, onlineat:

<http://m.allafrica.com/stories/201212120298.html/?maneref=http%3A%2F%2Fallafrica.com%2Fstories%2F201212120298.html%3Fpage%3D2>

BACK TO TOP

WWW.ORSAM.ORG.TR

❖ European Reconstruction Bank Seeks Water Experts in Kyrgyzstan

The European Bank for Reconstruction and Development is seeking project managers and water experts in the central Asian nation of Kyrgyzstan to improve supplies so unreliable there may not be potable water for more than a couple hours every other day.

The EBRD started water and wastewater infrastructure upgrades in 2009 with a project in the Kyrgyz capital of Bishkek, signed three other pacts and said it's now [soliciting](#) experts for work in Kant, which has a sugar factory and hosts a Russian air base, a second in nearby Bishkek and Talas starting in early 2013 valued at 580,000 euros (\$757,000).

The situation is such that Kyrgyz families store water in bathtubs and buckets when supply is available and water-borne disease outbreaks can occur, the bank said, adding that it's trying to address the problems through "a number of relatively small but well-designed projects."

The U.S. military has an air base in Manas, Kyrgyzstan, that's used to supply troops to [Afghanistan](#).

"European Reconstruction Bank Seeks Water Experts in Kyrgyzstan", 12/12/2012, online at:

<http://www.bloomberg.com/news/2012-12-12/european-reconstruction-bank-seeks-water-experts-in-kyrgyzstan.html>

BACK TO TOP

❖ **Second Environmental Performance Review of Tajikistan highlights lack of access to clean water and sanitation and need for improved waste management**

Access to clean water and improved sanitation and waste management remain some of the most pressing environmental challenges for Tajikistan according to the second Environmental Performance Review of Tajikistan published today. The Review, performed by the United Nations Economic Commission for Europe (UNECE), takes stock of progress made by the country in the management of its environment since the country was first reviewed in 2004.

The Review covers 10 issues of importance to the country related to policymaking, planning and implementation, the financing of environmental policies, climate change, water management, waste management, human health and the environment and biodiversity conservation. It notes a series of improvements, including significant changes to the legal and policy framework in the area of the environment, as well as challenges that the country is still facing.

Tajikistan has abundant water resources. However, due to institutional weaknesses as well as inadequate funding and outdated infrastructure in the water sector, there are multiple challenges in the use and protection of water resources. Only one third of Tajikistan's 7.2 million inhabitants have access to chlorinated piped water. Some 30% rely on spring water and the remainder of the population depend on river and ditch water sources. Only 5% of the population are connected to public sewerage. The functioning of the water supply and sewerage systems is, moreover, frequently interrupted by power outages, which is also a source of water contamination. Frequent power cuts limit water supply to a few hours per day. Although there has been an overall improvement since 2004 in the quality of drinking water, 15% of samples do not meet bacteriological standards today.

Waste management has been receiving more attention since 2004. Nevertheless, today municipal solid waste collection services are only provided for the urban population, which represents about 26% of the total population. Waste disposal practices require urgent improvement as even in the capital, Dushanbe, the city's single disposal site does not meet sanitary norms and standards.

Tailing ponds from mining activities also pose a threat to human health in the country. Approximately 54.8 million tons of waste from past uranium mining operations are still located in unsecured sites in northern Tajikistan, a number of them close to Khujand, the country's second-largest city.

The Review concludes with a set of 47 recommendations to the country to improve management of its environment, to better integrate the goals of sustainable development into sectoral policies, to promote greater accountability to the public and to strengthen cooperation with the international community. The recommendations were approved by the UNECE Committee on Environmental Policy.

The Review is available at: <http://www.unece.org/env/epr/publications.html>

“Second Environmental Performance Review of Tajikistan highlights lack of access to clean water and sanitation and need for improved waste management”, 14/12/2012, online at: <http://www.unece.org/index.php?id=31804>

BACK TO TOP

❖ **China Plans to Invest \$6 Billion in Water Projects, Journal Says**

[China](#) will invest more than 38 billion [yuan](#) (\$6 billion) in water-conservation and irrigation projects in four northeastern provinces, the China Securities Journal reported.

The projects will cover a total area of 38 million mu (2.5 million hectares) as part of the nation's efforts to add at least 150 million mu of high-efficiency water-saving projects in the years to 2020, the report said, citing an unidentified official from the Ministry of Water Resources.

The investment to promote water projects in northwestern and northern China may be even greater, the newspaper said.

“China Plans to Invest \$6 Billion in Water Projects, Journal Says”, 14/12/2012, online at:

<http://www.bloomberg.com/news/2012-12-14/china-plans-to-invest-6-billion-in-water-projects-journal-says.html>

BACK TO TOP

❖ **Self-help is the best, Jharkhand villagers tell the world by building a dam themselves**

Few months ago, a check dam built by the Jharkhand government's irrigation department near the State capital Ranchi was washed away in the rains. It caused great anxiety among the people of four villages, Hesatu, Sildri, Khatanga and Gagari, who were dependent on it for their irrigation needs.

The people of the villages - located about 25 km from Ranchi - mostly from the tribes of Santal and Munda, soon got over the shock and decided to build another check dam.

They also decided to build it themselves. That was about three months ago. The community responded with great enthusiasm.

About hundred villagers offered their labour free of cost, others pitched in with materials for making the sand bags - mostly old cement and fertilizer bags which would be packed with sand - and still others came forward to contribute the rice, pulses, and vegetables needed for making food for the volunteers.

And voila, in just 3 weeks a check dam was built on the stream running through their village. Then, another one was built a few hundred metres away. The sight of water getting stored in these check dams has now given them the confidence to build eight more across the stream.

"Materials were available locally, so that was not a problem. The project became successful because everyone from the community participated in it. We put a layer of hard rocks at the base and then piled up the sand bags over it," says Devender Thakur, 45, of Sildiri, who mobilized the villagers for the project.

"The stream flows down from the Gagari Mountain and has water throughout the year, but it had never been harnessed before," says Thakur.

Many youth from the neighbouring villages helped in building the dam, says Jagnu Oraon, a resident of Hesatu.

"We did not pay them any wages. But the idea was so noble that the youth of other villages such as Duhu and Barwe came to assist us. We only offered them food and served it hot," says Thakur.

The two check dams irrigate about 50 acres of land, where mostly vegetables such as bottle gourd, brinjal, and cauliflower are cultivated.

Government officials are impressed. "It could be a good example to be put before the Green India

Mission (GIM) program being carried out in various parts of the country,” says AK Mishra, Additional PCCF and member secretary of GIM for Jharkhand.

“The newly launched program (GIM) is not just about planting trees but also is about enhancing farm productivity so that a sense of profitability is attached with the afforestation drive. Here the villagers have used the water from the stream to irrigate their fields and turn them green in the true sense,” adds Mishra.

At a site where villagers are building another check dam, Ramesh Munda, a village youth, says with a great sense of ownership and pride: “We’re not just building the check dams but are taking efforts to protect them as well. We ensure that the dams do not get damaged by overflowing water or by any human interference.”

The villagers also hope the check dams would stop the migration of local people to cities in search of jobs. “We are hopeful that this trend would change soon with the availability of water for our agriculture needs,” says Thakur.

Meanwhile, the check dam built by the government has sunk into the sand and presents a sorry sight. “Look at the check dam that was built hardly a couple of years ago. It is narrating its own story,” says Jagnu, pointing to the collapsed structure.

“Self-help is the best, Jharkhand villagers tell the world by building a dam themselves”, 14/12/2012, online at: <http://www.theweekendleader.com/Heroism/1441/people%E2%80%99s-project.html>

BACK TO TOP

❖ Grabbing at Solutions: Water for the Hungry First

*This piece is part of **Water Grabbers: A Global Rush on Freshwater**, a special National Geographic News series on how grabbing land—and water—from poor people, desperate governments, and future generations threatens global food security, environmental sustainability, and local cultures.*

A spontaneous, largely under-the-radar blue revolution is gaining steam in sub-Saharan Africa and has the potential to boost food security and incomes for tens of millions of the region's poorest inhabitants.

Small-scale irrigation techniques with simple buckets, affordable pumps, drip lines, and other equipment are enabling farm families to weather dry seasons, raise yields, diversify their crops, and lift themselves out of poverty.

But unless African governments and foreign interests lend support to these farmer-driven initiatives, rather than undermine them through land and water deals that benefit large-scale, commercial schemes, the best opportunity in decades for societal advancement in the region will be squandered.

Worldwide, as the limits of available water become ever more apparent, the rush is on to acquire more of the precious liquid before there's none to be had. Government and business interests from China, India, Saudi Arabia, the United States, and other countries that have depleted many of their own water sources are now acquiring access to the land and water of other nations – especially poor ones – to rake in profits and secure food supplies.

The 2008 spike in global food prices unleashed a frenzy of land and water deals that threaten not only the livelihoods of millions but also the geopolitical security of nations.

Nowhere is this more evident than in Africa, especially poor countries south of the Sahara. Business and government interests are targeting Ethiopia, Mali, Sudan, and other underdeveloped nations to capitalize on their “underutilized” farmlands and waters.

Although pitched as investments to advance economic development, many of these deals are not only failing to deliver promised benefits, they are destroying the livelihoods of traditional farmers, herders, and fisherfolk.

Today, hunger is endemic in sub-Saharan Africa. The 2012 Global Hunger Index ranks forty-two of the forty-five countries in the region for which data are available at “serious” or “alarming” levels.

Nearly one in four children are underweight.

But most sub-Saharan African countries have barely begun to reach their food production potential.

According to a 2010 World Bank report, farms in Sudan have achieved only a tenth of their potential yield; those in Ethiopia, only 23 percent.

Closing this yield gap is precisely where the greatest opportunities lie in meeting future food needs.

The International Water Management Institute in Colombo, Sri Lanka, estimates that three quarters of the world's additional food needs in 2050 could be met by increasing harvests on low-yielding farms, including those in sub-Saharan Africa, to 80 percent of what high-yielding farms achieve on comparable land.

And that is where the new blue revolution in small-farm irrigation comes in.

Affordable Farm Technology

A suite of affordable pumps, drip systems, and other technologies are enabling poor farmers to access and deliver irrigation water to their small plots of land. Once small farmers have reliable water supplies, they can confidently invest in better seeds, fertilizers, and other yield-raising inputs. They can also plant higher-value crops to take to market.

The outcome can be transformative.

The non-profit KickStart, for example, markets a line of manual pumps called the MoneyMaker in Burkina Faso, Kenya, Malawi, Mali, and Tanzania. With access to irrigation water, farm families reap bigger harvests, greater food security, and more income. KickStart estimates that its MoneyMaker products have helped lift 667,000 people out of poverty and created 133,000 new businesses.

With the arrival of inexpensive motorized pumps costing around \$250 apiece, many farmers are turning to this laborsaving device to access water. About 30 percent of small-scale irrigators in Ghana, for instance, now lease or own a motor pump, a vast improvement over the simple water-lifting buckets used by the remaining 70 percent.

A three-year study funded by the Bill and Melinda Gates Foundation estimates that small, motorized pumps in sub-Saharan Africa could expand irrigation by some 30 million hectares, boost food security and incomes for 185 million people, and generate net revenues of \$22 billion per year. Governments and development organizations can help strengthen this farmer-driven movement by extending financial and institutional support. In northern Nigeria, a project begun with a \$67 million World Bank loan and initially spanning 50,000 hectares (123,550 acres), is enabling farmers to tap shallow groundwater with low-cost wells and motorized pumps. Yields of rice and maize, basic staples in the region, have risen markedly, as have yields of marketable crops like onions, peppers, and tomatoes. With their extra income, farm families have improved their homes, sent their children to school, and purchased more goods – adding jobs and money to the local economy.

Now in its third phase of expansion, this Fadama project (fadama is a Hausa term for irrigable land) has formed 12,000 stakeholder groups representing some 6.3 million households in some dozen Nigerian states.

Such development from the bottom up holds much greater promise of reducing hunger and poverty than land deals that promote crops for export or that expropriate land and water from local people.

Getting More out of Rainfall

More than 95 percent of cropland in sub-Saharan Africa is watered only by rain, so while expanding irrigation is crucial, so is making more effective use of rainwater. On many farms, only 15 to 30 percent of rainfall gets used productively by crops. The remainder evaporates, percolates below the root zone, or simply runs off the field.

So-called conservation farming techniques that retain rainwater in soils can greatly improve productivity on small farms. These include mulching, terracing, planting vegetative barriers to keep soil and water in place, and constructing small earthen dams or other structures to harvest and store rainwater for supplemental irrigation.

Work by Johan Rockström of the Stockholm Resilience Centre and others on experimental farms in Kenya, Ethiopia, Zambia, and Tanzania has shown that such conservation farming practices can increase yields of maize by 20 to 120 percent and of tef (a staple of the Ethiopian diet used in the spongy bread injera) by 35 to 100 percent.

Many of these conservation methods require a great deal of labor, however, so they remain under used. Constructing one hectare (2.5 acres) of rock embankments, for example, can take one person nearly 100 days. Farmers need a high rate of return to justify such an investment of time.

Development organizations could help spread the adoption of these methods by underwriting early returns, enabling more farmers to incur the short-term opportunity costs required to reap the longer-term benefits.

Addressing Water Use at Home

Besides re-focusing their agricultural investments abroad, richer countries can take some important actions at home – including improving their own water-use practices.

Getting more nutrition per drop can stretch domestic water supplies and reduce the need to seek land, water, and food from other nations. Drip irrigation, which delivers water directly to the roots of plants at very low volumes, can cut water use by up to 70 percent compared with old-style flood or furrow irrigation, while increasing crop yields by 20 to 90 percent. Although the method has expanded rapidly in recent years, it still accounts for only about 3 percent of irrigated land in China and India, the world's top two irrigators, and about 7 percent in the United States.

Slowing the depletion of groundwater reserves is also crucial. Pumping from the aquifers of the upper Ganges in India and Pakistan produces the world's biggest groundwater footprint by far, followed by the aquifers of Saudi Arabia, Iran, western Mexico, the U.S. High Plains, and the north China plain.

Globally, ten percent of our food supply now depends on the unsustainable use of groundwater. In effect we're robbing the Peters of the future to feed the Pauls of today.

Monitoring and placing limits on groundwater pumping would slow the depletion, drive up water efficiency, and save more water for future generations. After the Texas legislature capped pumping from the Edwards Aquifer two decades ago, irrigation efficiency rose, an active water market developed, and the city of San Antonio cut its per capita water use by 43%.

The United States and other countries could also help by re-framing their policies toward biofuels. Corn ethanol and biodiesel are water-intensive energy sources, so mandates to add more biofuels to the energy mix can hasten the draining of water supplies. A number of the big African land deals reported by the Spain-based non-profit GRAIN are geared toward the commercial production of biofuel crops, including palm oil in Cameroon's high-value tropical forest and jatropha in Kenya's Tana River Delta, one of Africa's most valuable wetlands.

Geopolitical Stability

Slowing the rush to grab land and water in sub-Saharan Africa is also a matter of regional and global geopolitical security.

Tensions over the Nile River, for example, could rise substantially due to recent foreign land deals.

GRAIN has identified some 4.9 million hectares of land leased out to foreign entities in Sudan and South Sudan since 2006 – 75 percent more area than the two countries' combined irrigation potential. Ethiopia, the source of 84 percent of the Nile's flow, has also leased out 3.6 million hectares, including lands in the Nile Basin's Gambela region.

If even a portion of the lands leased in these three countries is brought into production with Nile water, flows into Egypt – which depends completely on the Nile – would drop dramatically. Besides threatening food security in all three nations, the Nile water grabs could destabilize the entire region.

Unless governments and the international community stem the sell-off of sub-Saharan Africa's natural assets and dedicate themselves to agricultural development that benefits the poor and hungry, economic advancement and political stability in much of the region will remain elusive.

Sandra Postel is director of the Global Water Policy Project and Freshwater Fellow of the National Geographic Society. She is the author of several acclaimed books, including the award-winning Last Oasis, a Pew Scholar in Conservation and the Environment, and one of the "Scientific American 50."

"Grabbing at Solutions: Water for the Hungry First", 14/12/2012, online at:

<http://newswatch.nationalgeographic.com/2012/12/14/grabbing-at-solutions-water-for-the-hungry-first/>

BACK TO TOP

❖ **Haiti: More pressure needed to get clean water**

Haiti is vulnerable to water-borne diseases like cholera because of its lack of clean water and sanitation.

More than two years and nearly 7,800 deaths after UN troops brought the dread disease of cholera to Haiti, a plan has finally been put forward to do something to get rid of it. While we are still a long way from implementation, there are important lessons to be learned from this experience.

Perhaps most importantly, it shows that organised political pressure can work. There have been protests from many thousands of Haitians, and the Institute for Justice and Democracy in Haiti went to the UN to file for damages and reparations. Many other groups and individuals kept the issue in the news and wouldn't let it go away, as much as the UN and powerful governments wanted it to disappear.

Newspaper editorial boards such as those of the New York Times and the Boston Globe called on the UN to take responsibility for the disaster that it caused. As a result of grassroots organising, the majority of Democrats in the US House of Representatives signed a letter to the same effect.

Still, the UN has continued to deny its responsibility despite conclusive scientific and forensic evidence that its troops had brought the disease from South Asia, and transmitted it by dumping human waste into a tributary of Haiti's main water supply. This was gross negligence of the highest order.

Lack of clean water and sanitation

Haiti is especially vulnerable to this type of a water-borne disease because of its lack of clean water and sanitation. Troops coming from areas where cholera was present should have been adequately screened and tested, and of course there is no excuse for their reckless disregard in polluting the Artibonite river with the deadly bacteria.

UN likely to blame for Haiti cholera outbreak

In March of this year, Bill Clinton, UN Special Envoy to Haiti, admitted that the UN military mission was responsible for the deadly outbreak, but the organisation maintains its denial.

Tuesday's announcement by the governments of Haiti and the Dominican Republic, together with the UN, of a 10-year plan to eradicate cholera from the island shared by the two nations is a step forward, and a result of all the pressure that has been brought to bear over the past two years. Better late than never, but it is still just the beginning.

In the first place, the plan is much too slow. This is an ongoing national health emergency: about 700 people have been killed by cholera just since the first rains began in April, 167 of them since Hurricane Sandy caused widespread flooding. But this is a 10- year plan. We are still looking at several years before serious work begins to provide Haiti with the clean drinking water and sanitation needed to get rid of cholera.

According to the most recent data from the World Bank, only 69 per cent have access to "improved drinking water" and just 17 per cent have access to "improved sanitation", defined in the plan as "flush toilets, septic tanks, ventilated improved pit latrines and composting toilets". Among the poorest 20 per cent, only 1 per cent has access to improved water and more than 90 per cent "practice open air defecation". The necessary infrastructure work should begin immediately, not years from now.

Haiti is a very small country, smaller than the state of Maryland, with 10 million people. There is no civil war or violence that would prevent or delay the construction of water and sanitation facilities. The two-year delay in even announcing a plan has been tremendously costly in human lives; this plan needs to be implemented immediately and much faster than it appears to be scheduled for.

No funds to treat affected people

Meanwhile, even the funds for treatment of people with cholera are lacking. One of the most important non-governmental organisations in Haiti, Partners in Health, says that its US funding for cholera treatment runs out in February.

In 2012, the UN requested just \$30m for cholera treatment, yet only 34 per cent of this has been raised. There were 205 cholera treatment units and 61 cholera treatment centres last August; by June, these had fallen to 38 and 17, respectively.

And that is perhaps the biggest problem: for all the talk of "building back better" after the earthquake nearly three years ago, very little has been delivered. Of \$5.3bn pledged by governments to help Haiti, just \$2.8bn (53 per cent) has been disbursed. (For the US, it is \$250m of \$900m pledged, or just 28 per cent.)

So now we have the UN once again putting its hand out for money, for a 10-year plan to deal with a national emergency that has not even been nearly adequately dealt with over the last two years, with treatment facilities two years in a row closed just before the rainy season caused a spike in cholera infections. It is not a promising track record; rather a track record of broken promises.

With that in mind, thousands of people around the world have already signed a petition - initiated late last week by film director Oliver Stone - to keep up the pressure to accelerate this project and make sure that it actually happens. It's the least that the international community can do, after all of the suffering it has inflicted on Haiti in recent years as well as centuries: just clean up some of their own mess.

"Haiti: More pressure needed to get clean water", 12/12/2012, online at:

<http://www.aljazeera.com/indepth/opinion/2012/12/2012121263738325821.html>

BACK TO TOP

❖ The Farming Forecast Calls for Change

WEATHER and agriculture have always been intertwined in most every part of the world. No matter which continent, farmers have always been at the mercy of rainfall and temperature.

Thus it is curious that most of the conversation surrounding climate change — how the weather has been modified by industrial activity — revolves around reducing emissions (climate “mitigation”) and not on how to modify agriculture to new weather conditions. But with the world population expected to rise by another one billion people in 15 years, we need to produce more food with less emissions while adapting to changing climates.

Another round of international negotiations on climate change wrapped up in Doha, Qatar, last week without a major consensus on emissions. This was mostly expected — at the talks last year the most important decision was to draft a legally binding international treaty in 2015 that would take effect in 2020. This year’s talks marked the beginning of that effort.

Strikingly, though, there was a lack of consensus on addressing agricultural adaptation. Efforts to implement a formal program that addresses the dire problem of food security ended without agreement and the issue was punted to June for additional discussion.

But outside of diplomatic circles, a different consensus is forming — one that does not rely on negotiations. People are noticing that climate change has already taken hold. Maybe this is due to the superstorm of news coverage that followed Hurricane Sandy, which caused [more than \\$50 billion in damage](#) in the New York City region.

More likely, though, it was the failed monsoon that withered crop yields in India, or the fierce drought that hit most of the United States this year and that many other places still confront. In Doha — like much of the Middle East and North Africa — deserts and other drylands are becoming even drier, driving down local crop yields. Food prices have become increasingly volatile.

Many governments are not waiting for an international consensus before taking action. In Brazil, for example, a two-year-old, \$250 million program has financed more than 2,000 farming projects to help recover degraded pastures, improve the processing of livestock waste, implement no-till

agriculture to increase the life of the soil, plant commercial forests and employ other practices that have low emissions and respond to the changing climate.

In Niger, more than 1,000 separate projects were implemented in agriculture, fisheries and livestock management, benefiting more than 100,000 people. These projects developed almost 9,000 hectares of land with more sustainable management practices. Almost 90 percent of them reduced water and soil erosion. They also increased plant cover and the amount of carbon stored in the landscape.

In Vietnam, rice productivity was increased and methane emissions reduced through intermittent draining of the paddies. The project was launched in 2007, and by 2011 more than one million farmers were using the approach on 185,000 hectares, increasing yields by 9 to 15 percent and farmer income by \$95 to \$260 per hectare per crop season [[pdf](#)].

These initiatives are all successful, but the problem lies in their scale. Only 10 percent of Vietnamese rice farmers are served by that country's program; a sizable increase in capital is needed to expand the program's reach. It is unclear whether Vietnam, Niger and other developing countries will ever have sufficient funds accessible to farmers that can be used to tackle adaptation. This is where the shortcomings of the international efforts hurt most.

In the absence of a global treaty that provides incentives for farm adaptation there is often no choice but to continue with traditional methods. New approaches are desperately needed so that all the world's farmers can keep pace with the changing weather.

"The Farming Forecast Calls for Change", 12/12/2012, onlineat: <http://www.nytimes.com/2012/12/13/opinion/global/the-farming-forecast-calls-for-change.html>

BACK TO TOP

❖ Diverting the Missouri River to the West: 'Can' Does Not Mean 'Should'

Terraforming is not science fiction but reality: humans are remaking the surface of our planet. We are altering the composition of the planet's atmosphere and fundamentally changing the entire global climate. We remove mountains and dig miles beneath the surface for minerals. We cut down and destroy entire forests. We wipe out species and communities of species. We divert and consume entire rivers. We've stored so much water behind artificial reservoirs that we've actually changed the planet's orbital dynamics (just a wee bit - don't panic).

But we've lost sight of a fundamental principle: "can" does not mean "should." Modern civilization must learn that the ability to do something doesn't mean that we actually should, especially in the field of large-scale geoengineering.

A case in point is found in the new study just released by the U.S. Bureau of Reclamation: [The Colorado River Basin Water Demand and Supply Study](#) (CRBS) is the culmination of a two-year-long effort to develop and analyze future supply and demand scenarios for the seven states that share the Colorado River (AZ, CA, CO, NM, NV, UT, and WY).

The Basin Study is a remarkable, multi-year, multi-participant study about the growing challenges facing the most important river basin in the arid western United States. It [shows](#) that water demands in the basin already exceed the river's available supply - a situation the Pacific Institute has previously defined in [a paper in the Proceedings of the National Academy of Sciences](#) as reaching "peak water." The situation will worsen as water demands grow with population and if, as scientists now expect, water supply in the river diminishes with climate changes. Just as important as identifying water scarcity problems is identifying the options for addressing or preventing them. The Basin Study offers over a hundred different options and strategies for increasing supply or reducing demand. Many make sense; a few are far-fetched and seriously out of touch with reality. One of these has received considerable attention in the media in recent days, reflecting the fascination the public and the media have with massive engineering ideas: the concept of building a huge pipeline to bring Missouri River water west to Denver, the Rocky Mountain front range, and

beyond. This isn't a proposal for a water solution, it is a proposal to start a water war, and is a classic example of a 20th century solution to a 21st century problem.

From a narrow engineering perspective, there is no doubt such a pipeline can be built: a treatment plant, massive pumping stations, and a 600+ mile pipeline to move water. Technically, this is a piece of cake.

But it is also is a dangerous idea whose time has come and gone again. And in this era of fiscal limits, the federal government should not spend one penny even studying it, much less invest in such a thing. Why? The project is predicated on three assumptions - all false:

- First, it assumes that conservation and efficiency will not be sufficient to limit water demand and that we must find more "supply."
- Second, it assumes that money, energy, and the environment don't matter.
- Third, it assumes that there is excess water in the Missouri River to transfer.

Water demands should not be assumed to grow without limits.

Water managers, planners, local officials, and others are all trained to assume that water demands must grow inexorably with population and the economy, and that the only response is to find more new sources of water. This is false. Experience in the western U.S. and many other regions - indeed the United States as a whole - shows that we can cut water use substantially by [improving efficiency](#), [cutting waste](#), and changing use patterns, while populations and economies continue to grow. Figure 1 shows this has been the case in the U.S. for over 30 years, where total water use has actually decline - and new studies show vast untapped and relatively low-cost efficiency improvements remain. Moreover, it is long past time we had a real conversation about land use, urban planning, and population policies, instead of assuming they have no implications for water policy.

Money, energy, and the environment do matter.

A pipeline taking water from the Missouri River west makes perfect sense, if you don't care about money, energy, or the environment. Such a pipeline would cost tens of billions of dollars to build and require massive energy inputs to run. Here is just one piece of this puzzle: Moving water from the

Missouri River at Leavenworth, Kansas to Denver, Colorado would require a pipeline at least 600 miles long, pumping water uphill around 5,000 feet (see Figure 2). Even doing the math on the back of an envelope shows that the *energy costs for pumping alone*, with conservative assumptions, would be on the order of \$1000 per acre-foot of water. Add in the additional costs of financing and building such a pipeline and the power plants to run it, operating it, and treating and distributing the water, and we're looking at some of the most expensive water in the world (not including bottled water - another story).

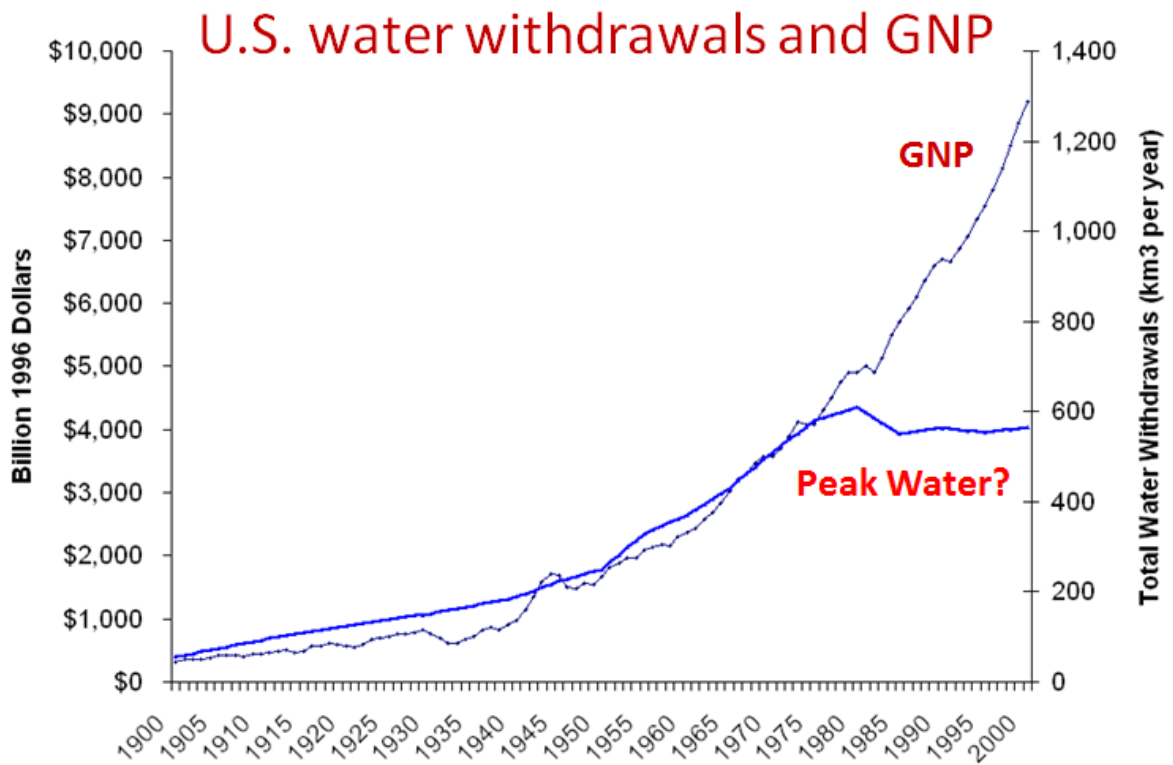


Figure 1. US water withdrawals and GNP over the past century showing the leveling off of water use (Source: P. Gleick 2012)

The Missouri River has no "excess" water.

Finally, the whole idea is predicated on the assumption that the Missouri River has excess water. This, of course, depends on how you define "excess" and who is doing the defining. But it is ironic that this idea is being floated at exactly the same time that massive severe drought has cut the flows

of the Missouri/Mississippi Rivers to record low levels, barges are being stranded, downstream users are demanding more upstream releases, and Midwest agriculture is suffering from water shortages. In recent days the U.S. Army Corps of Engineers has [turned back official requests](#) for more water from the Missouri River to alleviate shortages on the Mississippi. Releasing more water downstream would come at the expense of upstream users, drinking water supplies, environmental conditions, and hydropower generation.

We've reached the era of peak water, even on big rivers like the Missouri. While we can continue to fantasize about developing new water supplies by building larger and larger engineering projects to move water longer and longer distances, destroying ever more distant ecosystems in the name of satisfying uncontrolled and unquestioned sprawl and development in arid regions, perhaps it is time to ask: Just because we can, should we? And once we ask that question, the answer comes back quickly. No, we shouldn't. There are far more environmentally, politically, and economically sound solutions.

“Diverting the Missouri River to the West: 'Can' Does Not Mean 'Should'”, 15/12/2012, online at: <http://www.huffingtonpost.com/peter-h-gleick/diverting-the-missouri-river-to-the-west-p2287594.html>

BACK TO TOP

❖ Major Federal Study Sets Foundation for Colorado River Basin's Future

By 2060 seven western U.S. states face a “significant gap” between their water demands and the available supply from the Colorado River Basin, said Interior Secretary Ken Salazar during a press conference Wednesday to mark the release of the department’s three-year study of a critical watershed in which demand already exceeds supply.

The [landmark study](#) — the most comprehensive water study in the department’s history — revealed a “troubling trajectory,” Salazar said. The arid basin, which provides water to an area in which 40 million people live, will become drier, more densely populated and — even with new supply projects — more vulnerable in terms of water reliability, hydroelectric power generation, recreation, and river flows.

The median gap between supply and demand is 3.2 million acre-feet by 2060, or nearly 25 percent more than the forecasted annual flow when accounting for climate change, and most of the growth in demand will come from cities and industries.

“There is no one solution,” Salazar said. “We need to reduce demand and we need to consider increasing water supply through practical measures.”

The mix of solutions — and what makes one “practical” — is the most disputed section of the study. The Bureau of Reclamation, the lead agency, evaluated 30 options and slotted them into four “portfolios” based on water supply reliability, technical feasibility, and energy- and carbon-intensity.

Excluding the projects with low reliability or tremendous technical challenges, the basin could increase its water supply by 7 million acre-feet by 2060 at an annual cost, in 2012 dollars, that ranges from \$US 2 billion to \$US 7 billion. Those cost estimates are quite uncertain and are best used as a relative figure to compare options, not as an absolute number for what the actual cost might be, said Carly Jerla, a study co-manager and an engineer with the Bureau of Reclamation’s Lower Colorado office.

The bureau did not rank the projects it evaluated or make recommendations. But considering the depth and sophistication of its analysis and its collaboration with the basin’s myriad interest groups,

the study will set a foundation for all future discussions of water development in the Colorado River Basin.

“The study gave us the tools,” Kay Brothers, a study co-manager and a consultant to the Southern Nevada Water Authority, told Circle of Blue. “The states need an integrated planning process now for further evaluation and studies.”

A Call to Action

A handful of statistics show that the basin is already stressed. A drought that began in 1999 — the longest in the Southwest in the modern era — combined with unrelenting demand from water users have pummeled the basin’s two largest reservoirs. Lakes Mead and Powell have not been full in 13 years and now sit at just 52 percent of capacity.

These circumstances pushed average demand in the basin above the average annual supply in 2002, where it has remained.

The study makes clear that if climate change cuts into river flows as expected, doing nothing to increase supply, reduce demand, or change operational procedures leads to greatly increased vulnerability to water supply shortages for Las Vegas and for the four states that comprise the upper basin — Colorado, New Mexico, Utah and Wyoming. Based on climate modeling, the study forecasts an 8.7 percent decline in the river’s average annual flow, compared to the 1906-2007 period.

If no action is taken, by 2041 there is a one in five chance each subsequent year that the upper basin states would not be able to meet their water delivery obligations to the lower basin, according to the study. And nearly every other year Lake Mead would risk dropping below the lowest current intake that siphons drinking water to Las Vegas. (The city is building a third “straw” at a lower elevation as a hedge against this threat.)

“The upper basin is currently unprepared for this possibility,” said Eric Kuhn, general manager of the Colorado River District, which is in charge of developing Colorado’s portion of the river. “To address an uncertain future, upper basin users will need to develop new risk-management strategies including improved aggressive conservation, optimal use of storage and water-banking options.”

Not only will climate change reduce the amount of water available, rising temperatures and decreasing rainfall will also increase water demands, especially for irrigation. A 2010 Bureau of Reclamation study found that each 1 degree Fahrenheit (0.6 C) increase in temperature pushes up water demand in the basin by 5.5 percent; each 5 percent decrease in precipitation corresponds with a roughly 1 percent increase in water demand.

“We simply have to tackle this problem now so that our children and grandchildren will have water in the future,” said Anne Castle, the Interior Department’s assistant secretary for water and science.

What To Do?

The Bureau of Reclamation received more than 150 suggestions for how to close this gap. It winnowed those into 30 representative options to evaluate for the final report. These items range from desalination, weather modification and a Missouri River pipeline on the supply side, to conservation and wastewater reuse on the demand side. The bureau also looked at changes to reservoir operations, water markets and water banks to facilitate water transfers.

The most technically feasible options were placed into four portfolios. The bureau then estimated the cost of the projects and the cheapest order in which to deploy them. Those projects not selected for a portfolio are not likely to be considered in future plans by the states or the federal government, Jerla, the study co-manager, told Circle of Blue.

“I would be surprised if we see things like icebergs and water bags,” she said. “The things that got cut out of the portfolios — it’s hard to think those things will be considered going forward.”

Basin water users are already undertaking projects similar to those in the portfolios:

- Last month, the San Diego County Water Authority agreed to buy the entire output of a desalination plant planned for the southern California coast.
- Also last month, the U.S. and Mexican governments signed an agreement for the first time [to share shortages and surpluses in the river’s lower basin](#).
- In 2004, Palo Verde Irrigation District and the Metropolitan Water District of Southern California signed a 35-year agreement to transfer water from farmers to cities.

- The Southern Nevada Water Authority has the rights to pump 84,000 acre-feet of water from groundwater basins in northern Nevada. It will build a 300-mile pipeline to deliver the water.

The big infrastructure projects will take years to plan, permit and construct — if they ever make it that far. In the near term, Brothers said, water conservation and reuse are promising solutions.

An emphasis on conservation would be cheered by many groups who rely on healthy river flows.

“We’re glad that conservation measures were included, and we hope they prioritize it,” said Molly Muggleston, project coordinator for Protect the Flows, a group that represents nearly 600 businesses in the basin, mostly in the recreation and tourism industry.

“We should do all we can in the name of conservation before we start building pipelines and drawing water from an area — the Midwest — that is already in drought,” Mugglestone told Circle of Blue. The study estimates that conservation could free up 2 million acre-feet from municipal, industrial and agricultural users.

One factor the study did not consider, according to Brothers, is the effect of higher prices on water demand. The cost of developing the new supplies assessed in the study is significantly higher than the water currently available. More expensive water would certainly result in lower consumption.

“Major Federal Study Sets Foundation for Colorado River Basin’s Future”, 14/12/2012, online at:

<http://www.circleofblue.org/waternews/2012/world/major-federal-study-sets-foundation-for-colorado-river-basins-future/>

BACK TO TOP

❖ Cloud forest trees drink water through their leaves

Graduate student Greg Goldsmith in the montaine cloud forest of Monteverde Cloud Forest Reserve, Costa Rica. Photo courtesy of Drew Fulton (Canopy in the Clouds)

Tropical montane cloud forest trees use more than their roots to take up water. They also drink water from clouds directly through their leaves, University of California, Berkeley, scientists have discovered.

While this is an essential survival strategy in foggy but otherwise dry areas, the scientists say that the clouds the trees depend on are now disappearing due to climate change.

“The study highlights the vulnerability of this rare and already endangered ecosystem to climate change,” said Todd Dawson, senior author of the study and UC Berkeley professor of integrative biology. Changes in cloud cover have already been correlated to declines and disappearances of cloud forest animal populations, such as frogs and salamanders.

The new study will be published next year in the journal Ecology Letters and is available online this month.

In tropical montane cloud forests, leaves are constantly bathed in clouds, making them wet. The leaves of the most common cloud forest trees drink this cloud water when water from the soil just isn’t enough, said Greg Goldsmith, lead author of the study and a graduate student in Dawson’s lab.

“Many cloud forests experience an annual dry season when the primary water source isn’t rain, but rather, the moisture from the clouds,” he said. “This is when the trees are most likely to draw water in through their leaves.”

Working in Monteverde, Costa Rica, the researchers studied patterns of leaf wetness caused by the clouds by setting up small plastic “leaves” that use changes in the voltage of an embedded electrical circuit to detect wetness. Then, they installed miniature sensors on the branches of cloud forest plants to see whether or not water was entering leaves when they were wet.

“The textbooks teach us that water enters roots, moves up the trunk and into the branches, then finally exits the leaves. That’s true, but it’s not the whole story,” Goldsmith said. “With our sensors, we observed water entering the leaves and actually moving back down the branches toward the trunk.”

The research builds on previous work by Dawson, who demonstrated a similar phenomenon in California redwoods.

However, the study found that not all trees can drink the same amount of cloud water.

An electronic ‘leaf’ the researchers used to detect when clouds were wetting leaves. Photo courtesy of Greg Goldsmith (Canopy in the Clouds)

“The trees that are drinking the most water through their leaves may be more vulnerable to decreases in cloud cover resulting from rising temperatures,” said Goldsmith, who received funding from a National Geographic Society Young Explorers Grant to conduct the research.

“The study provides a clear demonstration of the interactions between clouds and cloud forest plants and will serve as a cornerstone for future research on the effects of climate change on tropical montane cloud forest ecosystems,” Dawson added.

In addition to funding from the National Geographic Society, Goldsmith was supported by a National Science Foundation Graduate Research Fellowship, a Smithsonian Institution Short-Term Fellowship and a Wang Family Fellowship from UC Berkeley.

UC Berkeley graduate student Nicholas J. Matzke is also a co-author of the report.

“Cloud forest trees drink water through their leaves”, 12/12/2012, online at:
http://newscenter.berkeley.edu/2012/12/12/cloud-forest-trees-drink-water-through-their-leaves/?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=c6521d218d-RSS_EMAIL_CAMPAIGN&utm_medium=email

❖ City seeks \$82m for water projects

BULAWAYO City Council says it plans to hold a donors' conference early next month to raise around \$82 million required to fund the city's mid-term water solution.

Report by Khanyile Mlotshwa Staff Reporter

Addressing a Press conference yesterday after a water summit with stakeholders, Bulawayo mayor Thaba Moyo said the numerous strategies of addressing the water crisis that has seen residents receive water for only three days a week had been proposed.

“The meeting was to discuss the challenges of water that the city is facing,” he said.

“We crafted a way forward. We have lined up more meetings for next year. We will leave no stone unturned as we seek a solution.”

MDC-T policy director and Bulawayo South MP Eddie Cross said that the water situation in Bulawayo was “critical”.

He said even if efforts to connect Mtshabezi Dam, duplicate Insiza pipeline and rehabilitate boreholes in Nyamandlovu succeed “Bulawayo is still going to be under water-rationing for the rest of 2013 unless there is enough rain.”

“There is need to pursue long-term strategies,” he said.

“Mid-term strategies, that is between 12 and 15 months, are to improve the water situation.

“It has been noted by experts that the rainfall in Mzingwane catchment area has been declining by 2,5% every decade.

“Rainfall has gone down and the population has gone up, which means we have a disaster.”

Cross said the emergency programme had already raised \$37 million.

“Even if it rains this year, we shouldn't relax. Bulawayo needs an urgent structured response and it is going to get that funding,” he said.

“As an outcome of the meeting, we have asked the mayor to write to the central government in early January so that the government calls for a funding summit next month.

“But the water problems here cannot wait until January.”

City engineer Simela Dube said the emergency response would need \$38 million for the Insiza duplication expected to be complete in 2014, \$3 million for the Epping Forest, \$1 million for the Nyamandlovu Aquifer and \$40 million for the recycling of water for industrial and urban agricultural purposes.

“City seeks \$82m for water projects”, 14/12/2012, online at: http://www.newsday.co.zw/2012/12/14/city-seeks-82m-for-water-projects/?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=15993d07f6-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

❖ Weather extremes push Sri Lanka to adopt crop insurance

COLOMBO, Sri Lanka (AlertNet) – Sri Lanka plans to offer a national crop insurance scheme to help farmers cope with increasingly severe and disruptive weather and resulting crop losses.

In **presenting the national budget** for 2013 recently, President Mahinda Rajapaksa said the government was moving toward ways of managing long-term severe weather events, particularly worsening drought.

“In the future, the economic losses of drought must be managed in a more meaningful manner. Therefore, I propose to implement a crop insurance scheme for all farmers,” he said

This is the first occasion that such a scheme has been put in place. Officials said funds of around \$1 million (Rs 1000m) will be set aside for the project through a National Insurance Trust Fund. The money would come from compulsory contributions from banking, financial and insurance companies.

Farmers who benefit from a fertilizer subsidy scheme will also have to make a contribution of around one dollar (Rs 150) for every 50kg of fertilizer they draw under the subsidy scheme.

Rajapaksa said that at least 100,000 farmers will benefit from the project if they lose their crops.

DROUGHT AND FLOODING

The new scheme comes in the wake of an eight month drought that has hurt the country’s staple rice production. The drought was broken during the last week of October – but by flash flooding brought on by Cyclone Nisha, which killed 10 people, damaged over 5,000 homes and left 200,000 people affected, **according to the government’s Disaster Management Centre.**

Before the floods, the drought was feared to have destroyed at least 23 percent of the country’s rice harvest, **reports** by the UN country office said citing assessments by the Agriculture Ministry.

In some areas where the drought was at its worst, like the northern districts of Vavuniya, Mannar and Kilinochchi and the north central districts of Polonnaruwa and Anuradhapura, the losses were likely to be higher, regional officials said.

“In some areas we fear that the losses would be around 50 percent of the harvest,” Ravi Vinanithambi, an environment officer for the North East Reawakening Programme for the Vavuniya District told AlertNet.

MORE MEASURES NEEDED

While welcoming the new insurance scheme, experts warned that Sri Lanka needed to put more such measures in place to face up to the challenges of changing climate patterns.

“We have seen how the harvest fluctuates with the weather. We need to realign the crop cycles according to the changing weather,” L Rupasena, additional secretary at the **Hector Kobbekaduwa Agrarian Training Research Institute** said.

Others said that changing weather patterns not only harmed to crops, but presented a direct threat to the country’s poorest people. The International Federation of Red Cross Societies (IFRC) launched a \$ 1 million **appeal** in early November to assist 20,000 families hit by the drought. The organisation said that over 125,000 persons affected by the drought needed assistance for at least 18 months.

“These extreme weather events hit the most vulnerable hardest,” Bob McKerrow, IFRC delegation head in Sri Lanka told AlertNet. The drought has caused particular **problems** in Sri Lanka’s northern districts, where over 450,000 persons displaced by the country’s decades-long civil war have returned since the conflict’s end.

The IFRC estimates that during the recent floods at least 20,000 such families were badly affected.

“It is no longer about a flood or a drought. People are increasingly talking about climate change,” McKerrow said.

STRING OF EXTREME WEATHER

Sri Lanka has had plenty of experience with extreme weather in the last two years. Between December 2010 and February 2011, heavy rains destroyed crops and left thousands displaced in the north eastern region. By the end of 2011, the same region was hit by drought that lasted until late October 2012. The drought ended with a cyclone but had already affected as many as 1.3 million people, according to the IFRC funding appeal.

In between, the capital Colombo was inundated on several occasions with flash flooding. And in November 2011, 14 people were killed due to gale force winds in the south.

“Effects of climate change are gathering momentum. We need to be prepared,” McKerrow said.

“Weather extremes push Sri Lanka to adopt crop insurance”, 13/12/2012, online at:

http://www.trust.org/alertnet/news/weather-extremes-push-sri-lanka-to-adopt-crop-insurance/?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=15993d07f6-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP