Central Water Commission
WSE Dte.,
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West Block II, Wing No-4
R. K. Puram, New Delhi – 66.

Dated 23.4.2019

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The News Clippings on Water Resources Development and allied subjects are enclosed for perusal of the Chairman, CWC, and Member (WP&P/D&R/RM), Central Water Commission. The soft copies of clippings will be uploaded on the CWC website.

S. Mahendran
23.4.2019
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O/C

Deputy Director, WSE Dte. on Leave.

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For information to

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Member (WP&P/D&R/R.M.), CWC and all concerned, uploaded at www.cwc.nic.in

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The Hindu (New Delhi) ✓
Rajasthan Patrika (Hindi)

Deccan Chronicle
Deccan Herald
The Times of India (A)
Business standard
The Economic Times

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Earth Day: saving the planet may cost $100 billion per year

H-23

Scientists propose a policy to prevent another mass extinction event

PRESS TRUST OF INDIA
WASHINGTON

Saving the diversity and abundance of life on the earth may cost $100 billion a year, say scientists who have proposed a policy to prevent another mass extinction event on the planet.

There have been five mass extinctions in the history of the earth. Scientists now estimate that society must urgently come to grips this coming decade to stop the very first human-made biodiversity catastrophe.

"The sixth extinction is on our society's shoulders; it really is," ecologist Greg Asner, of Arizona State University in the U.S., said in a statement on the occasion of Earth day.

Mr. Asner is one of 19 international authors with a bold new science policy proposal to reverse the tide, called "A Global Deal for Nature" (GDN). The policy's mission is to save the diversity and abundance of life on the earth – for the price tag of $100 billion a year.

Societal action: The policy's mission is to save the diversity and abundance of life on earth. ▪ GETTY IMAGES/ISTOCKPHOTO

Companion pact

Societal investment in the GDN plan would, for the first time, integrate and implement climate and nature deals on a global scale to avoid human upheaval and biodiversity loss.

While the 2015 Paris Climate Agreement was the first major accord to take global action toward climate change policies, the international team of GDN scientists believe a similar companion pact is desperately needed to implement the very first global nature conservation plan to meet these challenges.

"The Global Deal for Nature is a time-bound, science-based plan to save the diversity and abundance of life on Earth. Achieving the milestones and targets of the Global Deal for Nature is the best gift we can offer to future generations–an environmental reset, a pathway to an Eden 2.0," said Eric Dinerstein, of the U.S.-based nongovernmental organisation Resolve.

The study, published in *Science Advances*, outlines the guiding principles, milestones and targets needed to avoid the extinction threats of a two degrees Celsius warming forecast.

The three overarching goals of the GDN are to protect biodiversity by conserving at least 30% of the earth's surface by 2030; mitigate climate change by conserving the earth's natural carbon storehouses; and reduce major threats. The essence of implementing the plan is to set up protected areas of land as natural ecosystems.

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Why displacement due to river erosion not a poll issue, ask villagers

Several villages in central Bengal have disappeared under Ganga water, but no party has promised a solution

ELECTION 2019

SUVOJIT BAGCHI
MALDA

The village Hossainpur, that voted in all earlier elections, has disappeared. Last October, the village with about a thousand voters was devoured by the Ganga displacing all. Earlier this week, standing close to the advancing river, the villagers identified points where their mud and bamboo thatched houses were located.

"Mine had three rooms, a courtyard and a garden," said Rina Sarkar, a mother of three. The residents, mostly from Namasudra community, had moved twice earlier before settling in Hossainpur which was located at the point where the river splits in south Malda, with one branch moving to Bangladesh. As the village disappeared, the villagers moved further south to settle on the floodplains and named it "Srikanta Sarkarer Para", after a local popular trader.

Rina Sarkar (left) and Dipali Biswas pointing at the place where their village Hossainpur existed. • SUBHAM DUTTA

'River man'

Many thousand villages in central Bengal have disappeared or gone to other States due to river erosion over the last four decades. "About two lakh Bengalis became residents of Jharkhand as the river moved towards Bangladesh, giving birth to new floodplains in Jharkhand. Bengal's loss is Jharkhand's gain," said Kedar Mondal, a former CPI(M) activist. Octogenarian Mr. Mondal is considered the "river-man" of central Bengal, with in-depth knowledge to understand river erosion.

Since 2014 Lok Sabha poll, Mr. Mondal has documented 900 families "who have lost land and livelihood in at least six villages" on the border between Malda and Murshidabad. He blamed construction of the Farakka Barrage, nearly five decades ago, for excessive siltation causing large-scale flooding and erosion.

"Experts have reported on many occasions that the barrage allows the water to flow but the silt drops on the riverbed. Such siltation raises the height of the riverbed, washing away the villages year after year," Mr. Mondal said. What bothers Mr. Mondal more is the lack of response from the government.

"It [river erosion] never features in party manifestos. None of the parties talks about erosion and no one indicates any permanent solution," said Dipali Biswas, formerly a Hossainpur resident. Suranjan Mondal, a farmer, said that young men from erstwhile Hossainpur have now moved to Kerala.

"Didi's [CM Mamata Banerjee] slogan is 'Ma, Mati, Manush [mother, land, people]' but she refuses to find a permanent solution to the *manush* on this *mati*," said Govinda Roy, a farmer.

TMC candidate from Malda South Moazzem Hossain and BJP candidate Khagen Murmu said addressing the issue of river erosion will be their priority, if elected.

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Students get lessons on water conservation and laws around it

HT-23

Kainat Sarfaraz
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NEW DELHI: To raise enviro-legal literacy levels among school students, the Delhi State Legal Services Authority (DSLSA) Monday launched a module on conservation of water to apprise children of laws and penalties around it.

The session was planned by judges Tanvi Khurana and Pawan Kumar, who are secretaries at DLSA, for 131 students between classes 6 and 7 at Janki Devi Sarvodaya Kanya Vidyalaya, Mayur Vihar Phase 1, on the occasion of Earth Day.

"They should know what the law says about conserving environment and be aware of their rights and duties," Khurana said. "We are conducting one-hour sessions with students from Class 6 so that they spend the rest of their school years in implementing these lessons."

The students were taught about water conservation practices like rainwater harvesting. "Turn off the water while you brush your teeth. Use a cup of water to rinse your mouth. This will save more than 15 litres every minute," students were told.

When informed that one uses 85 litres of water while taking a shower, students questioned why there was no discussion around such facts that could help reduce water wastage.

"Students often see other people break rules but they do not know how to take action or where to report it," said Anita Singh, Head of School.

For instance, Section 277 of the Indian Penal Code (IPC) says that spoiling water of a public spring or reservoir, so as to render it less fit for the purpose for which it is ordinarily used, is punishable with a jail term that may extend to three months, or with a fine of up to ₹500, or with both.

"Children listened attentively as they were told about complaint cells where they could report such acts," said Indu Bala, a teacher at the school and the in-charge of legal literacy club.

On Monday, the students were also apprised of the challenges of having an online presence and how to safeguard themselves against cyber threats.

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Pioneer, Delhi
Tuesday, 23rd April 2019;

The bottom line on free electricity

For a State where agriculture is largely based on ground water, provision for round-the-clock power supply may not be the best policy. Instead, the Telangana Government's scheme has led to increasing farm distress. Alternatives such as recharging wells, water harvesting and conservation must be explored

JIN KATHRINE **FOSLI**

A AMARENDER **REDDY**

Sattaiah, a farmer in Shivampet village of Medak district in Andhra Pradesh, dug another borewell to save his standing crop from drought as his existing borewell had dried up in January. Like his previous one, the new alternative, too, failed and he incurred huge losses. Studies conducted by the Indian Council of Agricultural Research and the World Bank prove that groundwater-irrigated farms have twice the crop productivity as compared to rain-fed farms. However, groundwater must not be over-exploited as it is a natural resource with limited availability.

In this context, is the Telangana Government's scheme to provide round-the-clock power supply to 2.3 million farmers for free just another populist policy? Or is it a predominantly agricultural State's desperate response to climate change? Or will it really help the farmers in the long run? Similar policies have been launched in many other States, including Andhra Pradesh, Punjab and Maharashtra since the late 1970s.

Never mind the answer, more power does not equal more water in the long run. Water being a limited resource, free electricity for agriculture can lead to over-extraction, failed investments and worse still, borewell failures rather than making this scarce resource cheaper. Depletion of groundwater levels to 1,000 feet and more has been reported in some drought-prone areas due to excessive digging of borewells. The Telangana Government's move to provide 24x7 free electricity to farmers is lopsided and neglects other water sources such as farm ponds and village tanks. Complementary water sources and recharging systems are left to dry up, rather than being maintained. In the current situation, every farmer must fend for himself, in contrast to the traditional systems which usually required cooperation, whether voluntary or forced through regulation.

Due to the geology of our States such as Telangana, which have underlying hard rock formations, farmers are competing in a game they cannot win. According to figures from the Central Ground Water Board, farmers are not likely to hit major water-bearing fractures below 100-110 feet. Groundwater levels had already sunk beyond that level in many places due to extensive well drillings when the 24x7 free electricity policy was implemented.

Besides poor and erratic rains, over-exploitation of water without sustainable recharge options has led to a decline in groundwater levels in villages. The unfortunate outcome is the diminishing of the common resource base, losses on investments, crop failures and possibly, drinking water shortage. As of today, about 31 per cent of blocks in India are at a semi-critical, critical or over-exploited stage in terms of groundwater exploitation.

Fiscal costs to the Government: The central electricity authority, which announced the details of the progress of various States in the power sector for the year 2017-18, observed that Telangana secured the first place in the country in power consumption and per capita power consumption. The free electricity scheme was introduced with an aim to reduce farm distress but has in turn financially distressed the discoms. Distribution companies were already heavily in debt when the 24-hour free electricity scheme was introduced from December 31, 2017. With groundwater table declining, electricity use is bound to increase because of the extra power needed to pump water from deeper levels.

Discoms all around the country are adversely affected by subsidies such as free electricity. This is one of the factors that contributes to the widening gap between income and cost of supply, according to the Central Electricity Authority. One can even say that falling groundwater levels lead to higher levels of debt for electricity companies or levels of expenditure that are hard to recover.

Electricity consumption for agriculture in Telangana amounted to 29 per cent of the total consumption in 2016. The same sector contributed only three per cent to revenues for the electricity board. Still, there has been no policy shift to bridge the gap between electricity consumption and revenue generation. There are many other options that are more viable, environmentally and economically, such as construction of farm ponds, reviving village tanks and promoting micro-irrigation systems.

Look for alternatives: While the policy has been around too short to draw any definite conclusions, on their own account, farmers must shift their cropping patterns to sowing water-intensive crops such as paddy. This is not to say that it is a sustainable policy or that the farmers' response is viable. High informal debts due to investments in digging borewells was one of the causes for farm distress. Although free electricity contributes to reduced input costs, it does little to address the risks and losses faced by farmers. There is a need to strengthen institutions where farmers can acquire low-risk formal loans and facilitate viable payment conditions.

Farmers need information and education on which crops they should opt for in water-scarce conditions. They should be given incentives to grow suitable variants. Instead of blindly digging borewells on farmers' fields, they must be given assistance by hydrologists or technical experts. Many farmers also hold the opinion that instead of a 24-hour electricity, about five hours of uninterrupted electricity are enough to pump water for crops. Promoting groundwater recharging structures like farm ponds and village tanks, which reduces risk of borewell failures, is another alternative that can be explored.

In an attempt to discourage over-exploitation of groundwater and ensure a more robust regulatory mechanism in the country, the Government has proposed to slap for the first time a Water Conservation Fee (WCF) on extraction by all users of groundwater in the country, barring the armed forces, farmers and individual households.

There are questions that are hard to address for State politicians but should be addressed at the national level. Faced with the consequences of climate change and disintegration of the rural resource base, how can farmers and the landless rural population make a living in a sector dependent on monsoon rains, frequent failures of rains, prolonged dry spells, lack of water and decreasing hopes of livelihood? Should these forces be left to live their own lives? Without any concerted effort, the common rural inhabitant will drift like a splint in the open seas tossed by the forces of climate change, market fluctuations and shifting policy regimes.

(A Amarender Reddy is Principal Scientist, Agricultural Economics, ICAR and Jin Kathrine Fosli is with the University of Oslo)

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Jansatta, Delhi
Tuesday, 23rd April 2019;

बढ़ती आबादी, घटता पानी

सुविज्ञा जैन

इस समय भारत में बांधों और जल संचयन के दूसरे साधनों की संख्या और क्षमता दोनों ही जरूरत से बहुत पीछे हैं। देश में उपलब्ध पांच हजार से ज्यादा छोटे-बड़े बांध इस समय वर्षा से मिल रहे पानी को रोक कर रखने के लिए अपर्याप्त साबित हो रहे हैं।

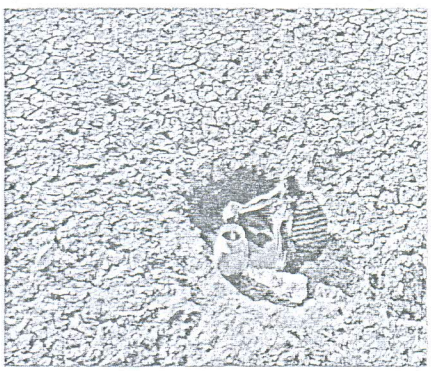
संयुक्त राष्ट्र ने वैश्विक जनसंख्या के आंकड़े जारी कर दिए हैं। भारत की जनसंख्या एक सौ छत्तीस करोड़ तक पहुंच गई है। पिछले नौ साल में बाकी सभी देशों की तुलना करें तो भारत की जनसंख्या सबसे तेज रफ्तार से बढ़ी। दुनिया में सबसे ज्यादा आबादी वाला देश अभी भी चीन ही है, जिसकी आबादी इस समय एक सौ बयालीस करोड़ का आंकड़ा पार कर आई है। अगर चीन की जनसंख्या बढ़ोतरी की रफ्तार देखें तो पिछले नौ साल में वह सिर्फ 0.5 फीसद सालाना की दर से बढ़ी, जबकि इसी दौरान भारत की जनसंख्या 1.2 फीसद की दर से बढ़ी।

भारत में बढ़ती जनसंख्या के साथ संसाधनों की जरूरत भी बढ़ती है। हर देश के पास अपनी आबादी की गुजर बसर के लिए संसाधन सीमित होते हैं। कुछ प्राकृतिक संसाधन तो स्थिर होते हैं जिन्हें बढ़ाया ही नहीं जा सकता, जैसे- जल संसाधन। जल जीवन की अनिवार्य आवश्यकता है और भारत इस समय अगर सबसे ज्यादा किसी चीज की कमी से जूझ रहा है तो वह पानी ही है। जिस रफ्तार से भारत की आबादी बढ़ रही है उस रफ्तार से पानी का इंतजाम करने में हम साल दर साल नाकाम होते जा रहे हैं। यह एक तथ्य है कि प्रचुर वर्षा के कारण कभी भारत जल संपन्न देश समझा जाता था। लेकिन अब ऐसा नहीं है। आबादी बढ़ने के कारण अब हम जल संपन्न देशों की सूची से बाहर हो गए हैं। यह अलग बात है कि इस भयावह हकीकत का पता हमें इसलिए नहीं चल रहा है कि हम पानी की जरूरत पूरी करने के लिए भूजल पर निर्भरता बढ़ाते आए हैं। मौजूदा हालात ये हैं कि भूजल भी चुक जाने को आ गया है। भारत सरकार की एक रिपोर्ट आई है कि दो-तीन साल के भीतर ही देश के कई शहरों का भूजल स्तर हमारी पहुंच से नीचे गिर जाएगा।

इस समय विश्व में जितना भूजल निकाला जा रहा है उसका एक चौथाई यानी पच्चीस फीसद सिर्फ भारत निकाल रहा है। जबकि इस समय विश्व को प्रकृति से जितना ताजा पानी मिलता है उसमें भारत के हिस्से में सिर्फ चार फीसद आता है। संयुक्त राष्ट्र की विशेषज्ञ एजंसी फूड एंड एग्रीकल्चर आर्गेनाइजेशन (एफएओ) के हिसाब से प्रति व्यक्ति प्रति वर्ष कम से कम दो हजार घन मीटर पानी चाहिए। जिस देश में प्रति व्यक्ति इससे कम पानी उपलब्ध हो, उसे जल अभाव वाले देश की श्रेणी में रखा जाता है। अगर यह उपलब्धता एक हजार घन मीटर प्रति व्यक्ति प्रति वर्ष से कम हो तो उस देश को गंभीर जल अभाव की श्रेणी में रखा जाता है।

देश को आजादी मिलने के समय हमारी आबादी तैंतीस करोड़ थी और बारिश से हमें हर साल चार हजार अरब घन मीटर पानी मिलता था। तब प्रति व्यक्ति सालाना जल उपलब्धता पांच हजार छह सौ घन मीटर थी, यानी अंतरराष्ट्रीय मानदंड के लिहाज से पर्याप्त से कोई ढाई गुनी ज्यादा। लेकिन अब सन 2019 में हमारी आबादी एक अरब छत्तीस करोड़ हो चुकी है, यानी आजादी के बाद से आज तक आबादी चार गुना बढ़ गई। जबकि बारिश से मिलने वाले पानी की मात्रा वही है। इस तरह से इस वक्त भारत में प्रति व्यक्ति प्रतिवर्ष जल की उपलब्धता लगभग एक हजार चार सौ घनमीटर ही बची है। लेकिन यह आंकड़ा उपलब्ध पानी का है, इस्तेमाल होने लायक पानी का नहीं। इसके लिए बारिश के पानी के सही-सही हिसाब-किताब पर गौर करना पड़ेगा।

भले ही देश की धरती पर वर्षा और हिमपात के रूप में चार हजार अरब घनमीटर पानी बरसता है, लेकिन यह पूरा का पूरा पानी इस्तेमाल के लिए उपलब्ध नहीं है। इस चार हजार अरब घनमीटर पानी में से आधे से ज्यादा यानी दो हजार एक सौ इकत्तीस घनमीटर पानी भाप बन कर उड़ जाने से और देश की विशिष्ट भू-आकृति के कारण इधर-उधर से बह कर समुद्र में चला जाता है। काफी कुछ पानी जमीन सोख लेती है। इसीलिए जल विज्ञानी हिसाब लगाते हैं कि सिर्फ एक हजार आठ सौ उनहत्तर अरब घनमीटर पानी हमें नदियों में और भूजल के पुनर्भरण के रूप में उपलब्ध है। लेकिन भारत की स्थलाकृति के कारण यह एक हजार आठ सौ उनहत्तर अरब घनमीटर पानी भी



पूरा का पूरा हमारी पहुंच में नहीं है। इस समय हमारी पहुंच सिर्फ एक हजार एक सौ तेंईस अरब घनमीटर पानी तक है। इस आंकड़े में भी सतही जल सिर्फ छह सौ नब्बे अरब घनमीटर है। बाकी चार सौ तैंतीस अरब घनमीटर पानी भूजल के रूप में उपलब्ध है। बेशक यह भूजल एक प्रकार से वर्षा का ही पानी है जो रिस कर जमीन में जमा होता है, लेकिन चिंताजनक तथ्य यह है कि बारिश का पानी जमीन में रिस कर कम मात्रा में जा रहा है और हम भूजल का दोहन ज्यादा कर रहे हैं।

दुनिया में सभी देश अपनी जल संचयन क्षमता बढ़ाने में लगे हैं। अमेरिका अपने हर नागरिक के लिए प्रति वर्ष पांच हजार घन मीटर जल का संचयन कर लेता है। मेक्सिको तक प्रति व्यक्ति प्रति वर्ष एक हजार घन मीटर जल संचयन कर रहा है। जबकि भारत में प्रति व्यक्ति सालाना दो सौ पच्चीस घन मीटर पानी का ही संचयन हो पा रहा है। यह आंकड़ा भी औसत लेकर निकाला गया है। इस समय भारत में बांधों और जल संचयन के दूसरे साधनों की संख्या और क्षमता दोनों ही जरूरत से बहुत पीछे है। देश में उपलब्ध पांच हजार से ज्यादा छोटे-बड़े बांध इस समय वर्षा से मिल रहे पानी को रोक कर रखने के लिए अपर्याप्त साबित हो रहे हैं। इसका सबसे बड़ा साक्ष्य पिछले साल के बारिश के आंकड़े हैं। पिछले साल सामान्य बारिश रहने के बावजूद कुछ ही महीनों के अंदर देश का सैंतालीस फीसद क्षेत्र सूखे की चपेट में आ गया था। सूखे के आंकड़े आइआइटी-गांधीनगर ने महीने भर पहले जारी किए हैं। मानसून के समय बाढ़ और कुछ ही महीनों बाद देश में सूखा पड़ जाना जल प्रबंधन की नाकामी का जीता जागता सबूत है।

पिछले साल ही नीति आयोग ने देश में पानी की स्थिति पर एक रिपोर्ट जारी की थी। रिपोर्ट में बताया गया था कि आने वाले दो-तीन साल में देश के इक्कीस शहरों का भूजल लगभग समाप्त हो जाएगा। इस समय सबसे ज्यादा भूजल का दोहन कृषि के लिए किया जा रहा है। नीति आयोग की रिपोर्ट में यह भी बताया गया था कि 2030 तक भारत में पानी की मांग आपूर्ति की तुलना में दुगनी हो चुकी होगी। अब जनसंख्या के नवीनतम आंकड़ों के हिसाब से यह आफत 2030 के पहले भी आ सकती है।

हालत इतनी नाजुक है कि अगर किसी भी साल मौसम ने थोड़ी-सी भी ऊंच-नीच कर दी तो नतीजे कई गुने भयानक हो सकते हैं। वैसे यह अंदेशा इसी साल खड़ा हो गया है। पिछले हफ्ते ही यह बताया गया है कि इस साल अल नीनो प्रभाव के कारण भारत में बारिश सात फीसद कम होगी। उसके बाद सरकारी मौसम विभाग ने भी इस साल तीन फीसद कम बारिश का अनुमान लगाया है। जब देश का आधे से ज्यादा हिस्सा पहले से ही सूखे की चपेट में हो, बांध और जलाशय खाली पड़े हों, वैसी हालत में कम बारिश के अनुमान कुछ ज्यादा ही डरा रहे हैं। यह भी तय है कि पानी की कमी की समस्या अब साल दर साल और गंभीर होती जाएगी। अगर जल संचयन की क्षमता बढ़ाने के काम को सर्वोच्च प्राथमिकता में न लाया गया तो बात हाथ से निकल जाएगी।