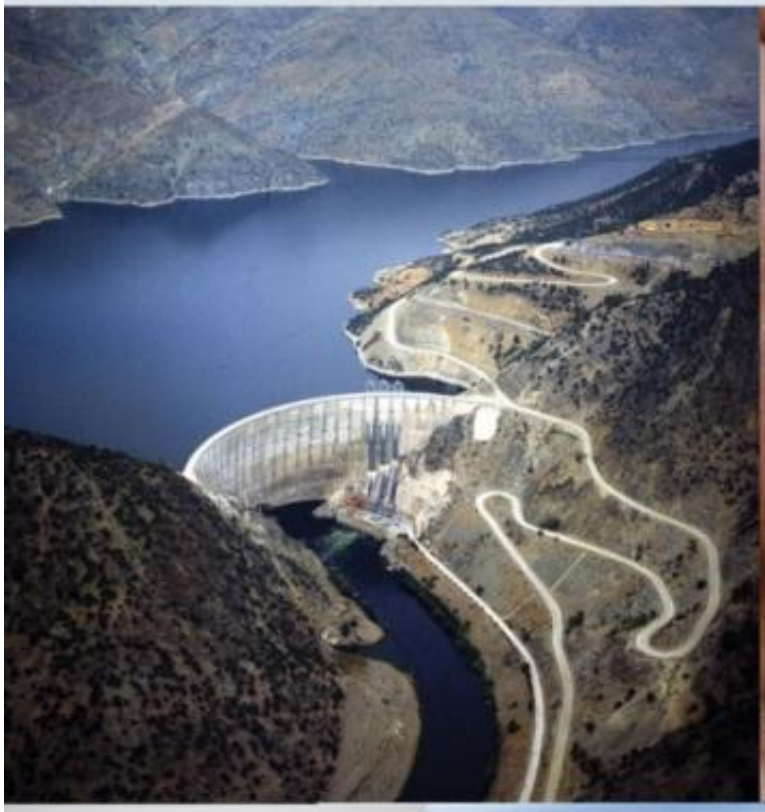


ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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





Issue 157

ORSAM WATER BULLETIN

02 December 2013 – 08 December 2013

- **Iran facing water crisis: energy minister**
- **Iranian Dam Projects Beginning of a Water War With Kurdistan**
- **UNDP issues report titled 'Water Governance in the Arab Region'**
- **Effective water management crucial for future of Arab world**
- **The high cost of Israel's water policies**
- **Gaza Need Not Be a Sewer**
- **SR500m water storage plan springs hope for Jeddawis**
- **Israeli forces demolish water wells and tents in the Jordan Valley**
- **Water independence — Key to a thriving future**
- **The war for water**
- **NWC outlines major water protection strategy**
- **SQU Studying Organic Compounds In Treated Water**
- **Nile Basin Countries Told To Focus Projects For Ordinary People**
- **Sudan's support to Ethiopian dam is economically motivated: Bashir**
- **Effective water management crucial for future of Arab world**
- **South Africa Needs Water Management to Avert Losses, OECD**
- **South Africa to Boost Warning Systems as Drought Cuts Corn**
- **Vietnam asks Laos to consult Mekong countries before building dam**
- **Nations unite against dam**
- **Shale and water industries pledge to "work together" to minimise the effect of fracking on water supplies**
- **The real price of good water**
- **An Explosive Mix: Gender and Hydropower**
- **Warsaw Climate Talks End with Foundation for a Global Agreement**
- **Modern Water's China Deals Buoy Forward-Osmosis Pioneer**

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

- **Pak cites water crisis, asks India to withdraw Siachen troops**
- **Peak Water: What Happens When the Wells Go Dry?**

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Iran facing water crisis: energy minister

TEHRAN – Energy Minister Hamid Chitchian says the water shortage in Iran has turned into crisis and it is showing itself across the country, the Mehr news agency reported on Friday.

"Today, the problem of water resources is not just limited to one province and generally it is showing itself as a crisis in the country," the energy minister said in a meeting with the MPs representing Fars Province, which is known as the breadbasket of Iran.

The minister said "old methods" such as building dams will not help to "get out" of this crisis and the focus must chiefly be on "water management".

Over the past 25 years Iran has succeeded to occupy the third place in the world in terms of dam building but now most countries in the world, including Iran, are facing serious water shortages, the minister explained.

He said 92 percent of the country's water resources are used in agricultural sector.

While the water reservoirs in rivers in Iran are just only about 46 billion cubic meters the dams in the country have an empty space of 68 billion cubic meters, the minister lamented.

"Iran facing water crisis: energy minister", 06/12/2013, online at: http://www.tehrantimes.com/economy-and-business/112605-iran-facing-water-crisis-energy-minister-

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Iranian Dam Projects Beginning of a Water War With Kurdistan

SULAIMANI, Kurdistan Region – Iran is completing construction of a major dam on its western border, which the Kurdistan Region next door says will have a huge impact on its own Darbandikhan storage facility and is the beginning of a water war by Iranian authorities.

As the Garan Dam, east of the Iranian city of Mariwan and built on the waters that flow into the Sirwan River in Iraqi Kurdistan, nears completion its dangers to the Kurdistan Region are becoming more evident.

Rahman Khani, director of the Darbandikhan dam, said that Iranian projects on the Sirwan River will have a considerable impact on the amount of water in Darbandikhan, where 70 percent of the flow comes from Iran.

"Several projects are under construction in eastern (Iranian) Kurdistan and some of them are completed. These will have an adverse impact not only on the amount of Darbandikhan water but also on areas further down, in particular the Hamrin Dam," Khani said.

Kurdish water experts believe that completion of the Iranian dam will have disastrous environmental impacts on the Kurdistan Region.

A close look by *Rudaw* at Iran's Garan Dam reveals it will reduce the amount of water flowing into Kurdistan Region. Some areas such as Kusai Hajij will become submerged, and tunnels built by the Iranians will change the flow and keep much of the water in Iran.

Khani said that according to the federal constitution, the Iraqi government has the right to follow up on international waters that are shared among Iraq, Iran, and Turkey.

"As far as we know, the Iraqi government and parliament have made some efforts, but not to the extent of placing pressure on them (Iranian authorities). They have even failed to get necessary information on the projects," he complained.

Experts say that, compared to last year, the level of Darbandikhan water has decreased by three meters. They say that once Iran completes all of its dam projects in the area, even if Darbandikhan does not dry out it will no longer have the capacity to meet demand from surrounding areas.

"Maybe Iran will not be able to completely block the flow of water into Darbandikhan, but during the water storage season we might face disastrous environmental consequences in the region," Khani said.

We can't have an exact assessment of the consequences because we don't have enough information on the dams that are built in Iran," he noted.

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

Akram Mohammed Anwar, director of Kurdistan Region dams, accused Iran of turning a deaf ear to Kurdish concerns.

"Iran does not listen. We have to pursue diplomatic ways to halt Iran's projects. Two years ago, an Iraqi delegation headed by the Iraqi minister of water resources visited Iran but the visit was not fruitful," Anwar said.

"Iranians ignore our concerns. Several times, Iraqi delegations have been told by Iranians that Iraq and the Kurdistan Region suffer from lack of water management not lack of water resources," he complained.

"Iranian Dam Projects Beginning of a Water War With Kurdistan", 03/12/2013, online at: http://rudaw.net/mobile/english/kurdistan/03122013

BACK TO TOP

❖ UNDP issues report titled 'Water Governance in the Arab Region'

The Middle East is an arid/semi-arid zone. The region receives only 2.1 percent of the world's average annual precipitation and contains 1.2 percent of annual renewable water resources. As can be seen from these figures, the quantity of renewable water resources is limited, and 65 percent of the region's surface water resources originate from external areas. The overexploitation and unsustainable use of renewable and non-renewable water resources increases the risk of water scarcity. In this sense, the Middle East is usually the first region mentioned in the scenario of future water wars or conflicts.

The United Nations Development Programme (UNDP) on Nov. 30, 2013 issued a report on managing water scarcity and securing the future for Arab countries: Mauritania, Iraq, Comoros, Sudan and South Sudan, Somalia, Lebanon, Morocco, Syria, Egypt, Oman, Tunisia, Djibouti, Algeria, Palestine, Jordan, Libya, Bahrain, Saudi Arabia, Yemen, Qatar, the United Arab Emirates and Kuwait. According to the report, the Arab region contains 23 major watersheds. These include the Nile, Euphrates-Tigris, Jordan, Orontes, Nahr Al Kebir and Senegal basins. Furthermore, the report states that the estimated total dam capacity of the Arab region is 363.27 cubic kilometers. There are four leading countries in terms of dam capacity, which are as follows: Egypt (168.2 cubic kilometers), Iraq (151.8 cubic kilometers), Syria (19.7 cubic kilometers) and Morocco (16.9 cubic kilometers).

Another major water resource of the region is groundwater. Fifty percent of total waterneed is met by groundwater, corresponding to 84 percent in the Arabian Peninsula. The 15,000 to 25,000-year-old fossil aquifers are not included in the hydrological cycle. Namely, they are not renewed by precipitation or by rivers, unlike other groundwater resources. Therefore, they are exhaustible resources and should be used on a sustainable basis. The quality of groundwater resources, which are in danger of depletion due to overexploitation, is threatened by agricultural, industrial and domestic use.

On the other hand, groundwater resources in the region are largely non-renewable, and the majority of water need in the Arabian Peninsula and the Maghreb region is met by groundwater resources. The

quality of groundwater resources, which are under risk due to overuse, is threatened by pollution from agricultural, industrial and domestic activities.

Another significant water resource in the Arab countries is desalination. The Arab region leads the world in desalination, with more than half of the world's desalination capacity. In the Arab countries 24 million cubic meters of water are desalinated every day. The highest desalination capacity is in the Gulf countries. Of the water supplied to cities in the Gulf countries, 55 percent comes from desalinated water. However, the desalination process requires a large amount of energy and capital. The cost of one delivered cubic meter of desalinated water, ranging from $1.50 to $4, has dropped to an average $0.50–$0.80 per cubic meter due to new technologies, especially the reverse osmosis technique.

The report also draws attention to the water-energy-food nexus which has been the theme of several conferences held in recent years. The concerns of the aforementioned countries in particular regarding food security have increased the pressure and competition for water resources in the region. Grain imports of the Arab countries have doubled since 1990 despite the fact that some 80 percent of water resources were used for agricultural production. The report suggests that to achieve national food security, governments should improve agricultural productivity, maximize water productivity and provide regional agricultural integration with water, land and financial resources. Today, more than half of the food consumed in the Arab region is imported. It is expected to rise to 64 percent in the next two decades.

The water scarcity that prevails in the region has promoted desalination as an alternative resource, and this situation affects energy consumption. It is asserted that the annual growth rate of energy consumption in the region is 3-4 percent, twice the world average. On the other hand, electricity generation is growing at a rate of 6-8 percent a year, three times the world average. This rapid growth is mainly caused by subsidized electricity rates all across the countries of the region, as well as growing population, long dry spells and rapid urbanization.

Considering changes in the climate conditions, population and urbanization, the report suggests that by 2025 the water supply in the Arab region will be only 15 percent of its 1960 level. But the pessimistic picture could change through the achievement of water security. According to the UNDP

report, the security of water resources, which are becoming more difficult to access with every day that passes, requires effective governance as well as good management principles and practices. It also depends on complex and rapidly changing social, economic, political and environmental circumstances. Furthermore, it should be stated that political will has a major role in providing effective governance and preparing a sound legal, institutional and economic infrastructure.

While population growth, rapid urbanization and climate change put more pressure on water resources in the Arab region, these factors also widen the gap between supply and demand. To meet the escalating water demand in the Middle East, water resources, both conventional (surface water and groundwater) and nonconventional (desalinated water, treated wastewater, rainwater harvesting, cloud seeding and irrigation drainage water), require efficient and sustainable management.

The key elements of good water governance are as follows: equity, transparency, accountability, environmental and economic sustainability, stakeholder participation and empowerment and responsiveness to socioeconomic development needs.

In addition, more than half of the conventional water resources of these countries are transboundary waters. Transboundary watercourses can cause problems for the region's water-related governance. Above all, these shared resources lack comprehensive international agreements regarding transboundary waters. Mostly the agreements are either bilateral or limited, or sometimes no agreement is signed at all. The importance of cooperation with riparian states outside the region in order to use these resources equitably is also highlighted by the report.

"UNDP issues report titled 'Water Governance in the Arab Region'", Tuğba Evrim Maden, 08/12/2013, online at: http://www.todayszaman.com/news-333384-undp-issues-report-titled-water-governance-in-the-arab-region.html

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Effective water management crucial for future of Arab world

There is a growing consensus throughout the Arab region that the Arab people are facing a new shift in their relationship with the natural world. If the last 70 years were the oil era, the coming years will certainly be characterized by how successfully we will benefit from one of the most important natural resources — water.

This week, the UNDP's Regional Bureau for Arab States (RBAS) will issue a new report on the future of water in the Arab region titled "Water Governance in the Arab Region: Managing Scarcity and Securing the Future." In brief, the report notes that the future will be determined by the ability of Arab countries to introduce radical enhancements to their water resources management. During the last decades, oil and gas wealth has helped achieve a high level of modernization, which included an unprecedented improvement in the Human Development Index (HDI) rankings in the Middle East. However, preserving the sustainability of the achieved advancement requires dealing with the issue of water as painstakingly and meticulously as we did with energy resources, or maybe even more. The Arab region may have the world's largest oil reserves, but at the same time, it has the lowest levels of water supply, the report affirms.

The report also affirms that water challenges facing the Arab region are an integral part of a wide range of issues that are of crucial importance nowadays, such as the decrease in agricultural production, youth unemployment and even civil unrest in the region. The majority of the difficult dynamics facing the Arab region is related, one way or the other, to the water issue.

Although the water issue poses a real challenge in all communities around the world, it holds in the Arab region a decisive importance whose deep implications are felt by everyone. Statistics and figures show that seven out of the world's 10 most water-stressed countries are in the Arab region. Globally, the average citizen has access to an amount of renewable potable water 16 times that available to the Arab citizen. In other words, the share of the Arab citizen does not exceed 6% of that of his global counterpart.

Furthermore, one-third of the water supply in Arab countries comes from rivers flowing from outside the region. In fact, the situation in the Arab region is bordering on a severe crisis. Some Arab countries have indeed run out of renewable potable water supplies, while other countries are expected to follow suit in the coming decades.

The water deficit, however, is only one part of the story. The report, drafted by a group of international and Arab water experts, explains that the tragedy lies in the way of dealing with this precious resource through approaches lacking future visions and proper planning. In many Arab countries, groundwater resources are exploited beyond their natural replenishment rates. In addition, the Arab region's most water-stressed countries register the highest water consumption rates. As a result, water levels — already low due to the dry climate — are slumping given the decisions taken as individuals and communities in regard to water use.

Demographic factors exacerbate the difficulty of this challenge. The population in the Arab region has nearly tripled since 1970, climbing from 128 million to more than 360 million. According to the United Nations, the Arab region is expected to have 634 million inhabitants by 2050, nearly doubling its current population. Also by 2050, three out of four people in the Arab region will be living in urban areas, while nearly half of the population lives in rural areas today.

Moreover, climate change negatively affects the water sector, increasing the frequency of droughts and floods. The latter usually exceeds the absorptive capacity of national and local water networks. This is a matter that should be taken into consideration when planning and developing policies.

Today, addressing the challenge of water scarcity through comprehensive and integrated approaches has become a stressing and urgent issue. The Arab world is rife with scientists, officials, businessmen and civil society representatives striving to create and implement many solutions that are needed to defuse the crisis of water, and aiming at laying a strategic foundation for the use of water in a more just, effective and sustainable way. What we lack in the Arab region though is the effective mix of the political administration that puts the water issue at the top of its priority list and the institutional capacity that ensures a more efficient use of water resources.

The report affirms that the future of water in the Arab region relies on bringing about a radical change in water management, dubbed "water governance." In other words, resolving the current water crisis requires reinforcing technical capacities and national institutions, and developing mechanisms to bolster integrity and accountability in the water public services. It also requires additional funding: a new report issued by the Development Islamic Bank (IDB) showed that Arab countries needed to invest $200 billion in infrastructure in the coming years to meet the growing demand on water.

To move forward in addressing the water crisis, it is important to adopt comprehensive approaches that deal with the relationship between water on the one hand and health, education, poverty reduction, environment protection, job opportunities, food security and energy provision on the other. This also requires more political attention and commitment, even amid the current tense political ambiance that is taking its toll on the region and imposing various challenges. Therefore, there must be an increasing cooperation between countries of the region and neighboring countries so as to share water according to the needs of every country in a way that achieves the best interest of all parties.

This is why the UNDP is operating in 18 Arab countries to make progress toward enhancing water management through its work in sharing knowledge, building capacity and linking stakeholders to necessary resources. This is being done to secure a better water future as part of UNDP's broader activities, which aim at supporting sustainable human development throughout the Arab region. In many countries, UNDP programs have indeed helped yield tangible results. However, there is still an urgent need for hard work. In this regard, the RBAS is always ready to redouble the efforts.

Working toward improving water resources management cannot be separated from the challenges the Arab region currently faces in moving toward a democratic rule. The voice of the people is still heard throughout the Arab region, calling for justice, equality, increased accountability regarding the use of public resources and a bright future for their children, communities, countries and the region. The components and dynamics of this shift are various and closely correlated. If the Arab region wishes to achieve its current or prospective aspirations, improvement of water governance proves crucial. It is time for all concerned parties in the Arab region to prioritize water management. Channeling focus solely toward oil is no longer enough.

"Effective water management crucial for future of Arab world", 02/12/2013, online at: http://www.al-monitor.com/pulse/security/2013/12/water-governance-middle-east-oil.html

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ The high cost of Israel's water policies

A Palestinian girl takes a rest on her way to collect drinking water in Gaza, where in 2010 more than 90% of the water available was polluted and unfit for human consumption. (Photo: Iyad El Baba/UNICEF-oPt)

As Massachusetts officials and businessmen prepare to launch water industry collaborations with Israeli companies, they should be aware of certain facts about "Israel's innate understanding of water issues" (as *Boston Globe* reporter Erin Ailworth put it in a November 17 front page article).

Both Palestinians under occupation and Palestinian citizens of Israel are paying a heavy price for what Ailworth terms "the modern version of the land of milk and honey." The Israeli government has created one integrated water system for both 'Israel proper' and the occupied Palestinian territory that benefits Israeli Jews, while depriving the Palestinian population in both areas of their right to access water.

The Interfaith Peace-Builders delegation that I led to the West Bank and Israel last month saw the impact of Israel's discriminatory water policies. These have been documented by the UN, World Bank, Amnesty International, Human Rights Watch, the US State Department and water researchers from Tufts University, among others.

"Water is a nightmare in Palestine," we were told by Issa Amro, a Palestinian resident of Hebron, who led us through a once vibrant part of the West Bank city that has been largely emptied of Palestinians by Israeli restrictions and Israeli settler aggression. "There is not enough for basic needs or agriculture. Settlers get the majority of the water. In the summer, water comes through the pipe every three or four weeks, while settlers get as much as they want."

Wherever we went in the West Bank we encountered this stark inequality in water distribution. For instance, while the fortress-like Israeli settlements surrounding Bethlehem have swimming pools and irrigated landscaping and lawns, Bethlehem can go for 10-15 days without flowing water, as residents are forced to pay for 'empty pipes.' The pipes in Bethlehem's Aida refugee camp have been empty for more than two months at a time, leaving entirely depleted the rooftop tanks where potable water is stored.

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

The water shortages that afflict West Bank cities and towns are even more crippling in villages and rural areas.

There, Palestinian agriculture has been dealt a deadly blow by Israel's control since 1967 of the occupied territory's water sources, including the underground aquifers and the waters of the Jordan River. Since 1967, half of the wells that sustained Palestinian communities have been destroyed, new wells are forbidden and settlers and soldiers routinely vandalize cisterns erected to collect rainwater.

The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) reports that an estimated 313,000 Palestinians from 113 West Bank communities are not connected to any water network and depend on springs and rainwater-collecting cisterns that are vulnerable to attack, or have to pay the Israeli Water Company exorbitant sums for water that is privately trucked in.

Today, Israelis – more than half a million of them West Bank settlers – use more than 80 percent of the water from the West Bank's three principal aquifers, leaving only 10 – 20 percent for Palestinians. Four years ago the World Bankfound the per capita water consumption by an Israeli is four times that of a Palestinian in the West Bank and Gaza. More recent studies estimate that Israeli water consumption is five or six times higher on a per capita basis.

What does this mean for daily life? While the World Health Organization has set 100 liters per day as the 'absolute minimum' needed for daily consumption per person, Palestinians are forced to subsist on just 70 liters per capita per day, an amount that dips to 60 liters for one million of the West Bank's 2.7 million residents, according to OCHA.

Israelis meanwhile enjoy the per capita equivalent of 300 liters per day. This disparity enables West Bank Israeli settlements – that are illegal under international law – to have 13 times more land under irrigation in the agriculture-rich Jordan Valley than indigenous Palestinian communities.

Combined with home demolitions and the fragmentation of Palestinian territory by walls, military checkpoints, closed military zones and 'settler-only' roads that are off limits to Palestinians, water

has become a weapon in Israel's decades-long battle to dispossess Palestinians of their land and livelihoods.

Water has also been used as a weapon against the Bedouin citizens of Israel, as we found out when we traveled to the village of Al-Araqeeb, one of the 35 'unrecognized villages' of the Negev that get no services or water from their government. Al-Araqeeb, where Bedouin have lived since early last century, has been repeatedly raided since 2010, its homes demolished, its thousands of olive trees uprooted, its sheep sprayed with herbicides and its water sources seized.

The Jewish National Fund (JNF) is a central actor in clearing the Negev of between 30,000 and 70,000 Bedouin who, under the controversial 'Prawer Plan' that has passed its first reading in the Knesset, are due to be forcibly moved off their land into poorly serviced townships.

In their place, the JNF is planting swiftly growing eucalyptus trees. While Israel chose not to pipe water to Bedouin communities, it is now ignoring sound ecological practices by irrigating notoriously water-greedy trees in the desert.

Massachusetts officials who are planning to collaborate with Israeli water firms in a new 'Water Innovation Network' should travel to the West Bank and Negev desert to see for themselves what an apartheid water system looks like.

"The high cost of Israel's water policies", 08/12/2013, online at: http://iranian.com/posts/view/post/25288

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Gaza Need Not Be a Sewer

For two decades, Palestinian and Israeli environmentalists set aside their differences to call for urgent measures to address the impending water crisis in the Gaza Strip. These calls went unheeded. The price of inaction, protracted conflict and unsustainable policies is being paid today by the 1.7 million residents of Gaza, who face catastrophic conditions thanks to the collapse of Gaza's sewage system.

Since the Israeli and Egyptian blockade, Gaza has not had sufficient fuel to sustain its electricity supply and keep its 290 water and sewage facilities running. The Hamas government refuses to buy alternative fuels, because taxes on these would go to the rival Fatah-controlled Palestinian Authority. As a result, pumping stations ceased operation in November, and many streets in southern Gaza City are now inundated with human excrement.

Residents must sandbag their homes so they won't be flooded by raw sewage. The stench is intolerable. With the pumping stations out of action, fresh water will soon cease to reach taps at all.

The health impact is already apparent. According to a recent UNICEF survey, 20 percent of Gazan children suffer from waterborne diseases. Without remedial action, the situation will only get worse.

Aside from humanitarian decency, there are ample pragmatic reasons for Israel to be concerned. Every day, 3.5 million cubic feet of sewage pours into the Mediterranean. Israel's own drinking water supply is increasingly dependent on seawater desalination. One of its largest facilities, in Ashkelon, is just a few miles north along the coast from Gaza. Erecting a fence can prevent terrorist infiltration, but it can't stop the flow of feces.

This sewage crisis is only the most acute manifestation of Gaza's hydrological nightmare. Pressure on water resources long since became unsustainable. Historically, Gaza obtained its water from a shallow aquifer below its sandy soils. This aquifer was already overexploited before 1967, when Egypt controlled the Gaza Strip, and extensive contamination by seawater occurred. Its annual recharge from rainfall is no more than 1.8 to 1.9 billion cubic feet, but Gaza's rapidly growing population uses more than 6 billion cubic feet of water a year. This mounting deficit exacerbates the problem: Last year, the United Nations reported that 95 percent of the aquifer's water was unfit for

human consumption because of pollution from seawater intrusion, fertilizers and sewage. Demand is expected to increase by 60 percent by 2020.

Well aware that the water in their taps makes them sick, many Gaza residents purchase bottled and filtered water at considerable cost. Others take matters into their own hands. After the 2005 Israeli withdrawal, thousands of unregistered wells were drilled in Gaza — causing water tables and water quality to decline still further.

Gaza's water crisis can be tackled, but fundamental change is necessary to begin the slow process of aquifer restoration. Water demand needs to be controlled effectively. A reduction can be achieved by better conservation in domestic supply and in agriculture, while new infrastructure will save on loss through leaks in the municipal system. But technical fixes alone won't reduce demand as long as Gaza's population continues to grow at a steep annual rate of 3.2 percent.

A complete moratorium on groundwater extraction is imperative. Gaza's water should come from alternative sources, such as comprehensive programs to collect roof rainwater and catch runoff from streets. Sewage treatment should be upgraded so that wastewater can be reused in agriculture (as is done in water-stressed states like Texas and Arizona).

Finally, most of Gaza's water should come from the sea. Desalination has been done since Roman times. Today, economies of scale and improvements in reverse-osmosis technology have reduced the price of desalinated water significantly. Israel's water authority reports that, on average, each of Israel's five major facilities can produce 1,000 liters of water for roughly 60 cents.

For over 20 years, a major desalination plant for Gaza has been discussed, but nothing has been done. Large desalination facilities could easily provide Gazans with affordable potable water. There are several small pilot plants already operating, most sponsored by international agencies, but they can meet only a fraction of present demand.

The Palestinian water authority has approved a large-scale $500 million facility, which Israel supports. And Israel has quietly begun to offer Palestinians desalination training. With funding doubtful, though, construction delays continue.

The other obstacle is that desalination plants require large amounts of electricity, which is in short supply in Gaza, where much of the power is still provided by Israel's utility company. The festering conflict between Israel and Gaza's government does not help the situation, even though Israel remains committed to selling power to the Palestinian territories, including Gaza. Israel continues to sell water to Gaza, and both parties have agreed on a pipeline that will double the amount of water supplied to the Gaza Strip.

Of course, just this sort of good will might smooth a path to progress in the vexed Israeli-Palestinian peace talks. But with no sign of any meaningful advance in the negotiations, it is time to think about decoupling the water conflict from other, more intractable issues. The interim water accord signed in 1995 needs to reflect Gaza's new realities, but there is no reason its people should lack basic water resources.

The United Nations Environmental Program warns that if present trends continue, the Gaza aquifer may be irreversibly damaged by 2020. This is one area where the international community could get involved to bring a meaningful improvement to Palestinians' quality of life. That, at least, would decontaminate a perilously toxic environment.

"Gaza Need Not Be a Sewer ", 02/12/2013, online at: http://mideastenvironment.apps01.yorku.ca/2013/12/gaza-need-not-be-a-sewer-new-york-times-op-ed/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ SR500m water storage plan springs hope for Jeddawis

The National Water Company (NWC) is set to launch the first of the six Strategic Water Storage Projects in Jeddah during the second quarter of 2014 at a cost of SR500 million.

NWC CEO Loay Al-Musallam said the first project would come up in Briman area and the company had accorded top priority to it since it was vital in case of water shortage or during periodic maintenance of saline-water desalination plants.

The NWC has completed connecting nearly 35,000 homes and other buildings in Al-Safa, Al-Marwa and Al-Faisaliah districts to the city's sewer system, he told Arab News in an exclusive interview,

The company will start work to connect 125,000 residential units to the sewage system in the districts south of Palestine Street beginning 2014.

He said strategic storage of water was essential in Jeddah given Makkah Region's dependence on desalinated water.

"We just have to avoid shortage of water supply to the public during desalination plants' maintenance periods and in case of emergency disruption of water pumping."

He said the second and third water storage projects in Jeddah will be implemented in Briman and Al-Faisaliah districts with a capacity of two million cubic meters.

"When completed, these projects would have the capacity to supply Jeddah with water for seven to ten days. The aim is for the residents not to feel any shortage in case of increase in demand or other emergencies."

He said the company has plans to implement water storage projects in Makkah and Taif in phases over a period of three years.

"The total cost for these projects, including the ones in Jeddah, could touch SR8 billion to SR9 billion."

Al-Musallam said that with the Jeddah Desalination Station 3 having a capacity of 240,000 cubic meters starting operations, the company was executing new water desalination plants and expanding the existing ones in the Makkah region.

Stating that many pipe networks in Jeddah and adjacent areas had been replaced, he said: "The NWC and the Saline Water Conversion Corporation (SWCC) have expanded their inspection efforts and largely reduced water leakage from the city's pipeline network."

On the sewage project, he said it began with the establishment of the NWC, but the main problem was completion of infrastructure, which involves a maze of tunnels at over 18 km and at a depth of 80 meters.

He said the implementation of this project in a city like Jeddah which has densely populated buildings is very difficult. However, the works were completed, including sub-networks and treatment plants, which include "Al-Khumra 4."

All the old stations that operate through dual treatment have been shut down, and a station at the airport with a capacity of 250, 000 cubic meters was implemented.

Regarding obstacles and difficulties in providing connections to domestic and business units, particularly since they are located in densely populated neighborhoods, he said: "A major project of this size will face challenges and difficulties. There are 17 contractors working simultaneously to provide connections to residential and commercial units at a cost of over SR 1.7 billion".

He said the NWC bears 80 percent of the total cost for providing connections while citizens or unit owners are burdened only with 20 percent which is minimal.

"Moreover, the SR 3000 that owners of housing units bear is paid in installments over a period of 3 years, while the company pays about SR 9,000 to provide connection to each household," he said.

"SR500m water storage plan springs hope for Jeddawis", 07/12/2013, online at: http://www.arabnews.com/news/488901

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Israeli forces demolish water wells and tents in the Jordan Valley

JENIN (Ma'an) -- Israeli bulldozers demolished water wells and tents belonging to local Palestinian residents in a number of districts across the northern Jordan Valley on early Tuesday morning.

Aref Daraghmeh, the mayor of al-Malih and neighboring Bedouin villages in the Jordan Valley, told a Ma'an reporter that two Israeli bulldozers demolished two water wells in the area of Barza, as well as tents in the areas of al-Bqaia and al-Adasa in al-Malih.

Daraghmeh noted that most of the residents whose property was demolished did not receive any advance warning from Israeli forces.

A few residents did receive notices prior to the demolitions, he added.

Israeli forces claimed that the tents and the water wells are not licensed.

The demolitions come a day after Israeli forces demolished four houses and eight agricultural structures in the southern Jordan Valley, leaving at least 50 Palestinians homeless.

The Jordan Valley forms roughly a third of the occupied West Bank, with 94 percent of the area off limits to Palestinian use and development.

Israel has declared around 56 percent of the total area to be part of closed military areas.

In 2012, 540 Palestinian structures were demolished in Area C due to a lack of Israeli-issued permits, displacing 815 people, over half children, the UN's Office for the Coordination of Humanitarian Affairs says.

The internationally recognized Palestinian territories of which the West Bank and East Jerusalem form a part have been occupied by the Israeli military since 1967.

"Israeli forces demolish water wells and tents in the Jordan Valley", 03/12/2013, online at: http://www.maannews.net/eng/ViewDetails.aspx?ID=653548

BACK TO TOP

❖ Water independence — Key to a thriving future

I initially joined the Water Quality Association (WQA) because my company, Dataman Group, provides direct mail and phone lists to members of the WQA, but through the years of my involvement and attendance at WQA events and conferences, I have become more and more interested in the importance of water because, in short Water is Life.

In the U.S. we tend to take water for granted as we turn on our taps and let the water flow. Not so much in the Middle East.

I just spent a week in the desert areas of Israel and Jordan. It was easy to see how this precious resource is the key to develop these regions and allow the people and economy to flourish.

In Israel, we saw communities and farms and green pastures created by the technologies of drip irrigation and treated wastewater. In Jordan we did not see cities of green - we saw Bedouin boys herding their goats to graze barren desert lands searching for something to chew on.

In Israel, we heard plans to bring more of the population into the Negev region, an area which covers 55 percent of Israel's land with only 12 percent of the population. There are no such plans to colonize the Jordanian Edom.

In this region of the Middle East, wars have been fought over water. Wikipedia refers to this as the "War over Water," which began after the 1948 Israeli War of Independence.

The 1949 Armistice Agreements created three demilitarized zones on the Israel-Jordan-Syria border, in the area of the Yarmuk and Jordan Rivers. The issue of sharing the water between the three countries turned out to be unsolvable and through the years, there were many water-related skirmishes and failed diplomatic attempts to resolve this.

With increased demands for a growing population and economy, Israel designed and completed its National Water Carrier program in 1964, siphoning off water from the Sea of Galilee to bring much needed water resources into Israel. The Arab states were not prepared to co-exist with this endeavor

and the Israeli defense of the project and the control of water resources are considered among the many factors which led to the Six-Day War of June 1967.

The Water Commission of Israel has been working on a solution to the scarcity of water for years.

Necessity being the mother of invention, because of the water problem, Israel's irrigation industry has become one of the most modern and rapidly developing in the world, taking up water-saving approaches such as drip irrigation.

With an eye towards the future, scientists have reviewed options that ran the gamut from towing in an iceberg from the South Pole, re-using wastewater for drinking or building a new pipeline to transport water from the sea. While each option had merit, the key was to create a sustainable system to balance water demand and water resources and to prevent ecological deterioration. The answer to this dilemma became the manufacturing of water.

By the end of this year, the goal is that the State of Israel will no long be water dependent, relying on a significant increase in manufactured water for drinking, improved desalination technology and continued use of recycled water and recharged groundwater for agriculture.

Make no bones about it, this will cost the government and citizens of Israel a great deal more, but it is the only way to overcome the water crisis and create water independence for the future.

"Water independence — Key to a thriving future", 02/12/2013, online at:
http://www.watertechonline.com/blogs/5/post/167401

BACK TO TOP

❖ The war for water

Future wars will be fought over water. There are already indications that water wars may soon erupt among the Nile Basin countries. Former Israeli prime minister, who is now foreign minister, Avigdor Lieberman threatened several times that Israel would not hesitate to destroy the High Dam in Egypt, if it had to as part of the water wars.

His threats must be taken seriously because they are not empty and he is not bluffing. Many of the world's rivers have begun to shrink and lakes have begun to dry out. The substitute is the desalination of sea water which is extremely expensive. Rich countries, including ours, are complaining about the high cost of water desalination. We use large amounts of fuel to operate the desalination plants. We could, instead, export this fuel to earn extra income. Therefore, it is imperative to lower this cost if we are to continue using desalinated water.

In this connection, Dr. Mohammed Bin Abdullah Abunayan, chairman of the board of directors of ACWA Power International said there was a need to reduce the cost, at least by tenfold, if we want to maintain the desalination process. He called for joining efforts to improve the desalination process which includes a reform of financing, storage, construction and the distribution system, apart from the traditional technology which is now being used.

The need to reduce the cost stems from the fact that in the near future desalinated water will be the only source of the vital liquid in the Kingdom because the underground water has almost been totally consumed. The Ministry of Water and Electricity said the demand for water during 2011 reached 19.1 billion cubic meters of which about 15.97 million cubic meters, representing 83.2 percent, were consumed by agriculture. We should, therefore, rationalize our use of water especially as the establishment of new desalination plants may not keep pace with the rapid and increasing demand.

"The war for water", 07/12/2013, online at:
http://www.saudigazette.com.sa/index.cfm?method=home.regcon&contentid=20131207188770

BACK TO TOP

❖ NWC outlines major water protection strategy

The National Water Company (NWC) began its fifth annual symposium on Thursday at the Jeddah Hilton, to discuss important water projects and outline future developments across the Kingdom. The main objective of the symposium is to address new initiatives and solutions for innovative water and environmental projects, and develop strategies for sustainable water and investment opportunities. Delegates also assessed current and future trends in modern technology in the industry and management of water demands locally and globally.

The event opened with Loay Al-Musallam, chief executive officer of the NWC, addressing the gathering. Local and international experts in the filed of water attended the session. "We have successfully launched comprehensive innovative solutions by adapting best practices, which have brought about significant improvements to the sector in terms of addressing the ever-increasing water demand, ensuring security of supply, sustainability, as well as managing the impact on the environment," said Al-Musallam. Al-Musallam said the NWC continues to take the lead in promoting sales of TSE (Treated Sewage Effluents). "More than 13 billion cubic meters of TSE is projected to be utilized in the next 20 years.

This will result in 1.8 million cubic meters of additional savings of water resources every day. More than SR5.4 billion in TSE sales has been successfully contracted, and is expected to grow to more than SR33 billion over the next 20 years." He said the NWC's long-term plan is to expand its operations into other major cities in the Kingdom, including Madinah, Dammam and Alkhobar, and increase its customer base to almost 60 percent of the Kingdom's population. Abdullah Saleh Al-Hagbani, executive director of projects at the NWC, said the diversity of modern techniques created new investment opportunities in water demand management, allowed for attractive returns and maximized environmental benefits.

He said the goal of the company is to pursue strategies to explore opportunities in the water sector and environmental remediation. This has been demonstrated by the successful implementation of the

company's project to strengthen water sources in the city of Riyadh over a period of six months. "We have successfully implemented 43 underground wells, 27 stations for the purification of water, seven stations for the filling of tanks and 10 tanks in separate locations amounting to SR1.6 billion, to ensure benefits from the available alternatives and achieve water security," said Al-Hagbani. The company also gave video presentations and displayed a snapshot overview of its current water projects, including the Riyadh and Jeddah Water Storage Programs. Leading local water company representatives and international experts took part in four sessions of panel discussions. The topics included waste-water reuse in the Kingdom, new plans and initiatives toward developing a sustainable water strategy for the country and project management lessons learned. Speakers participating in the panel discussions were Al-Musallam; Al-Hagbani; Montazar Al-Muhalhal, executive director of strategic planning at the NWC; Ibrahim Shirazi, financial adviser and executive director of business development at the NWC; and Yahya Al-Yousef, director of asset services at the NWC. Speakers and panelists included Mohsen Murtaza, general manager of Arcadis Middle East; Walid Abdulrahman, chief executive officer of Miahona; Pierre Paulk, chief executive officer of Degremont Middle East; Abdulaziz Trbag, professor at the department of civil engineering at King Saud University; Adam Kingdon, chief executive officer of i2O Water; Frederic Fleury, chief executive officer at Veolia Environment; Jesús Sancho, Middle East regional director at Acciona Agua; José Enrique Bofill, director of Aqualia Middle East; Bill Hackin, artistic director of the Water Resources Corporation (AECOM); and Ingmar Obermann, senior business developer of GIZ.

"NWC outlines major water protection strategy", 06/12/2013, online at:
http://www.zawya.com/story/NWC_outlines_major_water_protection_strategy-ZAWYA20131206044909/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ SQU Studying Organic Compounds In Treated Water

Researchers at Sultan Qaboos University (SQU) are working on a project to remove organic compounds from desalinated water and treated wastewater in Muscat by using advanced oxidation processes and nanotechnology. If successful, this process can be added to the final stages of treatment at plants.

Dr Mahad Said Baawain, director, Center for Environmental Studies and Research, SQU, said, "Increased development and industrial activity have resulted in the presence of many new organic compounds in our water resources which conventional treatment methods cannot remove. Hence, advanced treatment methods have to be developed to remove such contaminants to protect public health and the environment."

The project that began in May 2011 is being funded by The Research Council. Research will end in April next year.

Dr Baawain said, "Organic compounds in drinking water cause health issues, besides taste and odour problems. Problems are similar in the case of treated wastewater."

The aim of the project, he said, was to identify organic compounds in drinking water and treated wastewater by collecting samples from different areas of Muscat. "It then investigated the application of different oxidation and nanotechnology processes to remove the identified organics."

Dr Baawain, who is also chairman of the International Association for Hydro Environment Engineering and Research - Middle East and North Africa region collaboration committee, said that advanced oxidation and nanotechnology processes can be added to the final treatment stages at plants."

"SQU studying organic compounds in treated water", 03/12/2013, online at:
http://www.muscatdaily.com/Archive/Oman/SQU-studying-organic-compounds-in-treated-water-2r2h

BACK TO TOP

❖ Nile Basin Countries Told To Focus Projects For Ordinary People

DAR ES SALAAM, (Xinhua) -- The Tanzania government on Monday told experts with Nile Basin Initiative (NBI) to focus on small projects that would have direct benefits to the people surrounding the basin.

"Look at projects that affect people in rural areas, people usually don't think of national projects," the Minister for Water Jumanne Maghembe told the experts at a one-day workshop on Nile Equatorial Lakes Subsidiary Action Program (NELSAP) under Nile Basin Initiative.

Maghembe said people surrounding the basin would not recognize the importance of the initiative if it focuses on big national projects.

The NBI is a partnership among the Nile riparian states that seek to develop the river in a cooperative manner, share substantial socioeconomic benefits and promote regional peace and security.

Countries under the NBI are Egypt, Sudan, Ethiopia, Uganda, Kenya, Tanzania, Burundi, Rwanda and the Democratic Republic of Congo (DRC), as well as Eritrea as an observer, with at least 235 million people living within the basin.

The workshop meant to enhance awareness among the basin policy level stakeholders on the activities of the NBI and the role of the NELSAP in contributing towards poverty reduction, reversal of environmental degradation and stimulation of economic growth.

The meeting also was aimed at creating awareness on regional planning tools that have been developed by the program.

According to Antoine Sendama, Regional Coordinator for NBI, the basin faces number of challenges including persistent poverty to residents as along it. Also, the area is affected by environmental degradation, high population growth and climate change.

Projects of NELSAP include Mara river basin project and Kagera river basin project, which focus on proper management and investments on water resources of the Nile basin.

Mara river basin project manager Joseph Terer told participants that once completed the project would benefit 26,000 people from 4, 900 households through improved food security and income generation.

It will also provide water for 8,340 hectares of irrigation in Mara valley, he said.

The Kagera river basin project is expected to supply water to 120,500 people in the area.

"Nile Basin Countries Told To Focus Projects For Ordinary People", 08/12/2013, online at: http://www.coastweek.com/3649-africa-04.htm

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Sudan's support to Ethiopian dam is economically motivated: Bashir

December 4, 2013 (KHARTOUM) - The Sudanese president, Omer Hassan Al-Bashir, has said that his country's approval for the construction of Ethiopia's Grand Renaissance Dam was driven by economic not political reasons and asserted that Sudan would yield great economic benefits from the construction of the dam.

He further called upon Egypt to utilize the anticipated benefits of the dam, stressing that Sudan would support the construction of the dam through the tripartite committee for the interest of all countries in the region.

The Nile Tripartite Committee, now named the 'International Panel of Experts (IPoE), is composed of six experts drawn from Ethiopia, Egypt and Sudan, and another four international experts.

Bashir , who addressed a public rally in Gedaref state, eastern Sudan, on Wednesday in the occasion of the inauguration of the power linkage network between Sudan and Ethiopia, added that Sudan supports all projects which benefit people of the region.

He emphasized that Sudan seeks to strengthen ties with Ethiopia through trade zones and development and infrastructure projects, pointing to the power linkage, communications, and railways projects which will be completed in the near future.

The Sudanese president also mentioned that Ethiopia's electricity and dams projects will provide 200 megawatt of free electricity for Sudan, pointing that electricity generation from Upper Atbara and Setait dams would increase from 120 megawatt to 320 megawatt following the construction of the renaissance dam.

Addis Ababa was pleased recently by Khartoum's support to the new dam project which will be erected near the Sudanese border, as Sudan used to support the Egyptian position in matters of Nile water.

In the nineties following the fall of Mengistu regime with the support of the Sudanese regime, the two countries aspired to enhance regional cooperation together with the new nation of Eritrea. But

differences over Khartoum's support to Ethiopian and Eritrean Islamists followed by Addis and Asmara border war hampered the tripartite project.

The Ethiopian prime minister, Hailemariam Desalegn, said that the power linkage project represents the beginning of the integration and cooperation projects between Sudan and Ethiopia.

He affirmed that his country doesn't seek to achieve narrow interests from the major development projects but takes into account the benefit of all countries in the region.

Bashir and Desalegn signed on Wednesday the framework agreement on trade, economy, and technical cooperation between Sudan and Ethiopia at the end of the JSEHC meetings while foreign ministers signed the minutes of the higher committee meetings.

The two leaders also signed several agreements and Memorandums of Understanding (MOU).

The agreements included cooperation agreements on legal assistance in criminal issues, aviation services, local and decentralized governance, passenger services, security issues, and railways.

The MOUs included cooperation in areas of combating human trafficking, woman, youth, and children, banking, customs as well as the executive programs on youth and general education.

Speaking in a press conference held on Wednesday evening, Bashir that Sudan and Ethiopia agreed on establishing a free economic and trade zone on the common border, pointing that the trade zone would be equally split between the countries in order to attract investments from both sides.

He renewed Sudan's determination to achieve peace and stability in the Horn of Africa, stressing that Sudan has always sought to resolve problems and tensions among countries in the region. He pointed that Sudan's strong ties with Ethiopia and Eritrea qualify it play a role in removing tensions between the two countries.

Last year , tensions between Eritrea and Ethiopia escalated, mounting fears of renewed conflict, after the Ethiopian army carried out cross-border attacks on military camps inside Eritrea. The attack was in response to the killing and abduction of foreign tourists in January 2012 in Ethiopia's remote Afar region by rebels allegedly backed by Eritrea.

The cross-border attacks by Ethiopian troops was Addis Ababa's first and official military incursion since the two East African nations ended the bitter war in 2000 over the disputed town of Badme, which had been attributed to Eritrea by a UN border committee.

"Sudan's support to Ethiopian dam is economically motivated: Bashir", 05/12/2013, online at: http://www.sudantribune.com/spip.php?article49070

BACK TO TOP

❖ Effective water management crucial for future of Arab world

There is a growing consensus throughout the Arab region that the Arab people are facing a new shift in their relationship with the natural world. If the last 70 years were the oil era, the coming years will certainly be characterized by how successfully we will benefit from one of the most important natural resources — water.

This week, the UNDP's Regional Bureau for Arab States (RBAS) will issue a new report on the future of water in the Arab region titled "Water Governance in the Arab Region: Managing Scarcity and Securing the Future." In brief, the report notes that the future will be determined by the ability of Arab countries to introduce radical enhancements to their water resources management. During the last decades, oil and gas wealth has helped achieve a high level of modernization, which included an unprecedented improvement in the Human Development Index (HDI) rankings in the Middle East. However, preserving the sustainability of the achieved advancement requires dealing with the issue of water as painstakingly and meticulously as we did with energy resources, or maybe even more. The Arab region may have the world's largest oil reserves, but at the same time, it has the lowest levels of water supply, the report affirms.

The report also affirms that water challenges facing the Arab region are an integral part of a wide range of issues that are of crucial importance nowadays, such as the decrease in agricultural production, youth unemployment and even civil unrest in the region. The majority of the difficult dynamics facing the Arab region is related, one way or the other, to the water issue.

Although the water issue poses a real challenge in all communities around the world, it holds in the Arab region a decisive importance whose deep implications are felt by everyone. Statistics and figures show that seven out of the world's 10 most water-stressed countries are in the Arab region. Globally, the average citizen has access to an amount of renewable potable water 16 times that available to the Arab citizen. In other words, the share of the Arab citizen does not exceed 6% of that of his global counterpart.

Furthermore, one-third of the water supply in Arab countries comes from rivers flowing from outside the region. In fact, the situation in the Arab region is bordering on a severe crisis. Some Arab countries have indeed run out of renewable potable water supplies, while other countries are expected to follow suit in the coming decades.

The water deficit, however, is only one part of the story. The report, drafted by a group of international and Arab water experts, explains that the tragedy lies in the way of dealing with this precious resource through approaches lacking future visions and proper planning. In many Arab countries, groundwater resources are exploited beyond their natural replenishment rates. In addition, the Arab region's most water-stressed countries register the highest water consumption rates. As a result, water levels — already low due to the dry climate — are slumping given the decisions taken as individuals and communities in regard to water use.

Demographic factors exacerbate the difficulty of this challenge. The population in the Arab region has nearly tripled since 1970, climbing from 128 million to more than 360 million. According to the United Nations, the Arab region is expected to have 634 million inhabitants by 2050, nearly doubling its current population. Also by 2050, three out of four people in the Arab region will be living in urban areas, while nearly half of the population lives in rural areas today.

Moreover, climate change negatively affects the water sector, increasing the frequency of droughts and floods. The latter usually exceeds the absorptive capacity of national and local water networks. This is a matter that should be taken into consideration when planning and developing policies.

Today, addressing the challenge of water scarcity through comprehensive and integrated approaches has become a stressing and urgent issue. The Arab world is rife with scientists, officials, businessmen and civil society representatives striving to create and implement many solutions that are needed to defuse the crisis of water, and aiming at laying a strategic foundation for the use of water in a more just, effective and sustainable way. What we lack in the Arab region though is the effective mix of the political administration that puts the water issue at the top of its priority list and the institutional capacity that ensures a more efficient use of water resources.

The report affirms that the future of water in the Arab region relies on bringing about a radical change in water management, dubbed "water governance." In other words, resolving the current water crisis requires reinforcing technical capacities and national institutions, and developing mechanisms to bolster integrity and accountability in the water public services. It also requires additional funding: a new report issued by the Development Islamic Bank (IDB) showed that Arab countries needed to invest $200 billion in infrastructure in the coming years to meet the growing demand on water.

To move forward in addressing the water crisis, it is important to adopt comprehensive approaches that deal with the relationship between water on the one hand and health, education, poverty reduction, environment protection, job opportunities, food security and energy provision on the other. This also requires more political attention and commitment, even amid the current tense political ambiance that is taking its toll on the region and imposing various challenges. Therefore, there must be an increasing cooperation between countries of the region and neighboring countries so as to share water according to the needs of every country in a way that achieves the best interest of all parties.

This is why the UNDP is operating in 18 Arab countries to make progress toward enhancing water management through its work in sharing knowledge, building capacity and linking stakeholders to necessary resources. This is being done to secure a better water future as part of UNDP's broader activities, which aim at supporting sustainable human development throughout the Arab region. In many countries, UNDP programs have indeed helped yield tangible results. However, there is still an urgent need for hard work. In this regard, the RBAS is always ready to redouble the efforts.

Working toward improving water resources management cannot be separated from the challenges the Arab region currently faces in moving toward a democratic rule. The voice of the people is still heard throughout the Arab region, calling for justice, equality, increased accountability regarding the use of public resources and a bright future for their children, communities, countries and the region. The components and dynamics of this shift are various and closely correlated. If the Arab region wishes to achieve its current or prospective aspirations, improvement of water governance proves crucial. It is time for all concerned parties in the Arab region to prioritize water management. Channeling focus solely toward oil is no longer enough.

"Effective water management crucial for future of Arab world", 06/12/2013, online at: http://www.al-monitor.com/pulse/security/2013/12/water-governance-middle-east-oil.html#

BACK TO TOP

❖ South Africa Needs Water Management to Avert Losses, OECD

South Africa should empower agencies to start managing water-catchment areas and curb losses for a life-sustaining resource that's in increasingly short supply, the Organization for Economic Development and Cooperation said.

Leakage from the country's aging water-distribution infrastructure is worsening scarcity woes, the Paris-based organization said in its first **environmental performance review** for South Africa, published today on its website.

"Water-resources management, a national responsibility implemented through regional offices, isn't adequately integrated with the provision of water services, which is a municipal responsibility," **it said**. Establishing agencies would "ensure they better integrate water-resources management, the provision of water services and land use."

A fourth of South African river ecosystems and almost half of its wetland areas are critically endangered, the OECD said. The quality of surface water is "particularly poor" around urban areas while groundwater and surface-water contamination from flooding of closed mines is a "serious threat"

Acid water seeping from shuttered gold mines is rising in Johannesburg and the government in July said it would start pumping the liquid out by the end of this year. The city underwent a gold-mining boom that lasted more than a century from the 1890s.

Water has been progressively filling subterranean cavities under the country's biggest city, according to a study by the University of the Witwatersrand published in 2001.

"South Africa Needs Water Management to Avert Losses, OECD", 04/12/2013, online at: http://www.bloomberg.com/news/2013-12-03/south-africa-needs-water-management-to-avert-losses-oecd.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=71b1160697-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-71b1160697-250657169

BACK TO TOP

❖ South Africa to Boost Warning Systems as Drought Cuts Corn

South Africa, the continent's largest corn producer, said it will make its emergency weather warning systems more credible for farmers after drought reduced the country's white harvest.

"Our first priority is to have early-warning systems for farmers and to get them to respect" the forecasts, Agriculture Minister Tina Joemat-Pettersson said yesterday. "We warned farmers the drought was imminent but if they doubt the credibility of the information then they're not going to do anything."

The harvest of white corn, used to make one of the country's staple foods, fell 20 percent in the year ended April to the smallest since the 2007 season after a drought in the main growing provinces, the Crop Estimates Committee said on Nov. 29.

Grain SA, the nation's biggest representative of commercial farmers, said prices may surge as much as 27 percent should the North West province not get enough rain for farmers to plant crops by Dec. 15. The government of the region, which produced a third of the country's white corn in 2012, declared a drought in September.

The state provided 43 million rand ($4.1 million) in a "first tranche" of drought aid to the North West, Joemat-Pettersson said. The government is also concerned about a lack of rain in the Northern Cape, where table grapes are grown for export, and in the north of KwaZulu-Natal, where sugar cane is harvested, she said.

'Too Long'

With more than 23,000 farmers having applied for assistance, the money is "completely ineffectual," Johannes Moller, president of growers' body AgriSA, told the Cape Town Press Club Nov. 29. Farmers' organizations sought 400 million rand in drought aid.

"We're still concerned it's taking too long," Joemat-Pettersson said. "By the time the assistance gets to farmers, the situation is already out of control."

White-corn futures have climbed 25 percent in Johannesburg this year. They rose 1.6 percent to 2,664 rand by the close today. Contracts for the yellow variety have increased 17 percent this year to 2,615 rand.

South Africa is the world's biggest exporter of whole oranges and grapefruit, according to U.S. Department of Agriculture data compiled by Bloomberg. It's also the continent's largest exporter of table grapes. Agriculture makes up about 2.2 percent of the nation's gross domestic product, government data show.

The country, which the government says is the world's 30th-driest nation, consumes 98 percent of the water it treats and forecasts demand will outstrip supply "between 2025 and 2030," according to **National Treasury projections**.

"South Africa to Boost Warning Systems as Drought Cuts Corn", 04/12/2013, online at: http://www.bloomberg.com/news/2013-12-04/south-africa-to-boost-warning-systems-as-drought-cuts-corn-1-.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=71b1160697-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-71b1160697-250657169

BACK TO TOP

❖ Vietnam asks Laos to consult Mekong countries before building dam

Vietnam has called on Laos to honor its pledge to consult with its neighbors before moving forward with the potentially risky Don Sahong hydropower project.

The Vietnam National Mekong Committee has sent a letter demanding Laos honor regional cooperation pledged by the countries in the 1995 Mekong Agreement. According to some sources, Cambodian and Thai committees also sent separate letters to Laos.

"We … suggest that the proposed project needs to be considered under the prior consultation process," states Vietnam's letter, the only one of the three to be released publicly.

Under the agreement, regulated by the Mekong River Commission, a dam developer must notify or consult with member countries before building.

Le Duc Trung, chief of staff of the Vietnam National Mekong Committee, said its officers recently paid a field trip to the Don Sahong dam.

After the trip, they concluded that the four countries should discuss further undefined impacts of the project, especially in terms of fish migration.

Last September, Laos notified the Mekong River Commission (MRC), a consultative body that works with lower basin countries - Thailand, Vietnam, Laos and Cambodia - of its intent to build the 260-megawatt Don Sahong dam, despite calls from foreign donors to consult neighbors that face a risk of depleted fish stocks and damaged livelihoods.

The dam, to be developed by Malaysia's Mega First Corporation Bhd, is the second of 11 dams planned by Laos along its stretch of the 4,900 km (3,044 mile) Mekong.

Activists believe the dam could cause flooding and threaten food security in Cambodia and Vietnam, *Reuters* reported.

Vietnam, Cambodia and Thailand have repeatedly voiced concern about Laos failing to honor a consultation agreement on a bigger project, the US$3.5 billion, 1,260 megawatt Xayaburi dam, for which it held a groundbreaking ceremony late last year.

"Vietnam asks Laos to consult Mekong countries before building dam", 03/12/2013, online at: http://www.thanhniennews.com/index/pages/20131203-vietnam-asks-laos-to-consult-mekong-countries-before-building-dam.aspx

BACK TO TOP

❖ Nations unite against dam

Cambodia, Vietnam and Thailand have all called on Laos to submit its planned Don Sahong hydropower dam to an intergovernmental assessment.

According to the dam's opponents, the Laos National Mekong Committee has acted unilaterally in the planning of its second Mekong dam, a project they fear could irreparably damage the region's food security and biodiversity.

The Cambodia, Vietnam and Thailand National Mekong Committees have each sent separate letters demanding Laos honour regional cooperation pledged by the countries in the 1995 Mekong Agreement.

"We … suggest that the proposed project needs to be considered under the prior consultation process," states Vietnam's letter, the only one of the three to be released publicly.

Under the agreement, regulated by the Mekong River Commission, a dam developer must notify or consult with member countries before building.

"Compared with the notification process, which is just the timely submission of materials with no further discussion, consultation requires notification plus a six-month time frame for each country to conduct studies and share concerns," said Te Navuth, Cambodian National Mekong Committee secretary-general.

Less than two kilometres north of the Cambodia-Laos border, the 260-megawatt dam would potentially have too high an impact on mainstream fish migration in the dry season to bypass consultation with other affected countries, the downstream officials allege in letters sent to the MRC.

"We need the Don Sahong dam to go through a prior consultation process to ensure the people and affected communities can express their concerns and the environmental issues will be addressed," said Chhith Sam Ath, director of NGO Forum, a member of the Save the Mekong Coalition.

But even with prior consultation, NGOs and activists worry that the dam will follow in the footsteps of Laos' 1,285 megawatt Xayaburi dam.

Despite the fact that the Xayaburi prior consultation process concluded with a consensus that more assessment was needed, construction began in November last year.

"Prior consultation is prior – it should be self-explanatory that it means concerns are shared and resolved before any work starts," Navuth said.

"Nations unite against dam", 02/12/2013, online at: http://www.phnompenhpost.com/national/nations-unite-against-dam

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Shale and water industries pledge to "work together" to minimise the effect of fracking on water supplies

Trade bodies for both the water and onshore oil and gas industries have made a public commitment to identify and minimise any risks that shale gas exploration and exploitation poses to the UK's water supplies.

The memorandum of understanding between the two groups was published alongside a policy statement from Water UK (4-page / 109KB PDF) setting out the trade body's belief that the impact of hydraulic fracturing, or 'fracking', on water supplies could be minimised as long as regulatory requirements are properly enforced. Together with the UK Onshore Operators Group (UKOOG), it has agreed to a number of actions to reassure members of the public that the effect of shale gas exploration on water supplies will be limited.

Energy and environmental law expert David Ross of Pinsent Masons, the law firm behind Out-Law.com, said that the agreement was good news for both the fledgling shale industry and for local communities.

"It is also good news for the communities surrounding shale gas sites, as this commitment on shale gas developers to cooperate with Water UK adds an extra layer of water protection on top of the already extensive regulations affecting shale gas extraction. This protection may be extended further should Water UK prove successful in its lobbying to include water firms as statutory consultees on planning applications for shale gas extraction," he said.

"DECC estimated recently that each well may require 10-30 million litres to hydraulically fracture," he said. "Along with the perceived risks of groundwater contamination, the importance of water in the shale gas extraction process cannot be understated. On that basis, the Memorandum of Understanding can only be positive news for the industry; particularly as Water UK has now stated it believes that the risks to water can be mitigated."

Shale gas is natural gas trapped within shale formations at significant depths below ground. It has become an increasingly important source of natural gas in the US, particularly over the past decade, where a combination of drilling and 'fracking' has facilitated access to large volumes of shale gas that were previously uneconomical to exploit. Fracking involves pumping water at high pressure into shale rock to create narrow fractures, through which trapped gas can flow out and be captured.

Under the terms of their agreement, Water UK and the UKOOG will draw up plans for monitoring fracking sites and preventing water shortages. These will include general monitoring of local water quality and quantity; site-specific water management plans, with a particular focus on water reuse; development plans, including the likely short- and long-term impacts on water supplies of expanding exploration and development within a local area; and monitoring the volume and composition of waste water for disposal.

"This agreement with Water UK should give reassurance to local communities that the development of shale gas in the UK can proceed with minimal impact upon the local water and waste services," said UKOOG chief executive Ken Cronin.

"The environmental regulation covering the onshore oil and gas industry in the UK is among the most stringent in the world and, in addition, the industry has agreed to tough and transparent guidelines on how we operate and interact with local communities," he said.

“Shale and water industries pledge to "work together" to minimise the effect of fracking on water supplies”, 03/12/2013, online at: http://www.out-law.com/en/articles/2013/december/shale-and-water-industries-pledge-to-work-together-to-minimise-the-effect-of-fracking-on-water-supplies/

BACK TO TOP

❖ The real price of good water

CITY property owners are grumbling about increases in their water bills. Some people in rural areas of Thunder Bay whose homes aren't connected to city water pipes are annoyed, too, because soon they will no longer get water delivered for their dry wells. Both groups are victims of past practices established in better times. If the city has any responsibility to honour precedence it seems that it is being overridden by a policy of forcing people to pay the real cost of having a secure water supply. Based on a directive from the province, municipalities in Ontario are working toward just that. Ontarians — indeed most Canadians — have always enjoyed abundant water for far less than the cost of providing it via waterworks.

Cities and towns are gradually forcing residents to catch up to the real costs. In Thunder Bay's case, the development of a state-of-the art waterworks ahead of most other municipalities means water rates are rising rather dramatically to pay the cost of providing safe, reliable water from an upgraded system. It isn't pleasant but it's still a bargain relative to many other jurisdictions where water scarcities drive prices much higher.

Weak wells in rural Thunder Bay neighbourhoods caused the city to agree in 1998 to deliver potable water in trucks. The city waterworks bylaw states that "Water delivery service will be provided on an emergency basis only, where the normal supply fails. It is not intended to replace a normal water supply."

And yet that is what has developed in many cases. Currently there are 119 water delivery accounts. An average of 481 water deliveries is done annually by city personnel. There are some residents who have water delivered weekly.

Wells can fail in hot, dry weather or extremely cold weather and when emergencies arise (these are yet to be defined following a council discussion of the issue tonight) the city will continue to deliver water. But all other water deliveries will cease under the recommendation in September 2014.

The idea is to have these residents do one of three things: start buying water from private delivery companies, drive with a tank to one of the city's two water fill stations, or invest in a new well. To ease the financial hardship, those rural homeowners who still want deliveries on other than an emergency basis will get a rebate of the $70 delivery rate for a year and half that for another year. By then they will have been expected to make other arrangements.

Given urban taxpayers' rising water costs, it is unfair to expect them to continue underwriting the

cost of water deliveries when private companies can do it for less. A quoted price for a 7,000 litre water delivery by a private hauler is $120. The city's costs to complete the same delivery with only 4,000 litres of water is a minimum of $158. The private sector option is more economical.
This recommendation is a logical extension of city water policy. A new well can be costly but where that is viable it is the best option.

"The real price of good water", 02/12/2013, online at: http://www.chroniclejournal.com/editorial/daily_editorial/2013-12-02/real-price-good-water

BACK TO TOP

❖ WATER -GCC plans shared water network

By Peter Feuilherade A cross the Middle East and North Africa , ensuring a reliable supply of water is a top priority, as demand soars from both rapidly growing populations and water-intensive industries in the world's most water scarce region. Figures from the World Bank in 2012 showed a decline in per capita renewable water resources from over 3,000 cubic metres/year in the 1950s to around 715 in 2011, which is below the World Health Organisation's water poverty threshold of 1,000 cubic metres/year per capita. The projected impact of climate change on future water availability in the MENA region is not favourable, with some countries expected to experience up to a 40% decrease in precipitation and runoff by the end of the 21st century. "Ever-increasing water demand - coupled with rapid population and economic growth - will likely add to the region's water stress and pose serious challenges to the region's future development prospects," the World Bank argues. The rate of water extraction is also far greater than natural replenishment. The Abu Dhabi based Arab Water Academy estimates the collective water shortage of 17 Arab countries at over 30bn cubic metres, a deficit which is expected to triple by 2030 and increase to over 150bn cubic metres by 2050. The Gulf Cooperation Council (GCC) intends to complete a common regional water network by 2020, as part of efforts to address rising population growth in the Gulf region over the next three decades, Four of the six GCC states - Bahrain , Qatar , Kuwait and Saudi Arabia - are ranked as the most heavily affected by water scarcity in the world. According to the global management consulting firm Booz & Company , Saudi Arabia and the UAE respectively consume 91% and 83% more water per capita than the global average, while Qatar and Oman also use significantly more than the global average. However, the GCC countries, in the words of a recent report by the Oxford Business Group (OBG), "are in the unique position of being able to leverage their considerable wealth to invest in developing technologies and innovations with the aim of gaining a competitive advantage in the global water sector". Most of the GCC's water supplies come from desalination. As the OBG report notes, the GCC already accounts for 57% of the world's desalination capacity, and GCC countries plan to invest more than $100bn between 2011 and 2016 to develop more efficient desalination technologies, wastewater recycling and building water treatment facilities. Regional water network The GCC is conducting technical studies in the Saudi capital Riyadh , eastern Saudi Arabia and northern Oman as part of plans to build a regional water network. The total cost of building the

network is estimated at $10.5bn - $3bn to build desalination plants and $7.5bn for pipelines, pumping stations and reservoirs. In Oman , environmental impact assessments will also be carried out to identify the best places to build desalination plants in Sohar, the sultanate's industrial hub 200 km north of Muscat, and Al Ashkharah, on the Arabian Sea . Oman also plans to build strategic water storage reservoirs in Muscat to avert a crisis if desalination plants are disrupted. Other GCC water projects in the next few years will see Saudi Arabia complete the world's largest desalination plant in Ras Al Khair on the Gulf. Abu Dhabi will add more than 30m gallons per day of desalination capacity to its water network following a green light for a power and water plant extension at Mirfa. And Kuwait is constructing two reverse osmosis desalination plants that will produce nearly 50m gallons of water per day. High price of desalination Desalination, however, carries enormous economic and environmental costs. Despite efficiency improving more than fivefold since 1979, to desalinate a cubic metre of seawater costs one dollar , making it a relatively expensive way of producing potable water. The desalination process also discharges salt back into the Arabian Gulf and other oceanic sources, jeopardising their marine life and introducing new environmental risks. Seawater desalination is an energy-intensive process, consuming eight times more energy than groundwater projects, and accounting for between 10% and 25% of energy consumption in the GCC. The current almost total reliance on fossil fuels for water desalination is not sustainable - Saudi Arabia alone uses 1.5m barrels of oil per day in its plants, adding to the problem of excessive energy consumption already plaguing the region. Many of the problems related to desalination could be reduced by replacing fossil fuels with renewable energy sources. This would cut the cost of energy consumption, which accounts for 3050% of total water desalination costs. A gigawatt of energy produced by oil and gas generates 700 and 460 tonnes of carbon dioxide respectively. The same amount of energy produced by solar energy (concentrated solar power - CSP) releases just 17 tonnes of carbon dioxide, according to Dr Asma El Kasmi , director of the Arab Water Academy . Her views mesh with those of the World Bank , whose report Renewable Energy Desalination: An Emerging Solution to Close MENA's Water Gap recommended greater investments in renewable energy and suggested that CSP was the most suitable source of renewable energy, owing to its scalability and ability to provide energy 24 hours a day. However, CSP may only be an option in the long term because of its current high cost. Dr Nasser Saidi , founder and president of Nasser Saidi & Associates , an economic advisory and consulting company based in Dubai , notes that although the MENA region is home to 6.3% of the world's population, it has access to only 1.4% of the world's renewable

fresh water. "To make matters worse, the region currently exploits over 75% of its available renewable water resources due to its burgeoning population, increased urbanisation, mispricing of water and rapid economic growth," he warned. "Saudi Arabia, in an ill-fated drive to increase food production, has - over a 15-year period - largely depleted its water aquifer that had taken millions of years to accumulate. It will be forced to stop its wheat production by 2016. Yemen is already a hydrological basket case and Gaza is an ecological disaster," Saidi commented. In the GCC, a major policy issue is that "the bulk of the region's water is misdirected into agriculture, a sector that provides less than 5% of GDP". Overcoming water scarcity, Saidi argues, requires a combination of ecosystem and water management systems, improved efficiency and pricing of water use, and investment in water infrastructure. To close the "water gap" in this region, the World Bank estimates that approximately $104bn a year will be needed, equivalent to about 6% of the MENA region's GDP. However, the Bank warns that the costs of failing to take action could be even higher, reaching up to $300bn - $400bn annually. n THE BURGEONING POPULATIONS OF GCC STATES MEANS EVEN TRADITIONAL, HOME -GROWN CROPS ARE RARELY SUFFICIENT TO ME ET LOCAL NEEDS WITHOUT SOPHISTICATED DESALINATION TECHNOLOGIES AND INCREASED IMPORTS

“WATER -GCC plans shared water network”, 04/12/2013, online at:
http://www.hispanicbusiness.com/2013/12/4/water_-gcc_plans_shared_water_network.htm

BACK TO TOP

❖ An Explosive Mix: Gender and Hydropower

Discussing the gender and hydropower nexus at the CPWF forum on Water, Food and Energy

Talking about gender is never easy. And it is certainly harder when you are talking about it in relation tohydropower infrastructure. Hydropower *per se* can be a sensitive topic but once you add to it the gender nexus, you'll have an *"explosive mix"*. What is for many a political and economic issue then becomes a personal one too. Think of questions such as "how are the women in your community/country impacted by hydropower? Are men impacted differently? Does it depend on the cultural context of each country in the Mekong region?" or "would hydropower be managed more sensitively if your female colleagues were leading the project?" No doubts that we are entering the personal sphere. But these were exactly some of the questions we were asking during our session at the"3rdMekong Forum on Water, Food and Energy". And, as anticipated, answers didn't come easy.
The evening before this session, Oxfam's team was reviewing and finalizing the questions we wanted participants to discuss. The idea of this exercise was to spark a conversation not only about the different impacts of hydropower on women and men but also about the proactive role that women could take in all phases of a hydropower project. Some questions were focused on how women could be more involved in the research, others on how women could contribute to planning, implementation and assessment of relocation procedures. Another interesting question, and one that reflects my personal appreciation for spaces where communities can voice their perspectives, was about ways to incorporate indigenous women's interests intohydropower planning.
This session was not an isolated event, but the culmination of a series of three consultation workshops that Oxfam held in the past months in Vietnam, Lao PDR and Cambodia. Like in the previous workshops, this session tested some of the assumption and findings that were used to create Oxfam Gender Impact assessment Manual for Hydropower. The manual, which was also officially launched during the Forum and that can be found **here**, was made to support hydropower developers in including gender practices during all phases of their projects. The hope is that talking about gender and hydropower will be easier and, most importantly, that including the perspectives of impacted women and girls into the design of a project will become a widespread practice.

"An Explosive Mix: Gender and Hydropower", 04/12/2013, online at: http://mekong.waterandfood.org/archives/4377

BACK TO TOP

❖ Warsaw Climate Talks End with Foundation for a Global Agreement

After two weeks of negotiations, replete with dramatic high-level huddles and multiple all-night sessions, the U.N. climate talks ended with a modest set of decisions to keep countries on the path toward an international climate agreement by 2015.

Delegates from nearly 200 countries convened in Warsaw, Poland, for the annual Conference of the Parties to the U.N. Framework Convention on Climate Change, or UNFCCC, to craft an effective global strategy to reduce global warming pollution and adapt to the impacts of climate change.

More than 24 hours after the negotiations were scheduled to end, countries reached agreement on the following issues, which collectively signal the continued global commitment to addressing climate change:

- **A pathway to an international agreement.** Such an agreement would address climate mitigation, adaptation, and finance. Countries agreed to introduce their national climate mitigation contributions by early 2015, which would provide time to assess whether their actions are sufficient to address severe climate change. The 2015 U.N. climate agreement would apply to all countries.
- **A call for developed countries to continue mobilizing climate finance "at increasing levels" through 2020.** This funding would build resilience and reduce emissions in developing countries. The decision requests developed countries to submit strategies for scaling up climate finance through 2020, including information on pathways for mobilizing funds commensurate with a $100 billion annual commitment by 2020. It also says that parties will convene workshops to scale up climate finance that will inform a biennial high-level ministerial dialogue on climate finance—starting in 2014 and ending in 2020.
- **An entity to address loss and damage.** Countries agreed to establish an entity to address the adverse impacts of climate change in developing countries. Its functions include enhancing risk management and financial support.

This issue brief further explains the outcomes of the Warsaw meeting and what work lies ahead for the international community to address global warming.

Advancing a global agreement on climate change

During the 2011 U.N. climate talks in Durban, South Africa, countries decided to create a global climate agreement applicable to all parties by 2015—known as the Durban Platform—with the goal

of keeping average global temperature rise to 2 degrees Celsius, the level scientists say is necessary to avoid the worst impacts of global warming. A main task for the parties in Warsaw was to establish a process and timetable for creating the agreement in order to stay on track for finalizing the agreement by 2015.

There is broad international agreement for nationally determined mitigation targets, as well as a period of consultation and review among parties to measure the collective level of ambition—the sum of all countries' greenhouse gas emissions targets—against the 2 degree target. Todd Stern, the U.S. special envoy on climate change, presented the U.S. vision for the 2015 agreement in an October speech, calling for nationally determined commitments to be announced by early 2015, followed by a period of review and consultation. The European Union similarly proposed a multistage process for commitments to be put forward in the fall of 2014, followed by a period of assessment. The Least Developed Countries Group, comprised of 49 developing countries particularly vulnerable to climate change,urged for the Warsaw meeting to adopt "a clear roadmap for negotiating the planning, scope, structure and design of the new 2015 agreement" and for a draft agreement by 2014, followed by consultations ahead of adoption in 2015.

In the time leading up to the talks and throughout the two-week-long negotiations, some developing countries pushed back on taking on commitments and establishing a timeline or process for the 2015 agreement. Parties' entrenched positions on how responsibility should be allocated between developed and developing countries based on historical emissions underlay their positions. During the talks, the Like-Minded Developing Countries on Climate Change, or LMDC, group argued that developed countries would need to specify their emissions-reductions commitments before developing countries presented their own.

The bulk of the projected increase in greenhouse gas emissions will be from developing countries, particularly major emerging economies such as China and India. Therefore, broad participation in a new agreement is necessary to keep global temperature rise to 2 degrees Celsius.

On Friday, November 22, the final night of the conference, negotiators worked and reworked the central paragraphs of the negotiating text outlining the process by which countries are to introduce their emissions-reduction contributions. For more than an hour just before midnight, there was a high-level ministerial huddle in which negotiators hashed out language for a process and timetable for the 2015 agreement.

Ultimately, by early Saturday evening, parties adopted the decision titled "Further advancing the Durban Platform" that sets parties on a path toward a 2015 agreement. They agreed on a deadline for countries to report their intended emissions reductions by early 2015, allowing for time to review to determine whether the collective action would be enough to set the world on a path that avoids catastrophic warming. They also reaffirmed that the text of the 2015 agreement will be applicable to all countries—an important move away from a bifurcated agreement that calls on developed countries to reduce emissions before developing countries.

International climate finance

In 2009, developed countries committed to annually mobilizing $100 billion from public and private sources for climate mitigation and adaptation by 2020. Countries also agreed to the creation of the Green Climate Fund, or GCF, which would provide a significant portion of the $100 billion commitment.

During the Warsaw climate summit this year, developing countries called for a roadmap for reaching the promised $100 billion. They also called for an interim pledge in the years leading up to 2020, and for money to fill the GCF. The United States and other developed countries, however, were reluctant to commit to a finance roadmap—particularly when major developing countries were walking back on their responsibilities to tackle emissions in the context of the Durban Platform.

Finance negotiations went through the night and past 5:00 a.m. for several nights until a compromise was reached. The long-term finance decision aims to provide certainty around the finance commitments by calling on developed countries to submit strategies for scaling up climate finance through 2020, including information on pathways for mobilizing funds. Workshops will focus on scaling up finance, and these will inform biennial high-level ministerials starting next year through 2020. No concrete interim targets, however, were included in the decision. The GCF should be operational in time for donations beginning next year; the GCF decision calls on developed countries to provide "ambitious and timely contributions" to the GCF before the next round of high-level talks in Lima, Peru, in December 2014.

In the meantime, the United States and other donor countries will continue to focus on using public resources to leverage larger private flows. New initiatives on mobilizing finance are underway that work through development finance institutions, export credit agencies, and multilateral development banks to generate private investment and scale up climate finance.

Private sources and public-private partnerships will play a significant role in the future mobilization of finance commitments as governments face budget shortfalls, and they could provide a significant portion of climate finance in a ramp-up period to 2020. A 2010 report by the Center for American Progress and the Alliance for Climate Protection specifies the increases in public and private investment that would be necessary during a ramp-up period in order to meet the commitment to raise $100 billion annually by 2020—most of which would come from private sources.

Loss and damage

Typhoon Haiyan devastated the central Philippines and killed thousands of people just before the Warsaw climate talks began. The issue of loss and damage therefore became a focal point during the talks. "Loss and damage" refers to permanent loss or reparable damage caused by severe weather events or slow-onset events such as temperature rise or sea-level rise. The inhabitants of low-lying islands, for example, are confronting the eventual loss of their nations and cultures.

During last year's climate talks in Doha, parties agreed to establish "institutional arrangements, such as an international mechanism" to address loss and damage in vulnerable countries in Warsaw this year.

Two questions about the prospective mechanism caused controversy. The first was whether it should be an independent entity within the UNFCCC, which contains two central pillars of mitigation and adaptation. Negotiators from low-lying islands and other developing countries argued that the recent spate of devastating loss and damage marks a new era of climate change and calls for the construction of a third pillar.

Developed countries such as Norway and the United States, however, supported the creation of a mechanism but opposed the creation of a third pillar. They held that the mechanism should fall under the adaptation framework, on the grounds that addressing loss and damage without an eye on adaptation would only invite further loss and damage.

The second question was whether the loss and damage entity should include a mechanism for developed countries to provide compensation for the harm caused by their historical emissions. There is a moral argument to be made for compensation, but the idea is currently divisive and politically unviable within the UNFCCC. All parties, however, have long been in agreement that finance from developed countries—construed without moral baggage—is necessary to address the problem. In the final days of the talks, no negotiators discussed compensation. Instead, they discussed whether the mechanism should be an independent entity.

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

The draft decision established an entity called the "Warsaw Mechanism," which would fall under the adaptation framework. However, in a concession to low-lying island nations, the draft decision included a provision to reassess the mechanism after three years. It also established that the mechanism's functions would include enhancing knowledge of risk management and enhancing financial and technical support.

In the last several hours of the talks, negotiators for low-lying island nations and many developing countries vigorously opposed the word "under" in the first paragraph of the decision, which stated that the mechanism would fall under the adaptation framework.

In the end, the draft decision was adopted with modifications, including the addition of a preamble to recognize that there are instances of loss and damage that overwhelm adaptation measures. The first paragraph was also was amended to state not simply that the mechanism falls under the adaptation framework, but that it does so subject to the reassessment mentioned later in the document.

The negotiator from the Philippines said before the adoption of the text that he understands the reassessment to include a review of where the Warsaw Mechanism sits within the UNFCCC.

REDD+ developments at Warsaw

A positive development from the talks was progress on the U.N. program called Reducing Emissions from Deforestation and Degradation, or REDD+, to address deforestation. Steps to combat deforestation are important, since the loss of forests represents approximately 20 percent of worldwide greenhouse gas emissions. The United States, the United Kingdom, and Norway announced renewed commitments to finance REDD+, totaling more than $280 million. Negotiators also defined new rules for distributing finance through the Green Climate Fund to developing countries, and agreed to rules for measuring and verifying deforestation emissions through a new REDD+ information hub.

Closing the ambition gap

While NGO and media attention during the two weeks of talks was focused on contentious but important issues around finalizing a 2015 agreement and finance, a critical issue flew under the radar: deficient work on addressing skyrocketing greenhouse gas emissions worldwide before the agreement will take effect in 2020. This is known as the ambition gap.

The latest analysis from the U.N. Environment Programme estimates a gap of 8 gigatons to 12 gigatons of carbon dioxide, equivalent between countries' current climate pollution pledges through 2020 and the emissions reductions scientists say are necessary to keep us on a path to limiting

temperature rise to 2 degrees Celsius. There was some progress in the talks on closing this gap, but it was not sufficient. "We did more than expected here, but this also doesn't lead us to a pathway of 2 degrees," said UNFCCC Executive Secretary Christiana Figueres.

Countries that have not made commitments were urged to do so. Parties agreed to identify options to reduce emissions and to "promote voluntary cooperation on concrete actions in relation to identified mitigation opportunities." They also agreed to share best practices for reducing greenhouse gas emissions at the local and subnational level to promote information exchange and cooperation.

This is a positive step, but additional work is required.

Mexico, the European Union, and Norway had pushed for inclusion of international collaborative initiatives that could include, for example, international cooperation to catalyze action to reduce super pollutants. Methane and other super pollutants such as black carbon—soot—and hydrofluorocarbons, or HFCs, do not last as long in the atmosphere as CO_2 but are much more potent. Methane, for example, traps 34 times as much heat as CO_2 over a 100-year timeframe. The final version of the Warsaw text, however, had no mention of international collaborative initiatives.

Todd Stern highlighted such initiatives, including the Climate and Clean Air Coalition, or CCAC, to limit super pollutants among 30 member countries in Warsaw. Such multilateral actions outside the U.N. climate negotiations will continue to represent the best chance to reduce emissions in the near term.

During the second week of the negotiations, Stern announced that the CCAC will launch a partnership with oil and gas companies to reduce the potent greenhouse gas methane. The announcement is important for addressing a huge source of climate change, given that methane emissions account for approximately 15 percent of greenhouse gas emissions globally. In the United States, oil and gas systems represent the single-largest source of methane emissions; worldwide, they represent the largest source of methane emissions after agriculture.

Shifting party lines

The Warsaw talks provided incremental progress toward the 2015 international climate agreement. Negotiations were tenuous at times, with countries working hard to overcome political hurdles that have historically plagued the U.N. climate talks. Still, the historic fissure between developed and developing countries seemed less deep during the two-week-long negotiations, as developed and developing countries alike found common ground on the importance of seeking an agreement with a clear timeline for introducing targets.

In Warsaw, historically large rifts between developed and developing countries were shifting. A smaller group of developing countries—including China, Brazil, and parties in the LMDC group—were opposing some of the commitments for countries to reduce their emissions because they believe developed countries should put forth their commitments first. These countries, however, are becoming increasingly isolated, as broad support for establishing a pathway to the 2015 agreement grows among developed countries and developing countries alike.

LMDCs say that developed countries are responsible for taking on greenhouse gas reductions first because of historical emissions. However, taking global energy-use projections into consideration, other countries recognize that major emerging economies like China, which is now the largest greenhouse gas emitter in the world and was the second largest behind the United States for many years prior, and fast-growing emitters like India, must take on targets simultaneously for an effective global response to climate change.

The African Group, Latin American Group, and Least Developed Countries group are aligned with the United States, European Union, and other developed countries pushing for a stronger pathway to 2015.

According to Figueres' message to the Conference of the Parties, it is crucial "to maintain to your commitment to the current that is underneath the wave. The current is moving in the right direction."

While much work remains to be done over the next two years in the run-up to the U.N. climate talks in Paris, the evolving positions of countries and groundswell of support for finalizing an agreement before the talks, provide a promising outlook on progress toward an international agreement in 2015.

An international problem requiring national solutions

As Stern said during the conference, climate change is "first and foremost a quintessentially a global problem," but "you can't ever forget that the most important locus of action on climate change is at the national level."

President Barack Obama's Climate Action Plan, which expresses the renewed commitment by the United States to address climate change, lent credibility to U.S. negotiators as they argued for domestic action from all parties. Stern noted that "the United States was 'perfectly comfortable' agreeing to commitments," which reflected confidence that the United States is prepared to meet its emissions-reduction target.

President Obama announced the Climate Action Plan on June 25, 2013. It laid out a domestic and international agenda to promote clean energy and climate resilience, while discouraging further

investment in fossil fuels. Secretary of State John Kerry delivered a message to countries at the conference on November 18 on the plan, describing the new proposed EPA regulations on carbon emissions from new power plants; developments in transportation efficiencies from higher Corporate Average Fuel Economy, or CAFE, standards; and ongoing work to reduce the use of HFCs, which will all be instrumental in reducing U.S. emissions.

The State Department has projected that the policies outlined in the plan will reduce U.S. emissions by 17 percent below 2005 levels by 2020—the level President Obama pledged in Copenhagen, in spite of the failure by Congress to pass substantial climate legislation, as was originally anticipated.

The United States has taken important first steps to implement the plan, which is essential for the country to meet its international climate goals. Successful development of clear restrictions on power plant emissions and continued efforts by the federal government to curb emissions through support for clean and efficient energy are imperative for the United States to continue to demonstrate leadership in this sphere. The agreement by parties in Warsaw will call on all countries to act in similar fashion and develop their own domestic mitigation plans. As Stern noted, international agreements have the role of driving more attention and more action within national governments.

Conclusion

A foundation for a global climate agreement that is strong as well as broadly inclusive emerged from the Warsaw talks. There was substantial support for finalizing an agreement by 2015 that will include ambitious action on climate from a significant range of developed and developing countries.

However, the actions that will be taken to limit emissions before 2020, when the agreement will take effect, were less clear. The most significant opportunity to reduce emissions in the near term is through a phasedown of HFCs—super pollutants that are hundreds to thousands of times more potent than CO_2—in the Montreal Protocol. A phasedown of HFCs in the Montreal Protocol can avoid 1.9 gigatons of carbon dioxide equivalent, or $GtCO_2e$, by 2020, and more than 95 $GtCO_2e$ by mid-century.

In addition, other existing multilateral bodies can be enhanced to deal with climate change. The Major Economies Forum, or MEF, a group of countries that comprises approximately 80 percent of the world's carbon dioxide emissions, can be scaled up to form binding agreements on energy efficiency and renewable energy. CAP has proposed a 40 percent zero-carbon target for MEF parties by 2035.

Throughout the negotiations, Stern commented on the cooperative relationship between the United States and China on climate and clean energy. He highlighted agreements between the two countries, most notably a new joint working group on climate change and a presidential agreement in support of a phasedown of HFCs. This relationship between the world's two-largest greenhouse gas emitters will be critical for stopping global climate change in the future. Domestic actions by both countries to reduce emissions are critical for a successful partnership. They are also important for keeping all countries at the negotiating table for an agreement to adequately address global greenhouse gas pollution.

The U.S. position on climate change is stronger than ever, with the president's Climate Action Plan having reinvigorated his commitment to address climate change at home and abroad by strengthening climate diplomacy efforts and helping developing countries build resilience and chart a low-carbon development path. The outcome of the Warsaw climate talks invites all countries to prepare domestic mitigation contributions to be submitted before 2015. It creates a foundation for keeping all countries on the hook for national reduction targets—a necessary step for avoiding dangerous global warming. Historic divisions of responsibilities between developed and developing countries are breaking down. Now, all countries should intensify their efforts domestically to be incorporated in a 2015 international climate change agreement. They too must work bilaterally and multilaterally wherever possible before then to reduce emissions before 2020, to close the emissions gap, and to build clean energy and resilient economies in order to generate security and prosperity for all.

"Warsaw Climate Talks End with Foundation for a Global Agreement", 04/12/2013, online at: http://www.americanprogress.org/issues/green/report/2013/12/04/80378/warsaw-climate-talks-end-with-foundation-for-a-global-agreement/

BACK TO TOP

❖ Modern Water's China Deals Buoy Forward-Osmosis Pioneer

Modern Water Plc (MWG), which completed the world's first commercial forward-osmosis desalination plant in Oman last year, won three contracts in **China** during a U.K. trade mission led by Prime Minister **David Cameron**.The deals are "milestones for Modern Water's work in China" the past five years that has targeted water shortages, **energy efficiency** and environmental protection, the Guildford, England-based company said in a statement. No terms were given.

A Beijing signing ceremony included the outlines of a three-way deal with Ottomen Estate Resources and Hangzhou Water for a 500 cubic meter a day forward-osmosis desalination plant on Xugong Island that would be the first in China. Hangzhou Water is China's largest desalination equipment company.

Modern Water supplies advanced systems for water monitoring and treatment. It's attempted to coax more companies to a membrane-based forward-osmosis technology that offers lower energy consumption for contaminated waters than rival reverse-osmosis water purifiers increasingly in demand in water-stressed regions including the **Middle East**.

The agreements follow China's latest Five-Year Plan that "identified the need for a large increase in desalination capacity to help better control water shortages and improve environmental protection," Modern Water said today. The **shares** climbed 16 percent, the most in a year, on more than six times the 90-day average volume to 42.25 pence in London trading.

"Modern Water is an excellent example of a small British business taking world-leading technology to China and securing significant deals," Cameron said in the statement

"Modern Water's China Deals Buoy Forward-Osmosis Pioneer", 02/12/2013, online at: http://www.bloomberg.com/news/2013-12-02/modern-water-wins-china-deals-as-forward-osmosis-pioneer-expands.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=02e422dd7e-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-02e422dd7e-250657169

BACK TO TOP

❖ Pak cites water crisis, asks India to withdraw Siachen troops

Pakistan on Wednesday asked India to withdraw its troops from Siachen, claiming their presence on the glacier in Kashmir was damaging the environment and polluting one of its main sources of water supplies. Sartaj Aziz, Pakistan's advisor to the prime minister on national security and and foreign affairs, claimed Indian forces on Siachen posed a "serious threat" to the country's environment.

His remarks come against the backdrop of the Dawn daily quoting Pakistan Prime Minister Nawaz Sharif on Tuesday as saying Kashmir was a flashpoint in the relations between the two neighbours and can trigger another war. However, a statement from Sharif's office later clarified, "Prime Minister of Pakistan never uttered these words."

Pakistan is facing a water shortage and Indian troops are damaging the "virgin snow" of Siachen- one of the largest sources of water in Pakistan, Aziz said.

He added that items of daily use disposed of by Indian soldiers were threatening the glacier's existence. Describing the presence of Indian forces on the glacier as a "big issue", he urged India to resolve the Siachen matter "on priority basis by pulling out its troops".

Pakistan's 'Free Siachen' cry comes close on the heels of its prime minister saying India has forced the country to join an arms race.

Indian and Pakistani troops have been locked in an eyeball-to-eyeball confrontation on Siachen, the world's highest and coldest battlefield, since 1984.

Aziz said Pakistan and India are engaged to resolve outstanding water issues through multiple channels, including the composite dialogue and Indus Waters Commission. He said the implications of water scarcity were grave in view of climate change.

The guns have been largely silent along the Actual Ground Position Line since the two sides put in place a ceasefire in 2003, but adverse weather conditions on the glacier have claimed many lives on both sides.

India has insisted that the demilitarisation of Siachen must be preceded by recording the existing troop positions, but this has been rejected by Pakistan.

According to environmentalists, glacial retreat in the Himalaya and Karakoram ranges has accelerated in recent years because of human presence on glaciers.

Aziz stressed the need to make proper use of water in Pakistan as well as its conservation and the building of new reservoirs. He said parliament had formed a committee to discuss water-related issues and to make recommendations.

"Pak cites water crisis, asks India to withdraw Siachen troops", 04/12/2013, online at: http://www.hindustantimes.com/world-news/pakistan-asks-india-to-withdraw-siachen-troops/article1-1158965.aspx

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Peak Water: What Happens When the Wells Go Dry?

Peak oil has generated headlines in recent years, but the real threat to our future is peak water. There are substitutes for oil, but not for water.

We drink on average four liters of water per day, in one form or another, but the food we eat each day requires 2,000 liters of water to produce. Getting enough water to drink is relatively easy, but finding enough to produce the ever-growing quantities of grain the world consumes is another matter.

Grain consumed directly supplies nearly half of our calories. That consumed indirectly as meat, milk, and eggs supplies a large part of the remainder. Today roughly 40 percent of the world grain harvest comes from irrigated land.

During the last half of the twentieth century, the world's irrigated area expanded from close to 250 million acres in 1950 to roughly 700 million in 2000. But since then the growth in irrigation has come to a near standstill, expanding only 10 percent between 2000 and 2010.

Today some 18 countries, containing half the world's people, are overpumping their aquifers. Among these are the big three grain producers—China, India, and the United States—and several other populous countries, including Iran, Pakistan and Mexico.

During the last couple of decades, some of these countries have overpumped to the point where aquifers are being depleted and wells are going dry. Several have passed not only peak water, but also the peak in grain production that often follows. Among the countries whose use of water has peaked and begun to decline are Saudi Arabia, Syria, Iraq, and Yemen. In each of these countries peak grain has followed peak water.

In summarizing prospects for the three big grain producers—the United States, China, and India—we see sharp contrasts. In the United States, the irrigated grainland is starting to shrink largely as a result of depletion of the Ogallala aquifer, making it more difficult to rapidly increase overall grain production.

China, with four fifths of its grain harvest coming from irrigated land, relies heavily on irrigation, but it is largely river water. A notable exception to this is the all-important North China Plain which relies heavily on underground water. With tight water supplies in northern China and with cities

claiming more irrigation water, the shrinking water supply will likely reduce the harvest in some local situations. And before long it could more than offset production gains, leading to an absolute decline in China's grain harvest.

Of the big three countries, India is the most vulnerable to overpumping. Three fifths of its grain harvest comes from irrigated land. And since only a minor share of its irrigation water comes from rivers, India is overwhelmingly dependent on underground water. Its millions of wells, each powered with a diesel engine or electric motor, are dropping water tables at an alarming rate. Accurate data are hard to come by, but India may have already passed peak water. The question is, will peak water be followed by peak grain or is there sufficient unrealized technological potential remaining to raise grain yields enough to offset any imminent losses from wells going dry?

The world has quietly transitioned into a situation where water, not land, has emerged as the principal constraint on expanding food supplies. As water tables fall and as wells go dry, world food prices are rising. This collision with the earth's water limits underlines the urgency of not only halting population growth but stabilizing it at a size that is within the earth's water limits.

"Peak Water: What Happens When the Wells Go Dry?", 04/12/2013, online at: http://blogs.worldbank.org/water/peak-water-what-happens-when-wells-go-dry

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr