



ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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



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20 December 2016 – 26 December 2016

Are India and Pakistan set for water wars?

Indian Prime Minister Narendra Modi has said a government taskforce is finalizing details of the water project, which he has made a priority.

"The ball has started rolling and we will see some results soon, most of them will be about building new storages in the basin," one top official said on condition of anonymity.

Another senior official said: "We are quite familiar with the terrain as we have already built a number of structures there.

But he added: "We are talking about few years here."

How much water is at stake?

India wants to "maximize" its use of water from the Indus, Chenab and Jhelum rivers. Millions of people in both countries depend on water in the rivers.

An official with India's water resources ministry insisted that this action would be "well within" the terms of the Indus Water Treaty (IWT).

India began reviewing the treaty after the militant attack in Indian-administered Kashmir in September in which 19 soldiers were killed.

Delhi accused Islamabad of being behind the attack and relations have plummeted, leading to a rise in cross-border tensions.

The IWT was signed in 1960 and allocated the three eastern rivers - the Ravi, Beas and Sutlej - of the Indus basin to India, while 80% of the three western ones - the Indus, Jhelum and Chenab - was allotted to Pakistan.

India says it has not fully utilised the 20% of water given to it in the three western rivers. Pakistan disputes this.

Officials in Delhi said the IWT allows India to irrigate 1.4 million acres of land using water from those rivers.

But they say only 800,000 acres are irrigated at present.

They added that the building of hydropower projects would also be accelerated.

India currently generates around 3,000MW of hydroelectricity from the western rivers, but the Indus basin is said to have a potential of nearly 19,000 MW.

How safe is the water treaty?

Pakistan is watching India's moves closely.

Speaking in an open debate of the United Nations Security Council on "water, peace and security" last month, Pakistan's ambassador to the UN, Maleeha Lodhi, denounced any use of water as an "instrument of coercion and war".

"The IWT is equally a good case study of what could go wrong if such agreements are not honoured or threatened by one of the state parties to be abrogated altogether."

Water experts say the treaty seems to have at least survived because India is not talking about withdrawing from it.

But, they believe, maximising use of water from the western rivers in the Indus basin can still fuel tensions.

Islamabad is already unhappy with some of India's existing water projects.

It has asked the World Bank, which brokered the signing of the treaty between the two countries, for a court of arbitration to consider two Indian hydropower projects in the Indus basin.

India has objected to this move, prompting the bank to pause the dispute process while it tries to persuade the two countries to resolve their disagreements, fearing that otherwise the treaty itself could be in peril.

In 1987, Delhi suspended the Tulbul navigation project on the Jhelum river after Pakistan objected to it.

But sources within India's Water Resources Ministry say this project could now be revived.

"The decision to review the suspension signalled the Modi government's intent to revive it irrespective of Pakistan's protests," the Times of India newspaper wrote.

"As an implication, India gets to control Jhelum water, impact Pakistan's agriculture."

What else could India do?

Some experts say India could also demand a review of the IWT.

"The review can be used to demand more rights over the western rivers," says Himanshu Thakkar, a regional water resources expert with South Asian Network on Dams, Rivers and People.

Some water resources analysts believe Delhi will also have to be mindful of China before making any major move.

In September, Tibet blocked a tributary of the Yarlung Zangbo river (known as the Brahmaputra in India) as part of its most expensive hydro project, Chinese state-run news agency Xinhua reported.

The news came just when Indian media were suggesting that Delhi could pull out of the IWT.

"We need to remember that China is an upper riparian country in Indus and Brahmaputra basins and it is also Pakistan's closest ally," said Mr Thakkar.

Many experts agree that completing such huge and complex infrastructure projects may not be as swift as some Indian officials suggest.

22/12/2016 online at: <http://www.bbc.com/news/world-asia-37521897>

Demining and repair initiative restores key irrigation canals, farmland near Mosul

Some 200 000 people from Mosul and across Iraq will be able to earn an income for the first time since the Islamic State of the Levant (ISIL) took parts of the area in 2014, thanks to a new FAO project that is restoring irrigation to 250 000 hectares of farmland.

Water will soon be flowing again through the canals that used to feed the once-fertile land some 30 km west of Mosul - Iraq's third largest city. Through the cash-for-work component of the project, FAO supports vulnerable families who need money for daily needs, including food and clothes, heating and transport. Many of them have not had paid employment for at least two years.

Participants are clearing the main canal of the northern Al Jazeera irrigation scheme of dirt, stones and debris, which will allow it to again feed small canals throughout the farming landscape.

FAO has also repaired the pumping station that feeds the canal system from Mosul Dam. And, for the first time, the agency is collaborating with a demining company to clear valuable farmland around the canals of undetonated ordinances, so farmers can plant crops and graze their livestock safely.

The project is already benefiting more than 3 000 people and is essential in getting farming activities in the area back underway.

"Farmers here haven't been able to grow vegetables for two years, since the irrigation canals were destroyed by armed groups who also contaminated the area with explosive devices," said Fadel El-Zubi, FAO Representative in Iraq. "Restoring people's ability to farm and trade in this area is not only important for food security but also for building prosperity and lasting peace in the country," he added.

Farmers in the region used to export vegetables and crops, including wheat and barley, to Syria and other countries, as well as supplying millions of people in Iraq. Now the country relies on fruit and vegetable imports.

"We collect debris in piles, and then merge every four piles into one big one for the excavator to pick up and remove from the canal," said 23-year-old Ahmed Mohammed, a father of three. "My brother has agricultural land and he'll benefit from the project as well. He used to grow wheat and barley in the winter and vegetables at other times. Now he can only grow vegetables when the rain falls."

The Al Jazeera irrigation scheme used to be an essential source of water for agriculture, livestock and domestic use. Some 100 smaller canals in the system were damaged, bridges were also blown up and the damaged pumping station was working under capacity, resulting in extreme water shortages.

As the Government of Iraq retakes control of more areas, a major effort is needed to rehabilitate critical infrastructure so that agricultural production can resume and livelihoods can be restored. FAO is seeking urgent funding of \$89 million to strengthen its emergency response, including rehabilitating damaged agricultural infrastructure, supporting farmers to vaccinate and feed their livestock, and expanding cash-for-work and other income-generating activities. FAO's work, in coordination with the Iraqi government, supports families returning to reclaimed areas, internally displaced families, host communities and refugees from Syria. The current project on the Al Jazeera irrigation scheme is funded through the United Nations Development Programme (UNDP).

22/12/2016 online at: <http://reliefweb.int/report/iraq/demining-and-repair-initiative-restores-key-irrigation-canals-farmland-near-mosul>

Qatar's tap water could be harmful to your health

Qatar's drinking water may be safe from chemicals and bacteria, but it can still make you sick, a public health professor has warned this month.

As a desert nation, Qatar has very little available fresh water.

At least half of its water supply comes from the sea through a salt-removal process called desalination. This water is what we have in our homes.

But the problem with this type of "synthetic" water is that it lacks essential minerals needed by the body, asserts Dr. Jerome Nriagu.

He is Professor Emeritus at the School of Public Health and Research and the Center for Human Growth and Development at the University of Michigan.

Nriagu presented his concerns at a Qatar Environment and Energy Research Institute (QEERI) workshop last week.

Speaking to Doha News, he explained:

"By constantly drinking water with low potassium and magnesium, you increase the risk of getting obesity and hypertension, and (certain) metabolic disorders."

Health problems

Currently, desalinated water in Qatar and other countries undergoes a post-treatment process to make it less corrosive.

Otherwise, it would not be able to travel safely through pipes to reach our taps.

But according to Nriagu, officials should also be adding essential minerals to the water to help ward off health problems in the population.

“We’re not getting enough from our foods to start with, and now drinking (this type of) water compounds the problem,” he said.

Over the summer, the professor co-authored newly published research about the subject.

The paper focused on the health effects of desalinated water on cancer development, but Nriagu clarified to Doha News that “we’re not saying it’s linked to cancer, it’s linked to the hormones that cause cancer.”

WHO recommendations

His research builds on previous concerns raised by others about low-mineral drinking water.

The World Health Organization (WHO) for example has previously warned:

“In addition to an increased risk of sudden death, it has been suggested that intake of water low in magnesium may be associated with a higher risk of motor neuronal disease, pregnancy disorders (so-called preeclampsia), sudden death in infants, and some types of cancer.

Recent studies suggest that the intake of soft water, i.e. water low in calcium, is associated with a higher risk of fracture in children, certain neurodegenerative diseases, pre-term birth and low weight at birth and some types of cancer.”

WHO has also urged authorities to adopt mineral guidelines for home treatment devices and bottled water.

Nriagu said households that rely on these sources for their drinking water can face “exactly the same” issues as when drinking straight from the tap.

Public perceptions

Many residents here continue to favor drinking bottled water because they are worried about the quality of Qatar’s tap water.

Some also install filters on their kitchen faucets and shower heads for fear of ill health effects from rusting pipes and unhygienic storage tanks.

However, last year, QEERI announced results of new research that found Qatar’s tap water is more than safe to drink.

At the time, researchers told Doha News that local samples fell below maximum thresholds set out by WHO.

“We didn’t see leachate from the piping or the (storage) containers – even in the hot months,” public health researcher Candace Rowell said.

Nriagu conceded that Qatar's water is "not toxic," but added "if you look on the deficiency side, then you can see (it) is not healthy."

He added that once authorities commit to adding the necessary minerals to desalinated water, the change is easy to implement.

"We don't need new technology to do it."

23/12/2016 online at: <https://dohanews.co/research-qatars-tap-water-harmful-health/>

Damascus accuses rebels of polluting water supplies

Authorities in Syria say they have been forced to cut water supplies to the capital after rebels reportedly contaminated drinking water with diesel.

The Damascus water authority said late on Friday that it had resorted to using water reserves to meet the city's demands, after rebels who control territory northwest of Damascus, contaminated the al-Fija spring.

The spring, which supplies the capital with much of its water, is located in the rebel-held Wadi Barada valley, a mountainous area near the Lebanese border.

The water authority said it expected the problem to be resolved in a "few days".

A news outlet run by Syrian government's ally, Hezbollah, said the rebels had refused to leave the Wadi Barada valley and as a result, the Syrian army began an offensive against them on Friday.

Deliberate cuts to water and electricity supplies have caused significant suffering to civilians with the Syrian army and rebels accused of using water as a weapon.

Aid workers from the International Committee of the Red Cross have helped water boards and engineers maintain and repair ageing pumping stations but as much as half of the total production capacity has been lost or damaged.

Through a series of so-called settlement agreements and army offensives, the Syrian government, backed by Russian air power and Iran-backed militias, has been steadily suppressing armed opposition around the capital.

24/12/2016 online at: <http://www.aljazeera.com/news/2016/12/damascus-accuses-rebels-polluting-water-supplies-161224053913652.html>

Syria conflict: Air strikes leave Aleppo 'without water'

Intensified attacks on the Syrian city of Aleppo have left nearly two million people without water, the UN says.

The UN children's agency says fierce strikes on Friday prevented repairs to a damaged pumping station supplying rebel-held districts of the city.

In retaliation, Unicef says, a nearby station pumping water to the rest of Aleppo has been switched off.

Fresh strikes were reported in the city on Saturday, as the Syrian army presses on with its push to retake rebel areas.

The latest offensive was launched after a ceasefire collapsed on Monday.

Unicef deputy director Justin Forsyth told the BBC: "Aleppo is slowly dying, and the world is watching, and the water is being cut off and bombed - it's just the latest act of inhumanity."

Unicef spokesman Kieran Dwyer said the lack of running water could be "catastrophic" as residents now had to resort to contaminated water and were at risk from waterborne diseases.

He said water was being used as a weapon of war by all sides. The pumping station supplying rebel-held parts of Aleppo was damaged on Thursday and subsequent strikes had made repairs impossible, Mr Dwyer told the BBC.

"That pumping station pumps water to the entire population of the eastern part of city - that's at least 200,000 people and then in retaliation for that attack a nearby pumping station that pumps water to the entire western part of the city - upwards to 1.5 million people - was deliberately switched off," he told the BBC.

24/12/2016 online at: <http://www.bbc.com/news/world-middle-east-37460849>

Karzai Voices Concern over Afghanistan's Water Security

Hamid Karzai, the former president of Afghanistan, on Saturday said at a New Afghanistan Research and Studies Center (NARSC) conference in Kabul that a large amount of water goes to Iran and Pakistan and that those countries should respect Afghanistan's water rights.

"The water that is for our neighbors is being given to them. If we have more water, we will give a part of it to our neighbors," he said.

Karzai said he is worried about water security in future especially in light of climate change.

"We use a huge amount of underground water. In every house there is a deep well. For instance, in the past there was plenty of water in the Chaman-e-Babrak settlement in Kabul. But now that water level has dropped to only about 40 or 50 meters," Karzai added.

Some parliament members (MPs) however said water resources are also being polluted because townships built during Karzai's tenure did not include sewer systems for waste water.

"Karzai should have paid attention to the issue during his own presidency. He should have planned in this regard during his 12 years in office," said Nasrullah Sadiqi Zada Nili, an MP.

According to data provided by NASRC, Afghanistan only uses 30 percent of its total annual natural water.

“Iran does not give us money (for our water). Our water goes to Pakistan without receiving even one Afghani. But Pakistan everyday deports around six to eight thousand Afghan refugees,” said Abdullah Hewad, founder of the NARSC.

Afghanistan has for years been plagued with problems regarding its water going to Iran and Pakistan. Only one agreement has to date been signed with Iran in this respect.

24/12/2016 online at: <http://www.tolonews.com/afghanistan/karzai-voices-concern-over-afghanistan%E2%80%99s-water-security>

EU grants to support water, sanitation projects in northern region

EU grants to Jordan for water and sanitation work, worth 40 million euros (around JD30 million), were signed by Minister of Planning and International Cooperation Imad Fakhoury as part of the EU’s support for Jordan’s response to the Syrian crisis, the ministry said on Saturday.

The new water and sanitation projects are intended to help Jordanian host communities and the large Syrian refugee population in the Kingdom, where over 1.3 million Syrians currently live.

The grants are allocated for the expansion and improvement of water networks in Irbid and Ramtha, the connection of sewage networks to the wastewater disposal network in currently underserved areas in east and west Irbid, and to enhance the capacities of Yarmouk Water Company, the ministry said in a statement.

Fakhoury signed two grants which will be administered by the French Development Agency (FDA).

Serge Snrech, the director of the FDA in Amman; EU Ambassador to Jordan Andrea Matteo Fontana; and French Ambassador David Bertolotti attended the signing ceremony.

Fakhoury noted that the total cost of the project would be 144 million euros, with 50 per cent being covered by soft loans from the AFD and the German Development Bank (KfW), with the rest to be received in grants from the KfW and the EU.

On November 30, the AFD signed a highly concessional loan with the Kingdom for the project, worth 32 million euros. It is expected that further agreements will be signed in early 2017 with the KfW for the remaining funding, the statement said.

Fakhoury explained that the EU funding was divided into two parts, with the first grant of 21 million euros being provided by the EU Regional Trust Fund in Response to the Syrian Crisis.

The Water Authority of Jordan will manage 11 million euros from this grant to support water distribution networks in Irbid, 80km north of Amman, while the AFD will manage 10 million euros in order to provide access to water for vulnerable Jordanians and Syrians.

The second part of the grant, worth 19 million euros, is a contribution by the EU for the Neighbourhood Investment Facility.

Fakhoury said he considers the funding, with the AFD as lead donor, to be an important response by the donors to help mitigate the consequences of the Syrian crisis in Jordan, and to improve the Kingdom's development and resilience.

"This is a project that has important social aspects promoting cooperation between communities in sharing water resources and targeting vulnerable households," the statement quoted Fontana as saying at the signing ceremony.

"This joint European effort in this region is another sign of the continuous appreciation of the EU, its member states and the international community for Jordan's efforts in addressing the Syrian crisis," he added.

The funding comes in the context of the London donor conference that was held in February, in which donor countries pledged to support the region to deal with the consequences of the continuing war in Syria.

As well as Jordan, donors also pledged support to Syria, Lebanon, Turkey, Iraq and Egypt.

As part of the Jordan Response Plan, it is estimated that around \$8 billion of international support will be needed for 2016-2018, the ministry statement said.

25/12/2016 online at:

https://www.zawya.com/mena/en/story/EU_grants_to_support_water_sanitation_projects_in_Jordan-ZAWYA20161225051344/

Rabbani warns India against disrupting water flow into Pakistan

Senate Chairman Mian Raza Rabbani has said that it is a matter of concern for Pakistan that world powers and World Bank are not playing their due role in ensuring the implementation of the Indus Water Treaty.

Speaking to journalists at Bhuttos' mausoleum in Garhi Khuda Bukhsh Bhutto on Sunday, Mr Rabbani said: "We will resist any move favouring India on reducing or stopping water [flowing into Pakistan under the treaty]."

Commenting on the Indian threat to disrupt flow of water, the Senate chairman declared that any such attempt would be a violation of the treaty and would construed to be war.

Accompanied by Sindh PPP president Nisar Ahmed Khuhro, Senator Saeed Ghani, Waqar Mehdi and other party leaders, Mr Rabbani also criticised what he called the "wrong statement" given by former president retired General Parvez Musharraf in his recent

interview, and observed that it could create a wedge between institutions. He expressed the view that the judiciary and armed forces were performing in accordance with the Constitution.

Regarding the ongoing operations against terrorism in the country, the Senate chairman said it was wrong to believe that terrorism could be wiped out within a few days or with one or two operations. "We should repel such an impression as well ... this [rooting out terrorism] requires a long struggle," he said, and called for burying negative thinking to achieve the objective.

In reply to a question about the issue of regulatory authorities, the Senate chairman said that the federal law minister had submitted his statement, on legal aspects of the issue, in the upper house after which the ruling was reserved. "The ruling will be given in the next session of the Senate," he said.

Highlighting the sacrifices rendered by former prime minister and PPP chairperson Benazir Bhutto for the cause of democracy in the country, Mr Rabbani called Dec 27 a 'black day' in the country's history. He said Ms Bhutto was eliminated under an international conspiracy aimed at destabilising Pakistan and the subcontinent. "Ever since her assassination, the country and the subcontinent has been witnessing one crisis or the other," he observed.

He said that the country's political, internal and external conditions would have been different had Benazir Bhutto not been eliminated. "We have with us the her guiding principles ... and time demands from us all, irrespective of any territorial limitations, language and sect, to unite against terrorism, sectarianism and retrogressive forces and continue marching forward," he added.

Speaking about the opposition's bill on Panama Papers investigation, the Senate chairman said that the upper house had sent it to the National Assembly.

An identical bill tabled by the treasury benches was referred to the Senate's standing committee, which would submit its report in the house in due course of time, he said.

Anniversary arrangements reviewed

MNA Faryal Talpur on Sunday visited the residence of Sindh PPP president Nisar Ahmed Khuhro and discussed with him the arrangements made for the 9th death anniversary of slain party chairperson Benazir Bhutto in Garhi Khuda Bukhsh Bhutto. Senator Saeed Ghani, Suhail Anwar Siyal, Waqar Mehdi, Rashid Rabbani, Khursheed Junejo and other party leaders were present.

Later, Ms Talpur and Mr Khuhro different areas of Larkana to review progress of various development schemes.

She also visited the shrine of Qaim Shah Bukhari to lay a wreath and offer fateha. She then proceeded to Mahota village to condole the death of Ghulamullah Mahoto, the former convener of the Bhutto Mazar Committee, with his heirs. Later, she returned to the Naudero

House. A statement issued by Mr Khuhro in the evening said that a future course of action would be announced at the anniversary programme in Garhi Khuda Bukhsh Bhutto. It said that PPP chairman Bilawal Bhutto-Zardari and co-chairman Asif Ali Zardari would address the participants.

Meanwhile, speaking to newsmen in Larkana, Mr Khuhro said time demanded that all opposition parties should forge unity. "The PPP will launch a movement along with other opposition parties as it never opted for a solo flight," he said.

25/12/2016 online at: <https://www.dawn.com/news/1304485/rabbani-warns-india-against-disrupting-water-flow-into-pakistan>

CII-Triveni Water Institute inks MoU with the Water Research Center, Tel Aviv University, on Improving Indian Water Scenario across States and Regions

CII-Triveni Water Institute, CII's Center of Excellence on Water and the Water Research Center, Tel Aviv University, Israel, entered into Memorandum of Understanding, during the 9th India-Israel Forum. The MoU was signed by Mr Chandrajit Banerjee, Director General, CII, and Prof Joseph Klafter, President, Tel Aviv University.

The MoU enhances cooperation of the two countries on planning, designing, and implementing new and innovative tools and technologies that improve management of water in India. It identifies opportunities and geographical areas where WRC-TAU and CII-TWI will pool expertise and derive workable, scalable solutions in the water sector in India, for the benefit of the community at large. This includes technology, management, policy reforms and advance tools and techniques.

It covers various sectors namely, irrigation, industry, domestic water use, wastewater management, municipal sewage recycle, improving water use efficiency, training and capacity building, and most importantly implementing of strategies in drought prone areas of India. CII-Triveni Water Institute and Water Research Center, TAU together will work towards improving the water scenario across several states and regions of India.

Prof Klafter, TAU, mentioned that learnings from Israel, customized and applied to water sector in India will further strengthen the bilateral ties between the two countries. Political will and scientific considerations will lead to successful applications. In situ treatment technologies will also have a key role to play on a decentralized basis.

Mr Nikhil Sawhney, Member, Advisory Board, CII-Triveni Water Institute, and Managing Director, Triveni Turbine, mentioned that models of Public Private Partnerships, Awareness Generation, Policy reforms and Pricing that were applied and helped convert a desert country like Israel into Water surplus country will be further studied for adoption in India. The MoU would help advancing these.

Mr Chandrajit Banerjee, Director General, CII, said that the MoU opens doors to new state-of-the-art techniques and technologies that will be customized and implemented. He mentioned that combination of Intelligent Policy, Advanced Technology, and Stakeholder Participation will certainly bring about the much desired change in the sector. CII's WATSCAN, Water Scanning Tool, will be used and further strengthened for selection, and implementation of Water management strategies in the country.

26/12/2016 online at: http://www.business-standard.com/article/news-cm/cii-triveni-water-institute-inks-mou-with-the-water-research-center-tel-aviv-university-on-improving-indian-water-scenario-across-states-and-regions-116122600235_1.html

Al-Rahma Charity erects water stations for Syrian refugees in Turkey

Al-Rahma International Society, affiliated with Kuwait's Social Reform Society, launched on Monday three water filling and purification stations for Syrian refugees residing in refugee camps on the Turkish-Syrian border.

In a statement to KUNA during a ceremony to open these water stations, Secretary General of Al-Rahma International Society Yahya Al-Aqaili said that through these portable stations, refugees and displaced people will get access to pure water.

Moreover, he noted that the charity is well-versed in such projects, having opened a total of four water purification stations, which represents a breakthrough in efforts to provide pure drinking water for Syrian refugees and displaced people.

On the water stations, he said it is part of efforts to stifle the spread of waterborne diseases while simultaneously reducing the cost of pure water production by 80 percent, which subsequently grants refugees access to fresh water.

Meanwhile, according to the Syrian Research and Studies Center, less than 10 percent of Syrian children have access to pure water, noting that 70 percent of diseases in refugee camps are waterborne.

Al Aqaili also pointed out that each water station operates for 10 hours a day, with a capacity to churn out 3,000 water bottles daily.

26/12/2016 online at: <http://www.kuna.net.kw/ArticleDetails.aspx?id=2583463&language=en>

'Cloud fishing' reels in precious water for villagers in rural Morocco

“Everyone was leaving the village where I grew up, and it was all because of water,” says Jamila Bargach, whose village in rural Morocco has steadily emptied of people amid severe water stress.

As in most of rural Morocco, climate change and population pressures have led to more unpredictable rainfall patterns and the depletion of natural water sources, such as underground aquifers, in the area around the village of Taloust. Situated in the country's south-west Sidi

Ifni region, close to the coast, the area is extremely arid as it borders the northern Sahara desert. Average annual precipitation is less than 130mm.

In recent years, repeated cycles of intense drought followed by flash floods have led to deaths and the devastation of local infrastructure. Desertification, land degradation and the advance of the Sahara also affect the area.

However, the Sidi Ifni region does have one precious resource: fog. “We began to read about ‘fog harvesting’ projects around the world, and we wondered if we could repeat it here,” says Bargach. “Our observations started in 2006, and we saw that on average we have 143 days of fog a year.”

The fog is caused by a unique microclimate. Warm air driven by ocean currents makes landfall on Morocco’s Atlantic coast around the town of Sidi Ifni; as the humid air rises, it hits the natural barrier of Morocco’s Anti-Atlas mountains, which start just 35km east from the coast and rise to more than 2,500m. From there, the air turns into blankets of thick fog, particularly between December and June. For years, the community saw this as a bad thing: they believed the fog prevented rainfall, turned fields to mud and made people ill.

“Lots of people were reluctant – and even negative – at the beginning of the project. Some even thought that cloud water would not be safe to drink,” says Bargach, who is now director of non-profit organisation Dar Si Hmad. “We weren’t sure if it was going to deliver and we didn’t want to disappoint people. But slowly people began to be convinced, and now the local women call the nets their ‘wells’.”

Over the past 10 years, Dar Si Hmad has erected vast mesh nets to capture the moisture at an altitude of 1,225m on the slopes of Mount Boutmezguida – for what is now the largest fog-harvesting project in the world. About 600 square metres of mesh nets capture water particles from the fog, which then condense and drip into collection trays. Roughly 6,300 litres of water can be harvested daily. The water is then filtered and mixed with underground water. More than 8km of pipelines have been installed to share the water between about 400 people in five villages.

The benefits are obvious: clean water that is both instant and free. “We used to spend at least four or five hours going to collect water every day from wells in neighbouring villages, or collecting the rain in tanks during the rainy season,” says Zeyna Hamou Ali, 20, a local woman who works as a coordinator for Dar Si Hmad. “This made it very difficult for us to go to school because it’s just accepted by everyone that it’s a woman’s job to go and get water.”

The population of these areas of south-west Morocco consists predominantly of rural Berber women, the indigenous inhabitants of north Africa who speak a dialect of the Tamazight language. Rates of illiteracy among rural communities in Morocco are surprisingly high: more than 40%, with women accounting for the lion’s share of that figure. Dar Si Hmad also provides training and educational opportunities to women from the villages.

The idea of harvesting fog was first developed in South America in the 1980s and there are other projects in Chile, Peru, Ghana, Eritrea, South Africa and California in the US. In 2017,

Dar Si Hmad plans to start installing the next generation of bigger and better “cloudfisher” nets, developed in Germany. These larger nets will double the amount of water collected and connect another eight villages to the network.

In recognition of its contribution to finding innovative, community-led solutions to climate change, Dar Si Hmad was awarded the 2016 UN momentum for change award. Ali and the project’s directors travelled to collect the award at the COP22 climate change conference, which took place in Marrakech in November. “This is the first time I’ve left my village,” said the wide-eyed Ali at the glittering event. “You can see how much this project has changed my life.”

26/12/2016 online at: <https://www.theguardian.com/global-development/2016/dec/26/cloud-fishing-reels-in-precious-water-villagers-rural-morocco-dar-si-hmad>

Egypt below 30Hp Centrifugal Water Pumps Market Will Hit at a CAGR of 5.1% by 2014 to 2020

Future Market Insights (FMI) delivers key insights on the Egypt below 30Hp centrifugal water pump market in its upcoming market forecast and outlook titled, "Below 30 Hp Centrifugal Water Pump Market: Egypt Industry Analysis and Opportunity Assessment 2015 - 2020". The Egypt below 30 Hp centrifugal water pump market is projected to register a steady CAGR of 5.1% in terms of revenue during the forecast period due to various factors, regarding which FMI offers vital insights in detail.

FMI analyses the Egypt below 30Hp centrifugal water pump market in terms of market value (US\$ Mn) and volume (units), by applications, pump type and pump capacity, and provides insightful information regarding market dynamics, value chain, competitive landscape, current trends, market estimations and forecast until 2020.

Below 30Hp centrifugal water pumps are the most used types of pumps in the world due to robust and effective nature. Below 30 Hp centrifugal water pumps find application in various large and small scale industries such as chemicals, construction, waste water treatment and agriculture. On the basis of application type, the market has been segmented into industrial, agriculture and domestic use. The domestic application segment accounted for around 40% revenue share of the overall Egypt below 30Hp centrifugal water pump market in 2014, and is expected to register a CAGR of 4.8% over the forecast period. Agriculture application is estimated to grow at the fastest CAGR during the forecast period. Every application segment is further sub-segmented into monobloc, mini pump and submersible pump. Submersible pumps are widely preferred for all the above mentioned applications; however, monobloc pumps is expected to register a high CAGR over the forecast period. Submersible centrifugal water pumps are widely preferred in Egypt, and account for over 50% share of the Egypt below 30Hp centrifugal water pumps market.

This report covers trends driving growth of each segment and respective sub-segments and offers pricing analysis and insights for each pump type and their respective capacities. From the capacity perspective, segmentation is done on the basis of horsepower for all three types

of pumps. A detailed pricing analysis is done for the same. The 25 to 30 Hp pump in the monobloc and submersible pump category are more preferred, while the 1 to 2 Hp capacity pumps account for over 50% share in the mini centrifugal water pump category.

Increasing investment in housing construction, infrastructure development, expansion of water supply network and increase in agriculture initiatives are some of the macro-economic drivers for the Egypt below 30Hp centrifugal water pump market. Political instability and price volatility are some of the factors restricting growth of the Egypt below 30Hp centrifugal water pump market. Prices of China-made centrifugal water pumps are relatively lower and this is one of the major concerns for global and regional players operating in this market. Adoption of photovoltaic powered centrifugal water pumps and solar powered centrifugal water pumps is trending in the Egypt below 30Hp centrifugal water pumps market.

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