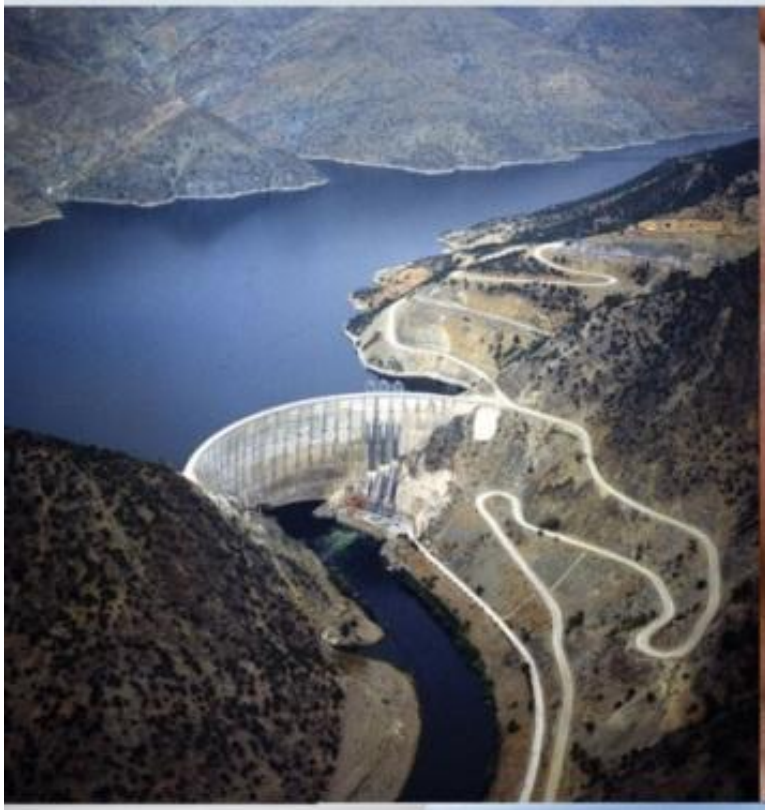


ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

Events-News-Politics-Projects-Environment-ClimateChange-Neighbourhoods-Cooperation-Disputes-Scarcity and more





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ORSAM WATER BULLETIN

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Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
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- **New dams necessary to face flood hazards**
- **Pakistan asks India to stop opposing Diamer dam**
- **Nepal: Water issues with India demand agreements review**
- **Pakistan floods: Tens of thousands made homeless**
- **Experts Warn of Water Bankruptcy for Many Regions After Reviewing 200 Major Global Projects**
- **How will climate change affect food production?**
- **Is Central Asia on the Verge of a Water War?**
- **Chinese Coal Mining Threatens Zimbabwe's Zambezi Water Project**
- **Tibet charting 44 rivers for water management**
- **Water woes increase in Yemen**
- **CWC's Arabian Water and Power Forum concludes on high note**
- **Uzbekistan to lose $600m a year due to Rogun Dam**
- **Bulgaria to Start Building Major Southern Dam in 2013**
- **CLIMATE CHANGE: New urgency to rethink dam projects**
- **It's about justice: Why all New Zealanders should support Maori claims to water**
- **Argentina seeks dam funding in China**
- **Why is Brazil the new America? Hint: water.**

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❖ Turkey, Ghana meet to finalise deal over $164.9m water expansion projects

Mr Enoch Teye-Mensah, Minister of Water Resources Works and Housing on Friday said the time had come for Ghana to place the right premium on water production in the country.

He said governments after government since independence have never taken into consideration the supply of water to its people over the years, and it was important to start adopting proper ways of producing water.

Mr Teye-Mensah made this observation when a Turkish delegation paid a courtesy call on him in Accra, to finalize procedures on the Akwatia, Akim Oda and Winneba water supply expansion project, expected to commence by the end of October and end after 36 months.

The Turkish funded project, worth $164,935,602.55, upon completion would improve water supply to the communities – total capacity would be increase, level of reliability water enhanced, and a setting up of local processing industries in the supply areas as well as tourism sites which will translate into job creation.

He said the Akim Oda Water Supply System Rehabilitation and expansion project will serve communities like Akim Asene, Akim Manso, Atiankama Nkwanta, Aboabo and Batabi, where as the Akwetia Project will serve Bawdua, Topreman, Bamanase, G.C.D Camp, Asubone, Camp, No. 4 Anwaeso, and Mmofrafaadwen.

“Mpata, Gyahadze, Okyreko, Nsuekyir Esonpanyin, Pomadze, Ansaful, Bewadze, Gomoa, Mampong, Dagor, Mamkoadze, Mpopa, Mprumem, Nkroful, Onyadze, Otsew, Simbrofo, Ankamn, and Apam communities will also benefit from the Winneba water supply system rehabilitation and network expansion project”, the Minister stated.

He said in Akwetia the existing water treatment plant had been out of operation for the past ten years, and now only few individual have boreholes in their homes which serves only a small proportion of the town, whereas the water supply system in Winneba had very little transmission and distribution networks thereby causing the plant to operate most of the time under capacity.

He expressed appreciation to the Export Credit Bank of Turkish for supporting the project, saying Turkey was an emerging economy and has expertise to help improve the water supply system of the country.

Mr Aydin Nurhan, Turkish Ambassador to Ghana commended Ghana for the bilateral relationship between the two nations pledge that projects will be complete within the time scheduled to alleviate the plight of the communities.

He said this was the first project in the water sector that the country was supporting, but hope to divert in the future to support the country in the construction of roads.

"Turkey, Ghana meet to finalise deal over $164.9m water expansion projects", 29/09/2012, online at: http://www.ghanabusinessnews.com/turkey-ghana-meet-to-finalise-deal-over-164-9m-water-expansion-projects/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
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❖ Water project inaugurated in Nineveh

Nineveh, Mosul (IraqiNews.com) -The Governor of Nineveh province Ethel al-Nijaifi inaugurated the Talsaqif pumping water station in northern Mosul.

Nijaifi reported in press statement during the inauguration of the project that ”The pumping water project is within the plans of Nineveh Water Department to eliminate the water scarcity in the neighborhoods and remote areas in Nineveh province,” noting that “The capacity of the project reaches (850) cubic meter per hour.”

The statement pointed out that ”The efforts which were exerted by cadre and the engineers in Nineveh Water Department resulted in inaugurating the Talsaqaf pumping water station in order that people of these areas can have the potable water,” noting that “The Governor did not announce the cost of the project.” \

“Water project inaugurated in Nineveh”, 24/09/2012, online at: http://www.iraqinews.com/features/water-project-inaugurated-in-nineveh/

BACK TO TOP

❖ Green Growth: a Survival Option for Arab Countries

Measured by the increase in gross domestic product over the past 50 years, Arab countries did well, as average GDP per capita increased by about four-fold.

While this was reflected in a higher standard of living, it did not necessarily lead to a better quality of life, nor did it enhance the chances of sustainability. The same period witnessed a steady deterioration in the natural capital and environmental conditions, putting the region at the brink of ecosystems bankruptcy.

During the past 50 years, nature's products and services available for residents of Arab countries decreased by more than half. According to a study prepared by the Global Footprint Network – as part of the Annual Report of the Arab Forum for Environment and Development to be released at its annual conference in November 2012 in Beirut – the Arab region has been in a state of ecosystems deficit since 1979. That gap has been progressively widening.

The drop in Arab biocapacity (life-supporting resources such as water) was accompanied by a doubling in ecological footprint, and a decrease in freshwater availability to one-fourth during the same period.

The deficit in nature's products and services is largely bridged by imports financed by oil exports and over-exploitation of finite local natural resources, with the associated deterioration in environmental conditions.

The AFED annual reports on the state of Arab environment have repeatedly warned since 2008 that the effect of climate change, high population growth rates and uncontrolled economic growth and urbanization amplify the region's environmental challenges and constrain its ability to manage them.

Significant among those challenges are water scarcity, land degradation, inadequate waste management, coastal and marine environment degradation and air pollution.

AFED estimated the cost of environmental degradation in the Arab region at 5 percent of GDP, while budgetary allocations for environmental purposes do not even come close to one percent of GDP.

If all humans lived like the average Arab resident, 1.2 planets would be required. If they lived like an average resident of Qatar, 6.6 planets would be required to satisfy their level of consumption and emissions of carbon dioxide. By contrast, if everyone lived like an average Yemeni, humans would demand only half of the planet Earth.

But for many countries like Yemen, the average inhabitant's footprint is small compared to the world average, and in many cases it is too small to meet basic food, shelter, health, and sanitation needs.

Therefore, the deficit cannot be bridged by reducing the demand for resources. To improve the quality of life, the actual per capita share of renewable natural resources must become more balanced and equitable across countries, accompanied by innovative resource management. In order to increase the footprint in countries where it's needed requires a decrease in high-consuming countries.

It is obvious that regional averages mask huge internal disparities. While three Arab countries lead the global inventory of ecological footprint per capita, other countries in the region rank at the bottom of the list.

The average resident of Qatar, for example, has the highest ecological footprint in the world, at about 12 global hectares per capita, which is 13 times more than the ecological footprint of the average Yemeni. Biocapacity availability per person also varies greatly, with Sudan having nearly 10 times that of Iraq or Jordan.

The ecological deficit puts at risk future economic expansion and stability, and demands restructuring committed to match economic consumption with resource availability and the capacity to assimilate waste.

The Arab region has one of the greatest variations in ecological footprint, biocapacity and income. In order to pursue sustainable wellbeing for all residents in the region, attention should be given to more regional economic integration and cooperation and toward more Arab free trade, where the overflow of goods, capital and people works to benefit all countries in the region. Regional programs in scientific research geared toward development are key to achieving sustainable and prosperous economies for all, based on sound resource management.

One fundamental choice is to make good use of the present income from the region's oil resources to build a science and technology base and a research and development infrastructure, which can help to extract and use resources efficiently and develop unconventional resources, as a strategy to secure survival and a decent quality of life.

The picture, though, is not completely gloomy. We have recently been witnessing several attempts to transfer the income from oil exports into technology- and knowledge-based economy. Those are demonstrated in multibillion-dollar initiatives such as King Abdullah University of Science and Technology in Saudi Arabia and Masdar City and Institute in Abu Dhabi, dedicated to the development of new technologies in the energy, water and food production sectors.

Lessons in this regard can be learned from South Korea. In 50 years, the country was transformed ito a modern state, and grew into a major economy and regional power, accompanied by a high standard of living. A look at Korea makes it clear progress does not happen by chance. It is the result of planning and hard work. The capital Seoul hosts the Global Green Growth Institute, and the Korean president has a team of experts advising him on green growth.

Most unique about South Korea might be its Knowledge Economy Ministry, assigned the role of promoting science for development.

It is hoped that the work of high-profile multibillion-dollar Arab institutions will be translated to better public policy and less public relations.

"Green Growth: a Survival Option for Arab Countries", Daily Star, 20/09/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=5957

BACK TO TOP

❖ Palestinian farmers wither in tough climate

West Bank's farming sector struggling to overcome water shortage, economic crisis

Once a mainstay of the local economy, Palestinian agriculture in the rocky West Bank is in decline as farmers struggle to protect their livelihoods and their lands.

Though cut off from key markets, the pressure to keep farming is strong. But with restrictions on water use and land, what farmers produce often fails to match the lower cost or higher quality of what Israel supplies to the Palestinian stores.

Palestinian agriculture represented just 6% of gross domestic product in 2010 from 13.7% in 1994, the World Bank said.

The Palestinian statistics bureau said where the sector employed 22% of the workforce in 1994, now it employs just 12.7%.

"Palestinian farmers are fighting a daily, losing battle against Israeli restrictions on land and water," Palestinian Minister of Agriculture Walid Assaf said.

In a report issued this month, a United Nations agency said the "impact of the Israeli occupation on the productive base of the Palestinian economy, and especially its once-flourishing agriculture, has been devastating.

"The economy has lost access to 40% of West Bank land, 82% of its ground water, and more than two-thirds of its grazing land," said the UN trade and development agency, UNCTAD.

Under the Oslo Accords, Israel controls more than 80% of West Bank water resources. International aid groups say it is much more generous in distributing the water to its own citizens than the Palestinians, who claim not just the territory, but also the underground aquifers, for themselves.

The direct result of this is easily visible. While fruit orchards north of the city of Hebron, are parched as they rely only on scarce rainfall, a settler farm across the way is lined with black pipes for regular hosing, allowing for faster growth. Lush green, the rows of fruit trees were all picked months ago.

Palestinian farmers in most West Bank areas cannot drill new wells without Israeli permission – something European Union diplomats say hardly ever happens.

Israel says it is already giving Palestinians more water than was agreed in the 1994 interim Oslo peace accords. They say a definitive division of resources can only be decided in a final peace deal – something that has proved elusive in years of mutual recrimination and missed chances.

Tied to the past

Israeli agriculture experts say the Palestinians could do much more with their land if they adopted modern farming methods including using "drip technology" and modern fertilizers, but again Palestinians counter that it comes down to ample water supplies and unrestricted access to imports.

The locals certainly receive little help or encouragement from the Palestinian Authority, which exercises limited self-rule in the West Bank.

It allocates a mere 1% of its budget to farming, despite the sector's importance. In a speech aimed at ending recent protests against tax hikes, Prime Minister Salam Fayyad this week promised to do more for the sector.

Farmers also say they are denied access to some of the West Bank's most fertile land, especially in Area C, which includes the Jordan Valley and is controlled by the Israelis.

Rights group Peace Now says Israel has declared 25,000 acres, or 16%, of the West Bank as "state land" since 1967 and annexed it to settlements. Other areas are still under scrutiny.

Palestinian farmers also say Israel restricts the entry of West Bank produce to key markets, namely Jerusalem, once the commercial center for Palestinians.

All produce destined to Israel or for export must through Israeli checkpoints and subject to lengthy checks and procedures, significantly increasing production costs and decreasing profitability.

Palestinians imported $72.2 million worth of fruit and vegetables from Israel in 2010, while their own farmers exported just $2.92 million of their produce and often labored to sell it at home, official local statistics show.

Once dubbed Palestine's fruit basket, now farmers leave some of their crop to rot in the sun-baked orchards, unwilling to sell it at a loss.

With the sector beset by so many problems, it is little wonder that many farmers are throwing in the towel.

"Palestinian farmers wither in tough climate – YNET", 25/09/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=5960

BACK TO TOP

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❖ Water Authority: Israel emerging from water crisis

The Water Authority has approved a large rise in the quota for agriculture in 2013.

The Water Authority has approved a large, 25 million cubic meter, increase in the water quota for agriculture in 2013, from 455 million cubic meters to 480 million cubic meters. The Water Authority said that the increase was possible because Israel was emerging from its water crisis of the past decade.

"Efficient management of the water sector, on the basis of the large increase in the amounts of desalinated water, continuing conservation by the public, and the extraordinary amounts of treated water recycled for agriculture, has enabled the Water Authority Council to make these decisions, which indicate the improvement and gradual emergence of the water sector from the crisis it has been in for the past decade," said the Water Authority in a press release.

The Water Authority Council also approved another large increase, of tens of percent, in water allocated for nature to 25 million cubic meters in 2013.

The Water Authority added, "Continued efficient conduct and conservation by everyone, in every sector, will enable the further rehabilitation of the water sector, which still faces large shortages and is still around the red lines."

"Water Authority: Israel emerging from water crisis", 24/09/2012, online at:
http://www.globes.co.il/serveen/globes/docview.asp?did=1000786592&fid=1725

BACK TO TOP

❖ Oasis of peace in the desert brings hope to Israeli-Palestinian conflict

Jerusalem – At first glance, Ein Prat, one of the many natural and historic sites hidden in the northern Judean Desert, looks like any other picnic site around the world.

Large wooden tables and long benches are located strategically under shady trees on either side of a bubbling brook. Clusters of friends and family relax and enjoy each other's company in the natural surroundings.

What sets Ein Prat – or Wadi Kelt, as it is known in Arabic – apart from other parks is that it is one of the few Israeli-run sites that Israelis and Palestinians can access equally, and that it has the potential of becoming an oasis for peace.

The park is a few minutes' drive from the Jewish neighbourhoods in Jerusalem's northern suburbs and it is almost equidistant from the Palestinian city of Ramallah. Those that descend on the park each weekend seem determined not to allow decades of occupation, violence or mistrust to stop them from enjoying its natural delights.

Surprisingly for the region, and unlike other places where Israelis and Palestinians come into close contact, there are no violent confrontations, angry words or accusations at Ein Prat/Wadi Kelt.

And, despite the fact that tension does hang somewhere in the air between the smoky barbecue grills and the intoxicating smell of water pipes, it is hard at first glance to differentiate between Jews, Muslims and Christians as they chit-chat and consume local delectable fare like hummus, pita and kebabs.

True, there is little interaction between the two groups, and there seems to be an unwritten agreement between the Israelis, who speak only Hebrew, and the Palestinians, whose mother tongue is Arabic, to treat each other like ghosts. And while this lack of interaction should not be mistaken for the simple politeness of strangers giving each other some space, it is a step forward.

The fact that Israeli and Palestinian children splash side-by-side in the natural pools and grown-ups seek relief together from the heat by wading through the cool waters suggests a glimmer of hope and the possibility of breaking down the growing barriers between the two peoples.

One of the main attractions of the park is a large natural pool half way up the mountain ravine. It is here – when the people have left the comfort of their separated picnic tables – that Israelis and Palestinians sit face-to-face around the perimeter of the cool, refreshing water.

Among the splashes of water and squeals of delight, members of the two groups eye one another, trying to determine if their so-called enemies are actually human beings or not.

Are we really all that different? In the natural light of this park, it seems not.

Through the stolen glances, there are some coy smiles and kind gestures. There mostly seems to be an acceptance that all are not only looking for some relief from the scorching midday sun, but also from the madness of an on-going conflict that affects our daily lives.

For just a moment, this park seems to be an ideal place for a peace summit. The thought of our respective leaders dipping in the cold water after negotiating each complicated point in this conflict suddenly seems entirely plausible. Perhaps the shock of the freezing water against burning skin and the realisation that the land we are fighting over has been here much longer than any of the humans now inhabiting it might actually be enough to convince them that fighting and violence, oppression and occupation, are not the way to preserve this land for future generations.

While the idea of politicians ditching their suits and ties for swimming gear seems less plausible than their coming together at a negotiating table, the reality is that here in Ein Prat/Wadi Kelt ordinary Israelis and Palestinians do have a rare chance to meet. And although years of conflict have made us wary of one another, maybe it is in this desert oasis that those who appreciate the beauty of nature can find a way to make peace.

"Oasis of peace in the desert brings hope to Israeli-Palestinian conflict – Common Ground", 25/09/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=5951

BACK TO TOP

❖ Water Authority Report to Ad Hoc Committee Highlights Water Problems

RAMALLAH, September 23, 2012 (WAFA) – The Water Authority report, published Sunday, highlighted the severe water shortages and acute water quality problems which continue to negatively affect the lives and livelihoods of millions of Palestinians living in the West Bank and Gaza Strip.

PWA report, titled 'Palestinian Water Sector: Status Summary Report, Sept. 2012,' will be distributed to members of the Ad Hoc Liaison Committee (AHLC) meeting in New York on Sunday.

It stated that these problems are not caused by environmental factors, but attributable to the discriminatory water policies and practices Israel has instituted across the occupied Palestinian Territory over the last forty five years.

"While customary international water law calls for all such trans-boundary freshwater resources to be shared "equitably and reasonably," Israel currently exploits over 90 per cent of these resources for exclusive Israeli use, including for use in Israeli settlements, and allocates less than 10 per cent for Palestinian use," It said.

The report covered main topics such as: water shortages in the West Bank, poor water quality in Gaza, Using the Joint Water Committee to consolidate illegal Israeli settlements, ICA Permits: prohibiting Palestinian development of Area C, and using water as a weapon: Israeli demolitions of Palestinian wells and cisterns.

"Water Authority Report to Ad Hoc Committee Highlights Water Problems", WAFA, 25/09/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=5949

BACK TO TOP

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❖ Settlers Pump Waste Water into Palestinian Land

BETHELEHEM, September 27, 2012 (WAFA) – Jewish settlers from the illegal Israeli settlement of Beitar Illit Thursday pumped waste water coming out from the settlement into Palestinian-owned agricultural land in Wadi Fukin, a village west of Bethlehem, according to a local activist.

Head of Wadi Fukin village council, Ahmed Sokar, told WAFA that the waste water stemming from the nearby settlement of Beitar Illit, built illegally on confiscated land from the Palestinian villages of Wadi Fukin, Husan and Nahalin, flooded around 50 dunums of the southern part of the village's agricultural land.

He added that the village's residents repeatedly suffer from this Israeli measure that led to polluting the environment, making land unsuitable for cultivation, and warned of the danger of spreading diseases among residents.

He said they have appealed to humanitarian organizations and all concerned institutions to stop this aggressive measure and did not get any responsd.

Sokar said that Israeli settlers, protected by soldiers, are constantly harassing the village's residents.

"Settlers Pump Waste Water into Palestinian Land", 27/09/2012, online at:
http://english.wafa.ps/index.php?action=detail&id=20754

BACK TO TOP

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❖ Israeli water power that doesn't give a dam

You don't have to build dams to get hydroelectricity from water flowing through municipal pipes, says Dr. Daniel Farb, the Los Angeles immigrant who previously shook up the Israeli clean-tech power scene with his Leviathan Energy company's award-winning Wind Tulip.

The ecologically conscious physician recently unveiled his latest brainchild, a turbine that turns excess pressure inside existing underground water pipes into energy for the electric grid.

The Negev-based Leviathan team is still fine-tuning the invention at its new testing site rented from Kibbutz Re'im. The Negev kibbutz's Isralaser industry is fabricating many of the parts for the turbine, dubbed "Benkatina" in tribute to Second Temple High Priest Ben Katin, who made a machine to lower and raise the ancient Temple's laver to and from the water table.

The modern version based on Farb's vision was engineered by Avner Farkash, Leviathan's vice president for research and development.

New, eco-friendly energy market

The Benkatina beta model already has been implemented in pilot areas by Israel's national water carrier Mekorot as well as in the South Philippines. An Italian partner is lined up next, and Farb met recently with a power company in Mumbai that is interested in doing business.

He says that the invention is creating an international buzz because it opens a new energy market using existing infrastructure and even solves a problem in that infrastructure.

"Managers of water systems already know where there is excess pressure, and often they put pressure breakers in those locations to prevent leaks from forming. One of the great things about what we're doing is that we are battling the water and energy shortage at the same time," Farb said "An estimated $14 billion worth of water is wasted each year through leakage, and decreased pressure means decreased leaks."

The company received a grant from the chief scientist of the Israeli Ministry of Industry, Trade and Labor under the Eureka program to develop the technology, as well as a grant from the Ness Fund for business development in the Negev.

Farb is optimistic that thousands of potential installation sites in Israel could start adding several more megawatts of power to the seriously overtaxed electricity grid by next summer.

A smaller version of the Benkatina turbine could provide off-grid electricity in remote areas of the world in need of moderate amounts of power, as long as there are nearby water pipes. This would be more consistently reliable than either solar or wind energy, Farb said.

And if a proposed Dead Sea canal ever gets built, the Leviathan technology could play a role.

"I can foresee desalinated water coming from the Gulf of Eilat or from the Mediterranean to the Dead Sea through pipes, and taking off some of the extra pressure in many points along the way to use for hydroelectricity," Farb said.

Radically different approach

The device is groundbreaking, according to Farb, because it is radically different from the way hydroelectric power has been accomplished for the last two centuries.

"In the past, they used a dam, used up all the pressure, worked in an environment of stable flow and used turbines that could be exposed to the air. In-pipe conditions are different, so there is no dam, which makes it more ecologically viable. Only the excess pressure is used so the integrity of the piping system can be maintained; the flow is variable; and it functions in a difficult, closed-system environment with splashing water," he said.

The turbine would only be installed in parts of the piping known to have extra pressure. "We don't want you to turn on the tap and have nothing come out," Farb said.

He's a firm believer in the need for a mix of wind, wave, water and solar energy alternatives.

"We're in an energy crisis that will last at least 100 years, and we have to provide solutions in more than just one area," he said. "Leviathan has provided a series of solutions that, when fully implemented with the right financial and bureaucratic support, can make a serious difference in the world we live in."

"Israeli water power that doesn't give a dam", 27/09/2012, online at: http://www.jewishjournal.com/business/article/israeli_water_power_that_doesnt_give_a_dam

BACK TO TOP

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❖ Water: Rethinking Our Consumption

Most of us in the West take water for granted. When I was growing up, I don't recall ever hearing about droughts, hosepipe bans, or rationing. Neither do I remember seeing bottled water, except in spas or highly overpriced restaurants. Britain was the country of rain, and Manchester (where I was born) was the rainiest place in the UK. So I always thought it strange that we Jews kept on praying for rain. Even when my father gently explained that we were praying for rain in Israel, it didn't really sink in (which pun reminds me that as much as 50% of water supplied through urban water systems gets lost through leaks and sinks into the earth).

Nowadays water has become big news, as the human population increases while at the same time the world is getting hotter and the major sources of water, the artic poles, are shrinking. According to United Nations statistics, 3.4 million human beings die each year from water related diseases. (I know, who trusts the UN? But that's when it comes to politics or human rights, some of their agencies do a better job on statistics.) One billion do not have access to clean water. One child dies from a water-related illness every 21 seconds. Only 10% of wastewater gets treated. The rest runs off into lakes, rivers, and oceans. Rachel Carson warned us in the 50s and 60s about the evil we were doing to nature, but we only half listened. We still needed Erin Brockovich in the 90s to sue contaminating companies and confirm that industry still pours millions of tons of poison into the earth's waters. And it doesn't help that 2.5 billion humans do not have access to toilets, so guess where most of their waste ends up.

U.S. tap water is apparently some of the cleanest on Earth, generally safe from the microbes and chemicals that have plagued water supplies for millennia. While much of the planet relies on polluted drinking water, Americans can fill a glass without fear of cryptosporidium, chromium, or chlordane. The Safe Drinking Water Act supposedly controls the standards and criteria for clean water, but it's far from perfect and bureaucracy and big money often get in the way.

All New York water is treated with chlorine, fluoride, orthophosphate, and in some cases sodium hydroxide. Fluoride is added to strengthen teeth. Chlorine disinfests, and others additives are to counteract corrosion in the pipes and other contaminants. In the UK, for many years, the national

water supply has had fluoride and chlorine. Water remains safe to drink right up to your tap (assuming your pipes are not lead, of course).

At the same time, bottled water has become a trillion dollar industry. But why do so many people in the rich world pay inflated sums for bottled water every week when perfectly good water flows out of every tap (or faucet) in the house? It's all the more amazing since 40% of all bottled water is actually taken from municipal water sources, and I've been happily drinking tap water all my life. Bottled water companies are literally bottling up the same water that comes out of the tap then inflating the cost and laughing all the way to the bank.

One of the biggest reasons people buy and drink bottled water is because they think it's cleaner than tap water. But it isn't. Also disturbing is the fact that far less testing is done on bottled water than on tap water. It turns out that unlike tap water, bottled water isn't tested for E. coli. And it can be distributed even if it doesn't meet the quality standards of tap water. Unlike tap water, bottled water isn't required to produce quality reports or even provide its source. Some consumers think the taste is better, but controlled tests consistently show that most people cannot tell the difference. I concede that around the world not all tap water tastes the same—still, neither is it all undrinkable.

Not only, but parents are doing their children a disservice by giving them bottled water instead if tap water because the fluoride in tap water does indeed strengthen teeth and prevent cavities. Unless they are Americans, who seem to be in love with popping pills (which they call dietary supplements!) of every imaginable kind and so don't mind throwing in a few fluoride ones too. Until municipal water companies in Britain began adding fluoride to water supplies in the 1960s, children usually had a mouthful of cavities by the time they reached adolescence. But that trend soon began to change, and dentists celebrated fluoride as one of the century's great health achievements.

Sukot is the festival of water above all else. The Sukah itself, which was originally used to protect from the sun, now reminds us that the summer is over and the rainy season is about to begin. The Four Plants we take and shake are dependent on water in different ways and to different degrees. The Rejoicing over the Temple Well House, which was instituted by the prophets, revolves around the pouring out of water in the hope that Heaven will replenish the supply, and of course we begin the prayers for winter rains in Israel. And believe you me, Israel needs all our prayers for rain.

Just as during the Days of Awe we are encouraged to think about our human lives and assess ourselves to see if we are on the right track, so during Sukot we examine our relationship to nature. I suggest we need to challenge ourselves. Do we really need to waste all that money on bottled water that could better be spent on charity and helping those who have far, far less than we do? Perhaps it is time to stop fooling ourselves about our water consumption, as we need to stop fooling ourselves about how good we think we are. The considered life, my friends, also includes asking whether we shouldn't stop contributing to the balance sheets of drink companies who fool us into thinking their water is healthier than "ours".

"Water: Rethinking Our Consumption", 28/09/2012, online at: http://www.algemeiner.com/2012/09/28/water-rethinking-our-consumption/

BACK TO TOP

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❖ Israel's control of water in the oPt

Water in Palestine: not a scarcity but a distribution problem. This was the title of the discussion held by the Emergency, Water, Hygiene and Sanitation (EWASH) group at the Alternative Information Center on 18 September. The focus of the presentation was on Israel's control of Palestinian water resources and the impact of these discriminatory policies on the daily life of Palestinians. Israel retains direct control over all water sources in the West Bank and significant indirect control over Gaza water resources.

The Israeli authorities extract up to 86% of the potential yield of the water from the Mountain Aquifer, which lies in most part under the West Bank and which is divided into three groundwater basins: the Western Aquifer, the Eastern Aquifer and the North-eastern Aquifer.

In 1967 Israel issued several military orders aimed at controlling the water resources of the West Bank and preventing Palestinian from digging new wells and from building water infrastructures without Israeli permits. These policies have resulted in a de-development of the Palestinian water sector.

Water played a major role in the Palestinian-Israeli peace process and some agreements were reached regarding water as a trans-boundary resource. However, the Interim Agreement signed in 1995 failed to define Palestinian water rights, instead leaving them to be negotiated in the permanent status talks along with other fundamental issues such as Jerusalem, final borders, refugees' right of return and settlements. The Interim Agreement was only meant to last for a five year period, but the failure to reach a final agreement has perpetuated the inequitable distribution of the groundwater resources between Israelis and Palestinians. As outlined in the Oslo Accords, Israel retained control over 80% of the potential yield of the Mountain Aquifer, leaving Palestinians with just 20%. Nowadays, the situation has worsened and the amount of water extracted by Palestinians in the West Bank dropped from 138 million cubic metres in 1993 to 113 in 2007. As a result, the Palestinian population doesn´t have access to a large enough quantity of water and Palestinians are forced to buy 52% of their water supplies from *Mekorot*, the Israeli National Water Carrier.

These policies and practices have led to a huge disparity in water consumption between Israelis and Palestinians: the average daily per capita water consumption rate for Palestinians is between 50 and

70 litres, compared to around 300 litres in Israel. The gap is even larger in some areas of the West Bank, such as the Jordan Valley or the South Hebron Hills. In the Tubas governorate, more than 48,000 Palestinians live with less than 30 litres per person per day, while Israeli settlers from the nearby settlement of Ro'i consume more than 400 litres per capita per day (including only domestic consumption).

In the Gaza Strip, the water extracted from the Coastal Aquifer which lies under the Strip has become saline due to over-extraction and polluted from sewage ground infiltration. Up to 95% of Gaza´s water resources are now unsuitable for human consumption and Palestinians living in Gaza are dependent on desalinated brackish water for drinking. Moreover, Israel retains indirect control over Gaza´s water by preventing the entry of essential materials necessary for construction and rehabilitation of water and sanitation infrastructures and by restricting the amount of fuel and electricity necessary to operate water and waste-water services. Moreover, during the 2008-2009 Cast Lead Operation many plants and water utilities were destroyed and, as stated in the Goldstone report, "there was a deliberate and systematic policy on the part of the Israeli armed forces to target... water installations."

As a result, 90 million of litres of untreated or partially treated water are released daily into the Mediterranean Sea, provoking water-borne illnesses and polluting the environment.

The right to access water is a fundamental human right that has been addressed in several international and regional treaties and conventions. Israel, as an Occupying power of the occupied Palestinian territory, has specific obligations under the International Humanitarian Law (IHL) as stated in the Hague Regulations of 1907 and in the Fourth Geneva Convention of 1949. The Hague Regulations forbid an occupying power from utilizing the resources of the occupied territory for the benefit of its civilian population. The rules of the Geneva Convention oblige Israel to take responsibility for the welfare of the Palestinian population under its control and to ensure the civilians are provided with or allowed to secure their basic necessities for survival including access to water.

EWASH: The Emergency Water, Sanitation and Hygiene group (EWASH) is a coalition of almost 30 organisations working in the water and sanitation sector in the occupied Palestinian territory. Established in 2002, its members include international and national NGOs and UN agencies.

"Israel's control of water in the oPt", 29/09/2012, online at:
http://www.alternativenews.org/english/index.php/news/news/5365-israels-control-of-water-in-the-opt.html

BACK TO TOP

❖ Jewish settlers divert waste water onto Palestinian farms

Jewish settlers have diverted their waste water onto Palestinian-owned farms, damaging crops in the process. The incident took place in the village of Fokeen to the west of Bethlehem.

According to the head of the village council, Ahmed Sokkar, the settlers of Bitar Elite settlement repeated the action several times. Apart from damaging the crops and wasting farmers' time, Sokkar pointed out that it also has a serious negative effect on the environment.

Palestinian residents and human rights organisations claim that these and similarly destructive actions take place across the occupied West Bank on an almost daily basis. Last week, for example, wild pigs were let loose from illegal settlements around Jenin and damaged Palestinian farms, while other settlers in the same area destroyed dozens of olive trees.

"Jewish settlers divert waste water onto Palestinian farms", 27/09/2012, online at:
http://www.middleeastmonitor.com/news/middle-east/4377-jewish-settlers-divert-waste-water-onto-palestinian-farms

BACK TO TOP

❖ City OKs water rate increase

PALESTINE — Many City of Palestine water customers will be paying more for the precious commodity beginning with next month's bill.

Palestine City Council members on Monday approved a rate "option" aimed to generate approximately $180,000 annually to fund three new positions in the water department.

Earlier this year, council members had approved $180,000 in the city's 2012-13 fiscal year budget for salary and benefits for the new positions .

On Monday, Robert Sedgwick, the city's utilities director, explained to council members that the water department's staff had shrunk to 7 1/2 employees due to budget cuts after being at 10 approximately a decade ago.

"We've been short staffed at the water department for the last 10 years," Sedgwick told council members during Monday's meeting.

Council member Steve Presley said the city had been expending more and more funds on overtime for water employees in recent years.

"We've chronically being using overtime," Presley said during Monday's meeting. "It's dangerous to me that we're getting to the point we're going to burn out our people and run 'em off."

Sedgwick said the water department's overtime costs had jumped from $18,000 annually to $48,000 in recent years.

Council members were presented four different options each designed to generate the additional $180,000 needed to offset the added salaries and benefits.

The option selected by council members will not affect the minimal user who uses 3,000 gallons or

less per month, according to Palestine City Manager Mike Ohrt.

Ohrt said the typical "single person" uses an average of roughly 2,000 gallons per month.

The base water rate for those customers will remain at $9 per month, according to the city manager.

"This (the option chosen by council members) will affect the smallest number of accounts," Ohrt said.

Customers using between 3,000 and 20,000 gallons per month currently pay $2.80 for every 1,000 gallons used above 3,000 gallons. That rate will increase by 20 cents to $3, according to Ohrt.

For every 1,000 gallons above 20,000 gallons per month, city customers currently pay $3, but that rate will increase by 25 cents to $3.25, the city manager explained.

Ohrt said the three new employees will be assigned to different sections of the water department. One will work at the city's water treatment plant, another in "the field"; and the third in the engineering division, according to the city manager.

The city manager said the additional employees were needed, primarily due to "the amount we're spending on overtime.

"The water plant is one of those 24/7 operations," Ohrt said. "We've got to have somebody there and they've got to be licensed."

"City OKs water rate increase", 27709/2012, online at: http://palestineherald.com/local/x766450361/City-OKs-water-rate-increase

BACK TO TOP

❖ Two pipes for two peoples: The politics of water in the West Bank

In a new series, Haaretz explores the inequitable distribution of drinking water in the West Bank, where supply for the Palestinian falls far short of that of their settler neighbors as well as the standard set out by the WHO.

The IDF's Civil Administration is preventing the Palestinian Authority from laying a water pipe that would alleviate the acute water shortage for more than 600,000 Palestinians in the West Bank.

The reason given for preventing the pipe's construction is that a section of less than two kilometers of it, laid on the margins of Route 50, would disrupt Jewish passenger traffic on the road.

The annual water amount provided to the district is about 20 million cubic meters - some 90 liters per capita per day. A considerable part of the water is lost on the way due to leaks and faulty connections.

The district needs an additional 13 million cubic meters a year for domestic use, apart from farming. From May to October the water to the Palestinians in the area is severely rationed. Some neighborhoods have water for a few hours once a week, others twice a month or less.

Banal functions such as house cleaning and laundry all depend on the water supply. Every day some 400 tankers transfer water from central depots to hospitals, factories, schools and other public facilities in the region.

About half the water amount to the Hebron district comes from springs and wells. The PA buys the other half from the Israeli water company Mekorot. Some 10,000 cubic meters a day - more than a third of the amount bought from Mekorot - are funneled from the Dir Sha'ar (Etzion junction) pumping depot in an 11 kilometer pipe.

About half the water is lost on the way, Mekorot's monthly invoices show. The Palestinians pay the amount registered at the depot, minus the water the pipe provides the Carmei Zur settlement (about 100 cubic meters a day). The water meters in the Palestinian neighborhoods show that the amount actually supplied to the Palestinians is much smaller.

The PA has been planning to replace the pipe since 2008, with the financing of the United states Agency for International Development.

The pipe, built by Israel in 1972, loses 45-50 percent of the water flowing in it due to deterioration, illegal connections, bad construction and faulty installation, the American construction company MWH wrote in its project description.

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Much of the water flowing in the pipe, which passes under residential and farming areas, is stolen, especially for farming. The water quality is unsafe, the company wrote.

The Palestinian water authority and MWH planned a new route alongside the road, to prevent hooking up to the pipe illegally. A new, wider pipe would reduce leaks and ensure the water's quality, they said. Mekorot agreed to increase the water amount to the Hebron district by 5,000 cubic meters a day.

The project was approved by the joint Israeli-Palestinian water committee in August 2010, as required by the Oslo agreement.

The Civil Administration had to approve the route, located in Area C. Finally it was agreed to lay nine kilometers of the pipe alongside an existing farm route, leaving 1.9 kilometers of pipe along Route 60. "This is necessary to avoid destroying two houses and fatally damaging vineyards," an engineer said.

But the Civil Administration refused "because the construction would disrupt the Jewish drivers' traffic," the Palestinian engineer said.

"When they do maintenance work on other roads in the West Bank, don't they disrupt the traffic?" he asked.

Like all Hebron neighborhoods, Jabar, located in Area H2 (in Israeli jurisdiction) has water only once every few weeks. Some of the residents' front doors and windows have been sealed and the alleys in the neighborhood are blocked. Only Israeli vehicles to and from the Jewish homes in ancient Hebron and the Cave of the Patriarchs are allowed to travel there. Water tankers to the Palestinian houses are not allowed and the residents use water holes.

On August 26, an Israeli bulldozer accompanied by soldiers began digging among the houses in the neighborhood. After several protests, the residents were told by a Civil Administration official that the water pipe serving the settlers, whose water is not rationed, is being replaced by an elevated one.

The Palestinians fear the construction in the narrow streets will damage the ancient houses, dating back to the Mamluk era. In some places, parts of the new pipe have been attached to the Palestinian houses.

The Coordinator of Activities in the Territories said "the decision to replace the underground pipe with an elevated one is pending a High Court of Justice ruling. Replacing the pipe, which serves the Jewish settlement in Hebron, stems from water theft by the Palestinians. It is planned to be mostly elevated, but in every place it passes past houses' openings, it will be buried underground."

As for the water pipe near Route 60, "the Civil Adminisration approved most of the route but in one section it would harm the traffic. It cannot be built on the road shoulders because there are houses adjacent to the road. Alternative plans have not been received yet."

"Two pipes for two peoples: The politics of water in the West Bank", 23/09/2012, online at: **http://www.haaretz.com/print-edition/news/two-pipes-for-two-peoples-the-politics-of-water-in-the-west-bank.premium-1.466250**

BACK TO TOP

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❖ 'Jordan Valley Authority to double wastewater irrigation by 2020'

AMMAN -- The Jordan Valley Authority (JVA) on Sunday announced a plan to double the amount of treated wastewater used for irrigation purposes in the Jordan Valley by 2020.
JVA Secretary General Saad Abu Hammour said that the authority will maximise the use of treated wastewater for irrigating crops to save scarce fresh water for drinking.

"Jordan currently treats 113 million cubic metres (mcm) of wastewater annually, 95 per cent of which is used for agricultural and industrial purposes. The amount will be raised to 240mcm by the year 2020," Abu Hammour underscored.

He said the step would help address Jordan's water shortage in light of the growing demand for water in various sectors, highlighting the need to support agriculture.
Almost 50 per cent of the Jordan Valley, the Kingdom's breadbasket, is irrigated with freshwater in a country categorised as the fourth water-poorest nation in the world and which struggles to secure potable water for an increasing population and growing industry.

Abu Hammour noted that a programme was initiated last year to monitor any microbiological pathogens in crops irrigated with treated wastewater during the 2011-2012 agricultural season, to ensure that the crops meet safety standards.
"Results of the monitoring programme will be announced during a workshop on Wednesday," the official noted.

Experts and officials encourage farmers to use treated wastewater for irrigation because it is a sustainable water resource that can also save farmers in the Jordan Valley JD4 million worth of fertiliser every year.

Experts say that one of the many advantages of treated wastewater reuse is in reducing the use of synthetic fertilisers, because treated wastewater is already rich in plant nutrients.

Studies conducted by the German Agency for International Cooperation (GIZ) and the JVA indicate that each 35-dunum farm unit could save JD1,000-JD3,000 in fertiliser costs each year if it used treated wastewater.

"Jordan Valley Authority to double wastewater irrigation by 2020"', 24/09/2012, online at: http://www.zawya.com/story/Jordan_Valley_Authority_to_double_wastewater_irrigation_by_2020-ZAWYA20120924043057/

BACK TO TOP

❖ Jordan's Disi water transmission project nears completion

The Jordanian ministry of water and irrigation has completed 92% of the Disi Water Conveyance Project and the pipelines will start pumping about 100 million cubic meters of water per year starting April 2013, a ministry spokesperson told Zawya.
"The project, estimated to cost USD 1 billion, was awarded to GAMA Enerji, which is implementing it with the help of 25 companies, 22 of which are local contractors," Omar Salameh said.

Mohamed Abu Taha, chairman of the Committee on Water and Environment in the Jordanian Engineers Association, told Zawya the project "will not solve but will go a long way to alleviating" an estimated annual shortfall of 400 million cubic meters of water in the kingdom.

A growing population has resulted in severe water scarcity in Jordan, where most people receive water for a few hours on one day of the week. Per capita water consumption in Jordan is 150 cubic meters per year, one of the lowest in the world. Saudi Arabia, for example has an annual per capita consumption of 850 cubic meters and the global average is 500 cubic meters, according to World Bank data.
The water transmission project being implemented will extend the pipeline from the Disi area in the south of Jordan to the capital, Amman, via storage tanks and pumping stations, according to information on the ministry of water and irrigation's website. Fifty-five production wells will supply water to the pipeline.

The government owns 22% of the project; 10% is shared between Agence Francaise de Developpement and European Investment Bank by way of sovereign loans; and the rest, 68%, is owned by the GAMA, which is the build-operate-transfer partner.
Abu Taha believes that a more effective way to resolve the kingdom's water problems would be to start desalination operations on the Red Sea; implement the canal link between the Red Sea and the Dead Sea; and start drilling in the eastern parts of the country.

"Jordan's Disi water transmission project nears completion", 24/09/2012, online at:
http://www.zawya.com/story/Jordans_Disi_water_transmission_project_nears_completion-ZAWYA20120924114446/

BACK TO TOP

❖ RESPONSE to COGAT "fact sheet" on water in West Bank

Water is a human right and a prerequisite for economic, social and cultural development. While the West Bank region is anything but water scarce and blessed with ample winter rains, the 45-year Israeli military occupation has left Palestinian communities severely water stressed. A fair and lasting redistribution of natural water resources remains central to Israeli-Palestinian negotiations and a highly politicized issue. Israel has been waging a PR campaign with very problematic and conflicting statistics and statements on water to legitimize its policies against Palestinians.

Justice (as a prerequisite for peace) can only be achieved when there is a fair distribution of water according to international law.

So what's the truth about water?

Two of the main bodies of Israel's occupation that decree, prohibit, block and demolish ("interact with") Palestinian water resources and infrastructure - the military "Civil

Administration" (Bet El settlement) and the Israeli Water Authority - have launched a campaign of "information on water issues", in reaction to respected studies by the World Bank (2009), Amnesty International (2009) and the French Assemblée Nationale (2011). This brief examines and, where necessary corrects, the latest Civil Administration (CA) leaflet.

"RESPONSE to COGAT "fact sheet" on water in West Bank", 23/09/2012, online at:
http://www.alternativenews.org/english/index.php/news/news/5331-response-to-cogat-fact-sheet-on-water-in-west-bank.html

BACK TO TOP

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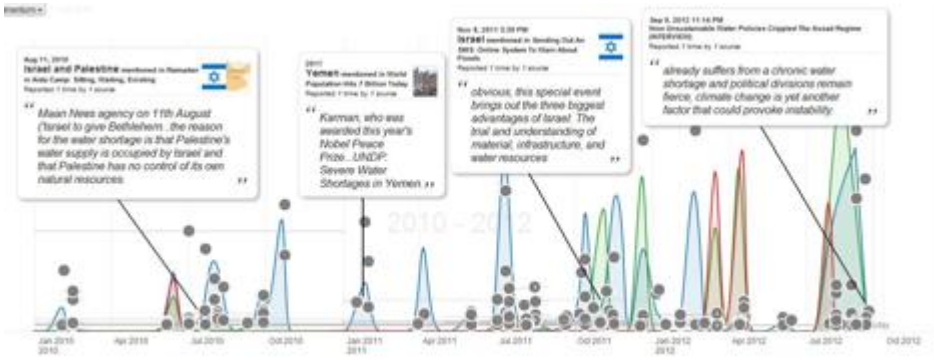
❖ Is the Middle East Thirsty for Freedom … or Water?

Looking forward and providing actionable intelligence on threats is difficult because of the many unknowns that may occur. For instance, the development of the Arab Spring in the Middle East was not seen by any western intelligence agency, let alone the outcome of regime changes that resulted from the protests. Peripheral threats such as a state's population with high rates of HIV or AIDS may limit its future ability to form functioning militaries thereby creating possible intrastate or interstate security dilemmas with regional players. However, this analysis is quite simple and focuses on one human requirement for survival – water.

The goal is to answer the question: Will an ever growing population in the Middle East affected by shortages of water turn to conflict to ensure its own survival? If so, what and who are these threats? Statistics provided from the United Nations outline the current and projected world population which will jump from 6.1 billion in 2001 to 8.9 billion by 2050. That is an increase in 47 percent with limited supplies of potable water. Countries in Less Developed Regions in 2000 had a population of 4.877 billion compared to 1.194 in More Developed Regions. (Numbers from the UN) In 2050, those numbers are estimated to reach as high as 9.263 and 1.370 respectively.

The UNWater.org suggests that the average person requires 20-50 liters of water a day for basic needs for drinking, cooking and cleansing, and with populations in Less Developed Regions outpacing the more industrialized, destabilizing factors will contribute to possible widespread security concerns both internally and externally. This post will focus on four key player in the Middle East: Israel, Egypt, Yemen and Iraq and provide an analysis using Recorded Future.

The terms "water shortage" or " water shortages" or " water drought" or " water droughts" are used to search for all instances in each country's media. By searching for media exported from each state a more accurate representation of that state's threats may be provided. Summaries will conclude each slide with information collected from Recorded Future's database outlining past and future documented instances along with the top cited key external players associated with each state.



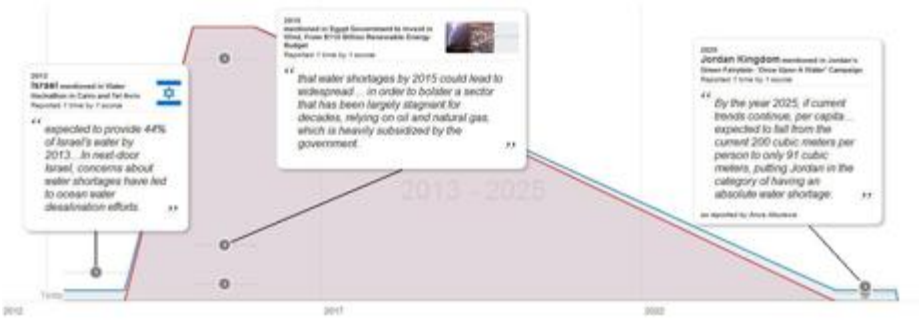
Israel's population is estimated to jump from 6.04 million in 2000 to 9.98 million in 2050. The most striking information pulled from Recorded Future's database notes that the Palestinian population and some Israeli academics believe that Israel has control over the water supplies, and future crisis

may be targeted at Israel as a result. Additionally, the time between May and November is the window of water shortages as cited by Palestinians on its population. Expected future tension may fall inside this window.

Israeli media has also focused attention outside its borders. In early January, 2010 at least four of seven states aligned with the Nile river were looking to renegotiate its 80 year old agreement with Egypt. The agreement allowed for upstream states to have more water allocated. With Egypt not willing to negotiate, the World Bank has prevented any funding as it views Egypt as a key player in any agreement. Yemen is cited in the above timeline for its severe water shortage in 2011. As the Syrian crisis continues (September 2012), Jordan is expected to see 500 refugees cross its borders with little support for both food and water. Israel does not appear to have shortages of water supply for its own need and security.

The top cited countries related to Israel referenced in order are: Egypt (24), Jordan (16), Palestine (14), Yemen (9) and Bahrain (9).

Israel (2012-2025)



Israel Water Shortage Discussion – 2012 to 2025 (the furthest date cited in RF)

By 2013 Israel is expected to complete the world's largest building of three osmosis desalination plants which is then expected to provide 44% of the country's water supply. Media projects a negative outlook for surrounding states with no direct security issue tied to Israel.

The top cited countries referenced in order are: Nigeria (4), Qatar (4), Yemen (4), Ethiopia (4), Libya (4), Egypt (4), and Jordan (3).

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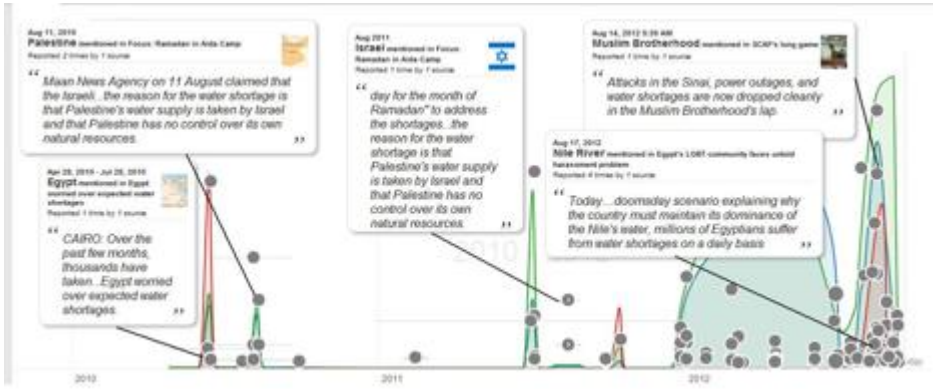
Egypt (2010-2012)

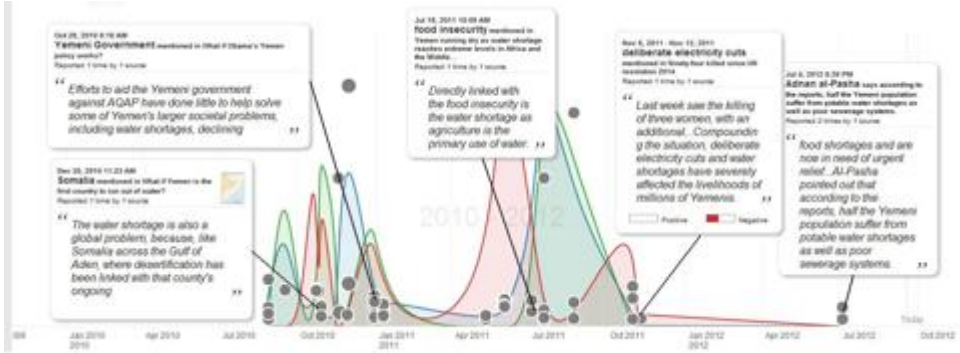


Egypt water shortage discussion – 2010 to 2012

Egypt's population is estimated to jump from 67.78 million in 2000 to 127.4 million in 2050. Early negative discussions beginning in 2010 and continuing to late 2012 suggest that Israel unfairly controls water supplies to the Palestinians. Additionally, estimates suggest that by 2017 demand in Egypt for water will outpace the country's supply. Tensions attributed to negotiations over the Nile's supply of water are noted in negative sentiment in September, 2012. This claim is supported with suggestions of 'doomsday scenario' in losing Egypt's control of the Nile. In early 2012, friction between Egypt and Ethiopia over a new agreement led Ethiopia to develop new plans without the approval of Egypt to build a massive dam to generate electricity. There has been no discussion of internal friction regarding water shortages. The fall of 2012 saw discussion about attacks and water shortages in Sinai which should now be targeted at the newly elected Muslim Brotherhood led government rather than military forces. 2012 marks the year furthest forward that Egyptian media has so far referenced water shortages.

The top cited countries referenced in order are: United Arab Emirates (9), Ethiopia (8), Palestine (7), Abu Dhabi (6), and Beirut (5).

Yemen (2010-2012)

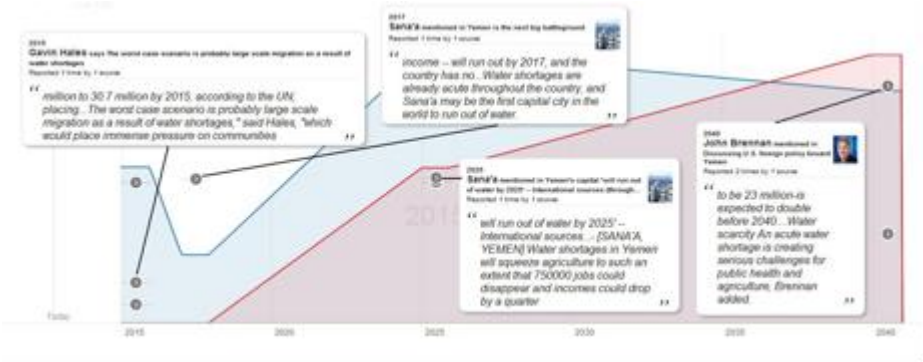


Yemen water shortage discussion – 2010 to 2012

Yemen's population is estimated to jump from 18.01 million in 2000 to 84.38 million in 2050. Yemen's negative sentiment is an acknowledgement of the water shortage as well as comments that the supply is further dwindled by farmers and wasted on the stimulant qat which is largely smoked in the region. Major negative sentiment throughout 2011 show water shortages as a factor in the Arab Spring in Yemen which led to President Ali Abdullah Saleh stepping down in October, 2011. Much of the discussion regarding shortage of potable water supply has direct links to the Saleh government. No external state has been linked to concerns of its own water supply.

The top cited countries referenced in order are: Somalia (4), Tunisia (3), and Egypt (3).

Yemen (2012-2040)

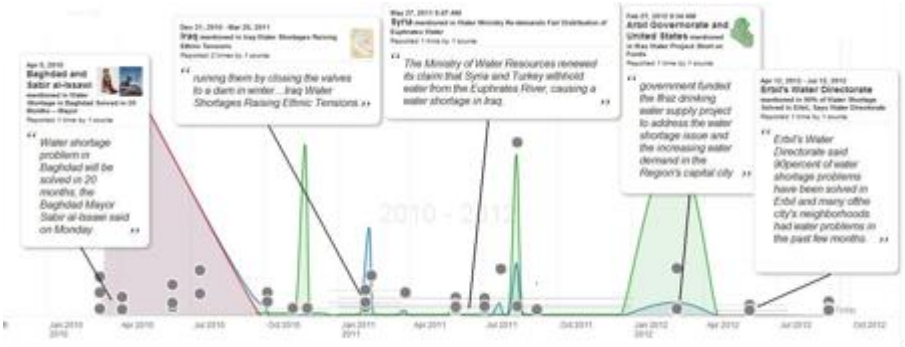


The furthest year out reference on Yemen was 2040. Minimized to show better detail.

The current population is expected to jump from estimates in 2010 at 8.5 to 30.7 million by 2015. The Yemen Times reports that the worst case scenario in 2015 will be water shortage that will lead to large scale migration putting immense pressure on communities. Yemen Portal states by 2025 the capital city of Yemen, Sana'a, will run out of water. White House chief counter-terrorism advisor, John Brennan, acknowledged that water shortage will be a major concern for stability and U.S. policy with Yemen in the next 40 years.

Only two locations cited: Yemen (8) and Sana'a (3).

Iraq (2010-2012)



Iraq water shortage discussion – 2010 to 2012

Iraq's population is estimated to jump from 23.22 million in 2000 to 57.93 million in 2050. Early 2010 marked a major decline in negative sentiment regarding water shortages linked to progress being made in parts of Iraq. In late 2010, discussion of raising ethnic tensions were linked to water shortages. In May, 2011 the Iraqi government claimed that Syria and Turkey are withholding water from the Euphrates river causing shortages in the country. Overall, the development of Iraqi government, aided by coalition forces, to address water shortages have been beneficial for the Iraqi people. 2012 marks the year furthest forward that Iraqi media has referenced water shortages.

The top cited countries referenced in order are: Syria (4), Turkey (4), United States (2), and Kurdistan (2).

Key Findings & Summary

Provided the information collected from Recorded Future's database, the author is able to provide some level of threat assessment based off water shortages. This will be broken down into individual states with a short outline of the internal and/or external threats attributed to water shortages.

Israel (very high interstate/ low intrastate)
Intrastate security issues will be low considering Israel has the financial and technical capacity to provide its own water supplies. However, outside actors may support perceived Israeli occupation of Gaza and the Arab population and support attacks on Israel. Support may intensify for organizations like Hezbollah in Lebanon and the Hamas becoming an interstate threat though the threat may be in the form of asymmetric warfare by some non-state actors.

Egypt (medium interstate/ medium intrastate)
Interstate conflict with states unwilling to negotiate future demands on access to the Nile river water will be the biggest threat to Egypt's security. Ethiopia cited as key state may pose a serious threat to regional security as Egypt looks to remain a key player. The Arab Spring has brought with it a new government in the Muslim Brotherhood, but media sources discuss that instead of the previous military dominated regime the new government will now be held accountable for living standards.

Yemen (medium interstate / very high intrastate)
The current and future debate is focused more on an intrastate security issue. Talk about using dialogue-based tribal traditions for mediation and arbitration in local communities. The current use of water has focused more on the production of the profitable drug crop, qat, than crops for Yemen's own stability. As instability becomes a major factor in Yemen, al-Qaeda in the Arab Peninsula (AQAP) could become a growing concern as they are able to inject their rhetoric into poor living standards and new found safe havens.

Iraq (Medium interstate / medium intrastate)
Iraq is currently able to provide the required water needed for its population. Media reports have noted that external actors have affected water supply into the country, and that ethnic tensions are linked with shortages. If the government is able to provide sustainable levels Iraq appears to be better off than the other three states.

Which of these states do you think is at greatest risk for unrest due to water shortages? Could there be a scenario during the next several years where we see armed conflict over water between these or other countries in the region? Share your thoughts in the comments!

"Is the Middle East Thirsty for Freedom … or Water?", 21/09/2012, online at:
http://analysisintelligence.com/geopolitics/is-the-middle-east-thirsty-for-freedom-or-water/

BACK TO TOP

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❖ Egypt remains "concerned" over Ethiopia's Nile River dam project

CAIRO and ADDIS ABABA: Ethiopia's ambitious Nile River dam project remains under the watchful gaze of Egypt. While Cairo denied any intention of attacking the dam, the country's Water Resources and Irrigation Minister Mohamed Bahaa el-Din said on Saturday that his country was maintaining its concerns about the construction of the Renaissance Dam in Ethiopia.

He did say that officials at the Ethiopia foreign ministry "assured Egypt and Sudan that in case there was any impact on their water quota to the dam, other projects will be carried out to collect lost water and cover shortages."

It is the latest in the ongoing battle for the world's largest river's water, with Egypt and Sudan continuing to remain obstinate in amending any of the colonial treaties that guarantee their countries with a lion's share of water from the Nile.

The International Monetary Fund (IMF) this month called on Ethiopia to slow its construction and planning for the dam, citing economic concerns for the country.

Whistleblower site Wikileaks released documents this month that revealed Egypt and Sudan had been planning to attack an Ethiopian dam project to "protect" their rights over Nile water based on colonial era treaties.

In documents revealed by Wikileaks, the Egyptian and Sudanese government appeared ready to develop a launching pad for an attack by Egypt against the dam.

Wikileaks has leaked files allegedly from the Texas-based global intelligence company, Stratfor, which quote an anonymous "high-level Egyptian source," which reported that the Egyptian ambassador to Lebanon said in 2010 that Egypt "would do anything to prevent the secession of South Sudan because of the political implications it will have for Egypt's access to the Nile."

Ethiopia's massive dam project has seen much concern from Cairo and Khartoum, who fear the establishment of Africa's largest dam would affect previous colonial deals on Nile water-sharing.

It is to be built some 40 kilometers upstream from Sudan on the Blue Nile.

But even before the official announcement of Ethiopia's prime minister's passing on August 20, Egyptian officials told Bikyamasr.com that they believed a post-Meles region could bring forth new negotiations and compromise over Nile water.

An Egyptian ministry of water and irrigation told Bikyamasr.com last month, two weeks before Zenawi was pronounced dead, that with the combination of Egypt's new President Morsi and the potential of seeing a new leader in Ethiopia, they hoped the tension over Nile River water could be resolved.

"While this can in no way be official policy at this point, I believe that there would be more maneuvering with a new leadership in Ethiopia because there would be the ability to communicate and not be seen as antagonistic," the official said, adding that they were not authorized to speak to the media.

"Let us be frank about the situation between Egypt and other Nile countries," the official continued. "We in Egypt have not been the best at compromise so I think overall, there is so much that can be done to help bring countries together, and Ethiopia has been a leader in its criticism of Egypt so starting there would be good."

With the Nile comes a new set of issues, and with Egypt holding onto a lion's share of water from the world's largest river, upstream countries such as Ethiopia have taken it on their own to begin building dams and other water related endeavors, much to the anger of Cairo.

However, officials hope that solutions can be had in the new post-revolution Egypt that could see the growing tension between countries along the Nile reduce.

"While Egypt never wants to mingle in another country's affairs, a new leadership in Ethiopia would go a long way to changing how things are run, just like it has in Egypt," the official added.

"Egypt remains "concerned" over Ethiopia's Nile River dam project", 25/09/2012, online at: http://www.bikyamasr.com/78373/egypt-remains-concerned-over-ethiopias-nile-river-dam-project/

BACK TO TOP

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❖ Nigeria Needs More Dams to Curb Flooding, Says Director

Dr Emmanuel Adanu, the Director Dams and Reservoir Operations, Federal Ministry of Water Resources, has advocated the construction of additional dams to curb flooding across the country.

Adanu told the News Agency of Nigeria (NAN) on Wednesday in Abuja that more rivers needed to be dammed to avert the recurrence of flood disaster in the country.

He said that dams were constructed to impound water and control flood.

The director said the current flood situation in the country was beyond the capacity of the ministry to handle, adding that the best the ministry could do was to reduce the effect of the disaster through precautionary measures.

He said that the overflow occurring in different parts of the country was as a result of the excessive rainfall concentrated within a short period of time, adding that the existing dams in the country were inadequate to regulate the flow of the water.

"There is nothing we can do as a ministry now when the flood occurs normally.

"If we have enough dam to check the inflow from tributaries to regulate and monitor it , we may be able to avert it, but flooding is not something that you have total control because the flooding we are having this year is due to excessive rainfall concentrated within a short period.

"If the intensity was spread over a period, surely we may not have the flood the way it is but the cycle of rainfall is not something we can control, it is beyond human control, flooding will always occur."

He noted that similar flood disaster was also experienced by other continents of the world such as Europe, Asia and America, adding that Nigeria was doing its best to curb the menace.

"All over the world there is flood today, America there is flood, and Europe there is flood, Asia, here and there everywhere.

"Even when you think you have done your best engineering design and done a good construction based on that design you could still have the incidence."

On the release of water from the Lagdo dam in Cameroon which caused the recent flood in Yola, Adamawa, the director said Nigeria had to construct a dam, named Dasin Hausa in Adamawa, to collect the water usually released from the Cameroon dam.

He said that there were discussions on how to monitor the flow of water in the Niger and Benue river system in the late 70's and 80's and it was resolved that the Lagdo dam and the Dasin Hausa dam should be constructed.

NAN learnt that Nigeria was to construct the Dasin Hausa dam while Cameroun would construct the Lagdo dam which would act as safe valves to control flooding and impound water for irrigation, hydropower generation, fishery, among others.

According to him, the Dasin Hausa dam was to serve as a buffer dam that would be able to contain any water released from the Lagdo dam which was completed since 1982 but regretted that Nigeria had not constructed its own dam.

"According to the programme, if both of these dams are constructed by Cameroon and Nigeria, the dam in Cameroon, any time it is stressed and it is supposed to release water, it will release it downstream and the dam in Nigeria will catch it, the design was such that dam in Nigeria was going to be like a buffer dam that can take the floods from Cameroon

"Cameroon completed its own dam and started impounding since 1982.

" Nigeria has not been able to construct the dam and each time the dam in Cameroon was filled up to capacity, they will signal Nigeria that they are going to release water and then they will do it because that is the only thing they could do to keep their dam safe."

He said that the Dasin Hausa dam must be constructed to curb the problem of flood because Cameroon would keep releasing water from the Lagdo dam

"What we intend to do now, is to construct the Dasin Hausa dam, the government surely has to do something about the Datsin-Hausa dam otherwise we will live with this problem forever, so we are going to that, we just have to do it."

"Nigeria Needs More Dams to Curb Flooding, Says Director", 26/09/2012, online at: http://allafrica.com/stories/201209270034.html

BACK TO TOP

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❖ African Water Facility Supports the Construction of Multi-Purpose Dams in Zambia to Build Resilience to Climate Change, Increase Food Security

The African Development Bank approved on August 29, an African Water Facility (AWF) grant of €950,000 to support a project to help the Government of Zambia develop, test and adopt updated guidelines, which will be used as framework for programming as well as designing the financing, construction and operations of multi-purpose small dams.

The dams are expected to directly improve the lives and livelihoods of an estimated 90,000 people, and indirectly benefit about a million people living in rural areas, thus enhancing water security in more vulnerable parts of the country.

Specifically, the AWF funding will be used to modernize and update the guidelines that govern and promote investments in multi-purpose small dams, with the aim to give greater relevance to the selection of potential dams using criteria based on community interest and environmental protection, as well as to build confidence of potential development partners. This project should ultimately result in attracting the massive investments required to proceed.

The urgent need for building additional small-purpose dams in the country comes as increasing hydro-climatic variability due to climate change has intensified water stress, particularly in the drought-prone areas of the Eastern, Central and Southern provinces.

The small dams would help sustain the lives and livelihoods of local communities through multiple uses, by securing access to water:

for domestic use;

for agriculture, with the aim of increasing the agriculture yields of smallholder farming;

for fish farming;

for livestock; and

for various water-dependent activities such as mini hydropower systems, brick-making, tree growing, and food processing .

The small dams will also be beneficial instruments for climate change adaptation by attenuating the impact of flooding.

"The AWF is fully committed to supporting projects such as this one that propose water solutions poised to build resilience to climate change, increase food security and support socio-economic development," said Dr. Akissa Bahri, Coordinator of the African Water Facility. "Heavily hit by climate change, Zambia will greatly benefit from improving its water storage capacity as a way to adapt to increasingly unpredictable rainfalls - one of the main sources of water for people living in the regions targeted by this project."

In addition to the delivery and testing of the guidelines, another important attribute of the project is its contribution to design planning and mobilisation of funds to serve as a springboard to scale up water development program, such as the national Integrated Water Resources Management and Water Efficiency Implementation Plan (2007-30).

The project will be implemented over a period of 36 months from the date of grant signature. The Zambia Ministry of Lands, Energy and Water Development and the Department of Water Affairs will be the Executing Agency.

"African Water Facility Supports the Construction of Multi-Purpose Dams in Zambia to Build Resilience to Climate Change, Increase Food Security", 26/09/2012, online at: http://allafrica.com/stories/201209260746.html

BACK TO TOP

❖ Zimbabwe: No Free Water

Local authorities are unable to offer free water amounting to 6 000 litres per family monthly because of overcrowding at urban properties, Urban Councils Association president and Masvingo Mayor Femias Chakabuda has said. Water Resources Development and Management Minister Samuel Sipepa Nkomo announced recently that residents of cities and towns should not pay water charges for the first six cubic metres per month.

He justified the policy saying water was a basic human right used for cooking, drinking, washing and personal hygiene. A 200-litre drum was found to be adequate per day for a family of six.

But Clr Chakabuda said Minister Nkomo needed to be educated on the situation on the ground.

"We respect what Minister Nkomo is saying but we want to advise the Minister to be informed of the situation on the ground," he said.

He said the majority of urban properties in high density areas that are entitled to the benefit were designed for a family of six. Because of housing problems up to four families now share a single property.

"There is no way we can give four families free water per each housing property," he said.

"Zimbabwe: No Free Water", 27/09/2012, online at: http://allafrica.com/stories/201209270359.html

BACK TO TOP

❖ Kenya: KDF Airlifts Water to Troops as Wells Poisoned

Senior Kenya Defence Force officials were over the weekend forced to airlift water and food supplies to troops marching towards Kismayu after Al Shabaab insurgent fighters dropped poison in one well and vandalised pipes from another in Jana Cabdalla area forty kilometers to the port city.

Military helicopters and vehicles were dispatched to Jana Cabdalla to supply water to troops in three sections of the frontline after the Al Qaeda linked insurgents desperate to stop the AMISOM march to Kismayu poisoned wells. "There has been a problem of water in Jana Cabdalla after Al Shabaab put poison in one well and vandalized the other well. The problem is being addressed. Today, the troops got some water supply and more will be delivered," KDF Information Operation officer Colonel Cyrus Oguna said yesterday.

Troops had complained that several of them had suffered dehydration due to lack of water and the fact that they have been feeding on dry rations popularly known as 'dry rats'. Intense fighting closer to Kismayu has posed logistical challenges to the AMISOM troops in the recent days.

Following the capture by KDF and SNA in the last two weeks of Miido, Biibi, Harbole, Sooyac, Jana Cabdalla which have been strategic villages to the insurgents, the capability to defend the port city have diminished. However, the last group of fighters are regrouping in their bid to give strong resistance to the AMISOM troops.

Although many civilians have left the port city in anticipation of the AMISOM assault, there are concerns that there are likely to be may civilian casualties among innocent people who are being held in Kismayu by the insurgents as human shields against their will. KDF has expressed concern over civilians and revealed that they are creating a safe passage for those leaving the area.

KDF Special Forces are expected to play a major role in the last assault to counter the last group of foreign Al Shabaab snipers. Al Shabaab has also been known to use armour piercing ammunition. Col. Oguna yesterday said that troops were being supported well but KDF was being careful not to expose aircraft at the frointline.

" The aircraft are being kept away from the frontline but our 'casuavac' (casualty evacuation) is the most effective in the section. In military operation procedures you do not keep aircraft at the frontline. But no operations have been effective in evacuations like KDF's. Our casevac operations is the best. It is a morale issue and we ensure that they are airlifted immediately," Col. Oguna said yesterday.

"Kenya: KDF Airlifts Water to Troops as Wells Poisoned", 24/09/2012, online at: http://allafrica.com/stories/201209250173.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=f3ac557588-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

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❖ Stranded Nigerians sell possessions to eat

ABUJA, Nigeria, Sept. 25 (UPI) -- Travelers stranded in their vehicles by widespread flooding on a Nigerian highway are selling their possessions to pay for food, officials say.

Many of the people had left home with only enough money for bus fare, the Nigerian Tribune reported.

One woman said she sold a gold earring to survive.

The highway between the Nigerian capital of Abuja and Lokoja in adjacent Kogi State to the south has been flooded by rising rivers since Friday. On Sunday, a line of vehicles that had been headed north on the highway before being swamped by the water stretched nine miles.

A pregnant woman said she had been told when she left her home in coastal Delta State that the Niger River had flooded, but she thought it was a lie until she got to Lokoja.

Travelers weren't the only ones affected. People who had taken refuge at a Red Cross camp at a primary school said they had not had adequate food since arriving on Friday.

Officials closed the Lokoja highway as flood waters continued to rise. Four alternate routes have been designated for travelers.

The flooding in Kogi State was "a national disaster," said Mike Onolemen, the federal minister of works.

At least 10,000 people have been driven from their homes by flooding caused by swollen rivers.

Six states covering virtually the entire Atlantic coast of Nigeria from Lagos to Calabar have been severely affected by flooding.

"Stranded Nigerians sell possessions to eat", 25/09/2012, online at: http://www.upi.com/Top_News/World-News/2012/09/25/Stranded-Nigerians-sell-possessions-to-eat/UPI-49441348585144/?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=c847fb368d-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

❖ The Ganges: All plan, no action

River Ganga, or the Ganges - the most sacred river for Hindus and India's national river - remains filthy despite whopping sums being pumped into the Ganga Action Plan (GAP) for the last 26 years, a damning report has revealed.

"Since 1986, there is not even a 1% improvement in the river's condition despite millions being spent under the GAP," concludes the study by Dr Sandeep Kumar Behera, associate director (river basins and biodiversity), World Wildlife Fund (India).

According to the scholar, who is also a member ofthe Prime Minister Manmohan Singh-led National Ganga River Basin Authority (NGRBA), the problem has only worsened over the years. Over 50 drains today carry sewage to the Ganga and Yamuna rivers at northern Allahabad compared to 13 before 1986, states the report. In addition, the 84 bathing *ghats* (banks) sandwiched between two tributaries - Assi and Varuna - are now "huge sewage drains".

Defilement of the river, the study elaborates, begins at Rishikesh in northern Uttarakhand when the river enters the plains and in Kanpur where "the water stinks even during monsoon when the river is flooded".

GAP, an environmental initiative to clean up the Ganges fully sponsored by the central government, is based on a comprehensive survey conducted by the Central Pollution Control Board on the state of the river in 1979. It was approved by the cabinet in April 1985 and launched by then prime minister Rajiv Gandhi with a promise "to clean the river in five years".

The action plan included 261 schemes spread over 25 towns of Uttar Pradesh, Bihar and West Bengal. GAP Phase I was completed in March 2000 at a cost of about US$90 million.

GAP Phase II was initiated in 1993 and covered 59 towns located along the river in the five states of Uttarakhand, UP, Jharkhand, Bihar and West Bengal. Of the 319 schemes undertaken under the plan, 200 have been completed. GAP Phase II was expanded into the National River

Conservation Plan (NRCP) in 2009 after the Ganga was declared the 'national river'.

Phase II, which was to be completed in 2001, was extended by seven years to 2008 due to constant delays and inefficiency on the part of Central, state Governments and contractors.

Over the years, the action plan has come in for flak from environmentalists and dubbed "a colossal failure". Corruption, lack of technical expertise and a lack of environmental planning amongst the myriad government agencies handling the scheme are the primary reasons cited for this. After an audit in 2006, exactly 20 years after GAP's adoption, it was discovered that the project had met "only 39 per cent of its target of sewage treatment". In short, the GAP remains all plan, no action.

The pollution in the Ganges was also highlighted in August this year by India's Environment and Forests Minister, Jayanthi Natarajan: "The levels of bacterial contamination in terms of fecal coliform are reported to be exceeding the maximum permissible limit at a number of locations," said the minister.

The Standing Committee on Environment and Forests, in its report on the grants to the environment ministry for the year 2012-13, also reiterated the project's failure to check the river's pollution. The ministry, said the report, was only adopting an engineering-centric approach with undue emphasis on sewage treatment plants. It concluded that despite the efforts and huge investment, "the pollution level in the Ganga continues to rise unabated".

Originating in the Himalayas, the Ganges travels across 2,250 kilometers through India to the Bay of Bengal before merging with the Indian Ocean. It is ranked among the top five most polluted rivers of the world with its pollution threatening not only humans, but also more than 140 fish species, 90 amphibian species and the endangered Ganges River Dolphin.

The magnitude of the problem can be gauged from the fact that the Ganga Basin, amongst the world's most densely populated regions, hosts over 400 million people. Over 2 million people ritually swim and bathe in the river daily.

A raft of diseases plague the river's polluted waters, a lethal cocktail of garbage waste, sewage, human and livestock corpses and toxic chemicals. Over 1.3 billion liters of sewage, it is estimated, is dumped into the river daily. Over 50 tanneries, 10 textile mills and several other industrial companies shove 37 million gallons per day waste, and only have to pay a small fee for it. Shockingly, there is no legal provision or punitive measure against dumping of waste into the river.

The resultant pollution has naturally impacted the river's wildlife. While earlier, the river was full of plump glutinous fish - and supported a thriving fishing industry - it is currently struggling with dwindling species that are fast becoming extinct. For instance, the Ganges River Dolphin is an endangered species with only 4,000 of its kind remaining. Consequently, local fishermen are relocating to look elsewhere for work.

A crucial reason for the GAP's failure, say experts, is the Indian government's inability to engage sundry stakeholders, including the local Hindu communities who not only interact with the River Ganga, but have been the most impacted by its policies.

Noted environmentalist of Banaras Hindu University, B D Tripathi has said that the problems plaguing the Ganga can be solved by adopting a triple P Program - Policy, Planning and Prevention. Others iterate that the successful implementation of environmental policies necessitates radical changes in the behavior and mindsets of a multitude of diverse groups of actors, not just corporations and governments.

"People must be sensitized about threats to the environment with the help of local leaders who have a good grasp of local belief systems. This will ensure mass participation in setting the rules, in determining sanctions and in other pressing issues related to the management of the resource," says B K Kandhari, an environmental engineer from Benaras Hindu University.

Over $2 billion has already been spent on the Ganga Action Plan I and II. From 2009 to 2012, the center and the state governments have additionally spent nearly $50 million in their efforts to

clean the river. The government has also inked a $1 billion deal with the World Bank to clean the river by 2020.

But apart from the fiscal investment, India's emotional investment in the Ganges is also intense. In 2011, spiritual guru Swami Nigamanand undertook a fast unto death demanding an end to illegal sand mining in the Ganga, especially in Haridwar where the Kumbh Mela, a mass Hindu pilgrimage, takes place. The governments, both in Uttarakhand and at the center, ignored his pleas. The swami breathed his last after fasting for 115 days.

Since February 8 this year, G D Agrawal, now Swami Sampurnanand, a former professor with the Indian Institute of Technology (IIT) Kanpur and a renowned environmental scientist, has been on a hunger strike demanding that all hydroelectric projects on the tributaries of the Ganga be stopped "to maintain the purity of the river, allow its continuous flow and protect the flora and fauna in the river basin zone".

Perhaps the Indian government is waiting for the second Swami's death to be spurred in to action.

“The Ganges: All plan, no action”, 28/09/2012, online at: **http://www.atimes.com/atimes/South_Asia/NI28Df02.html**

BACK TO TOP

❖ New dams necessary to face flood hazards

LAHORE: Construction of new dams is need of the hour as it will not only lessen the flood water destructions but also storage surplus water, which could be used both for energy generation and irrigation.

These views were expressed by discussants in Jang Economic Session on 'Recent rains, floods and its impacts on economy", held here. Those who participated in the session included: Punjab University IBA director professor Dr Ihsan Malik, Special Assistant to Punjab Chief Minister for Live Stock Hussain Qasuri, Four Brothers Group chairman Javed Quraishi, Agri Forum chairman Ibrahim Mughal, Farmers Associates Pakistan director Abad ur Rehman Khan and Dr Asif Mahmood Bajwa. The event was hosted by Sikandar Hameed Lodhi and Intikhab Tariq.

Dr Ihsan Malik said that it rained almost daily in the developed countries but floods did not occur there because of dams. The dams, he added, not only protected the countries but also provided them with cheap electricity through which they ran their industries smoothly. He said it was disappointing that Pakistan was an agricultural country but was importing agro-based items from Saudi Arabia due to Pakistan's failure in handling floods.

Khadim Hussain Qasuri said the Punjab chief minister had taken keen interest in reconstruction and rebuilding of the flood-hit areas by helping those flood-affected poor people. He said the Punjab government would establish health clinics in the flood-hit areas and would also announce relief package for the farmers.

Javed Quraishi said that recent floods had caused more damages to DG Khan and Rajinpur districts as compare to the damage by floods of 2010. He said both of the major political parties were involved in petty politics as elections were around the corner but they had not paid heed to helping the flood-affected people.

Ibrahim Mughal said the recent rains had proved very beneficial for the crops, rather than causing the crops damage. The rains were worth seven billion rupees to Rs 10 billion which were required to fulfill the water needs. He said shortage of storage capacity was the key behind floods in the country. He said that, due to the wrong information disseminated by meteorological department, farmers had

not got much time to prepare them for the recent rains which had later turned into floods. He said cotton crop was expected to be cultivated on eight million acres but, due to heavy rains, it could be cultivated only on 72 million acres.

Abad ur Rehman said cotton crop was the most affected crop in recent floods, asking the government to take action in tackling corruption of the irrigation department. Dr Asif Mehmood Bajwa said that, due to flood, thousands of people were forced to live in the open air and there was no government which could address their miseries. He said many diseases had been reported in flood-hit areas such as gastro and there was also a danger of spreading of typhoid there. He said around two hundred thousand people had suffered due to recent floods in Rajinpur alone. He underlined the need to pay more attention and allocate more funds to help flood-affected people.

"New dams necessary to face flood hazards", 28/09/2012, online at: http://www.thenews.com.pk/Todays-News-2-134473-New-dams-necessary--to-face-flood-hazards

BACK TO TOP

❖ Pakistan asks India to stop opposing Diamer dam

ISLAMABAD - Pakistan has asked India to stop opposing the construction of Diamer-Bhasha Dam at various international financial institutions (IFIs), as New Delhi's opposition to the vital dam was casting a negative impact on the ongoing Indo-Pak peace process, besides causing huge loss to the country's exchequer.

India is against the construction of Diamer-Bhasha dam on grounds that it is located in the 'disputed territory' of Gilgit-Baltistan and hence it has been opposing Islamabad's endeavors to seek the required financial assistance for the important project from multilateral creditors.

"Through diplomatic channels, Pakistan is trying to impress upon India to drop its opposition to the mega water project as it is vital for the struggling economy of the country and also that New Delhi's decision to oppose the dam is also not based on principles, as the people of this areas had themselves decided their accession to Islamabad," said a diplomatic source, seeking anonymity.

He said India had also been told that its opposition to the dam was impacting the ongoing peace process between the nuclear neighbors and hence it was required to review its decision.

Owing to the reluctance of IFIs like Asian Development and World Bank to extend funds for the Diamer-Basha Dam, a huge loss of $2.5b in the cost of the construction has already been caused to Pakistan's exchequer.

The cost of Diamer-Bhasha Dam was estimated at around $11 billion in 2009, which however, has now reached at around $13 billion with an increase of $2.5billion due to the delay in the financing of the project.

A Pakistani official, who also sought anonymity, said the dam had a storage capacity of about eight million acre feet (MAF) and the expected electricity generation was 4,500MWs.

He said the project was supposed to be completed by 2017 but due to some financial problems, the dam construction was expected to be delayed by three to four years.

The ADB has reportedly committed $4.5 billion to $5 billion for construction of the project. The bank had also pledged that it would act as the government's investment banker in raising the money from international capital markets to meet funding requirements.

Similarly, the World Bank too is reluctant to provide funds for this dam on grounds that India is opposing the project.

The official said the good thing so far was that United States had assured Pakistan to extend around $500 million in assistance for the mega project from the $7.5 billion Kerry Lugar assistance package for Islamabad.

Pakistan is also seeking Chinese assistance for the construction of dam. The official said Pakistan would not seek an NOC from India for Diamer-Bhasha Dam but it would continue to nudge New Delhi against the blocking of financial assistance to the project at the IFIs.

"Pakistan asks India to stop opposing Diamer dam", 24/09/2012, online at:
http://www.pakistantoday.com.pk/2012/09/24/news/national/pakistan-asks-india-to-stop-opposing-diamer-dam/

BACK TO TOP

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❖ Nepal: Water issues with India demand agreements review

1950 treaty set the ball rolling on this path during the 20th century in favor of India. There are points in favor of Nepal which remain silent and inactive. Starting from Koshi, Gandaki and Mahakali Treaties, prove that the party leaders are no more than the puppets of the aliens. One thing is common in all these treaties and agreements-ensuring fresh water for India. Nepal is cheated by India on those three agreements on the water resources of Nepal. Now in the name of the liberal economy of the rich country India has come to Nepal through the help of European, Australian and the American capitalists in the state of neo-colonists'.

The politician need to study the Columbia Treaty under which Canada is compensated for losing alternative use of the land inundated. The compensation is also for augmented flow in the dry season from USA. Besides there is the power benefit shares between the two countries for constructing the reservoir project. Nepal must insist on using this treaty as a precedent in getting recompense for land mass lost. It also must incorporate the value of environment degradation, submergences, loss of forest resources, wild life, existing infrastructure in the case of West Seti project, Kankai high dam and similar other projects including Indra Sarovar.

Nepal is ceding its rights on waters becomes apparent with some difficulty. However, the run of the river projects like Upper Karnali and Arun-Ill do not generate augmented flow and apparently seems no water related issues are involved. Those having thorough knowledge will clearly understand that water issue is involved even in these projects. Section 20 of Electricity Regulation, 1993 guarantees "Right on Water Resources." The section says - "The licensee, who has obtained license for production of electricity, shall have the right to use the water resources for the works as mentioned in the license to the extent of such place and quantity as specified in the license." As per this section someone possessing a license to a specific site is guaranteed that no consumptive use of water will be undertaken in the upstream areas of the project as is stated in the Gandak project agreement. It is no more than tying of both hands himself. By getting various "investors" to secure licenses to sites in Nepal, India has succeeded in ensuring that Nepal is forced to refrain from using the water for consumptive uses. In this way the downstream flow to the Ganges is successfully secured with the issuance of each license. Similarly, at the same water, India has taken rights from Bangladesh and

Pakistan as upper stream flow to the Ganges/Sind is successfully secured. Nepal even misses an opportunity to use such water to irrigate its arable land. The Ganges receives 41% of its flow from Nepal in the wet season and 75% in the dry season.

Learning from Bitter Experiences:

Kaligandaki-A has a bitter experience. The Middle Marshyangdi at the public sector and the Khimti, for example, at the private sector have the bitterest experiences. Delays by four years doubled the cost of the Middle Marshyangdi. We need to learn that the each year delay adds a 25 % of its cost. Therefore all projects must run nonstop round the clock in three shifts without any hurdles as suggested in the national main policy.

Meeting the Demands First:

The peak demand was 720 MW. The industrial corridors in and around Kathmandu Pokhara, Dang, Surkhet Valleys, Butwal-Bhairahawa, Parwanipur-Birgunj Duhabi Biratnagar and elsewhere are starving for energy for the existing industries. Sooner the cheaper and easily available power and water facilities are given, new industries will be established rapidly. These corridors could use over 200 MW each. The establishment of new industries and expansion of the existing industries is constrained due to lack of electricity. On the other side, first of all the government must displace cooking gas (LPG) and kerosene for which Nepal needs over 1000 MW at the beginning. Half of which will be consumed in Kathmandu valley alone. By the time the West Seti, Karnali and Arun-3 projects get commissioned, Nepal's own demand will exceed 25,00-3000 MW. Nepal must be self-reliant in the matter of energy for transportation as well and reducing import of petrol. If Nepal is to proceed to a developed nation, electric run transportation system, i.e. electric train, trolley bus, cable car, hybrid cars, is a must. During that period the demand of electricity will be much higher. Therefore, it makes no sense for Nepal to endeavor to export electricity and invite alien government and private sectors when Nepal itself doesn't have enough electricity. It is high time to go on producing hydropower projects by Nepal itself and make it easily available and cheaper compared to neighbors.

First Consider the Life of the Project:

The Kulekhani reservoir, the only peak hour runoff project, is not river based. The storage of this reservoir is reduced by 25% of its original capacity in 25 years that is 1 percent a year. The west Seti River carries high silt load (which) will be transformed into a run-of-the-river project in 30 years. During that time the project will be handed over to Nepal. The project's dam will have to be decommissioned. The government of Nepal will be forced to spend money for this project again. When the so called leaders of Nepal are thinking of enjoying electricity free of cost by that time Nepal will be forced to auction. For decommissioning of which will be costlier than the original project cost. If so, why not to construct such projects by the government itself right from the beginning?

Do not cut your hand yourself:

Another myth regarding electricity that has dominated the public mind in Nepal is that water agreements have to be done in hot haste otherwise Bhutan will capture the Indian power market, or that India will develop nuclear power and will have no need for Nepali hydropower. It must be realized that Bhutan has no Tarai to irrigate, nor is the adjacent riparian territory in India highly thirsty for water. The UP and Bihar both are highly water and power scarce areas. Nepal is situated as the upstream of large swathes of these states. After four or five decades, India will need storage dams in Nepal for water alone. Even if there were no electricity involved. Nepali hydroelectricity can only be a very valuable by-product for them. These facts have been proven by the state agencies and the socio-environmental activists. Electricity from Nepali storage dams is more valuable than their local thermal or coal electricity power plants. The coal deposit is almost finishing in India. The peak hour power and systemic irrigation is of high importance for them. Therefore, Nepal must not lose its sovereign rights over its natural fresh water resources by any mean.

Develop planned settlements:

Over three fourth of the people of Nepal reside in the rugged, remote and scattered settlements. Support for new technologies is crucial for transforming the lives of the rural communities. The access to electricity allows children to study at night, reduces the burden on rural women; fuel collection time is saved; immense health costs such as respiratory and eye diseases from indoor wood smoke pollution is also reduced.

Implementing the one window policy, the holistic development concept, preventing haphazard promulgation of policy/fiscal directives, enforcing time bound decisions on matters related to licensing are some examples for immediate reform.

For smooth and quick development and delivering of the services in equal amount and quality a planned settlement scheme is a must. The scattered small villages should be consolidated under various planned settlement schemes.

After suspending the unplanned development expenses the northern remote rocky belt about 23 percent of the total area should be kept away from human habitation and set aside for herbal and horticultural development, wild life reserve, tourist resorts, trekking and sport facilities. The present settlement up to 66-degree slope must be controlled by an act reducing to 40 degree. And this area must be restricted for seasonal cropping and kept for forest or tree based fruit cultivation.

A land use map should be drawn up and use projecting Chakala bandi farmland to promote intensive and block farming. Then a new set up of politico administration of local level organization should be reorganized so as to facilitate implementation of decentralization schemes by mobilizing manpower and other local resources. It is only through materialization of well-planned decentralization scheme that only can provide equal opportunity of full employment to all, equal access of quality education without any discrimination of gender, cast, ethnicity religion and so on; equal opportunity of the services (e.g. electricity, communications, transportation, human and animal health, banking facilities etc.) to be provided by the state. Then plans can be well stabilized and corruptions be rooted out permanently.

Inside Himalaya National Park:

Nepal can also benefit from the melting water of the Himalayas, a perennial source of hydropower in Nepal. Nepal should work for investment in hydro projects that have capacity to be reserved. The other alternative energy sources such as solar, bio-gas and CDM (clean development mechanism) projects should also be enforced. However, regarding the detail of Himalayan National Park, I would like to request to go through on my book on Tourism called *'Himali National Park and tourism development'*.

Party Politics and Hydro Power Utilization:

The parties have leveraged every agenda from republicanism to nationalism, ethnic determination to gender-based politics, federalism to human rights and similar situation catch agenda depending on time and situation. When examined over a continuum, the contradictions and hollow cast inherent everywhere are proving that none of the parties have a clear and genuine vision. They have only one vision as how to grab power and money out of nation's natural resources. They really have managed to keep the Nepali public focused on peripheral issues and their political opponents guessing and in disarray. They also have used civil society and the INGO community as stepping stones on their path to power. Politically speaking, there is nothing wrong with the manner in which they have campaigned - they have operated under the same constraints as their political rivals. However, there is slight difference between the parties the subtle threat of violence to false assurances. Whether through the PLA, the YCL, or through their unions, the Maoists have always retained a credible (and demonstrated) penchant for the application of force.

Meanwhile, Nepal's liberal elite (domestically and abroad), have continued to focus on the more progressive aspects of the Maoist agenda while turning a blind eye to the not-so- progressive, power plays that actually enable the Maoists as a force to reckon with. The height of hypocrisy has been so-called civil society leaders expressing fear for their lives in private and then praising in public. They are using the human rights lobby to neutralize their inhuman activities. Unless the parities do agree to work under a full agreed National main policy and run the country under objective based 'system run' administration, nation can never progress. The poor will have no chance to progress economically and educationally. For, in the present situation they are unaware because they are poor and they are poor because they are unaware.

Infrastructures:

Before implementing any project preparation of land use map, nationwide planned & consolidated settlement, reorganization of political division, new set up of administration, land reform: a productive phase (the present is not land reform but land ceiling only) and human resource mobilization accurately under sustainable and long term planning strategy is a must without which would be the waste of money as the pouring of water over sand.

This situation can be ended when only the

Vyvasthit Vasti Model (planned settlement) of development is applied mainly in the developing nations.

Nepal's Army and Police's welfare funds, the NEA, NRN, public enterprises, and banks, other financial institutions & individuals can collectively run projects such as the ongoing upper Tamakosi Project. All that is required is a strong commitment to Nepal's development and proper coordination and management of activities.

Finally, a land use map should be drawn up and the land should be consolidated (Chakala bandi) promoting farming activities. The scattered small villages should also be consolidated under planned settlement schemes. A planned and consolidated nationwide settlement solves all the existing problems. It includes reorganization of political divisions, new administrative procedures, a genuine land reform and mobilization of human resources in scientific way. Moreover, it is suggested that the northern remote rocky belt of the country should not be exploited and instead be put aside for horticultural development and be established as a wild life reserve. The present settlement up to 66-degree slope must be reduced to 40 degrees and be restricted to seasonal cropping.

A re-organization of political-administrative procedures should also take place so as to facilitate the implementation of decentralization schemes through the mobilization of manpower and other local resources. Decentralization schemes are vital for tackling unemployment, promoting equal access to quality education and services including electricity, communications and transportation. These schemes would also be conducive to root out corruption.Thanks the author: Ed.

"Nepal: Water issues with India demand agreements review", 30/09/2012,online at: http://www.telegraphnepal.com/national/2012-09-24/nepal:-water-issues-with-india-demand-agreements-review.html

BACK TO TOP

❖ Pakistan floods: Tens of thousands made homeless

Tens of thousands of people have been made homeless by heavy monsoon flooding in the Pakistani provinces of Balochistan and Sindh, officials say.

About 120,000 homes have been destroyed and tens of thousands of tents are now being distributed.

Officials in Balochistan say that about 80% of the population is now affected.

However, correspondents say the floods are not on the same scale as those two years ago which devastated large parts of the country.

In Balochistan, the government has set up medical posts to treat gastric problems, malaria and other illnesses among 500,000 people who have been made homeless.

One meal a day

A BBC reporter who has been travelling through the province and in Sindh says that many people are now living in the open without shelter on whatever patch of dry ground they can find.

Officials say that food, tents and medicine are in short supply.

Balochistan is Pakistan's largest province in size but ranks lowest in terms of infrastructure and services.

The BBC's Syed Shoaib Hasan in Karachi says that it is also a staging ground for militant activities - the kidnapping threat makes it almost impossible for aid agencies to operate effectively.

Our correspondent says that food supplies are so low in Balochistan that many people are surviving on one meal a day.

The army has been called in to help with the rescue operation even though it wants to pull out of a province used as a sanctuary by Taliban militants from fighting in neighbouring Afghanistan.

Balochistan is also blighted by sectarian violence and is at the centre of an insurgency waged by ethnic Baloch separatists demanding more autonomy and a greater share of its natural resources.

The army says that aid supply is the responsibility of the government, but correspondents say that so far it is nowhere to be seen.

"Pakistan floods: Tens of thousands made homeless", 25/09/2012, online at: http://www.bbc.co.uk/news/world-asia-19722037?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=c847fb368d-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

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❖ Experts Warn of Water Bankruptcy for Many Regions After Reviewing 200 Major Global Projects

Bangkok, 24 September 2012 - A study of almost 200 major international water-related projects over the past 20 years has identified a suite of existing and emerging challenges and how science can offer remedies.

The Global Environment Facility (GEF), the largest public funder of projects to improve the global environment and promote sustainable development, partnered with the United Nations University and the United Nations Environment Programme (UNEP) to extract lessons from a portfolio of major transboundary water projects involving investments of more than US$7 billion.

Insufficient and disjointed management of human demands on water and aquatic systems has led to situations where both social and ecological systems are in jeopardy and have even collapsed, says the report.

River basins in particular are set to experience growing pressures due to urbanization, rising water scarcity and poor water quality.

Investing in science, in order to identify emerging issues and track trends relating to the use of water resources, can help to reduce such risks, according to the study. Links between science and policymaking also need to be strengthened.

Several success stories of research investments that paid rich dividends are also highlighted in the report.

These include efforts to rid Lake Victoria of alien water hyacinths, where an unsuccessful project using harvesting and chopping machines was replaced with biological control of the hyacinths using a weevil. The GEF-backed approach yielded immediate positive results for biodiversity and local communities.

The new report, Science-Policy Bridges over Troubled Waters, synthesizes findings of over 90 scientists worldwide assigned to five GEF International Water Science (IW:Science) working groups

focusing on groundwater, lakes, rivers, land-based pollution sources, and large marine ecosystems and the open ocean.

According to the report: "The consequences of poor decision-making are dire: we face a 'water bankruptcy' in many regions of the world with implications for food and energy security, adaptation to climate variability and change, economic growth and human security challenges."

The report was launched on the opening day of the GEF International Waters Science Conference held in Bangkok, Thailand. The conference aims to set priorities for international waters science over the next decade and to enhance the use of science in GEF projects and beyond.

Other key findings include:

- Levels of dissolved oxygen levels in marine areas (a critical ecological indicator) have dropped significantly over a relatively short time. In 2008, over 400 marine dead zones were known to span a total area of more than 245,000 square kilometers.
- The report also highlights a major increase of stored heat in oceans. Such changes could have negative impacts on ecosystems, sea levels and human livelihoods.
- The management of groundwater remains isolated from other ecosystems, and the limitations in recharge capacity of aquifers are not well understood by decision makers.

Zafar Adeel, director of the United Nations University International Network on Water, Environment and Health (UNU-INWEH), and a report co-author, said: "This study underscores how often early 'alarm bells' with respect to emerging issues can be heard and must be heeded. The report offers helpful recommendations to the GEF to foster this process."

Ivan Zavadsky, GEF's International Waters Focal Area Coordinator, notes that over 20 years GEF had catalyzed the largest investment of its kind in human history. GEF's $1.3 billion catalyzed a total of $7 billion of investment in managing shared waters - fresh and marine - in almost every part of the planet, above and below its surface.

"One of the principal lessons from this review is that science must play a more central role in determining the nature and priority of these investments," he said. "This examination of work in the recent past contributes significant insights into the challenges ahead."

"World leaders agreed at the Rio+20 summit in June to strengthen the science-policy interface and to foster international research collaboration on sustainable development. This is especially important in respect to water resources at a point in time of unprecedented pressures from climate change and urbanization to pollution and over extraction," said UN Under-Secretary-General and UNEP Executive Director Achim Steiner.

"Some positive steps are being made, however. UNEP's recent Global Environment Outlook-5 report analyzed progress on 90 key environmental goals. It found that significant progress is being made in improving research to reduce pollution of the marine environment. These achievements need to be registered across the water management challenge including lakes, rivers and aquifers in order to bring water into the centre of development plans en route to an inclusive Green Economy", added Mr Steiner.

"Experts Warn of Water Bankruptcy for Many Regions After Reviewing 200 Major Global Projects", 24/09/2012, online at:
http://www.unep.org/NewsCentre/default.aspx?DocumentID=2694&ArticleID=9282&l=en&utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=f3ac557588-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

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❖ How will climate change affect food production?

Food is one of society's key sensitivities to climate. A year of not enough or too much rainfall, a hot spell or cold snap at the wrong time, or extremes, like flooding and storms, can have a significant effect on local crop yields and livestock production. While modern farming technologies and techniques have helped to reduce this vulnerability and boost production, the impact of recent droughts in the USA, China and Russiaon global cereal production highlight a glaring potential future vulnerability.

There is some evidence that climate change is already having a measurable affect on the quality and quantity of food produced globally. But this is small when compared with the significant increase in global food production that has been achieved over the past few decades. Isolating the influence of climatic change from all the other trends is difficult, but one recent Stanford University study found that increases in global production of maize and wheat since 1980 would have been about 5% higher were it not for climate change.

All else being equal, rising carbon dioxide concentrations – the main driver of climate change – could increase production of some crops, such as rice, soybean and wheat. However, the changing climate would affect the length and quality of the growing season and farmers could experience increasing damage to their crops, caused by a rising intensity of droughts, flooding or fires.

The latest IPCC report predicted improving conditions for food production in the mid to high latitudes over the next few decades, including in the northern USA, Canada, northern Europe and Russia. Conversely, parts of the subtropics, such as the Mediterranean region and parts of Australia, and the low latitudes, could experience declining conditions. For example, across Africa, yields from rain-fed agriculture could decline by as much as 50% by 2020. Beyond this, if global temperatures rise by more than about 1–3°C, declining conditions could be experienced over a much larger area. The future course of global food production will depend on how well societies can adapt to such climatic changes, as well as the influence of other pressures, such as the competition for land from biofuel production. The IPCC concluded that in the poorer, low-latitude countries, climate change could seriously challenge the capacity to adapt for a warming of more than 3°C. The richer, higher latitude countries are likely to have a greater capacity to adapt and exploit changing climatic conditions.

But we can't ignore the potential for "surprises" down the line. There are many uncertainties in such predictions. The world has not seen such changes in climate for millennia, and so it is impossible to know how our agricultural systems will react in the real world. For example, the complex interlinkages with the impacts of climate change on pests, diseases and pollinators, like bees, are largely unknown. Also, climate models have difficulty in accurately predicting the detailed local environmental changes that are important for food production, particularly weather extremes.

A looming vulnerability is the world's fisheries, which provide an important source of protein for at least half the world's population. Fisheries are already stressed by overexploitation and pollution. Warming surface waters in the oceans, rivers and lakes, as well as sea level rise and melting ice, will adversely affect many fish species. Some marine fish species are already adapting by migrating to the high latitudes, but others, such as Arctic and freshwater species, have nowhere to go. The absorption of carbon dioxide emissions by the oceans also has a direct impact on marine ecosystems through ocean acidification.

But what does this mean for food security – the price and availability of food for the world's seven billion people? A 2011 Foresight reportconcluded that climate change is a relatively small factor here, at least in the short term, when compared with the rapid increases in global food demand expected in the next decade. On current projections, by 2050 there will be between one and three billion additional mouths to feed. As people become wealthier, they also demand more food and disproportionally more meat, which requires far more land and water resources per calorie consumed. When these factors are combined, it points toward a future of increasing and more volatile food prices.

As was seen during the 2007–08 food price spikes, the poorest countries and communities will be hit first and hardest. The Foresight reportconcluded that international policy has an important role to play here – today, despite plentiful supplies of food globally, almost one billion people are undernourished.

Finally, food production itself is a significant emitter of greenhouse gases, as well as a cause of environmental degradation in many parts of the world. Agriculture contributes about 15% of all emissions, on a par with transport. When land conversion and the wider food system are taken into account the total contribution of food may be as high as 30%. This means that to limit the long-run

impacts of climate change, food production must become not only more resilient to climate but also more sustainable and low-carbon itself.

"How will climate change affect food production?", 19/09/2012, online at: http://www.guardian.co.uk/environment/2012/sep/19/climate-change-affect-food-production?CMP=twt_fd

BACK TO TOP

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❖ Is Central Asia on the Verge of a Water War?

Whether it's Israel *maybe* pre-emptively striking Iran, Afghanistan spiralling into sectarian violence, Libya becoming home base for Al-Qaeda, or Syria continuing to be the site of a government-led genocide, there's no shortage of potential dirty wars and ominous harbingers in the Middle East and Central Asia. While everyone is focusing on the recent turmoil in Benghazi, a new kind of conflict is rising in Uzbekistan and Tajikistan that could eventually lead to the first water war of the 21st century

It's fair to say that when Louise Arbour, the hard-ass former UN prosecutor of war criminal Slobodan Milošević, lists her bets on future wars, the rest of us should take her seriously. In December 2011, writing for *Foreign Policy*, Arbour predicted Tajikistan and Uzbekistan, two obscure Central Asian countries to most westerners, as potential combatants in a war over quickly depleting water resources. Judging by current tensions between the two, she might be right.

Basically the Tajiks, who are already plagued by an Islamic insurgency, plan to build the Rogun dam on the Vakhsh River. The river is a major tributary to the Amudarya—the main water vein for downstream Uzbekistan. While the hydroelectric power from the proposed dam would make the Tajiks rich, it'll make the Uzbeks thirsty. This has been a problem for Uzbekistan since Stalin's failed plan for the Transformation of Nature during the 1940s drained the Aral Sea (Uzbekistan's main water reserve) to irrigate cotton fields.Pissing off the Uzbeks, however, may not be what the Tajiks want to do. Besides being geopolitical wildcards, Uzbek President Islam Karimov is widely considered a tyrant, ruling over his country's oil reserves and national wealth since a questionable 1991 election. He's also a cheap imitation Saddam. And like any delusional dictator, he's known for his outlandish behavior: like rewriting history books to make himself the spiritual descendant of the warlord Tamerlane, owning a soccer team in the national league (who are conveniently champions nearly every year), and allegedly ordering the assassination of a political dissident hiding in Sweden. Human Rights Watch even accused his regime of systematic torture, including boiling rebels alive.

One former diplomatic employee of a country in the region, speaking on the condition of anonymity, says the lack of western sanctions on Karimov is no surprise: "There's the general feeling that Karimov gets off very lightly from the International community because of his violent campaign against Islamic extremists and the war on terror, which is really an excuse for a political crackdown." Meanwhile, the Karimovs enjoys total rule over the state: "It's modern tribalism. One family rules the country for two decades, keeping the population poor so they can use them as a cheap labor force under the loose tenants of communism," the source added.

When or if a war will erupt is unknown. "I don't want to speculate on the probability of a war breaking out," says David Trilling of Eurasianet, "but Islam Karimov did up the ante [recently] by

suggesting that attempts by Tajikistan and Kyrgyzstan to build giant hydropower dams upstream could lead to war."

According to Trilling, tensions have been escalating for years as the Uzbeks pressure the Tajiks by pulling classically dirty diplomatic moves the Russians are known for, like cutting off vital gas deliveries, mining their shared borders, and possibly resorting to covert attacks. "Late last year," Trilling said, "all rail traffic to southern Tajikistan stopped when a rail bridge in a remote part of Uzbekistan mysteriously blew up. Tashkent blamed terrorists, as it is wont to do, but a visitor to the site described signs of deliberate sabotage."

Joshua Foust, a Central Asian expert with the American Security Project, isn't convinced war is inevitable, but says, "the potential is definitely there for that dispute to become violent [...] if the Tajiks stopped releasing enough water to feed all of the Uzbek cotton fields, that might push things over the edge." According to Foust, while internal violence in Central Asia by a state against its people is all too common, state to state violence is pretty rare. Yet he does admit there are ominous signs and the conflict needs to be monitored: "The reason why this hasn't deteriorated into open violence is because both parties are keenly aware of the potential for violence."

For NATO countries, another conflict in the 'Stans might not mean more body bags and beheading videos. When asked to describe an American response to a war, Foust was blunt. "There is definitely not an appetite in Washington for initiating another armed conflict, that's part of the reason there's been no response in Syria. What the US would do immediately is focus itself on the humanitarian response. If there were American assets and citizens being targeted you'd see a very sharp response, but I don't think that would involve troops on the ground."

Foust also described the disruptive contest between superpowers in the region, as Russia, America, and China jockey for influence. "Although the contest is real, a war won't happen until one of these outside powers funds their proxies against one another directly." In other words, each superpower would look to pin down another in an Afghan-Soviet or Vietnam type of war, which among other things spawned the mujahedeen (precursors to Al-Qaeda) and severely taxed the infrastructure of the US Army, respectively. The US interest is simple: these countries are strategic supply routes for the eventual withdrawal from Afghanistan. If they were compromised it would only leave Pakistan as an option, which some see as an extremist hornets' nest buzzing with anti-American sentiment.

Whether foreign interests are already stirring the pot is the real question. Foust told me that US Special Forces recently trained Kyrgyz soldiers. "They've also been training border guards and set up a counterterrorism training center in Tajikistan. But this is mainly to train domestic police forces against internal terrorists and, as far as I've heard, they're not being used to help execute violent espionage […] but if, say, that train blowing up was confirmed to be the work of an intelligence service, *that* would be a precursor for actual violence." And Putin's Russia, or his USSR resurgent,

are just as involved: “Russia is negotiating with Uzbekistan, Tajikistan, and Kyrgyzstan to host military bases, while they have an investment in training Tajik border guards to secure their southern borders. They also have the ultimate goal of a sort of Pan-Eurasian economic union, modeled loosely on the EU.” To confuse things even more, China’s commercial entities have been infiltrating all levels of economies in the area. And like everywhere else in the world, China is winning favor financially: “If they can make money somewhere, they’ll try. They’ve mainly focused on infrastructure building, on a credit to debt basis, especially in Kyrgyzstan.” By all indications, Central Asia is becoming the crossroads of the three global superpowers. If history is any indication, this often leads to death and destruction.As for the regional players, when Tajikistan fought its civil war in the 90s it claimed an estimated 100,000 victims, proving that when they go to war, they do not fuck around. A full scale armed conflict with Uzbekistan (who is allied with Kazakhstan, another emerging player) would likely drag in the Kyrgyz. The Krygyz have not only battled a bloody internal uprising in 2010 that involved the ethnic cleansing of Uzbeks, but they continue to skirmish with them on their own shared borders. While at the moment it may seem unlikely, a water war could potentially be the spark that would upgrade the region's brewing geopolitical shit-storm to a full blown shit-hurricane.

“Is Central Asia on the Verge of a Water War?”, 28/09/2012, online at: http://www.vice.com/read/is-central-asia-on-the-verge-of-a-water-war-

BACK TO TOP

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❖ Chinese Coal Mining Threatens Zimbabwe's Zambezi Water Project

ZIMBABWE, BULAWAYO — The environmental practices of Chinese coal companies are threatening the future of Zimbabwe's National Zambezi Water Project, according to Zimbabwean officials.

The government has granted a number of Chinese companies mining rights along the Gwayi and Shangani rivers, the site of the Gwayi-Shangani Dam, which will serve as the reservoir for water drawn from the Zambezi River under the water pipeline mega project.

Both the Gwayi-Shangani Dam and the Zambezi pipeline are being funded through a Chinese loan.

But officials from the Gwayi Valley Conservancy now say the Chinese mining firms are flouting environmental laws and polluting the rivers that feed the Gwayi-Shangani Dam.

They are engaging in open pit mining, which is blamed for causing siltation while coal residue is making its way into the main waterways.

"Some of these Chinese companies have been fined more than three times by the Environmental Management Agency for operating without an environmental impact assessment certificate, but they continue to secretly do their pegging on the farms and some have established structures that they are not allowed to [build] by law," Mark Russell, chairman of the Gwayi Valley Intensive Conservation Area, told reporters last week.

Langton Masunda, another official from the Gwayi Valley Intensive Conservation Area, said the level of pollution from coal mining could be a serious blow to efforts to bring water to the region.

"Allowing the Chinese companies to extract coal in the Gwayi area would scuttle Bulawayo's plans to draw water from Zambezi River. We are not refusing development in Matabeleland North, but we should also think of our children and grandchildren," said Masunda, who sits on the conservancy's executive committee.

"Water has far-reaching benefits than the mining activities that are likely to last for about 20 years, but the environment won't be renewable after coal mining. Those who make decisions should make economic decisions and think of the future generations," Masunda said.

The operations of Chinese companies, which have won multi-million-dollar contracts in virtually every sector of the Zimbabwean economy, are increasingly coming under scrutiny, with some critics noting labor violations at some of the dam construction sites across the country.

The Water Ministry has not weighed in on the pollution concerns.

Critics also say the Chinese are protected by President Robert Mugabe under his ambitious "Look East policy," which over the past decade has courted Chinese investment as part of the country's economic revival efforts.

"Chinese Coal Mining Threatens Zimbabwe's Zambezi Water Project", 26/09/2012, online at: http://www.ooskanews.com/daily-water-briefing/chinese-coal-mining-threatens-zimbabwes-zambezi-water-project_24500

BACK TO TOP

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❖ Tibet charting 44 rivers for water management

LHASA, Sept. 26 (Xinhua) -- Southwest China's Tibet Autonomous Region will compile a comprehensive set of data on each of its 44 rivers within two to three years for efficient water resource management, local authorities told Xinhua on Wednesday.

The "basin-planning" project will cover the major waterways of the Yarlung Zangbo River, Jinsha River, Lancang River and Nujiang River, according to the regional water resources department.

The total investment is expected to reach 160 million yuan (about 25.39 million U.S. dollars).

Tibet has more water resources than any other Chinese province or region, with over 500 billion cubic meters and the country's highest per capita availability of water.

It is also the source of several important rivers flowing through China and other Asian countries.

The project targets solving water resource management issues in the region, which has suffered uneven distribution of water resources as well as regional and seasonal water shortages in the past.

In the 2011-2015 period, China plans to invest 11.61 billion yuan in Tibet's water conservancy facilities to control geological disasters, build small- and medium-sized hydropower stations and ensure drinking water safety.

"Tibet charting 44 rivers for water management", 26/09/2012, online at: http://news.xinhuanet.com/english/china/2012-09/26/c_131875092.htm?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=cb2cb07e46-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

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❖ Water woes increase in Yemen

The country could soon hold the distinction of being one of the hardest places in the world to get a glass of water

During Yemen's rainy season, which stretches from August to October, the Silah, the cobbled road that intersects the capital Sanaa's ancient Old City, often floods becoming, for a few brief hours, a fast-running river. Over the years, the road has been gradually deepened, with steps built up the side and bridges spanning its width so that the rest of the area does not overflow with water from the surrounding mountains.

At such times it is hard for Sanaanis, the residents of the capital, to countenance the idea that their city is rapidly running out of water. But this may happen sooner rather than later: Sanaa province's water aquifers are being exhausted by rapid population growth, demand for the qat leaf and the growing threat of climate change.

"Within 10 to 15 years, Yemen should either pump additional water from outside into Sana'a basin or move the people to other basins."

Although the country is probably best known abroad for the uprising that unseated former president Ali Abdullah Saleh in 2011, and as a haven for Al Qaida, it could soon hold the distinction of being one of the hardest places in the world to get a glass of water. In 2011, it looked like social order in Sanaa was on the verge of collapsing. But regardless of politics, it could soon become a ghost town — a tourist attraction centred on the Old City as the real estate developments that sprouted up around the city's borders before 2011 are left to rot.

In a 2010 report commissioned by the Yemeni government, analysts at the United States' consultancy McKinsey forecast that if water use in the Sanaa basin was not controlled, the area could completely run out of water by about 2020.

"Sanaa will almost certainly face a severe water crisis in the coming years," they wrote, "and might even run out of water in the coming decade." If this were allowed to happen, the analysts reckoned,

the implications would be dire: "Scarcity of water resources can have staggering consequences on health, property, population migration and ultimately the very fabric of society."

Sanaanis already know what it feels like to run out of water. In 2011, protesters took to the streets across the country, to often brutal and murderous response from troops loyal to Saleh, and fighting broke out in Sanaa between the Republican Guard, run by Saleh's son, Ahmad Ali, and tribal militiamen associated with his rival, Hamed Al Ahmar.

The economy came to a grinding halt. Just as importantly, tribesmen in the southern Marib province blew up a key pipeline connecting the area with the port of Ras Issa in the south, the main source of domestic fuel supplies. Most potable water in Yemen is produced from a series of deep underground aquifers using electric and diesel-powered pumps. Some of these pumps are run by the government, but many more are run by private companies, most of them unlicensed and unregulated. Because of this, it is nigh on impossible to control the volume of water produced.

By some (conservative) estimates, about 250 million cubic metres of water are produced from the Sanaa basin every year, 80 per cent of which is nonrenewable. In recent years, the businessmen who produce the water have had to drill ever-deeper wells and use increasingly powerful pumps to get the region's dwindling water reserves out of the ground.

When the oil pipeline was cut off, the price for black market diesel shot up, and with it the price of water. Electricity was cut off across the country. Government water supply — which is erratic at best, and only covers about 60 per cent of urban homes and (at most) 40 per cent of rural households — dried up completely. The price of water on the black market can run up to YR5,000 (Dh85) a truck but peaked at YR12,000 in 2011. Businesses were forced to shut down across the country. Factories couldn't get fuel so their owners laid off workers in the hundreds. Constant blackouts made doing business nearly impossible. With growing numbers of people out of work and prices for food and water rapidly increasing, it became harder and harder for average Yemenis to make ends meet, particularly the 10 million plus people living on $2 (Dh7.3) a day or less. Abdullah, a lifelong resident of Sanaa's Old City, finds thinking back to 2011 painful. It was, he says, "the nightmare of my life." During the darkest days of the crisis, he and some of his wealthier neighbours paid for a truck to come and deliver water to the Al Alami quarter of the Old City where he lives. At first, a

handful of people turned up. But as word spread, the queue grew into the hundreds, pushing and shoving to get to the truck.

Fights broke out between neighbours who previously had never exchanged a cross word in their lives. And then the truck ran out of water. "It was the worst day of my life," he says. "After the crisis, my mother told me, Abdullah, we are fine now. But if we don't have fuel, and if we don't have electricity, then we don't have water. I think, where will we be in five, in ten years' time?"

Sanaanis have long been aware that something is not quite right with their water supply. Every quarter of the Old City has its own walled garden, owned by the state and rented to local residents at a nominal fee. Local families tend to the gardens on behalf of their neighbours, distributing the fruit and vegetables they produce on the basis of need.

In the past, each garden had its own well, attached to the local mosque, which also serviced the local community, while most crops were largely rain-fed. Until a new sewage system was built in the 1980s, wastewater from the mosques and houses was also used to irrigate the crops.

When he was a child, Abdullah's mother used to take him to the Al Alami garden in the afternoons.

Today, he surveys an expanse of cracked earth walled off from the bustle of the outside world. "We used to have a lot of fruit and vegetables, but not any more," he says. "They planted cactuses, but they didn't take. Now the family that looks after the garden has started building houses. This was all green; there was no earth like this. I loved to come here with my mother in the afternoons. Who would come here now?"

He points to the Al Alami well, one of the oldest and biggest in the city. It dried up when he was too young understand its importance. The water, maybe 30 metres under ground, had been used up completely. Now, the garden is irrigated using water from new diesel pumps, which draw water from wells drilled hundreds of metres underground. Most of the water is now fed to a set of taps built along the side of the local mosque, from which locals who can't afford trucked supplies collect water most mornings.

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Bernd Schoenewald, a water expert at KfW, a German development bank, who works with Yemeni technocrats on water issues, says that there are two scenarios for Sanaa over the coming decade.

"The depletion is obvious," he says. "Water pumps have to go deeper and deeper, wells are getting less productive and the Yemeni government is well aware of it. Different studies have tried to come up with short and medium term solutions such as reducing irrigation. However, in the long run, 10 to 15 years from now, there are only two options: getting additional water from outside into Sanaa basin, either transferring water from other basins or pumping desalinated water from the Red Sea coast to Sanaa; or moving people from Sanaa to other basins which would result effectively in moving the capital city."

The government needs billions of dollars to make the first option work — in 2010, the McKinsey analysts reckoned that simply maintaining basic water supplies in Sanaa would cost between $9 billion and 10 billion over 20 years. However, the second option — mass migration — may well occur of its own accord, Schoenewald says. "It would be a natural consequence of inactivity."

Sanaanis do not have a monopoly on suffering. Hodeidah province is one of the poorest parts of Yemen, and according to the United Nations Children's Fund (Unicef) acute child malnutrition there is as bad as in Somalia and Afghanistan.

Once one of the greenest parts of the country, it is drying up after a decade of poor rainfall and rising water prices. In late February, Yahya arrived early at a school building in the Mansouria district of Hodeidah to collect a $50 payment from the British charity Oxfam. It wasn't enough to keep his extended family of 72 going, he said, but was a help. About six miles from the school, Yahya's home is surrounded by emaciated earth which he says was once fertile land. A neighbouring farm, which can afford the diesel for a water pump, stands out on the horizon, an oasis of green in the middle of what resembles an arid desert.

Yahya, who is about 90 years old, says that when Ebrahim Al Hamdi was president he grew watermelons here. "It rained; it was the best time of my life. I was a big farmer," he says. Al Hamdi was assassinated in 1977. In the cushioned mafraj, or meeting room, of his spacious home in the Hadda district of Sanaa,

Mohammad Al Iryani pauses for thought. He is trying to explain how it came to this. Al Iryani, Yemen's ambassador to Germany in 2011, was sacked after publicly criticising the Saleh regime's brutal crackdown on protesters. He is now out of work and considering a return to the development sector. A water resource engineer, he was part of the team that drafted Yemen's first water laws in the 1990s and was appointed the country's first water minister in 2002.

Al Iryani partly blames the introduction of modern drilling techniques and diesel pumps for the growing scarcity of water in Yemen (Schoenenwald describes it as a "curse for Yemeni water resources"), which arrived shortly after oil was discovered in the country. "The main reason is the uncontrolled use of technology, drilling wells, installing water pumps and not having any control over the quantity being pumped out," he explains. "Yemeni farmers are, by their culture, rain-fed farmers, and in the best case they had stream water or streams, and they used to cherish water very highly. The new technology made people think there was a sea under the ground. Pump as much as you can and there will be no limit to the water."

The situation is exacerbated by a lack of regulation and huge government fuel subsidies, which make producing water using pumps relatively cheap, Schoenewald says. If the subsidies weren't in place, people would not be able to turn as much of a profit from irrigating crops, which accounts for 90 per cent of all water use in Yemen. In the long term, he says, farming needs to become more efficient.

Even then, the most profitable cash crop for Yemeni farmers would be qat, a mildly narcotic leaf chewed at social meetings in mafrajes such as Al Iryani's, as it has been for decades. Qat brings with it many other social issues ("traditionally, only wealthier Yemenis chew qat at weekends, today about half of the population is chewing daily," Schoenewald says), but it also accounts for about 40 to 50 per cent of the water used in agriculture, a huge amount for something with no nutritional or social benefits.

"The willingness of qat farmers to pay for water is the highest among the farmers because of the return, which is very high," Al Iryani says, citing revenue of about $8,000 per hectare for qat farmers, higher than any other crop.

Qat only grows in mountainous areas, so is mainly farmed in the country's northern highlands, including Sanaa province. Efforts have been made to curb the production of qat and to improve the efficiency of farming in Yemen, and in 2011, after a conference on water, the Saleh government signed the "Sanaa declaration", pledging to use "efficiently every single drop of water" resource development and management.

But the damage has already been done. "Using water more efficiently would help in the short to medium term but the high population growth means that the demand will inevitably rise," Schoenewald says. Sooner or later Sanaa will run out of water.

Al Iryani agrees, but points out that neighbouring Saudi Arabia, with a more or less identical population size and miniscule water resources, has been able to meet its people's needs.

But Saudi Arabia is far richer in another resource — oil — and can afford to desalinate seawater. It has also been able to build an economy that does not depend on water-intensive activities such as farming (in fact, Riyadh is overseeing a gradual phasing out of domestic wheat production). The real issue, Al Iryani says, is one of development. "[The problem] is the failure of our social and economic development to really diversify and to bring people into new economic activities that are less water dependent," he says.

Yet it is clear that Saleh's successor, Abed Rabbo Mansour Hadi, and the coalition government headed by Prime Minister Mohammad Basindwah are at present in no position to focus on development issues as they deal with a once again deteriorating security situation. That will need to change sooner rather than later.

"Water woes increase in Yemen", 27/09/2012, online at: http://gulfnews.com/about-gulf-news/al-nisr-portfolio/weekend-review/water-woes-increase-in-yemen-1.1078241

BACK TO TOP

❖ CWC's Arabian Water and Power Forum concludes on high note

The CWC Group's Arabian Water & Power Forum 'AWPF' concluded on 'September 25 2012' in Dubai at the Atlantis, The Palm Hotel on Dubai's Palm Jumeirah. The event was held under the Patronage of HH Sheikh Mohammed Bin Maktoum Bin Juma Al Maktoum, and partnered with the UAE Ministry of Environment and Water, DEWA and DSCE.

The second day of the Forum started with a session titled: 'IPP and IWPP Case Study Panel: Analysing the successes, challenges and benefits'.

The session was moderated by Nick Bahr, Principal, Booz, Allen, Hamilton and welcomed speakers including Rohit Gokhale, Director, Acquisitions and Project Finance, ACWA Power; Tauseef Farooqi, Commercial Director, Taweelah Asia Power Company 'TAPCO',UAE ; Jean Rappe, Executive Vice President of Business Development, IPR - GDF SUEZ Middle East, Turkey & Africa ; and Bas van Vossen, Manager Intake & Outfalls Market Team, Deltares.

The session focussed on the most successful IPP and IWPP projects to date and evaluated recent changes in the market to stimulate private investment. It also showcased the latest technologies employed.

The second session of the day welcomed Dr Kareem W Hassan, Former Iraq Minister of Electricity, Iraq and Dr Mustafa Al-Jarrah, Former DG Petrochemicals, Iraq Ministry of Industry, Iraq. The speakers highlighted the outlining developments within Iraq's Electricity Master Plan, and the financing and implementation strategies that should be followed to achieve required power levels.

They also reviewed the implementation schedule of Iraqi power projects and defined the current challenges that face power distribution and transmission systems' ROI's.

The noon session was moderated by Hatem Samman, Director & lead Economist, Booz & Co, and titled 'Ensuring fuel diversification: Defining a viable role for renewable energy'. Speaking during this session was Mohammed Atif, Director, DNV KEMA Middle East.

The session assessed the possibilities offered by nuclear, wind, geothermal and solar in the region as a clean, sustainable source of energy, as well as developing the required level of expertise for the advancement of a renewables market, and the impact of renewables integration upon grid stability.

The sessions continued after lunch with a focus on Nuclear energy, Solar power, and the enhancement of power grid systems. The Nuclear Forum was moderated by Christer Viktorsson, Deputy Director General for Operations, Federal Authority for Nuclear Regulation, UAE.

Speakers included Gauri Singh, Director of Knowledge Management & Technology Cooperation, IRENA and Michael Waite, EMEA Business Development, Westinghouse Nuclear Power Plants.

The Solar Spotlight Forum session was moderated by Mohammed Atif, Director, DNV KEMA Middle East and witnessed the participation of Ramesh Trikkadi, Renewables Specialist, ABB, Dr Hamda Ali Al-Thani, Director, NEWRC, ADWEA, UAE, and Bader Al Lamki, Director of Clean Energy, Masdar.

The session highlighted topics including investment criteria and emerging technologies, latest progress in solar pilot projects from across the region, advancements in solar desalination projects, and cutting-edge solutions within the CSP and PV markets.

The final session of the day discussed the enhancement of power grid system reliability, quality and security of supply. Mark Preece, Director, Abu Dhabi Electricity Network, Regulation & Supervision Bureau,UAE spoke during this session and discussed upgrading the power sector efficiency through improvement of power reliability and quality, maximising network grid efficiency to minimise losses, and exploring the role of regulations and policies in increasing network efficiency. The session was moderated by Frank Ackland, Region GM: Middle East & Africa, GE Energy.

The Forum awarded companies and professionals who have demonstrated exceptional talent and innovation through work on sustainable power and water projects. The Arabian Water & Power Forum Awards for Innovation in Sustainability was held on the evening of Day 1 where Aqualia, National Water Company - Saudi Arabia, Parsons, PTL Solar, Prana Sustainable Water and Dow Water & Process Solutions were all shortlisted.

The Award, presented by DEWA, was won by Dow Water & Process Solutions, for bringing together the elements of science and the human element to create sustainable solutions.

The Arabian Water & Power Forum was organized by The CWC Group, a leading events company focused on energy and infrastructure issues. The event was attended by H.E. Dr Rashid Ahmed Bin Fahad, the UAE's Minister for Environment & Water. Arabian Water & Power Forum was organised in partnership with UAEMinistry of Environment, Supreme Council of Energy, and & Dubai Electricity and Water Authority.

"CWC's Arabian Water and Power Forum concludes on high note", 25/09/2012, online at:
http://www.ameinfo.com/cwcs-arabian-water-power-forum-concludes-312811

BACK TO TOP

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❖ Uzbekistan to lose $600m a year due to Rogun Dam

Diloram Abdullaeva - Future water shortage due to construction of Rogun hydropower station in Tajikistan may cost Uzbekistan over $600 million annually in losses from agriculture. A new research of the US scholars on impact of Rogun project to agriculture sector of Uzbekistan said.

The experts, Shokhrukh-Mirzo Jalilov of the New Mexico State University and Tom M. DeSutter and Jay Leitch of North Dakota State University published said article.

The scholars said that water shortage will result in decrease of GDP of Uzbekistan by 2pc and some 300,000 people will lose their jobs.

The experts rates two scenarios – worse and more likely case, when Rogun power station will be filled in and will work in full regime.

They noted that 12.4 years will be required to fill Rogun water reservoir. This period will be difficult as part of Amudarya will be directed to filling reservoir. The main impact will be when Rogun reservoir is in full operation mode accumulating water in summer and releasing water in winter, which differs from the flow regime needed by downstream irrigated agriculture.

With Rogun hydropower station operating in full electricity generation mode in winter, the Amudarya River flow entering Uzbekistan in the summer is predicted to decrease by 18pc and to increase by 54pc in winter. This suggests that: one, during May to September (irrigation period), Uzbekistan will have a shortage of water; and two, from September to May, Uzbekistan will experience water abundance, which may lead to flooding.

This scenario is clearly a no-win option for the Uzbekistan economy as the country would have to remove 506,000 hectares of land (about 11pc of the country's irrigated agricultural land area) (FAO, 1997) from agricultural production, which means 336,000 people may lose their jobs.

As a result, Uzbekistan's GDP would decrease by 2.2pc, government revenues decreasing by 6.9pc, and economic growth would likely decline, the US researchers said.

The "more likely case" scenario assumes that Uzbekistan will undertake reforms in agricultural water use, particularly in irrigation practices, and adjust irrigation requirements to fit potential water shortages. This scenario would allow Uzbekistan time to adjust agricultural water consumption by 15pc over 12 years of Rogun reservoir filling, reducing the negative effects of changed water flows. This scenario also assumes an increase in water use efficiency in irrigated agriculture. Generally, a 15pc reduction in water use would reduce negative impacts by 40pc, meaning Uzbekistan will have to withdraw only 314,000 hectares of irrigated land compared to the 506,000 hectares if nothing is done. Moreover that reduction would reduce the number of unemployed to 208,000; the country's GDP by 1.4pc; and the revenue part of the budget by 4.3pc. While this scenario also has negative results, the impacts are reduced with adequate planning.

US scholars said that Uzbekistan's agriculture sector and economy will be damaged by Rogun project. They said that the Amudarya River may have increased flow during winter, which may lead to flooding downstream countries.

Most problems related to worsening of the environment are cross-border in nature, which, in turn, stipulates the need to formulate and implement independent and balanced environmental policy of cooperation in the protection of the environment on regional and global levels.

Thorough focus is required for resolution of the problems caused by the implications of the environmental disasters - desiccation of the Aral Sea, which affected the lives of dozens of millions of people living in the Aral Sea basin.

Water is a critical resource for Central Asian countries. For Uzbekistan with about 30 million inhabitants, water resources are the backbone of food security.Water supply of irrigated lands in Uzbekistan is still dependent on water policies of neighboring upstream countries, whose actions lead to the changes in the natural flow of the major rivers – Amudarya and Syrdarya, in the way adverse for the agriculture.

Water resources are very important for sustainable development, including food security, healthcare, agriculture, and rural development, thus the right for safe and clean drinking water and sanitation, the

importance of reasonable and fair use of trans-boundary water resources based on the norms and principles of international water laws must be emphasised.

Taking into account the opinion of international organisations and structures, and on the basis of international law, the World Bank decided in 2010 to conduct an independent international expertise of the project of construction of Rogun hydro-power station and provided $200 million for its implementation. A number of European firms from France, Switzerland and other countries are involved in this studies and its completion is expected at the first quarter of 2013.

In its turn, the government of Tajikistan committed in 2010, not to carry out construction works on Rogun hydro-power station' site until completion of independent technical, economic, social and environmental impact assessment. At the same time Tajikistan pledged to International Monetary Fund to stop campaign on forcible fund-raising from the population to finance the project of construction of Rogun hydro-power station.

However, regardless of its commitments to the World Bank and IMF, the Tajik side is continuing to implement its obsession unilaterally, which is considered as gross violation of the achieved agreements to halt construction works at Rogun hydro-power station.

Numerous facts indicate that Tajikistan is tacitly carrying out behind closed doors a wide range of works on construction site. At the present time massive construction works are being carried out on the site of Rogun HPP, its constructional drainage tunnels, turbine hall, quarries and other facilities of the station.

Also, the Tajik authorities are vigorously employing foreign contractors (from Russia, Ukraine and other countries) to carry out works on designing the Rogun HPP facilities.

Along with allocation of significant budget funds for the last several years (more than $200 million annually), in violation of its obligations before the IMF, Tajikistan has lately enhanced the compulsory sale of Rogun shares to the population despite harsh financial conditions of majority of people in the country.

Distorting the real situation, misleading and hiding the real works from the world community, the Tajik side has been trying to win time and finish the started works and cross the line of no return. But what if after the completion of assessment, the World Bank will recommend altering the initial design or relocating the Rogun HPP. No doubt that such mega construction should not be built in haste in order to prevent ecological catastrophes.

"Uzbekistan to lose $600m a year due to Rogun Dam", 24/09/2012, online at: http://www.nation.com.pk/pakistan-news-newspaper-daily-english-online/business/24-Sep-2012/uzbekistan-to-lose-600m-a-year-due-to-rogun-dam

BACK TO TOP

❖ Bulgaria to Start Building Major Southern Dam in 2013

The construction of the Luda Yana **dam** in the southern Bulgarian municipality of **Pazardzhik** is to start in 2013.

The project is to be completed in 38 months and its cost has been estimated at EUR 1,392 M, VAT included, including the contractor's control over the construction of the **water reservoir**.

According to a media statement of the **Ministry of Regional Development and Public Works**, the Luda Yana **dam** will contain 19.94 million cubic meters of water.

The project will be built with funding from the **World Bank** loan.

Dobromir Simidchiev, Deputy Minister of Regional Development and Public Works, signed a contract Wednesday with Greek engineering **consortium** G.Karavokiris-Edafos for site exploration, designing of the **dam** and preparation of the tender documents for the construction of the facility and an accompanying drinking water treatment plant.

The **dam** is to supply water to over 45 000 people in the region of **Panagyurishte**.

The southern Bulgarian region currently relies on the Maritsa highway pipe which is over 30 years old and is very run down.

Regional Development Minister Lilyana Pavlova invited Austrian companies to participate in tenders for the construction of dams and water supply and sewerage infrastructure in Bulgaria during an Austrian-Bulgarian business forum in Vienna.

Pavlova, as cited by Bulgarian Standard daily, explained that the **Ministry of Regional Development and Public Works** was preparing the tenders for the construction of three dams near Plovdiv, Neykovstsi and Luda Yana.

She made clear that the three projects worth a total of EUR 500 M would be built using a loan from the **World Bank**.

"Bulgaria to Start Building Major Southern Dam in 2013", 26/09/2012, online at:
http://www.novinite.com/view_news.php?id=143576

BACK TO TOP

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❖ CLIMATE CHANGE: New urgency to rethink dam projects

JOHANNESBURG, 26 September 2012 (IRIN) - The massive hydropower dams built on the Zambezi River, the largest river system in Southern Africa, not only supply power to major economies in the region but also help mitigate annual floods. But as electricity demands grow and rising global temperatures affect rainfall patterns, the dams will be unable to meet energy needs or control floods, warns a new study.

The study, A Risky Climate for Southern African Hydro, was conducted for the NGO, International Rivers by Richard Beilfuss, a hydrologist and environmentalist who teaches at the University of Wisconsin-Madison College of Engineering in the US and the University of Eduardo Mondlane in Mozambique. Beilfuss says the region - and the rest of Africa as well - must reconsider the construction of massive hydropower dams and rethink their use as a flood management tool, especially as floods are expected to worsen with climate change.

"Large dams are being built or proposed, typically without analysis of the risks from hydrological variability that are already a hallmark of African weather patterns, much less the medium- and long-term impacts expected from climate change," Beilfuss noted in the report. "Likewise, ecosystem services are rarely given much weight in the energy-planning process."

Extreme floods expected

The report uses the Zambezi basin as a case study to inform governments planning to establish new hydropower plants.

Assessing climate change impact studies conducted on the Zambezi River Basin, Beilfuss said the Zambezi is expected to experience "drier and more prolonged drought periods". Over the next century, rainfall is expected to decrease by between 10 and 15 percent over the basin, according to several studies cited by the Intergovernmental Panel on Climate Change. There will be a significant reduction in the amount of water flowing through the river system, affecting all eight countries it passes through. The water that feeds the river is expected to decrease by between 26 percent and 40

percent in another four decades, the study observed.

But when the rains do fall, they will be more intense, triggering more extreme floods.

No major dams are currently under construction on the Zambezi, Beilfuss told IRIN, but two large dams have been proposed: Batoka Dam on the Middle Zambezi and Mphanda Nkuwa Dam on the Lower Zambezi. “Batoka is politically and financially complex because it must be a joint project between Zambia and Zimbabwe,” Beilfus said. “Mphanda is entirely within Mozambique and is in very advanced stages of preparation with a timeline for construction."

There has been considerable opposition to Mphanda Nkuwa, which environmentalists warn could displace several thousand people. Much of the anxiety over its construction is fuelled by the experience of the Cahora Bassa Dam in Mozambique, which has been widely cited as an environmental catastrophe since its construction in the early 1970s by the former Portuguese colonial government.

"None of these projects, current or proposed, has seriously incorporated considerations of climate change into project design or operation," noted Beilfuss.

Guido Van Langenhove, who heads Namibia’s Hydrological Services Department, agreed with the concerns raised by Beilfuss and said, "Our dams cannot handle one-in-a-hundred-year [extreme] flood events. They cannot handle the sheer volume of water that might be involved. We have to even consider how to fortify our existing structures."

Disasters

Recent floods and their impact on the existing dams offer a possible view of future disasters. In 2007, heavy rains over the Zambezi threatened the dam structure, forcing the authorities to open the sluice gates of the Cahora Bassa Dam, affecting up to half a million people [some displaced, but others had crops destroyed etc].

> **"Large dams are being built or proposed, typically without analysis of the risks from hydrological variability that are already a hallmark of African weather patterns, much less the medium- and long-term impacts expected from climate change"**

In a case study on the floods and cyclones that struck Mozambique that year, the Overseas Development Institute warned that the two biggest dams on the Zambezi, Cahora Bassa and Zambia's Kariba, "do not have the spill-way capacity to cope with the very large floods that occur on the river every five to 10 years. At best, the dam operators can slow down the sudden rise in water levels by phasing the spillage of water over a period of a few days, which gives the people living downstream a little more time to evacuate their homes."

Hydrologists in Southern Africa have been calling for a reconsideration of dam planning for years. In 2001, Bryan Davies, an ecologist and a Zambezi river expert, conducted an assessment of the Cahora Bassa and told IRIN, "one of these days there will be a cyclonic event" that the full dams would be unable to cope with.

Part of the problem is that the Zambezi River Basin in Mozambique is a naturally occurring flood plain. In the past, human habitation patterns took flooding into account. When the waters subsided, people would move in to plant in the rich soils, and shift to higher ground when the floods returned, but since the construction of Cahora Bassa, communities have settled much closer to the river, making them more vulnerable, Davies warned.

Van Langenhove, the Namibian official, said people mistakenly believe that the construction of a dam means they will be safe from flooding, and so tend to settle close to dams. "Should an extreme event take place, there would be a huge disaster," he said.

Finding alternatives

Beilfuss suggested using hydropower dams to produce electricity only and not to store flood water. "Many hydropower projects are justified on the basis of providing flood control in addition to energy generation. However, allowing for flood storage means the reservoir must be drawn down to provide flood capture space at the very time that this water is most needed to supply energy".

The vast natural flood plains of the Zambezi should be allowed to flood while ensuring people do not settle in those areas, he said. "This will allow for regeneration of the floodplains systems for wildlife and fisheries and agriculture, and also will reduce the impact of extreme floods - which already occur in the basin as it is - on people and property.

"By removing people from flood-prone areas - in accordance with Mozambique and Zambia law, by the way - it becomes especially important to restore modest annual high flows in the basin so that people can secure their livelihoods from fisheries and agriculture," he told IRIN by email.

Beilfuss also suggested that countries in the region improve existing hydropower capacity rather than investing in new infrastructure. "Adding new or more efficient turbines is almost always much lower-impact than building new dams." Countries should also consider alternative sources of energy generation.

In 2011, the eight countries through which the Zambezi flows set up the Zambezi Watercourse Commission (ZAMCOM) to manage the river. Though still a new body, "ZAMCOM is a very important step forward for the integrated development and water conservation in the Zambezi River Basin," Beifluss said. "In particular, the ZAMCOM structure offers the potential to strategically address river development, including hydropower, on a basin-wide level rather than a country-by-country level."

Américo José Ubisse, secretary general of the Mozambique Red Cross, has been involved in flood relief operations in Mozambique for many years. He told IRIN in an email that, in the past, issues related to the "environment, climate change and their future humanitarian consequences were deeply undermined... The added value that is coming with these scientific studies must been taken into consideration. Undermining [scientific studies]... can be a big mistake, not only for the future of economic investment but also for the future of humanitarian sustainability."

"CLIMATE CHANGE: New urgency to rethink dam projects", 26/09/2012, online at:
http://www.irinnews.org/Report/96393/CLIMATE-CHANGE-New-urgency-to-rethink-dam-projects

BACK TO TOP

❖ It's about justice: Why all New Zealanders should support Maori claims to water

Imagine you are a homeowner with a few spare rooms in your house. One day you come home from work, and a couple of people have moved into these rooms without your knowledge or consent. After trying to assert your rights to the house, you call the police. The police won't help; they're too busy to come to your place and flog you off to the courts to file a lawsuit. You can't afford a lawyer so you decide the people who have moved in can stay as long as they take care of the place and pay a bit for the upkeep and maintenance. Not only do they refuse, but they push you out of the house to live in a tent on the yard. After a while, the house is in terrible shape, so they decide to sell the house and keep the profits. They do all of this without your knowledge or consent.

We live in a world of property rights; they form one of the central pillars of our legal system. If something belongs to you, anyone who takes it from you is committing theft. Anyone who attempts to sell it without your consent is committing fraud, and anyone receiving that property is guilty of receiving stolen goods. While this may seem a simplistic way of looking at the issue of asset sales, it perfectly encapsulates what is happening. The government is attempting to sell something it doesn't own and keep the profits.

Three of the four companies slated for sale, Mighty River Power, Meridian and Genesis (the fourth is Solid Energy that operates coal mines) make power in full or in part through hydroelectricity or thermal heat (the steam coming through the rocks in places like Rotorua and Taupo). The primary ingredient in the operation of these power plants is water. Without the water to turn the turbines, there is no power; there are no assets.

The position of this government and previous ones is that 'no one owns the water.' This position ascribes a zero dollar value to water. It means that power companies pay nothing – not a cent – for the water that flows through their turbines. Water of course can be used and re-used. But altering the course of a river, building large dams and creating reservoirs does significantly change and in some respects limit the availability of that water for other purposes. It also impacts significantly on the wider eco-system of which the river is a part.

The issue of freshwater 'ownership' is really about the ability to control how that water is used, and for whose benefit it is used. For a long time prior to 1840, Maori had exclusive control over

waterways; in other words, they had the ability to decide how water was used, and for whose benefit. Since 1840, the Crown has largely acted as if they are the only ones with the right to decide how the water is used, and for whose benefit. Water for the nation's electricity needs, for example, has priority, and other commercial and non-commercial uses are secondary. The Crown has decided this unilaterally; and for the most part, Maori have been forced to accept that arrangement while continuing to assert their rights.

The current plan to sell-off state assets, however, changes all of that and makes action urgent. Maori are not happy to allow control of water to be sold to multinational corporations for private profit. Maori are not the ones interested in profiting; they are not the ones who are interested in turning water into a commodity to be bought and sold to the highest bidder:

The claimants do not seek to benefit from non-commercial uses of the water bodies in which they have these proprietary rights. Nor do they seek a commercial benefit from uses that do not generate an income stream. What they do seek is recognition of their property rights, payment for the commercial use of water in which they have property rights (particularly its use for electricity generation), and enhanced authority and control in how their taonga are used."
From the Letter of transmittal to the Government from the Waitangi Tribunal, 21 August 2012

The term 'ownership' has unfortunately allowed misconceptions and fear-mongering to flourish. Yet it is patently clear that the drive to privatise the control of water lies at the heart of the Crown's agenda, not that of Maoridom. In essence, Maori are fighting the Crown to stop them selling off of the control of water. In acting in their own interests, they are actually acting for the good of ordinary New Zealanders against the State that seeks to put water under the control of international investors, capitalists and the 'free-market'.

The sell-off of state assets is actually a sell-off of the control of water. In other places in the world, when water rights have been handed over to multinational corporations, the damaging consequences have become obvious almost immediately. Take for example the privatisation of water supplies in the Bolivian city of Cochabamba. There, water services were contracted out to Bechtel, a US-based multinational with links to Dick Cheney and Iraq war profiteering. Bechtel got the contract as a result of the World Bank's aggressive pressure campaign on Bolivia to privatise state enterprises. Within

the first month of service, prices rose up to 90%: this in a country where over 60% of the population lives on less than $2/day. Bechtel sued Bolivia for $25 million for canceling the contract after widespread protests erupted.

If no one owns the water, then no one can sell it. The Crown's own agency, the Waitangi Tribunal, has said that Maori do 'own' some part of the water. If the Crown presses ahead and sells the power companies without Maori consent, they have committed theft and fraud. There is no way around it. If you support the legal concept of private property, then you must support the Maori case.

As importantly, the commodification of water on the scale engendered by the sell-off of power companies has profound implications for the country as a whole. Water is essential for life. If we want to ensure that we continue to have the water we need for life, then supporting Maori ownership of freshwater is not only a matter of justice, it is a no-brainer.

"It's about justice: Why all New Zealanders should support Maori claims to water", 26/09/2012,online at: http://www.scoop.co.nz/stories/HL1209/S00153/why-all-new-zealanders-should-support-maori-claims-to-water.htm

❖ Argentina seeks dam funding in China

Argentina's planning minister Julio De Vido visited Beijing Thursday to seek financing for a pair of hydroelectric dams in the southern province of Santa Cruz, the 21st Century Business Herald reported.

As a part of Argentina's "2020 Plan", the two dams will produce 1740 MW annually, increasing the country's electricity capacity by 6.5 percent.

Argentina's electricity capacity will reach 39005 MW in 2020, while the figure is 26627 now, according to the plan.

The government is going to open the bidding process for construction on Dec. 12 and expects construction to start during the first half of 2013, Mr. De Vido said.

While the dams will cost $1.2 billion investment in 66 months, Chinese large-scale construction enterprise still showed a big interest in them. The total investment could reach $5 billion, with 50 percent came from private capital. And the investor should provide at least 50 percent of the whole fund during the construction period.

From China, the minister will go to Russia for an Oct. 1 meeting with Russia's energy minister Alexander Novak.

"Argentina seeks dam funding in China", 28/09/2012, online at:
http://www.morningwhistle.com/html/2012/IPOs_Offerings_0928/214314.html

BACK TO TOP

❖ Why is Brazil the new America? Hint: water.

While the US farm belt is mining its groundwater, Brazil is expanding production and lowering the cost of raising food.

If you would like to get a firsthand peek at the bright future of Brazil, but you don't have $7,500 for a business-class fare to Rio de Janeiro, you can learn almost as much, while having less fun, by making your way to Henry County, Ill., just east of Moline.

Drive around and take a good look at the worst drought in half a century. Remind yourself as you look at the desiccated fields that the US Department of Agriculture (USDA) predicted a record corn crop for 2012.

It didn't turn out that way. Current best estimates are that the US corn crop will fall by one-sixth. As a consequence, the price of corn has risen by 60 percent to an all-time high. Meanwhile, this year's corn crop in Brazil is up 27 percent year-over-year. Brazil's farmers are growing rich as American farmers go broke.

The USDA's chronic optimism notwithstanding, as you look out over the brown fields of Henry County, many of which have already been harvested for low-value silage, you see the future of American farming. It is a little understood that in much of America's farm belt, water is in chronically scarce supply. In eight states, the Ogallala (or High Plains) fossil aquifer provides the irrigation required to prevent the return of John Steinbeck's 1930s Dust Bowl.

In other words, American agricultural output is supported by the hydrological equivalent of deficit spending. The Dust Bowl was not dampened by greater rainfall, but by the invention of more powerful pumps that could lift water from deep underground. The Ogallala is a wide but shallow aquifer that was formed in the last Ice Age and has been drained every year since the 1930s to a far greater degree than it can be recharged by natural rainfall.

What does this have to do with Brazil? As I spell out in my new book, "Brazil is the New America," Brazil is the world's superpower of water.

Half a lifetime ago, when I was in college, a shortfall in the US corn crop would have spelled disaster for Brazil. In those days, Brazil was a food importer. The Brazilians believed what all the temperate-centric agronomists told them – that tropical countries could not produce grains. But then something astonishing happened. Brazil transformed itself from a major agricultural importer into the world's largest exporter of five major crops. As the Frank Sinatra song underscored, it had long been known that "there is a lot of coffee in Brazil." What no one knew 35 years ago is that Brazil had the capacity to become the breadbasket of the world – even for what were once thought to be exclusively temperate climate crops.

While experts from the temperate zone were dismissing even the possibility that a tropical country could become a major agricultural power, the Brazilians created Embrapa, (Empresa Brasileira de Pesquisa Agropecuária), a technical firm associated with the Brazilian Ministry of Agriculture. Embrapa devised ways to turn Brazil's vast Cerrado savanna into a highly productive region. Among other things, they engineered a new breed of grass that greatly increased pasture yields, allowing Brazil to become within a few decades the world's largest producer of beef.

Embrapa also invented new tropical versions of temperate crops like soybeans and corn. The new Embrapa versions ripened faster in the tropical sun and were more resistant to pests. These short-cycle crops mature eight to 12 weeks faster than the original temperate versions, making it possible for Brazilian farmers to produce two crops a year rather than one as in most of the United States' grain belt Embrapa also helped pioneer "no-till" farming in which the soil is not plowed before sowing and the crop is not harvested at ground level. As of 2010, Brazilian farmers were using no till techniques for over 50 percent of their grain crops. By 2002, the overall average yield for soybeans in Brazil (2.6 metric tons/hectare) surpassed the average yield in the United States (2.4 tons/hectare or about 36 bushels per acre). More significantly, the cost of producing soybeans in Brazil fell to about $6.23 per 60 kilogram bag (one bushel equals 27.22 kilgrams) just 50 percent of the US level of $11 72.

By 2004, the United Nation's Food and Agricultural Organization (FAO) declared, "Brazilian farmers are practicing one of the most advanced and sustainable agricultural systems in the world."

Now US meat companies have turned to Brazil to buy corn for their feedlots, a first installment on what will undoubtedly be a major relationship in the future.

There was certainly plenty of scope for Brazil to expand production. According to the prominent Brazilian economist, Antônio Delfin Netto, over 90 percent of the increase in Brazilian agricultural output over the past three decades has been due to improvements in total factor productivity, with less than 10 percent attributable to increased use of land, labor, and capital. In other words, while farming just about everywhere else is experiencing falling returns, the returns to agriculture are rising in Brazil.

Brazil produces a quarter of the world's soybean exports on just 6 percent of the country's arable land. The UN estimates that Brazil has 400 million hectares of arable land, of which only 50 million are currently in production. In other words, Brazil has 865 million acres of unused arable land – more than twice as much unused arable land as the 382 million acres the US has in crop production, according to the USDA.

In a world of 7 billion people, most of whom live in regions that are already water-scarce or soon will be, Brazil is destined to become in the 21st century version of what the US was in the 20th century. Brazil is richly endowed with natural resources that are growing more valuable by the day.

"Why is Brazil the new America? Hint: water. ", 26/09/2012, online at: http://www.csmonitor.com/Environment/2012/0926/Why-is-Brazil-the-new-America-Hint-water?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=cb2cb07e46-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP