

Projects worth Rs 425 crore approved by NMCG**Projects worth Rs 425 crore approved by NMCG**

The Executive Committee of National Mission for Clean Ganga in its 4th meeting held here today approved seven projects worth Rs 425 crore in the sector of sewage infrastructure, Ghat development and research.

In sewage sector, three projects each in Uttar Pradesh and Bihar have been approved. For Uttar Pradesh, interception, diversion and STP projects for Unnao, Shuklaganj and Ramnagar have been approved. These three projects aim at creation of sewage treatment capacity of 29 MLD (Unnao- 13 MLD, Shuklaganj- six MLD and Ramnagar- ten MLD) at a total cost of Rs 238.64 crore.

While in Bihar, three projects at Sultanganj, Naugachia and Mokama with total estimated cost of Rs 175 crore have been approved. These three projects will create additional sewage treatment capacity of 27 MLD (Sultanganj- ten MLD, Mokama- eight MLD and Naugachia- nine MLD).

All the six projects will be provided with Operation and Maintenance cost for 15 years by Central government and 100 per cent central assistance. It is also important to mention that Unnao and Sultanganj projects will be taken up under Hybrid Annuity based PPP model in which 60 per cent of the capital cost will be paid to the contractor who has constructed the STP, over a period of 15 years, on the basis of his work performance on the achievement of desired norms of treated waste water.

A research study to understand the non-putrefying properties of river Ganga in both water and sediment was also approved at an estimated cost of Rs 4.96 crore. The study will be an extension of a research carried out by National Environment Engineering Research Institute (NEERI) to identify the special properties of river's waters. This research would focus on finding out the science behind these special properties in order to formulate a strategy to retain these characteristics.

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Government launches e-RaKAM portal for selling agri produce

NEW DELHI: The government today launched a portal, [e-RaKAM](#), to provide a platform to sell agricultural produce.

The portal is a joint initiative by state-run-auctioneer MSTC and Central Warehousing Corporation arm CRWC.

Launching the portal with Steel Minister Chaudhary Birender Singh, Consumer Affairs, Food & Public [Distribution](#) Minister Ram Vilas Paswan said the effort should be to auction 20 lakh tonnes of pulses in the first phase through the platform.

"I personally feel that we should start with auctioning of pulses as we have them in abundance. Twenty lakh tonnes of pulses were lying idle at warehouse and it still has no buyers. E-RaKAM will help us and farmers hugely," Paswan said.

He said initial hurdles will be there as most of the farmers are illiterate and are in bad condition, Paswan said, as per a joint statement issued by MSTC and CRWC. It added that now various crops whose price increases due to rainfall or bad weather conditions, will be managed and get the [market](#).

He said even transport will face initial hurdles that will be sorted out over time.

Steel Minister Singh said, "Our aim is to strengthen the agriculture-oriented Indian [economy](#) and farmers, who play a vital role in national development. I congratulate all for the launch of e-RaKAM."

E-RaKAM is a first-of-its-kind initiative that leverages [technology](#) to connect farmers of the smallest villages to the biggest [markets](#) of the world through internet and e-RaKAM centres.

E-RaKAM is developed by MSTC Limited and supported by marketing & logistics partner CRWC Limited.

E-RaKAM is a digital initiative bringing together the farmers, [FPOs](#), PSUs, civil supplies and buyers on a single platform to ease the selling and buying process of agricultural products.

Under this initiative, e-RaKAM centres are being developed in a phased manner throughout the country to facilitate farmers for online sale of their produce.

The statement said farmers would be paid through e-Payment directly into their bank accounts.

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ISARC to play a major role in harnessing and sustaining rice production in eastern India & similar ecologies in other South Asian and African countries: Shri Radha Mohan Singh
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Press Information Bureau
Government Of India

Ministry of Agriculture (02-August, 2017 17:29 IST)

ISARC to play a major role in harnessing and sustaining rice production in eastern India & similar ecologies in other South Asian and African countries: Shri Radha Mohan Singh

DAC&FW and IRRI sign Memorandum of Association (MOA) to establish the ISARC

In order to establish the ISARC, a Memorandum of Association (MOA) has been signed today between the Department of Agriculture, Cooperation and Farmers Welfare (DAC & FW) represented by Secretary, DAC&FW and International Rice Research Institute (IRRI), Philippines represented by Director General, IRRI. Union Agriculture and Farmers Welfare Minister, Shri Radha Mohan Singh graced the occasion.

Shri Singh said that the Center will be the first international Center in the eastern India and it will play a major role in harnessing and sustaining rice production in the region. It is expected to be a boon for food production and skill development in the eastern India and similar ecologies in other South Asian and African countries.

Agriculture Minister said this would be a Centre of Excellence in Rice Value Addition (CERVA) and will include a modern and sophisticated laboratory with the capacity to determine quality and status of heavy metals in grain and straw. The Centre will also undertake capacity-building exercises for stakeholders across the rice value chain.

ISARC will operate under the governance of the IRRI Board of Trustees who will appoint an appropriate IRRI staff member as Director. A Coordination Committee will be headed by Director General, IRRI as Chair and Secretary, Government of India, DACFW as Co-Chair. The other members of Coordination Committee are

Deputy Director General (Crop Sciences), ICAR; Director, NSRTC; IRRI representative in India, representative of Government of UP and representatives of Governments of Nepal & Bangladesh and Private Sector.

Shri Singh said that the rich biodiversity of India can be utilised to develop special rice varieties. This will help India to achieve higher per hectare yields and improved nutritional contents. India's food and nutritional security issues will also be addressed. The Centre will support in adopting value chain based production system in the country. This will reduce wastage, add value and generate higher income for the farmers. The farmers in Eastern India will benefit in particular, besides those in South Asian and African countries.

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Cabinet approves MoU between India and BRICs countries to set up BRICS Agriculture Research Platform

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The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has given its ex-post facto approval for a Memorandum of Understanding (MoU) signed among India and various BRICs countries for establishment of the BRICS Agriculture Research Platform (BRICS-ARP).

Background:

During the 7th BRICS Summit held on 9th July 2015 at Ufa in Russia, Prime Minister Shri Modi proposed to establish BRICS Agriculture Research Centre which will be a gift to the entire world. The Centre will promote sustainable agricultural development and poverty alleviation through strategic cooperation in agriculture to provide food security in the BRICS member countries.

In order to further intensify cooperation among BRICS countries in agricultural research policy, science and technology, innovation and capacity building, including technologies for small-holder farming in the BRICS countries, an MoU on establishment of the Agricultural Research Platform was signed by the foreign Ministers of BRICS countries in the 8th BRICS Summit held on 16th October, 2016 at Goa.

BRICS-ARP will be the natural global platform for science-led agriculture-based sustainable development for addressing the issues of world hunger, under-nutrition, poverty and inequality, particularly between farmers' and non-farmers' income, and enhancing agricultural trade, bio-security and climate resilient agriculture.

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Asia Africa Growth Corridor: Chinese daily cautions India, Japan over trade corridor

BEIJING: The [Asia Africa Growth Corridor](#) ([AAGC](#)) sponsored by [India](#) and [Japan](#) is welcome — as long as it does not try to trip China's [Belt](#) and Road initiative, a Chinese newspaper said on Wednesday.

Announced by Indian Prime Minister Narendra Modi in May, the AAGC, essentially a maritime corridor, was seen by some as a counterbalance to the Belt and Road initiative, the state-run Global Times said in a report.

"The new venture, jointly led by India and Japan - two countries that have so far opted not to join the B&R initiative - sets out a vision for the better integration of South Asia, Southeast Asia and East Asia with Africa and Oceania," it said.

The Times said the India-Japan vision indicates an overlap between the AAGC and the [Belt and Road project](#) "and invites controversy over the actual intentions behind the growth corridor.

It goes without saying that India and Japan could feel free to embark on a new connectivity initiative and no one is begging them to join the B&R initiative.

"As long as the AAGC aims to embrace inclusive growth and promote joint prosperity, the corridor should be encouraged.

"But if India and Japan design the corridor to deliberately counterbalance China's B&R, they should think twice before rushing to it because the route of the AAGC has an extensive geographic overlap with the route of the B&R initiative," the report said.

"That's particularly the case, considering that China has already made huge commitments to developing Africa while the India-Japan partnership is only just taking shape.

"If the AAGC aims to squeeze out China's B&R initiative instead of serving as a complement, it actually divides what's supposed to be a united force to forge ahead with inclusive growth in dozens of countries and regions along the route of the B&R initiative.

"India, for its part, should be particularly level-headed and guard against any over-assertive plans that may go awry."

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Nabard: Lok Sabha passes bill to raise Nabard's capital to Rs 30000 crore

NEW DELHI: A bill to enable exit of RBI from [Nabard](#) and increase authorised capital of the development institution six times to Rs 30,000 crore was passed by the Lok Sabha today.

The National Bank for Agriculture and Rural Development (Amendment) Bill, 2017 also seeks to amend certain clauses in the light of reference of the Micro, Small and Medium Enterprises (MSMEs) Development Act, 2006 in the proposed legislation.

Minister of State for Finance Santosh Kumar Gangwar said that the law is one of the "major step" towards doubling farmers' income by 2022.

This is a small bill but irrespective of that, 28 members put their views on this legislation, which reflects the interest of members on agriculture related issues, he said.

He said that as this is a short bill, suggestions made by members would be considered when the detail bill will come.

"This law would benefit farmers," he said adding the government is sensitive towards issues of farmers.

On concerns being raised by few members such as N K Premachandran (RSP) and K C Venugopal (Congress) on including MSMEs in place of SSIs (small scale industries), he said Nabard would always support agriculture and not corporates.

Earlier while moving the bill for consideration and passage, Gangwar said in his introductory speech on The NABARD (Amendment) Bill, 2017 said National Bank for Agriculture and Rural Development (NABARD) is a premier organisation which was established in 1982.

It provides loans for agriculture, small scale industries among others.

In the last three decades, there has been diversification in the functioning of Nabard and in the last three years, after the BJP government came to power, the bank has undergone a lot of changes, he said.

There has been changes in its priority and policies in the area of agriculture and rural development. Now Nabard is refinancing and providing direct loan in the agriculture and rural areas, he added.

The balance sheet of Nabard has increased from Rs 1.82 lakh crore in March 31, 2012 to Rs 3.10 lakh crore on March 31, 2016, he said adding that means, there has been an increase of around 70 per cent in the activities of Nabard.

Nabard plays an important role for doubling the income of farmers and increasing the infrastructure in the rural areas, the minister said adding "Keeping this target in mind I am placing this bill in the house".

At present the authorised capital of Nabard is Rs 5,000 crore and there is a proposal to increase it to Rs 30,000 crore, Gangwar said.

According to the need, he said, the government can increase the authorised capital from time to time.

If there is a need to increase this authorised capital above Rs 30,000 crore, then after discussions with RBI it can be increased, he added.

There is another suggestion that at present in Nabard, the centre has a share of 99.6 per cent and the RBI has the remaining share, he said adding there is a conflict in the role of the RBI.

As RBI is also a regulator, its 0.4 per cent equity will be transferred to Centre, he said adding as a result, 100 per cent equity will come to the Centre.

Participating in the discussion, BJD member B Mahtab suggested that the NABARD can have an authentic data bank on rural credit.

Agriculture credit is a major issue and that disbursement is dominated by private banks in certain states, he added.

Mahtab also said the functioning of [Regional Rural Banks](#) (RRBs) should be looked into.

Gajanan Kirtikar (Shiv Sena) said the government could look at appointing a RBI Deputy Governor as chairman of the NABARD.

Three members from the Lok Sabha and two from the Rajya Sabha should be appointed to the NABARD board for a period of two years, TDP member Murali Mohan said.

Varaprasad Rao (YSR Congress) said that more funds should be given to the bank for rural development activities.

Mamtaz Sanghamita (TMC), Om Birla (BJP), K Parasuraman ([AIADMK](#)), Konda Vishweshwar Reddy (TRS), Jitendra Chaudhury (CPI-M), L N Yadav (BJP), J P N Yadav (RJD), Bhagwant Mann (AAP) and M K Raghvan (INC) also spoke.

Members from the northeast India across different states rued that their region has been getting little share of the credit funds.

Kamakhya Prasad, a BJP member of the Assam, said the penetrations of banks in his insurgency-hit state was less and it should be stepped up.

P D Rai, the lone member of [Sikkim Democratic Fund](#) (SDF), said the northeast gets one per cent of the credit, leading to farmers trapping in the net of loan sharks.

C K Sangma, another member of [National People's Party](#) (NPP) from Meghalaya, emphasised that the government policy should focus on food processing in the northeast region.

[Kalushendra Kumar](#), the lone member of the JDU, which has broken ranks with the opposition to align with the BJP in Bihar, emphasised on giving credit-free loans to farmers.

[Ramesh Bidhuri](#) of the BJP said unlike the previous regimes, the focus of the Modi government is truly empowering the farmers rather than resort to populist measures.

He also cited the Bill which will allow the government to enhance the capital of NABARD bank from Rs 5000 crore to Rs 30,000.

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AGRI UDAAN- Food and Agribusiness Accelerator 2.0**AGRI UDAAN- Food and Agribusiness Accelerator 2.0**

ICAR-NAARM Technology Business Incubator (TBI), a-IDEA and Indian Institute of Management Ahmedabad's (IIM-A) incubator Center for Innovation, Incubation and Entrepreneurship (CIIE) announces "AGRI UDAAN"- Food and Agribusiness Accelerator 2.0. This programme will help to selected innovative startups who will be mentored in to scale up their operations in agri value chain for effective improvement in agriculture. This is a 6 month program in which shortlisted agri startups with promising innovative business models will be mentored & guided to scale up their operations.

Accelerators are 4-8 month program aiming at scaling up innovative startups with a working prototype and initial market traction. This is done through education, mentorship, and financing. Startups enter accelerators for a fixed-period of time, and as part of a cohort. The cohort is shortlisted by evaluation panel comprising of industry veterans, business experts, R&D scientists. Four distinct factors that make accelerators unique are fixed term, cohort based, mentorship driven and they culminate into demo day.

Forthcoming Food & Agribusiness accelerator: AGRI UDAAN

Looking at the impact created through NAARM TBI a-IDEA India's first Food & Agribusiness accelerator 2015 in partnership with IIM-A CIIE, National Science and Technology Entrepreneurship Development Board (NSTEDB), DST has come forward to support AGRI UDAAN – a unique initiative for upliftment of agri startups

Through AGRI UDAAN we will be reaching out to agri-startups across the country with a series of road shows in Chandigarh, Ahmedabad, Pune, Bangalore, Kolkata & Hyderabad. This initiative is backed by Caspian Impact Investments as Platinum Partner, Yes Bank as Banking Partner, NCDEX eMarkets Ltd (NeML) & Marico Innovation Foundation as Silver partners. AGRI UDAAN also received support from National Research Development Corporation (NRDC), Agrinnovate as tech transfer partners, and FICCI as outreach partner.

Unique selection process

The application is available at www.aidea.naarm.org.in. Applications will be evaluated by mentors from industry, business and partner organizations, based on the average scores top 40 startups will be shortlisted and allowed to pitch in front of panel of evaluators during cohort finalization programme on 9th and 10th of October 2017 at NAARM. Out of these about 8 to 12 startups will be selected for final cohort for capacity building workshop.

Rigorous mentoring and acceleration

The shortlisted cohort of startups will undergo a capacity building (CB) workshop in ICAR-NAARM. During this period, the startups will be trained in different aspects of technology commercialization, product validation, business plan preparation, risk analysis, customer engagement, finance management, fund raising etc. There will be a match making between startup-mentor. The accelerator program will culminate with demo day/ investors meet at Hyderabad and Mumbai.

Agri-Udaan Schedule

S. No	Date	Event Name	City
1	4th August, 2017	Program Launch	NASC, New Delhi
2.	8 August 2017	1st Road show	Chandigarh
3.	19 August 2017	2nd Road Show	Ahmedabad
4.	23 August 2017	3rd Road Show	Pune
5.	26 August 2017	4th Road Show	Bangalore
6.	29th August 2017	5th Road Show	Kolkata
7.	9 September 2017	6th Road show	Hyderabad
9.	15 September 2017	Close of applications	Hyderabad
10.	25 September 2017	Shortlisting 40 startups/ Announcement	Hyderabad
11.	9 & 10 October 2017	Cohort finalization programme	Hyderabad
12.	30 October – 3 November 2017	Capacity building workshop & Milestone setting, MENTOR MATCH (5 Days)	Hyderabad
13.	16-17 January 2018	Mock Demo day	Hyderabad
14.	18 January 2018	Demo Day 1	Hyderabad
15.	20 January 2018	Demo Day 2	Mumbai

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India signs loan agreement with the Asian Infrastructure Investment Bank (AIIB) for Financing of US\$ 329 million for Gujarat Rural Roads Project

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The Loan and Project Agreements for Asian Infrastructure Investment Bank (AIIB) lending of US\$ 329 million for Gujarat Rural Roads Project have been signed between the Government of India/ Government of Gujarat and the AIIB today on 04.08.2017 at New Delhi.

The Loan Agreement was signed by Shri Sameer Kumar Khare, Joint Secretary (MI), Department of Economic Affairs(DEA), Ministry of Finance on behalf of the Government of India and Dr. D.J. Pandian, Vice President and Chief Investment Officer, AIIB, on behalf of the AIIB. The Project Agreement was signed between Shri A.K. Patel, Chief Engineer (Panchayat) and Additional Secretary, Roads & Building Department, Government of Gujarat on behalf of the Gujarat State Government and Dr. D.J. Pandian signed the Project Agreement on behalf of the AIIB.

The objective of the project is to improve the rural road connectivity and accessibility (by providing all weather road connectivity) to 1,060 villages in all the 33 districts in Gujarat state benefiting about 8 million people. The project will also benefit the service providers such as public transport operators, educational institutions, hospitals, local markets and traders.

The project consists of following two main components:

1. **Constructions and Up-gradation of Non-Plan Roads (NPRs):** A total of 5000 km of NPRs will be constructed under this component. Besides, it is also envisaged to construct – missing links (last mile connecting to the road network); missing structures (culverts and small bridges); approach roads to educational institutions; and upgrade/ construct roads passing through tribal areas.
2. **Up-gradation of Planned Roads:** It is envisaged to upgrade existing earthen and metal roads to black top roads, resurfacing of village roads and other district roads, up-gradation of bridges to prevent flooding and subsequent isolation of flooded villages during monsoon season and widening of village roads and other district roads to ease traffic congestion.

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FCI let over 4 lakh tonne wheat rot away: CAG

NEW DELHI: The [Comptroller and Auditor General](#) of India has said in an audit report on the Food Corporation of India ([FCI](#)) that more than 4.72 lakh tonnes of wheat valued at Rs700.30 crore got damaged in Punjab till March 2016 due to delay in implementation of the private entrepreneur scheme which was expected to increase the storage capacity of foodgrains in the state.

The damaged wheat was declared as non-issuable for public distribution as it was stored in open areas, said the report which was tabled in [Parliament](#) on Friday. The report pertains to implementation of the Private Entrepreneur Guarantee (PEG) schemes in Punjab and the way the FCI managed its debt, labour and incentive payments during 2011-16. The auditor also found that the stateowned FCI sold wheat to bulk consumers at a rate below the cost under open market sale scheme during 2013-14, leading to non-recovery of Rs38.99 crore Further, due to non-rationalisation of surplus departmental labour and deployment of costlier labour at depots resulted in excess expenditure of Rs237.65 crore, it said. The [CAG](#) also said that there was delay in award of contracts for construction of godowns.

“The PEG scheme 2008 was launched to enhance covered storage capacities as the covered and plinth (CAP)/kacha storage is prone to damage and deterioration of stock and is not an optimum storage method.

However, as on 31March 2016 in Punjab, 53.56 LMT of wheat stock was lying in CAP/kacha and in mandi,” it said. Such stock increased from 103.36 lakh tonnes in 2011-12 to 132.68 lakh tonnes in 2012-13, the CAG said.

NEW DELHI: The [Comptroller and Auditor General](#) of India has said in an audit report on the Food Corporation of India ([FCI](#)) that more than 4.72 lakh tonnes of wheat valued at Rs700.30 crore got damaged in Punjab till March 2016 due to delay in implementation of the private entrepreneur scheme which was expected to increase the storage capacity of foodgrains in the state.

The damaged wheat was declared as non-issuable for public distribution as it was stored in open areas, said the report which was tabled in [Parliament](#) on Friday. The report pertains to implementation of the Private Entrepreneur Guarantee (PEG) schemes in Punjab and the way the FCI managed its debt, labour and incentive payments during 2011-16. The auditor also found that the stateowned FCI sold wheat to bulk consumers at a rate below the cost under open market sale scheme during 2013-14, leading to non-recovery of Rs38.99 crore Further, due to non-rationalisation of surplus departmental labour and deployment of costlier labour at depots resulted in excess expenditure of Rs237.65 crore, it said. The [CAG](#) also said that there was delay in award of contracts for construction of godowns.

“The PEG scheme 2008 was launched to enhance covered storage capacities as the covered and plinth (CAP)/kacha storage is prone to damage and deterioration of stock and is not an optimum storage method.

However, as on 31March 2016 in Punjab, 53.56 LMT of wheat stock was lying in CAP/kacha and in mandi,” it said. Such stock increased from 103.36 lakh tonnes in 2011-12 to 132.68 lakh tonnes in 2012-13, the CAG said.

END

Cattle trade ban rules were not placed before Parliament

Cattle traders assemble at a monthly market near Mundakayam in Kerala's Kottayam district. File | Photo Credit: [The Hindu](#)

A Lok Sabha Secretariat reply to a Right To Information request made by one of the petitioners who has challenged the cattle slaughter ban rules in the Supreme Court reveals that the rules were never laid before the Parliament, which the government should have done before implementing them.

Having triggered an avalanche of litigation across the country, the [Prevention of Cruelty to Animal \(Regulation of Livestock Market\) Rules of 2017](#), which bans the sale of cattle in livestock markets for the purpose of slaughter or animal sacrifices, is back to the drawing board. Notified on May 23, 2017, the rules mandate that cattle should only be sold in animal markets for farming purposes.

On August 4, 2017, petitioner Sabu Stephen, represented by advocate V.K. Biju, exposed before a Bench led by Chief Justice of India J.S. Khehar another chink in the government's slaughter ban rules.

Section 38A of the Prevention of Cruelty Act of 1960 — the parent Act under which the rules are made — mandates that any rule made by the Centre under it ought to be laid before each House of the Parliament "as soon as it is made". The rules would be placed before the Parliament for a total 30 days. Any modification agreed upon by both Houses of the Parliament should be incorporated in the rules or else they would have no effect.

The July 27, 2017 reply of the Lok Sabha Secretariat says the Parliament had no information about the rules. The RTI reply, in clear terms, said the livestock rules were "not forwarded by the Ministry concerned, i.e., the Ministry of Environment, Forests and Climate Change, for laying on the table of the House so far. Hence, not laid till date".

Mr. Biju submitted: "The government bypassed the Parliament, suppressed the rules from the elected representatives of the people of the country and killed the parent Act... all this when over 70% of the country is affected by certain provisions of the livestock rules."

Additional Solicitor-General P.S. Narasimha admitted that he was not aware of the facts and sought an adjournment till August 9, 2017.

"A simple reading of Section 38A tells us that you (the government) cannot say 'I will not place the rules before the Parliament'," Chief Justice Khehar agreed with the petitioner's submission.

Justice D.Y. Chandrachud added that Section 38A invokes the spirit that "laying a law before the Parliament is important". "It is an exercise of parliamentary control over the laws of the land," Justice Chandrachud addressed the government.

The information about the alleged lapse on the government side came to light during a hearing on an application filed activist Gauri Maulekhi seeking a clarification of a Supreme Court order on the issue on July 11, 2017.

On that day, the court recorded the Centre's submission that the Madras High Court had already issued a blanket stay on both Prevention of Cruelty to Animals (Regulation of Livestock Markets) Rules and The Prevention of Cruelty to Animals (Maintenance of Case Property Animals) Act, 2017.

However, later, through Ms. Maulekhi's intervention, the court realised that the High Court had only stayed a provision of the livestock markets rules, namely Rule 22(b)(iii), which required a person bringing cattle for sale to market to furnish a written declaration that it would not be sold for slaughter.

The Centre has assured the court that it is re-considering the entire body of the livestock market rules. It has promised that the rules, in its existing form, meanwhile, would not be implemented.

"But these rules in the current form is nevertheless in operation. Rules, once notified, are the law. Government cannot say we will not implement them. The rules will continue to operate until either you (government) repeal them or we issue an order of injunction," Chief Justice Khehar indicated.

Says BJP will campaign against corruption, law and order problems and lack of development work in Himachal Pradesh

The process of holding the requisite Board Meetings and Shareholder Meetings has been completed in phases in September 2017.

Ruben George is staying at Ram Nath Kovind's house at Kalyanpur, near Kanpur

END

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China's RCEP push veils grand plan

.Wider horizon:

Community social media platform 'LocalCircles' recently did a survey on the Indian consumer's perception about items imported from China. The results gave a peek into the minds of Indian consumers. It showed 52% of participants were of the opinion that for the same product, the quality of a 'Made in India' version was superior to the one from China. However, 83% said they buy Chinese products as those items were the cheapest. On the issue of addressing 'quality concerns' about imported Chinese items, 98% said there should be better screening of such products before they enter the Indian market — including ensuring that only those imports meeting the Indian (BIS) standards are allowed.

The poll assumes significance as it comes amid ongoing negotiations for a mega-regional Free Trade Agreement (FTA) among 16 Asia-Pacific nations, including China and India. Known as the Regional Comprehensive Economic Partnership (RCEP), the proposed FTA, aims to boost goods trade by eliminating most tariff and non-tariff barriers — a move that is expected to provide the region's consumers greater choice of quality products at affordable rates. It also seeks to liberalise investment norms and do away with services trade restrictions.

The RCEP is billed as an FTA between the 10-member ASEAN bloc and its six FTA partners — India, China, Japan, South Korea, Australia and New Zealand. When inked, it would become the world's biggest free trade pact. This is because the 16 nations account for a total GDP (Purchasing Power Parity, or PPP basis) of about \$50 trillion (or about 40% of the global GDP) and house close to 3.5 billion people (about half the world's population). India (GDP-PPP worth \$9.5 trillion and population of 1.3 billion) and China (GDP-PPP of \$23.2 trillion and population of 1.4 billion) together comprise the RCEP's biggest component in terms of market size.

The RCEP 'guiding principles and objectives' state that the "negotiations on trade in goods, trade in services, investment and other areas will be conducted in parallel to ensure a comprehensive and balanced outcome." However, it is learnt that China, using its influence as the global leader in goods exports, has been deploying quiet diplomacy to ensure consistent focus on attempts to obtain commitments on elimination of tariffs on most traded goods.

China is keen on an agreement on a 'high level' of tariff liberalisation — eliminating duties on as much as 92% of traded products. However, India's offer is to do away with duties on only 80% of the lines and that too, with a longer phase-out period for Chinese imports (ie, about 20 years, as against 15 for other RCEP nations).

A highly ambitious level of tariff elimination without enough flexibility would affect India the most on the goods side. This is because in the RCEP group (except Myanmar, Cambodia and Lao PDR), India has the highest average 'Most Favoured Nation (MFN) tariff' level at 13.5%. MFN tariff, as per the WTO, refers to normal, non-discriminatory tariff charged on imports — excluding preferential tariffs under FTAs and other schemes or tariffs charged inside quotas.

A March 2017 discussion paper on RCEP by the think tank RIS also said, "India is the only participant that has a high level of merchandise trade deficit ... Its trade deficit with RCEP countries is also more than half its global trade deficit." The paper, by V.S. Seshadri, also showed that India's trade deficit with China "is over three times its exports to China (in 2014), a situation not matched by any other RCEP member except Cambodia..." It further said, "considering India's vulnerabilities and large bilateral trade deficits, India will need substantial flexibilities to deal with China... A longer phase out period with backloading of concessions, particularly on sensitive

products, will be essential.”

On the sidelines of the recently held RCEP talks in Hyderabad, representatives from the Indian industry laid out their apprehensions before the industry bodies of other RCEP nations and the trade negotiators. Their main worry was that the proposed FTA, owing to the possibility of elimination of duties across most sectors, could lead to a surge in inflow of low-priced goods, mainly from China. This, India Inc. feared, would result in their share in the domestic market contracting, and consequent downsizing/closure of operations, as well as job losses. This could lead to lower incomes and reduced consumer spending.

Also, since India already has separate FTAs with the 10-member ASEAN bloc, Japan and Korea, India Inc. feels that on account of the RCEP, India may not gain much on the goods side with existing FTA partners. India is also negotiating separate FTAs with Australia and New Zealand. However, be it through a separate FTA or via RCEP, India’s gains on the goods segment from Australia and New Zealand will be limited as MFN tariff levels of those two countries are already low. China is the only RCEP country with which India neither has an FTA, nor is in talks for one. Therefore, Indian industry sees RCEP as an indirect FTA with China, especially since, given the sensitivities involved, there could be a hue and cry if India opts for a direct FTA with that country.

Ajit Ranade, chief economist, Aditya Birla Group, said even without a bilateral FTA, India was already affected by China’s overhang of excess capacity in sectors including metals, chemicals and textiles. Goods imports from China have been far outpacing India’s shipments to that country (India’s exports are mainly troubled by China’s non-tariff barriers). This has led to goods trade deficit with China widening from just \$1.1 billion in 2003-04 to a whopping \$52.7 billion in 2015-16, though easing slightly to \$51.1 billion in 2016-17. Mr. Ranade said India’s FTA strategy has to be guided by the ‘Make In India’ initiative that aims to boost domestic manufacturing and job creation within India.

In return for greater market access in goods, India, with its large pool of skilled workers and professionals, might be trying to use the RCEP to gain on the services side, by securing commitments from the other nations to mutually ease norms on movement of such people across borders for short-term work.

However, the RCEP is just one element of China’s grander plans for global dominance. In February, its foreign minister Wang Yi said, “We hope to ... speed up the RCEP negotiation process and strive for an early agreement, so as to contribute to realising the greater common goal of building the Free Trade Area of the Asia-Pacific (FTAAP).” The FTAAP spans 21 Asia-Pacific Economic Cooperation countries, including the U.S. and China, but does not cover India (though it has sought to be a APEC member). With the U.S. withdrawing from the Trans Pacific Partnership — a mega-regional FTA not involving India and China — that similarly aimed to help establish the FTAAP, the path is clear for China to push ahead with this strategic initiative to its advantage through the RCEP.

In May, Chinese Commerce Minister Zhong Shan said the RCEP “highly echoes the Silk Road spirit.” The Silk Road Economic Belt (on land) and the Maritime Silk Road (via the ocean) comprise China’s Belt and Road Initiative, that India had opposed on strategic grounds.

Joshua P. Meltzer of the think-tank Brookings said in an article that the impact of the BRI — to which China has committed \$1.4 trillion — “on regional trade integration should also be seen in light of trade agreements such as the RCEP.”

“Once completed, RCEP will also provide preferential access to each country’s markets. BRI could help China address some of its excess capacity in industries such as steel and cement, since

infrastructure projects supported by the initiative would boost external demand for Chinese exports. The initiative could provide a means for Chinese industries with excess capacity to export equipment that is currently idle.” It is pertinent for India to note this larger picture even as it sees the RCEP as “a beacon of hope for free trade” and a pact offering “a positive and forward-looking alternative in the face of growing protectionism across the world.”

The service is available in Bengaluru, Kolkata and Chennai, operating 500 bicycles

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e-Shakti initiative of NABARD**e-Shakti initiative of NABARD**

e-Shakti is a pilot project of National Bank for Agriculture and Rural Development (NABARD) for digitisation of Self Help Groups (SHGs). It was initiated to address certain concerns like improving the quality of book keeping of SHGs and to enable banks to take informed credit decisions about the group through a Management Information System (MIS). The project covers 25 districts and 1,30,176 SHGs have been digitised as on 31st March, 2017.

As per information compiled by NABARD, about 69,696 SHGs of the SHGs which have been digitised are credit linked as on 31st July, 2017.

No SHG has been de-recognised on account of, or, after digitisation. The digitisation project does not impact the profit/ loss position of the SHGs.

This was stated by Shri Santosh Kumar Gangwar, Minister of State for Finance in written reply to a question in Rajya Sabha today.

DSM/SBS

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A gathering crisis: the need for groundwater regulation

The water crisis India faces is of such a magnitude that urgent measures are necessary to address it. Yet, while the crisis is often discussed, law and policy measures to address it remain insufficient. This is partly due to the fact that the primary source of domestic water and irrigation is groundwater but the media and policymakers still and often focus on surface water. This needs to change as water tables have been falling rapidly in many parts of the country, indicating that use generally exceeds replenishment.

One of the underlying reasons for excessive use of groundwater is the legal framework governing access to the resource. This was first introduced in the mid-19th century when judges decided that the easiest way to regulate this 'invisible' substance was to give landowners what amounts to a right to access groundwater found under their land, even if in the process they also used water found under their neighbours' land. Over the following decades, this led to a framework whereby landowners see groundwater as their own and as a resource they can exploit without considering the need to protect and replenish it since there are no immediate consequences for over-exploiting it. Access to a source of groundwater has progressively become a source of power and economic gain. The latter has become increasingly visible in recent decades with the propagation of mechanical pumps, which allows big landowners to sell water to others.

The Union government recognised the need to modernise the regulatory framework for accessing groundwater soon after massive expansion in mechanical pumping led to the realisation that recharge could not keep pace with use. The measures proposed were in keeping with the policy paradigm of the early 1970s when a model Bill was first introduced. It focussed on adding some State-level control over new, additional uses of groundwater but did not address the iniquitous regime giving landowners unlimited control over groundwater. This was only taken up by around a dozen States from the late 1990s onwards. The States that now have groundwater legislation based on the model Bill conceptualised in 1970 have on the whole failed to manage to address the problem of falling water tables due to increasing use. In addition, there is no provision in the existing legal regime to protect and conserve groundwater at the aquifer level. Further, since the legal regime fails to give gram sabhas and panchayats a prevailing say in the regulation of what is essentially a local resource, the present framework remains mostly top-down and is incapable of addressing local situations adequately.

Over the past decade, the situation has become increasingly dire not only in States where water tables are falling but also in those that are less affected by quantity concerns. Indeed, the quality of the water pumped is increasingly becoming cause for concern; thus the worry is about accessing a sufficient amount of groundwater that is not harmful to health. The present legal regime has clearly failed to address the growing multiple crises of groundwater. This has been officially recognised since at least the beginning of this decade, first in the Planning Commission and more recently by the Ministry of Water Resources, River Development & Ganga Rejuvenation. The result is the Groundwater (Sustainable Management) Bill, 2017, which is based on current understandings of groundwater and its links with surface water and on the legal framework as it has evolved since the 19th century.

The Groundwater Bill, 2017 consequently proposes a different regulatory framework from the century-old, outdated, inequitable and environmentally unfriendly legal regime in place. It is based on the recognition of the unitary nature of water, the need for decentralised control over groundwater and the necessity to protect it at aquifer level. The Bill is also based on legal developments that have taken place in the past few decades. This includes the recognition that water is a public trust (in line with the oft-quoted statement that groundwater is a common pool resource), the recognition of the fundamental right to water and the introduction of protection

principles, including the precautionary principle, that are currently absent from water legislation. The Bill also builds on the decentralisation mandate that is already enshrined in general legislation but has not been implemented effectively as far as groundwater is concerned and seeks to give regulatory control over groundwater to local users.

A new regulatory regime for the source of water that provides domestic water to around four-fifths of the population and the overwhelming majority of irrigation is urgently needed. For decades, policymakers behaved like the proverbial ostrich because the 'invisibility' of falling groundwater tables made it possible not to address the problem immediately. In many places, the situation is now so grave that regulatory action is unavoidable. The proposed new regime will benefit the resource, for instance through the introduction of groundwater security plans, and will benefit the overwhelming majority of people through local decision-making. Overall, the increasing crisis of groundwater and the failure of the existing legal regime make it imperative to entrust people directly dependent on the source of water the mandate to use it wisely and to protect it for their own benefit, as well as for future generations.

Prof. Philippe Cullet is Senior Visiting Fellow, Centre for Policy Research, New Delhi and Professor of Environmental Law, SOAS University of London

The new U.S. Fed Chairman is unlikely to opt for policies that might upset the President's plan

END

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Approval of Industrial Parks in Andhra Pradesh

Approval of Industrial Parks in Andhra Pradesh

Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry has approved two projects under 'Modified Industrial Infrastructure Upgradation Scheme (MIUS)' for development of industrial clusters at Hindupur and Bobbili in the respective districts of Anantapur and Vizianagaram of Andhra Pradesh. Details of the projects are given below:

Sl. No.	Name of project	Date of Approval	Rs. in crore		
			Project Cost	Central Grant	Released central grant
1.	Upgradation of Hindupur Growth Centre & IP Gollapuram, Anantapur District	01.03.2016	54.20	14.93	4.48
2.	Upgradation of industrial Growth Centre, Bobbili, Vizianagaram District	01.03.2016	30.61	8.68	2.60

The objective of the above projects is to provide quality and reliable infrastructure to industrial units located in these clusters; specifically these projects aim to provide road network, drainage, power and water supply networks and some other common services like health centres, canteens, crèches, dormitories, parking areas, etc. These projects are likely to be functional by 31st March, 2018.

These projects have employment potential of about 5500 persons (direct) and 8500 persons (indirect).

This information was given by the Commerce and Industry Minister Smt. Nirmala Sitharaman in a written reply in Rajya Sabha today

MJPS

END

GM food crops: India in no hurry to grow GM food crops

NEW DELHI: The government is in no hurry to introduce genetically modified food crops in the country, three months after the sector regulator gave its nod to commercialisation of [GM mustard](#), because of widespread opposition from different quarters.

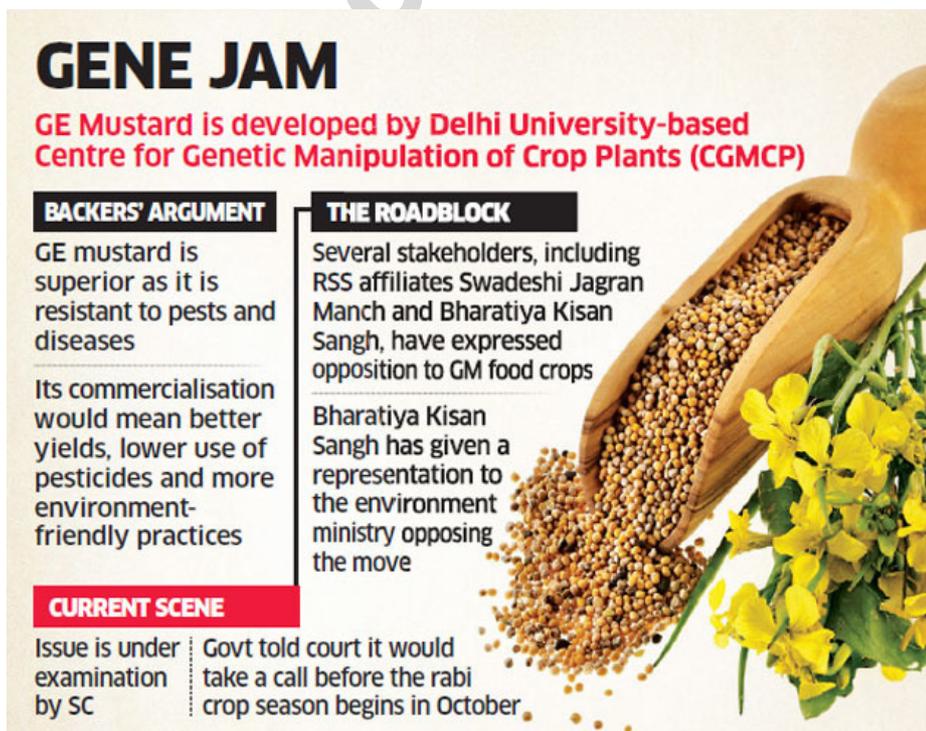
The government has decided to examine all objections raised by scientists and farmers before taking a decision on genetically engineered (GE) mustard, environment minister Harsh Vardhan has said. "Pursuant to recommendation of GE mustard by [GEAC](#) (Genetic Engineering Appraisal Committee), several representations and concerns have been raised by a wide range of stakeholders including scientists, policymakers, farmers and NGOs," Vardhan told ET. "The issues raised are manifold, like long-term health and environmental impact, herbicide tolerance, loss to honey bees and pollinators, outperformance of native varieties, no enhancement in yields, etc. All these issues are under examination," he said.

GEAC, India's regulator for transgenic products, had given a green signal to GM mustard in early May, paving way for introduction of genetically modified food crops. After the regulator's nod, the final call is taken by the government.

Developed by Delhi University-based Centre for Genetic Manipulation of Crop Plants (CGMCP), GE mustard is argued to be superior as it is resistant to pests and diseases. Support Supporters also claimed that its commercialisation would mean better yields, lower use of pesticides and more environment-friendly practices.

But several stakeholders, including Rashtriya Swayamsevak Sangh ([RSS](#)) affiliates Swadeshi Jagran Manch and Bharatiya Kisan Sangh, have expressed opposition to [GM food crops](#). Bharatiya Kisan Sangh has already given a representation to the environment ministry opposing the move. Though impact of these organisations on Narendra Modi government's decision making is questioned, sources believe this is one of the reasons for the government's cautious approach.

Also, in its 2014 election manifesto, BJP had said, "GM foods will not be allowed without full scientific evaluation on its long-term effects on soil, production and biological impact on consumers."



GENE JAM

GE Mustard is developed by Delhi University-based Centre for Genetic Manipulation of Crop Plants (CGMCP)

BACKERS' ARGUMENT

GE mustard is superior as it is resistant to pests and diseases

Its commercialisation would mean better yields, lower use of pesticides and more environment-friendly practices

THE ROADBLOCK

Several stakeholders, including RSS affiliates Swadeshi Jagran Manch and Bharatiya Kisan Sangh, have expressed opposition to GM food crops

Bharatiya Kisan Sangh has given a representation to the environment ministry opposing the move

CURRENT SCENE

Issue is under examination by SC

Govt told court it would take a call before the rabi crop season begins in October

NEW DELHI: The government is in no hurry to introduce genetically modified food crops in the country, three months after the sector regulator gave its nod to commercialisation of [GM mustard](#), because of widespread opposition from different quarters.

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GENE JAM

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BACKERS' ARGUMENT	THE ROADBLOCK
GE mustard is superior as it is resistant to pests and diseases	Several stakeholders, including RSS affiliates Swadeshi Jagran Manch and Bharatiya Kisan Sangh, have expressed opposition to GM food crops
Its commercialisation would mean better yields, lower use of pesticides and more environment-friendly practices	Bharatiya Kisan Sangh has given a representation to the environment ministry opposing the move

CURRENT SCENE

Issue is under examination by SC	Govt told court it would take a call before the rabi crop season begins in October
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It is almost two months since Indian and Chinese soldiers became locked in a standoff at Doklam in the Sikkim Sector. The faceoff was triggered when a team of the People's Liberation Army (PLA) was prevented by Indian troops from extending a class-5 track in the Dolam Plateau area which is part of Bhutanese territory. The Indian Army acted in response to a request from the Royal Bhutan Army under the terms of the 2007 Bilateral Friendship Treaty. Moreover, the PLA's track building is in contravention of the 2012 Agreement between the Special Representatives of India and China, whereby the status quo was required to be maintained in the said area until the resolution of the trijunction in consultation with Bhutan.

Post 1962, there have been numerous border incidences between the Indian and Chinese militaries; Nathu La in 1967 and Sumdorong Chu two decades later. In the recent past too, the Depsang Plateau and the Chumar-Demchok area witnessed face-offs in April 2013 and September 2014, respectively, with the latter intriguingly coinciding with President Xi Jinping's visit to India. Incidentally, the current Chinese incursion in Bhutan happened around the time of Prime Minister Modi's visit to the United States.

Given the opaque Chinese system, deciphering the intent of its Communist leadership poses a real challenge. According to the eminent scholar Derek Bodde, those who deal with China are often bewildered when the actions of its leadership send mixed signals, making clear interpretation extremely difficult. The People's Republic of China (PRC) draws from its ancient thinkers. Its actions are always deliberate, like the moves on a checker board. It is imperative to gain an insight into the Chinese psyche and decode China's strategic calculus in order to effectively cope with its grand designs.

The PRC's assertiveness around its periphery is attributable to its age old belief of a 'subdued neighbourhood' being an essential prerequisite for stability. In his book *On China*, Henry Kissinger has brought out that the PRC perceives itself to be a returning power and does not view exercising influence as unnatural. Alastair Johnson, an expert on Chinese strategic culture, has stated that there is no pacifist bias in the Chinese strategic tradition but only realpolitik. Nations are either friendly or hostile. This is why servile countries such as Pakistan and North Korea are generously rewarded, while those like India or Vietnam which counter China's aggressive behaviour invite its wrath.

Chinese thinking since ancient times advocates mitigating a threat by eliminating it. Thus, during the period 1950-85, the PRC opted to use force eight times. When confronted with a stronger adversary, non-coercive means may be adopted as an interim expedient.

China's grand strategy encompasses three concise objectives: safeguarding sovereignty, maintaining stability, and sustaining economic progress. Any danger to the Communist Party is perceived as an 'existential threat'. Sovereignty implies, besides external non-interference, safeguarding core interests, control of the South China Sea, unification of Taiwan, and integration of claimed territories with the mainland including South Tibet (Arunachal Pradesh). In the pursuit of these vital national interests, the use of force remains an option.

President Xi has emerged as an all-powerful leader. Designated as a 'Core' leader and addressed as 'Chairman' (*Zhuxi*), he is poised to join the league of Mao and Deng. During the forthcoming 19th Party Congress in November, Xi is set to consolidate his grip further. The earlier policy enunciated by Deng that China should "bide time, hide capability and not to claim leadership" has

undergone a visible shift under Xi. Xi's 'China Dream' envisions a 'prosperous and powerful' China restored to its past greatness.

In the Chinese concept of Comprehensive National Power (CNP), hard power is the key component. China's military culture lays immense emphasis on the 'strategic configuration of power', creating a favourable disposition of forces to obviate actual fighting. By exploiting its asymmetric edge to coerce smaller nations, China has effectively pursued the surreptitious strategy of 'fighting and talking concurrently' in order to extend its control over the South China Sea. China's military doctrine of "Local Wars under Informationalised Conditions" envisages short-swift engagements to achieve political objectives. Under President Xi, the PLA is in the process of path breaking transformation to emerge as a modern military in the coming decades.

Internationally, PRC remains a lonely power. It has used diplomacy effectively to exploit differences among the adversaries to its advantage. China's threat assessment perceives the US and Japan to be the prime security concerns, while India is seen as a potential threat. As US and Western countries yield space, China under Xi has pronounced itself as a champion of globalization and sustainable growth to fill the void. Major initiatives like the 'Belt-Road' and 'Maritime Silk Road' have been launched in a quest to shape a Sino-Centric global order.

The PRC's action at Doklam is in consonance with its policy of intimidating smaller neighbours. Apparently, China did not anticipate India to step in. The Communist leadership is infuriated with India for abstaining from its signature projects. New Delhi's growing proximity to Washington and Tokyo has also irked Beijing. Given its focus on the Western Pacific, the mounting tension on the Korean Peninsula, economic imperatives and internal stability concerns in the run-up to the forthcoming Party Congress, China will avoid an armed confrontation with India, despite its rhetoric. However, it will keep up the pressure militarily and pursue aggressive diplomacy to deal with the issue.

The PRC has pursued the policy of delinking complex political issues from economic ones. It enjoys strong trade linkages with the US, Japan and Taiwan, despite serious political differences. Beijing will continue with its policy of marginalising New Delhi politically in international forums, while seeking to avoid a negative economic fallout.

In its efforts to engage China, India has followed a policy of appeasement. And its responses to PRC's misadventures have been in the form of crisis management. To effectively cope with the PRC's hostile attitude, India needs to evolve a pragmatic China policy centred on core national interests. Some essential facets which merit serious consideration are summarised below.

Firstly, given the PRC's policy of asymmetric coercion, India has no option but to narrow the existing CNP gap between the two countries. Developing strategic partnerships, initiatives like 'Indo-Pacific Economic Corridor', 'Act East Policy' and counter balancing strategies are steps in the right direction.

Secondly, national security policy needs clear articulation, based on a realistic threat assessment. Apex organizational structures require streamlining to telescope the decision making process. The current format of military modernization demands a holistic review.

Thirdly, in an era of 'limited wars', a 'joint military doctrine' is a *sine qua non* and 'tri service theatre commands' are prerequisites for synergised application of the war waging potential. In the prevailing scenario, facing the PLA's Western Theatre Command are India's seven Army and Air Force commands, which is a serious lacuna. In short engagements, the timely application of requisite combat power at the point of decision is critical. This calls for creating essential infrastructure on highest priority.

Lastly, the border management mechanism needs to be revamped. A single nodal agency is required to coordinate the functions of the various organs. Operational control astride the Line of Actual Control ought to rest with the Army. A well calibrated response mechanism must be put in place, with disputed vulnerable areas effectively dominated and troops fully prepared to meet any eventuality. Paramilitary Forces deployed for manning the borders require urgent upgrade to match the PLA's Border Regiments.

While many seem to know China, few understand it. In the desperation to engage the PRC, there is a tendency to lose sight of the bigger picture. Given the conflicting interests coupled with unresolved issues, relations between India and China are bound to be marked by contradictions, leading to frequent confrontations. However, through deft diplomacy, differences can be managed. While solutions to vexed problems may not be on the horizon, disputes turning into conflict can be avoided in the larger interest of both nations.

The Chinese are shrewd negotiators with tremendous stamina and penchant to sit across the table, but with equals. India must, therefore, firmly stand its ground and forthrightly safeguard its strategic interests. To deal with China on a level footing, the Indian leadership needs to make pragmatic assessments, possess the courage to accept home truths and display audacity for bold decisions.

The writer has served as Defence Attaché in China, North Korea and Mongolia; commanded a Division in the Eastern Sector; and currently is Professor of International Studies, Aligarh Muslim University.

Views expressed are of the author and do not necessarily reflect the views of the IDSA or of the Government of India.

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India, China to join Indian Ocean exercise

PLA Navy ships, Zhenghe and Weifang, during their visit to Visakhapatnam in 2014. | Photo Credit: [PTI](#)

Despite growing tensions with China, official sources said the Indian Navy would join the People's Liberation Army (PLA) Navy in a maiden maritime search and rescue exercise to be chaired by Bangladesh at the Indian Ocean Naval Symposium (IONS) in November this year.

"Bangladesh, the current Chair, is scheduling a maiden International Maritime Search and Rescue Exercise (IMMSAREX) in November in the Bay of Bengal to be attended by ships and aircraft of the members and observers of the IONS," an official source said.

The IONS is a regional forum of Indian Ocean littoral states, represented by their Navy chiefs, launched by India in February 2008. It presently has 23 members and nine observers.

Conclave of chiefs

The exercise comes at a time of intensifying competition among regional navies for dominance in the Indian Ocean — navies of China and Japan, presently observers, in addition to member states like India, France, Iran and the U.K.

In addition, Bangladesh is also scheduling an "extraordinary conclave of Chiefs," a meeting of chiefs of Navy before it hands over the Chair to Iran next year, the source added.

Under the charter of business adopted in 2014, the grouping has working groups on Humanitarian Assistance and Disaster Relief (HADR), Information Security and Interoperability (IS&I) and anti-piracy now renamed as maritime security.

India has considerably expanded its engagement with countries to further its own interests as well as to check the rapid expansion of Chinese naval forays in the Indian Ocean. Other countries in the region are also engaged in rapid expansion of their military capabilities.

The working group's conferences are held annually and India had chaired the one on HADR in May this year and Pakistan had chaired the meeting on IS&I in July.

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In South Asia, be the Un-China

As the [stand-off between the Indian and Chinese militaries](#) enters its third month at Doklam, it is not just Bhutan that is keenly anticipating the potential fallout. The entire neighbourhood is watching. There is obvious interest in how the situation plays out and the consequent change in the balance of power between India and China in South Asia. India's other neighbours are likely to take away their own lessons about dealing with their respective "tri-junctions" both real and imagined, on land and in the sea. A Chinese defence official was hoping to press that nerve with India's neighbours when he told a visiting delegation of Indian journalists this week that China could well "enter Kalapani" — an area near Pithoragarh in Uttarakhand that lies along an undefined India-Nepal boundary and a tri-junction with China — or "even Kashmir" with a notional India-China-Pakistan trijunction.

Perhaps, it is for this reason that governments in the region have refused to show their hand in the Doklam conflict. "Nepal will not get dragged into this or that side in the border dispute," Nepal's Deputy Prime Minister Krishna Bahadur Mahara said ahead of a meeting with External Affairs Minister Sushma Swaraj, who had travelled to Kathmandu for the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) regional summit. Chinese Vice Premier Wang Yang will be in Kathmandu next week, and Nepal's Prime Minister Sher Bahadur Deuba in Delhi the week after. Making a similar point while speaking at a conference on public relations this week, a Sri Lankan Minister in Colombo contended that India and China are "both important" to Sri Lanka. Bhutan's Foreign Ministry has stuck to its line, blaming China for violating agreements at Doklam, but not mentioning India. Columnists in the country too are increasingly advocating that Bhutan distance itself from both Indian and Chinese positions.

Is India a good neighbour?

A policy of 'equidistance' for our closest neighbours is a far cry from India's past primacy in the region and something South Block can hardly be sanguine about. Yet, it is a slow path each of the neighbours (minus Bhutan) has taken in the past few years. When the Maldives first turfed private infrastructure group GMR out of its contract to develop Male airport in 2012, few could have imagined the situation today with Chinese companies having bagged contracts to most infrastructure projects. This includes development of a key new island and its link to the capital Male and a 50-year lease to another island for a tourism project.

Similarly, when the then Prime Minister of Nepal K.P. Sharma Oli signed a transit trade treaty and agreement on infrastructure linkages with China in late 2015-2016, Ministry of External Affairs mandarins had brushed it off as a "bluff". Today, China is building a railway to Nepal, opening up Lhasa-Kathmandu road links, and has approved a soft loan of over \$200 million to construct an airport at Pokhara. According to the Investment Board Nepal, at a two-day investment summit in March this year, Chinese investors contributed \$8.2 billion, more than 60% of the foreign direct investment commitments made by the seven countries present.

Sri Lanka's Hambantota port construction project went to the Chinese in 2007 only after India rejected it. Today, China doesn't just own 80% of the port; it has also won practically every infrastructure contract from Hambantota to Colombo. Chinese President Xi Jinping's visit to Bangladesh last October was another such overture, with \$24 billion committed in infrastructure and energy projects. Earlier this year, the largely state-owned Chinese consortium, Himalaya Energy, won a bid for three gas fields in Bangladesh's north-east shoulder from the American company Chevron, which together account for more than half of the country's total gas output.

Even if Pakistan is not counted in this list, it is not hard to see which way India's immediate

neighbours, which are each a part of China's Belt and Road Initiative (BRI), are headed in the next few years. More pointedly, once the investment flows in, it will be that much harder for them to stave off a more strategic presence which China is now more unabashed about.

The crossroads at the Doklam plateau

If one of the aims of the action in Doklam is to save Bhutan from the same fate, then what else must India do to ensure that China doesn't succeed in creating similar space for itself in a country that stood by India in its objections to BRI, and bring its other neighbours back?

To begin with, India must regain its role as a prime mover of the South Asian Association for Regional Cooperation (SAARC), the organisation it abandoned a year ago over its problems with Pakistan. Despite sneers all around, SAARC has survived three decades in spite of its biggest challenge, India-Pakistan tensions. That New Delhi would cancel its attendance at the summit to be held in Pakistan in the wake of the Uri attack, winning support from other countries similarly affected by terrorism such as Bangladesh and Afghanistan, is understandable. But a year later, the fact that there have been no steps taken to restore the SAARC process is unfortunate. This will hurt the South Asian construct and further loosen the bonds that tie all the countries together, thereby making it easier for China to make inroads. It should be remembered that despite China's repeated requests, SAARC was one club it never gained admittance to. For all the Narendra Modi government's promotion of alternate groupings such as South Asia Subregional Economic Cooperation (SASEC), BIMSTEC, the Bangladesh, Bhutan, India, Nepal (BBIN) Initiative and Security and Growth for All in the Region (SAGAR), none will come close to SAARC's comprehensive cogency.

Second, India must recognise that picking sides in the politics of its neighbours makes little difference to China's success there. In Sri Lanka, the Sirisena government hasn't changed course when it comes to China, and despite its protestations that it was saddled with debt by the Rajapaksa regime, it has made no moves to clear that debt while signing up for more. The United Progressive Alliance government made a similar mistake when President Mohamed Nasheed was ousted in the Maldives, only to find that subsequent governments did little to veer away from Chinese influence.

India made its concerns about the then Prime Minister Oli very clear, and was even accused of helping Pushpa Kamal Dahal 'Prachanda' to replace him in 2016, yet Nepal's eager embrace of Chinese infrastructure and trade to develop its difficult terrain has not eased. In Bangladesh too, Prime Minister Sheikh Hasina, who has overseen the closest ties with New Delhi over the past decade, has also forged ahead on ties with China. Should her Awami League lose next year's election, the Bangladesh Nationalist Party will most certainly strengthen the shift towards China. In Bhutan's election, also next year, it is necessary that India picks no side, for nothing could be worse than if the Doklam stand-off becomes an India-versus-China election issue.

Above all, India must recognise that doing better with its neighbours is not about investing more or undue favours. It is about following a policy of mutual interests and of respect, which India is more culturally attuned to than its large rival is. Each of India's neighbours shares more than a geographical context with India. They share history, language, tradition and even cuisine. With the exception of Pakistan, none of them sees itself as a rival to India, or India as inimical to its sovereignty. As an Indian diplomat put it, when dealing with Beijing bilaterally, New Delhi must match China's aggression, and counter its moves with its own. When dealing with China in South Asia, however, India must do exactly the opposite, and not allow itself to be outpaced. In short, India must "be the Un-China".

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85 lakh milk producing animals identified and their data uploaded on INAPH data base.

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Pashu Sanjivni component under National Mission on Bovine Productivity scheme was initiated by the Government in November 2016. 88 million milk producing animals out of 300 million cattle and buffaloes are being identified using polyurethane tags with 12 digit unique identification (UID) number. Data of the identified animals is being uploaded on Information Network on Animal Health and Productivity (INAPH) data base. As on date 85 lakh milk producing animals have been identified and their data has been uploaded on INAPH data base.

The Pashu Sanjivni is crucial for control and spread of animal diseases, scientific management of animals, enhanced production and productivity, improvement in quality of livestock & livestock products, increase in trade of livestock and livestock products by meeting out sanitary and phytosanitary issues.

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India moves to revive TAPI gas pipeline

Power point: India wants to secure gas from Galkynysh in Turkmenistan | Photo Credit: [REUTERS](#)

India will host the next steering committee meeting of the proposed 1,814 kilometre-long Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline, senior officials on both sides confirmed.

The decision was made during the sixth joint Inter-Governmental Committee (IGC) meeting on trade, economic, scientific and technological cooperation.

The meeting was followed by a meeting between visiting Deputy Prime Minister and Foreign Minister of Turkmenistan Rashid Meredov and Minister of State for Petroleum and Natural Gas Dharmendra Pradhan.

"I strongly believe in this project, and this is the position of Turkmenistan," Mr. Merodov said at a small interaction.

"It is not just a commercial project, but one which will be a good foundation for providing peace and security in the region," he added.

In Beijing's shadow

Mr. Pradhan said India's commitment to TAPI — first proposed in 1995 — "remains strong", and Prime Minister Narendra Modi had made the proposal to hold the TAPI steering committee meet in Delhi when he met the Turkmenistan President in Ashgabad last year, which he has now accepted. The last steering committee meeting, scheduled to be held annually, which is supposed to be held took place in April 2016.

Officials told *The Hindu* that the pipeline, that had its ground-breaking ceremony in December 2015, has seen flagging interest since then for a number of reasons. India's effort is to tap Turkmenistan's Galkynysh gasfields, which are the fourth largest in the world.

The move is also an effort by the government to stave off any Chinese interest in the project, given that Turkmenistan is a close partner of China in its Belt and Road initiative across Central Asia, and Beijing is the largest buyer of its gas. Even the Galkynysh gas basin is being developed under a loan from the Chinese Development Bank (CDB).

When asked by *The Hindu* on apprehensions about China's Belt and Road Initiative (BRI), which India has refused to join, affecting India's interests, Mr. Meredov said it was important to have a "united approach" on connectivity and economic cooperation in Eurasia.

"We must be practical in the implementation of strategic economic projects. China has the BRI, we have similar ideas, India has similar ideas," he explained.

Responding to Indian sovereignty concerns about the China-Pakistan Economic Corridor (CPEC), which passes through Pakistan-occupied Kashmir, Mr. Meredov said Turkmenistan was "open to all economic cooperation, which is how all such projects should be seen. India is and will be one of the most important countries for Turkmenistan."

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Why can't the government provide a higher income for farmers, asks M.S. Swaminathan

It is 11 years since agronomist M.S. Swaminathan handed over his recommendations for improving the state of agriculture in India to the former United Progressive Alliance government, at the height of the Vidarbha farmer suicides crisis, but they are still to be implemented. To address the agrarian crisis and farmers' unrest across the country, he urged the government to take steps to secure farmers' income. As India marks 50 years of the Green Revolution this year, the architect of the movement says sustainability is the greatest challenge facing Indian agriculture. Excerpts:

There are two major challenges before Indian agriculture today: ecological and economical. The conservation of our basic agricultural assets such as land, water, and biodiversity is a major challenge. How to make agriculture sustainable is the challenge. Increasing productivity in perpetuity without ecological harm is the need of the hour. In Punjab, and in other Green Revolution States, the water table has gone down and become saline. Further, during the Green Revolution the population was about 400-500 million; now it is 1,300 million and it is predicted to be 1.5 billion by 2030. The growing population pressure has made it pertinent to increase crop yield.

Also, the economics of farming will have to be made profitable to address the current situation. We have to devise ways to lower the cost of production and reduce the risks involved in agriculture such as pests, pathogens, and weeds. Today, the expected return in agriculture is adverse to farmers. That's why they are unable to repay loans. Addressing the ecological challenge requires more technology while the economics requires more public policy interventions. In my 2006 report, I had recommended a formula for calculating Minimum Support Price, $C_2 + 50\%$ (50% more than the weighted average cost of production, classified as C_2 by the Commission for Agricultural Costs and Prices). This would raise the current MSP and has now become the clamour of farmers and the nightmare of policymakers.

Yes. All kinds of excuses have been given by governments for not implementing this recommendation like food price inflation. But the question is, do the farmers of this country, who constitute nearly half of the working population, also not need to eat? The government is willing to pay Seventh Pay Commission salaries to insulate government servants from inflation, but they cannot provide a higher income for farmers to improve their lot? If you really look at what is happening now, farm loan waivers are posing a bigger burden on the government exchequer compared to what higher pay for farm produce will incur. But the government is not prepared to give the 20,000 crore or so for farmers by way of higher MSP. In 2009, the UPA government gave 72,000 crore as farm loan waiver, but no government is prepared to take long-term steps to ensure the economic viability of farming.

There are three ways to improve the incomes of farmers. MSP and procurement is one. We also need to improve productivity. The marketable surplus from agriculture has to be enhanced. We should also look at making a value addition to biomass. For example, paddy straw is a biomass product that could be used to make edible mushrooms.

We are not really analysing the causes of farmer suicides. Instead, we are simply attributing it to the inability to pay off debts. Some serious thought needs to be given to how we could reduce the cost of farm production, minimise risks and maximise returns. The solution for ending farmer suicides is not only paying compensation. I've seen in Vidarbha — so many men have committed suicide and their families are left in the lurch. One of the first projects we initiated in Vidarbha at that time was to rescue children and give them education. Farming is the most important enterprise in this country and farmers are an integral part of our country. In China, farms are

owned by the government, and farmers are mere contractors. In our case, land is owned by the people. How do you treat this largest group of entrepreneurs? Unfortunately, all policies today are related to corporate powers. What about food security and 50 crore farmers? We need to think about them too.

After the Green Revolution, I came up with the concept of the Evergreen Revolution. In this we will see increase in farm productivity but without ecological harm. This will include integrated pest management, integrated nutrient supply, and scientific water management to avoid the kind of environmental damage witnessed during the Green Revolution. I've addressed these issues in my 2016 paper on Evergreen Revolution. I recommended mandatory rainwater harvesting and introduction of fodder and grain legumes as rotation crops to be adopted by wheat farmers in States like Punjab to ensure sustainability of farming. We can also declare fertile zones capable of sustaining two to three crops as Special Agricultural Zones, and provide unique facilities to farmers here to ensure food security. Soil health managers should be appointed to monitor and ameliorate the soil conditions in degraded zones and rectify defects like salinity, alkalinity, water logging, etc.

The Prime Minister recently went to Israel. We have several practices to emulate from there. They have a clear sense of where water is needed and where it's not. The idea of more crops per drop has been implemented well in Israel. We should adopt those practices here. You should see how a water controller works in an Israeli farm. Everything is remote-controlled. They know exactly which portion of the field requires how much water and release only the exact amount. We cannot sacrifice on productivity now, because land under crop cover is shrinking. Post-harvest technologies like threshing, storage, etc. will have to be given greater attention now.

There are many methods of plant breeding, of which molecular breeding is one. Genetic modification has both advantages and disadvantages. One has to measure the risks and benefits before arriving at a conclusion. First, we need an efficient regulatory mechanism for GM in India. We need an all-India coordinated research project on GMOs with a bio-safety coordinator. We need to devise a way to get the technology's benefit without its associated risks. At MSSRF (M.S. Swaminathan Research Foundation), we used GM technology with mangroves to create salt-tolerant varieties of rice. For this we took the genes from the mangroves and inserted them into rice. To make the most of GM technology we must choose a problem where there is no other way to address the challenge.

Barring the U.S., most countries have reservations about adopting GM technology. Europe has banned it on grounds of health and environmental safety. I'd say GM in most cases is not necessary. Normal Mendelian breeding itself is sufficient in most cases — 99% of what is being done under GM initiatives is not justifiable. Parliament has already suggested a law based on the Norwegian model where there are considerable restrictions on GMOs.

Organic farming can have a good scope only under three conditions. One, farmers must possess animals for organic manure. Two, they must have the capacity to control pests and diseases. Three, they should adopt agronomical methods of sowing such as rotation of crops. Even genetic resistance to pests and diseases can help organic farmers.

If you look at the organic farms in Pillaiyarkuppam near Puducherry that were started by the Sri Aurobindo Ashram, it is a good model to follow for organic farming. They have adopted the requisite crop-livestock integration.

Both less rainfall and a higher mean temperature affect farming adversely. Currently we are witnessing drought, excess rainfall, sea-level rise... There are both adaptation and mitigation measures to follow in this regard. I've evolved a drought code and a flood code... some of the

recommendations I've made in recent times include setting up a multi-disciplinary monsoon management centre in each drought-affected district, to provide timely information to rural families on the methods of mitigating the effects of drought, and maximising the benefits of good growing conditions whenever the season is normal. Animal husbandry camps could be set up to make arrangements for saving cattle and other farm animals because usually animals tend to be neglected during such crises. Special provisions could also be made to enable women to manage household food security under conditions of agrarian distress.

In the case of temperature rise, wheat yield could become a gamble. We should start breeding varieties characterised by high per day productivity than just per crop productivity. These will be able to provide higher yields in a shorter duration.

India has done well in production, but not in consumption. What we are witnessing today is grain mountains on the one side and hungry millions on the other. The Food Security Act must be implemented properly to address the situation. We should also enlarge the food basket to include nutri-millets.

The novelist explains how his books, including 'Exit West' that is shortlisted for the Man Booker Prize, originate from personal crises

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Assam, Manipur can now decide on AFSPA

In this 2010 photo, students stage a protest to demand the withdrawal of the AFSPA in New Delhi.

The Union Home Ministry is set to give up its power to impose the 'disturbed areas' tag on Assam and Manipur, both ruled by the BJP. The move effectively means it will be the States' decision to either continue the Armed Forces (Special Powers) Act (AFSPA) or revoke it.

As per Section 3 of the AFSPA, it can be invoked in places where "the use of armed forces in aid of the civil power is necessary."

A senior official told *The Hindu* that it would be the first time since 1990 — when the AFSPA was first invoked in Assam — that the Centre would give up its power to continue or discontinue it.

The AFSPA empowers the Army and Central forces deployed in "disturbed areas" to kill anyone breaking the law and arrest and search any premises without warrant. "...we have decided to rescind the power of invoking the AFSPA in two States for now: Assam and Manipur. The States are competent to decide whether they want to continue with it in entirety or impose it in a few pockets where disturbance is expected," the official said.

Another official clarified that there was no such proposal for Jammu and Kashmir.

Earlier, the Home Ministry used to issue a notification declaring States "disturbed areas" every six months. The duration was later changed to three months, pending a periodic review. On August 4, the Ministry extended the AFSPA in Assam for 27 days.

It is effective in the whole of Nagaland, Assam and Manipur (excluding seven Assembly constituencies of Imphal). In Arunachal Pradesh, it is in force in 16 police station areas and in Tirap, Longding and Changlang districts bordering Assam. Tripura withdrew the AFSPA in 2015. It is not in force in Meghalaya (except in a 20-km area along the border with Assam) and Mizoram.

To justify the continuation of the AFSPA in Assam, the Home Ministry had said in the notification that the security situation in Assam "remained vitiated owing to the belligerent attitude of the underground groups, including the ULFA(I), the NDFB(S), the KLO and the KPLT."

While 246 insurgency-related incidents were reported in Assam in 2014, the number came down to 11 in 2017 (till March 31). Cases of abduction also declined, with 94 reported in 2014 and nil from January to March this year.

In Manipur, 56 incidents were reported till March this year, while 278, 229 and 233 incidents were reported in 2014, 2015 and 2016 respectively.

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Cabinet approves raising Extra Budgetary Resources upto Rs. 9020 crore for Long Term Irrigation Fund during the year 2017-18

Cabinet approves raising Extra Budgetary Resources upto Rs. 9020 crore for Long Term Irrigation Fund during the year 2017-18

The Union Cabinet chaired by the Prime Minister Shri Narendra Modi today has given its approval for raising Extra Budgetary Resources (EBR) of upto Rs. 9020 crore as per the requirement during 2017-18 by NABARD through issuance of Bonds for ensuring lending rate of 6% per annum (pa) in respect of borrowings for implementation of Accelerated Irrigation Benefits Programme (AIBP) works of 99 ongoing prioritized irrigation projects along with their command area development (CAD) works under PMKSY.

A large number of major and medium irrigation projects taken up under Accelerated Irrigation Benefit Programme (AIBP) were languishing mainly due to inadequate provision of funds. During 2016-17, 99 ongoing projects under PMKSY- AIBP were identified for completion in phases by December-2019. To cater to the large fund requirement and ensure completion of these projects, the Union Finance Minister, during his Budget speech 2016-17, announced creation of dedicated Long Term Irrigation Fund (LTIF) in NABARD with an initial corpus of Rs. 20,000 crore for funding of Central and State share for the identified ongoing projects under PMKSY (AIBP and CAD).

To make the loan from NABARD attractive for states, it was decided that the rate of interest may be kept around 6% by providing requisite cost free funds to NABARD every year during 2016-17 to 2019-20 on which interest cost would be borne by Govt. of India.

During the year 2016-17, NABARD disbursed aggregate amount of Rs. 9086.02 crore under LTIF, out of which Rs. 2414.16 crore was released for Polavaram project (without EBR component) and balance Rs. 6671.86 crore was released to identified projects using EBR. Further, an amount of Rs. 924.9 crore was disbursed as Central Assistance (CA) through budgetary provision. During 2016-17, overall an amount of Rs 2187 crore was raised by NABARD in the form of Government of India fully serviced bond as EBR.

During 2017-18, it is estimated that an amount of Rs 29,000 Crore may be required through LTIF, for which EBR of Rs 9020 cr would be required.

As per the status reported by the states and Central Water Commission during various review meeting, 18 projects have been completed/almost completed. Irrigation potential utilization is expected to be more than 14 lakh hectares during 2016-17 from all the 99 projects. During 2017-18, 33 more projects are likely to be completed. The completion of the identified irrigation projects will generate immediate wage and other employment opportunities in good measure during the construction phase. More importantly, on completion of the projects, the utilization of irrigation potential of about 76 lakh hectares will transform the agriculture scenario of the region resulting in generation of substantially more employment opportunities through increase in cropping intensity, change in cropping pattern, agro processing and other ancillary activities.

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Cabinet approves completion of balance works of North Koel Reservoir Project**Cabinet approves completion of balance works of North Koel Reservoir Project**

The Union Cabinet chaired by the Prime Minister Shri Narendra Modi today has given its approval to the proposal to complete the balance works of the North Koel Reservoir Project in Jharkhand and Bihar at an estimated expenditure of Rs.1622.27 crore to be incurred during three financial years from the start of the project.

The Cabinet also approved storage of water in dam restricted at lower level than envisaged earlier to reduce the submergence and to protect Betla National Park and Palamau Tiger Reserve.

The project is situated on North Koel river which is a tributary of Sone river finally joining the river Ganga. The North Koel Reservoir is located in the most backward tribal areas in Palamau and Garhwa districts of Jharkhand State. The construction was originally started in the year 1972 and continued till 1993 when it was stopped by the Forest Department, Govt. of Bihar. Since then, the work on dam is at a standstill. The major components of project are: 67.86 m high and 343.33 m long concrete dam called Mandal dam originally intended to store 1160 million cubic metre (MCM) water; 819.6 m long barrage at Mohammadganj, 96 km downstream of the dam; and two canals originating from left and right banks of Mohammadganj Barrage with distributaries system for irrigation. With the new lowered elevation level (EL) of 341 metre, the Mandal dam will now have storage of 190 MCM. The project aims to provide irrigation to 111,521 hectares of land annually in the most backward and drought prone areas of Palamu & Garhwa districts in Jharkhand and Aurangabad & Gaya districts in Bihar. The unfinished project as on date is providing irrigation to 71,720 hectares and completion of this project will provide additional irrigation benefit to the extent of 39,801 hectares. The irrigation potential through this Project in the two States would be as follows:

Total irrigation potential: **1,11, 521 hectares**

Irrigation potential in Bihar: **91,917 hectares**

Irrigation potential in Jharkhand:

19,604 hectares

The total cost of the project as assessed on date is Rs 2391.36 crore. An expenditure amounting to Rs. 769.09 crore has been incurred on the project till date. The Union Cabinet has approved the proposal for completing the balance of the North-Koel reservoir project in Jharkhand & Bihar at an estimated cost of Rs 1622.27 crore during three financial years.

The common components amounting to Rs.1013.11 crore of balance works would be funded by the Central Government as a grant from PMKSY Fund. This would include cost of Net Present Value (NPV) and Compensatory Afforestation (CA) which comes to Rs.607 crore and Rs.43 crore respectively. The Central Government will also fund 60% of the cost of balance works amounting to Rs.365.5 crore (Bihar Rs.318.64 crore and Jharkhand Rs.46.86 crore) from Long Term Irrigation Fund (LTIF) under PMKSY as grant from the States of Bihar and Jharkhand. The States of Bihar and Jharkhand will arrange 40% of remaining cost of balance works amounting to Rs.243.66 crore (Bihar 212.43 crore and Jharkhand 31.23 crore) as loan from LTIF through NABARD at the rate which is not subsidised and is related to market borrowing cost with no interest subvention.

The Cabinet also approved execution of balance works of the project on turnkey basis by M/S WAPCOS Ltd., a CPSU under MoWR, RD & GR as Project Management Consultant (PMC). The execution of the project will be monitored by an Empowered Committee of Government of India headed by CEO NITI Aayog.

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Union Cabinet approves new Metro Rail Policy; Focus on compact urban development, cost reduction and multi-modal integration

Union Cabinet approves new Metro Rail Policy; Focus on compact urban development, cost reduction and multi-modal integration

Policy opens a big window for private investments: PPP component must for getting Central assistance

The Union Cabinet chaired by Prime Minister Shri Narendra Modi today approved a new Metro Rail Policy that seeks to enable realization of growing metro rail aspirations of a large number of cities but in a responsible manner.

The policy opens a big window for private investments across a range of metro operations making PPP component mandatory for availing central assistance for new metro projects. Private investment and other innovative forms of financing of metro projects have been made compulsory to meet the huge resource demand for capital intensive high capacity metro projects.

“Private participation either for complete provision of metro rail or for some unbundled components (like Automatic Fare Collection, Operation & Maintenance of services etc) will form an essential requirement for all metro rail projects seeking central financial assistance” says the policy, to capitalize on private resources, expertise and entrepreneurship.

In view of inadequate availability and even absence of last mile connectivity at present, the new policy seeks to ensure it focusing on a catchment area of five kms. on either side of metro stations requiring States to commit in project reports to provide necessary last mile connectivity through feeder services, Non-Motorised Transport infrastructure like walking and cycling pathways and introduction of para-transport facilities. States, proposing new metro projects will be required to indicate in project report the proposals and investments that would be made for such services.

Seeking to ensure that least cost mass transit mode is selected for public transport, the new policy mandates Alternate Analysis, requiring evaluation of other modes of mass transit like BRTS (Bus Rapid Transit System), Light Rail Transit, Tramways, Metro Rail and Regional Rail in terms of demand, capacity, cost and ease of implementation. Setting up of Urban Metropolitan Transport Authority (UMTA) has been made mandatory which is to prepare Comprehensive Mobility Plans for cities for ensuring complete multi-modal integration for optimal utilization of capacities.

The new Metro Rail Policy provides for rigorous assessment of new metro proposals

and proposes an independent third party assessment by agencies to be identified by the Government like the Institute of Urban Transport and other such Centres of Excellence whose capacities would be augmented, as required in this regard.

Taking note of substantial social, economic and environmental gains of metro projects, the Policy stipulated a shift from the present 'Financial Internal Rate of Return of 8%' to 'Economic Internal Rate of Return of 14%' for approving metro projects, in line with global practices.

Noting that urban mass transit projects should not merely be seen as urban transport projects but more as urban transformation projects, the new policy mandates Transit Oriented Development (TOD) to promote compact and dense urban development along metro corridors since TOD reduces travel distances besides enabling efficient land use in urban areas. Under the policy, States need to adopt innovative mechanisms like Value Capture Financing tools to mobilize resources for financing metro projects by capturing a share of increase in the asset values through 'Betterment Levy'. States would also be required to enable low cost debt capital through issuance of corporate bonds for metro projects.

Seeking to ensure financial viability of metro projects, the new Metro Rail Policy requires the States to clearly indicate in the project report the measures to be taken for commercial/property development at stations and on other urban land and for other means of maximum non-fare revenue generation through advertisements, lease of space etc., backed by statutory support. States are also required to commit to accord all required permissions and approvals.

The new policy empowers States to make rules and regulations and set up permanent Fare Fixation Authority for timely revision of fares. States can take up metro projects exercising any of the three options for availing central assistance. These include; PPP with central assistance under the Viability Gap Funding scheme of the Ministry of Finance, Grant by Government of India under which 10% of the project cost will be given as lump sum central assistance and 50:50 Equity sharing model between central and state governments. Under all these options, private participation, however, is mandatory.

The policy envisages private sector participation in O & M of metro services in different ways. These include:

1. Cost plus fee contract: Private operator is paid a monthly/annual payment for O&M of system. This can have a fixed and variable component depending on the quality of service. Operational and revenue

risk is borne by the owner.

2. Gross Cost Contract: Private operator is paid a fixed sum for the duration of the contract. Operator to bear the O&M risk while the owner bears the revenue risk.

3. Net Cost Contract: Operator collects the complete revenue generated for the services provided. If revenue generation is below the O&M cost, the owner may agree to compensate.

At present, metro projects with a total length of 370 kms are operational in 8 cities viz., Delhi (217 kms), Bengaluru (42.30 kms), Kolkata (27.39 kms), Chennai (27.36 kms), Kochi (13.30 kms), Mumbai (Metro Line 1-11.40 km, Mono Rail Phase 1-9.0 km), Jaipur-9.00 kms and Gurugram (Rapid Metro-1.60 km).

Metro Projects with a total length of 537 kms are in progress in 13 cities including the eight mentioned above. New cities acquiring metro services are; Hyderabad (71 kms), Nagpur (38 kms), Ahmedabad (36 kms), Pune (31.25 kms) and Lucknow (23 kms).

Metro projects with a total length of 595 kms in 13 cities including 10 new cities are at various stages of planning and appraisal. These are; Delhi Metro Phase IV- 103.93 km, Delhi & NCR-21.10 km, Vijayawada-26.03 km, Visakhapatnam-42.55 km, Bhopal-27.87 km, Indore-31.55 km, Kochi Metro Phase II-11.20 km, Greater Chandigarh Region Metro Project-37.56 km, Patna-27.88 km, Guwahati-61 km, Varanasi-29.24 km, Thiruvananthapuram & Kozhikode (Light Rail Transport)-35.12 km and Chennai Phase II-107.50 km.

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Can't Mekedatu be used to address T.N.'s needs, asks SC

The Supreme Court on Thursday asked why the Mekedatu dam project cannot be envisioned as a facility to store excess water from Karnataka, which can be released to Tamil Nadu.

The suggestion was mooted by a three-judge Special Bench, led by Justice Dipak Misra, during the hearing of appeals in the Cauvery case.

The discussion touched upon the Mekedatu project when Karnataka provided statistics of Cauvery water released to Tamil Nadu from 2007, post the tribunal award. Karnataka submitted that except for two drought-ridden years, the water released had never decreased below the 192 tmc ordered by the tribunal.

Tamil Nadu retorted, saying only excess water was released by Karnataka.

'Can be storage facility'

At this point, Karnataka submitted that the Mekedatu dam project could be used as storage facility for excess water, to be released whenever Tamil Nadu required so.

Tamil Nadu indicated that it was agreeable to the proposition, provided that such an arrangement was under the control and supervision of an independent third party. The court also said that it may not be feasible to construct a new dam for storage in Tamil Nadu, and asked both States to put the proposition before the Centre when it begins its arguments in the Cauvery case next week.

In 2015, Karnataka had termed the challenge posed by Tamil Nadu to the construction of Shivasamudram and Mekedatu hydro power projects as "misconceived, obstructive and factually baseless".

The Karnataka government told the Supreme Court that the two reservoirs would neither diminish nor reduce the river's downstream flow.

First instalment, an adaptation of first two chapters, released

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TRIFED celebrates World Honey Bee Day**TRIFED celebrates World Honey Bee Day**

To create awareness about Beekeeping and uses of its products including Honey, Tribal Cooperative Marketing Development Federation of India Limited (TRIFED) is celebrating World Honey Bee Day (WHBD) on 19.08.2017 in the Country and on 18.08.2017 at all its Regional Offices and 43 Retails Outlets spread in the country. In Delhi, this would be celebrated in TRIBES India Showrooms at Dilli Haat, Mahadev Road and Baba Karak Singh Marg on 18.08.2017. The main theme of celebrating WHBD is to save Indian honey bee.

Beekeeping has been useful in pollination of crops, thereby, increasing income of the farmers/beekeepers by way of increasing crop yield and providing honey and other beehive products, viz. royal jelly, bee pollen, propolis, bees wax, etc. that serves a source of livelihood for rural poor. Therefore, honeybees/ beekeeping has been recognised as one of the important inputs for sustainable development of agriculture/ horticulture.

TRIFED is an apex organisation at National Level and functioning under the administrative control of Ministry of Tribal Affairs. TRIFED is serving the interests of Tribals, who are engaged in collection of NTFP and making of Tribal Art & Handicraft Products for their livelihood so as to ensure better remunerative price for their products as well as for the socio-economic betterment through Self Help Groups, Empanelled NGOs, State level Tribal Development Corporations, Forest Development Corporations for undertaking marketing development of the tribal products.

Honey, being an important Minor Forest Produce, TRIFED is playing and lead role in protecting, promoting and multiplication of Honey Bees by Scientific, Non-destructive collection practices, thereby increasing the livelihood of tribal people living in various forest areas of the country, contributing to the growth of Honey Bees population and reducing the mortality rate of Honey Bees drastically. About 90% of the Scheduled Tribes of the country live in and around forest areas and the forests provide 60% of the food & medicinal needs of tribals and 40% of their income from Minor Forest Produce (MFP) mostly of which come from Honey.

Samir/JD/jk

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No data from China on Brahmaputra this year

Hinting at China's responsibility for the current spate of floods across the northeastern States, India on Friday said Beijing had not shared any water-related data about the Himalayan rivers in the current year. The Ministry of External Affairs said under an agreement, China had committed to share annual hydrological data with India but the same has not been shared this year.

"There is an existing mechanism named India-China Expert-Level mechanism... started in 2006 to share hydrological data during the flood season for Brahmaputra and Satluj rivers. Under the MoUs, the hydrological data is to be shared between May 15 to October 15 every year but from May 15 till now, we have no data from China. The last meeting of the mechanism was held in April 2016," said Raveesh Kumar, spokesperson of the Ministry of External Affairs.

Cooperation necessary

The spokesperson hinted at the necessity for regional cooperation to control floods and explained that the responsibility of sharing data is with China as it hosts the points of origin of the Brahmaputra and Satluj.

Mr. Kumar also flagged Nepal's role in controlling floods in Bihar, saying External Affairs Minister Sushma Swaraj had discussed the issue with Nepal's Deputy PM.

The spokesperson also addressed the ongoing India-China standoff at Doklam and declined to give a timeline to the standoff adding, "I am not an astrologer and since I am not an astrologer so I will let it pass." He however noted a racially motivated skit that appeared in the Chinese official media earlier in the week and said, "I will not dignify this with an answer."

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Ministry of Defence approves delegation of Powers to Border Roads Organisation**Ministry of Defence approves delegation of Powers to Border Roads Organisation**

The Ministry of Defence has decided to delegate administrative and financial powers to the Border Roads Organisation (BRO) right upto the level of Chief Engineer and Task Force Commander, so as to avoid delays on account of references between the Chief Engineer and HQ DGBR and also between HQ DGBR and the Ministry.

Functioning under the control of the Ministry of Defence since 2015, the BRO is engaged in road construction to provide connectivity to difficult and inaccessible regions in the border areas of the country. The Ministry of Defence intends to bring transformational changes in the organization in order to improve the pace of execution of works and to achieve the desired outcomes according to the requirement of the Armed Forces.

In line with the aim to bring in transformational changes in the BRO, various powers of delegation have been revised. According to the earlier delegation of powers, a Chief Engineer in the BRO could give administrative approval of works only upto Rs. 10 crore, that too only for departmental works, whereas the ADGBR had powers to accord administrative approval only upto Rs. 20 crore for departmental works. For contractual works, all administrative approvals were given by DGBR, who had powers only upto Rs. 50 crore. Enhancing the powers at all levels in the BRO, the Ministry of Defence has now approved that for both departmental and contractual mode of execution, a Chief Engineer of BRO can accord administrative approval upto Rs. 50 crore, ADGBR upto Rs. 75 crore and DGBR upto Rs. 100 crore.

Further, according to the earlier delegation of powers, a Chief Engineer in the BRO had the power to accept execution of contracts only upto Rs. 10 crore, ADGBR had powers upto Rs. 20 crore, beyond which all tenders had to be sent to DGBR. With the intent to speed up the tendering process, the Ministry of Defence has now enhanced the powers of Chief Engineer for acceptance of bids with cost of contract upto Rs. 100 crore and that of ADGBR for cost of contract upto Rs. 300 crore. With this delegation, the entire tendering process including acceptance of bids would be completed at the level of Chief Engineer/ADGBR for a majority of the contracts.

For adopting the DPR mode of execution, there is a need to outsource consultancy services. According to the earlier delegation of powers, a Chief Engineer had powers only upto Rs. 10 lakh, ADGBR upto Rs. 50 lakh and DGBR upto Rs. 2 crore. The Ministry of Defence has now enhanced the powers of Chief Engineer to accord administrative approval for outsourcing of consultancy services upto Rs. 2 crore and ADGBR upto Rs. 5 crore and full powers beyond Rs. 5 crore to DGBR.

There also is a need to replace obsolete construction equipment in the BRO with modern equipment. According to the earlier delegation of powers, DGBR had powers only upto Rs. 7.5 crore for procurement of indigenous equipment and Rs. 3 crore for procurement of imported equipment. All other cases of procurement had to be referred to the Ministry of Defence. In order to fast track the procurement of latest construction machinery and

equipment in the BRO, the Ministry of Defence has enhanced the delegation of powers upto Rs. 100 crore to DGBR for procurement of both indigenous/imported equipment.

In case of emergent need for construction equipment, DGBR has been given full powers for hiring upto three years and for Chief Engineers (Project), powers have been enhanced from Rs. 50 lakh to Rs. 5 crore and the period of hiring has been enhanced from 6 months to one year.

The BRO is engaged in road construction activities in the most difficult areas and the usage norms and fixation of life of construction equipment varies from terrain to terrain. Earlier, all cases of revision of norms of equipment and fixation of life had to be referred to the Ministry of Defence. In a departure from the earlier policy, full powers in this regard have been delegated to DGBR.

The Ministry of Defence in consultation with the Armed Forces would identify the roads to be entrusted to the BRO and fix priorities by approving the Long Term Roll-On Works Plan and Annual Works Programme for the BRO. Thereafter, powers related to execution of works have been delegated to be exercised by different levels within the BRO. However, to ensure accountability, a MIS is being developed for online monitoring of progress of works.

From the current year, the BRO has initiated the practice of preparation of DPRs for all new road projects to be taken up and has adopted the project mode of execution. In an important policy change from the conventional departmental mode of execution followed by the BRO in the past, the organisation has now also started adopting the EPC mode of execution. The Ministry of Defence has approved policy guidelines in this regard, based on which the BRO may engage big construction companies for taking up road projects on a turnkey basis.

It is expected that with delegation of powers by the Ministry of Defence to the BRO, the pace of road construction in border areas would improve and the BRO would be able to complete ongoing/new projects in compressed timelines.

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Safeguarding the interests of farmers

“The PDS in Tamil Nadu is intact and continues to retain the feature of universal coverage even after implementation of the National Food Security Act, 2013.” A PDS outlet in Coimbatore. | Photo Credit: [M. Periasamy](#)

Transformational changes are taking place in India currently, improving the way we live. These changes are impacting all our lives in small or significant ways. It is gratifying to know that the citizens at large are happy with these changes. However, for some who have fed themselves on the fodder that such changes are not for the near future, there is consternation. Even worse, these people find it difficult to comprehend that technology and policy are working together to remove discretion and opaqueness.

The ongoing discourse, particularly in Tamil Nadu, on the Public Distribution System (PDS), the procurement of grains/pulses from farmers, public storage in Food Corporation of India godowns, commitments made in the World Trade Organisation (WTO), Direct Benefit Transfer, etc. is interesting. However, there are strands in this discourse which are impressionistic and not based on data. They create a populist narrative and distract from the core issues. It is necessary, therefore, to infuse facts into the discourse.

The PDS in Tamil Nadu is intact and continues to retain the feature of universal coverage even after implementation of the National Food Security Act, 2013 (NFSA). Although the guidelines under the NFSA prescribe identification of priority households, there is no denial of any benefit under the PDS. There is no reduction even in the total coverage from the earlier Targeted Public Distribution System, which was effective till Tamil Nadu joined the NFSA in November 2016. The average annual offtake or the annual allocation has remained 36.78 lakh tonnes. The major part of the subsidy for the distribution of foodgrains (90.81% for rice and 91.70% for wheat) is borne by the Government of India.

The implication of this subsidy allocation to Tamil Nadu alone on the Government of India is approximately 843 crore per month and approximately 10,120 crore per year. Since the central issue price under the NFSA is much lower compared to the erstwhile Targeted Public Distribution System, the burden on the State government has come down. On implementing the NFSA, the savings for the State exchequer on account of this subsidy, thanks to the lower central issue price, is approximately 436.44 crore per year.

Union Consumer Affairs Minister Ram Vilas Paswan on August 1 stated in a series of tweets the data for Tamil Nadu and also highlighted the fact that Tamil Nadu gets the highest allocation in the country as ‘tide over’ allocation of 12.52 lakh metric tonnes of foodgrains. The narrative in Tamil Nadu cannot be devoid of these facts.

Another disturbing strand in this narrative in Tamil Nadu is that the Indian government has callously sold away the interests of our farmers at the WTO by agreeing to the Trade Facilitation Agreement. Nothing can be further from the truth than this!

The Trade Facilitation Agreement was agreed on in 2013 in Bali and came into force from February 2017 after two-thirds of the WTO’s 164 members ratified it. Several trade-related issues such as transparency, predictability and efficiency at the ports, faster clearance procedures, and improved appeal rights for traders are to be addressed by countries. They shall notify various provisions to bring in the facilitation, over three years or more. Only the basic set of provisions will be implemented within one year. The Trade Facilitation Agreement allows for consultations before any new trade rules are notified. A WTO study indicated that when the Trade Facilitation

Agreement is fully implemented, trade costs for member countries will decrease by an average of 14.3%. It is also estimated that the time taken to export and import will come down drastically. Finance Minister Arun Jaitley has made budgetary allocations for bringing in single-window clearance and improving customs clearance at the ports. A high-level committee chaired by the Cabinet Secretary will monitor logistics and efficiency at ports and related issues.

Thus, it can be seen that the Trade Facilitation Agreement is not about market access but inter alia about facilitating and bringing trade transparency. By ratifying the Trade Facilitation Agreement, India has not forgotten the developmental agenda lying unfulfilled at the WTO.

The Public Stock Holding issue remains unresolved at the WTO. Although agreed on in Bali in 2013 and reiterated in Nairobi in 2015, that a permanent solution for Public Stock Holding be found by 2017, it is still a 'work-in-progress'. The existing WTO rules would have allowed a legal challenge to our Public Stock Holding and minimum support price-based procurement programme in case we breached 'the limit' on procurement. 'The limit' is defined as 10% of the value of production of the particular grain being procured.

WTO rules classify procurement and holding of public stocks for food security purposes as 'Green Box' or non trade-distorting. However, if foodgrains for the public stocks are procured through an administered price/minimum support price and if this minimum support price is higher than the archaic fixed reference price (calculated on base period 1986-88), then it is considered as trade-distorting agriculture support. Such trade-distorting support should be within 'the limit', which is 10% of the value of production of the particular grain being procured.

One of the first things that this government did in 2014 was to intensely engage with the WTO to obtain a 'peace clause' so that even if we did breach 'the limit', no one shall challenge our programme till such a time a permanent solution is found, agreed on, and adopted by the WTO membership. Prime Minister Narendra Modi, on this matter, personally engaged with global leaders, and by November 2014 we obtained an open-ended peace clause from the General Council of the WTO, which was later reaffirmed at the Nairobi Ministerial. So Prime Minister Modi has safeguarded the interests of the farmer and ensured that India's sovereign right to protect them is not diluted.

Providing food to the poor or targeted groups at subsidised prices is fully WTO-compatible. This does not figure at all in the WTO calculations. We have not undertaken any commitment in the WTO for any kind of limit on the food supplied under the NFSA .

An informed discourse based on facts is welcome and I believe such a discourse shall strengthen public policy.

Nirmala Sitharaman is Minister of State (Independent Charge) for Commerce and Industry, Government of India

The new U.S. Fed Chairman is unlikely to opt for policies that might upset the President's plan

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NHAI launches mobile App MyFASTag and FASTag Partner**NHAI launches mobile App MyFASTag and FASTag Partner****Apps will facilitate the availability of FASTags for Electronic Toll Collection**

National Highways Authority of India launched two mobile Apps – MyFASTag and FASTag Partner in New Delhi today, to facilitate the availability of FASTags for Electronic Toll Collection. Speaking on the occasion the NHAI Chairman Shri Deepak Kumar said the cumbersome method of purchase and recharge of FASTags has been one of the major challenges with the ETC project. The mobile Apps launched today will ease the process, making it possible to buy or recharge FASTags at the click of a mobile button.

MyFASTag is a consumer App that can be downloaded from the App Store for both Android and iOS systems. A consumer can purchase or recharge FASTags on this App. The App also helps to keep track of transactions and provides for online grievance redressal.

FASTag Partner is a merchant App. Agencies like Common Services Centre, banking partners and vehicle dealers can sell and enroll FASTag through this App. In addition to this, the App can also be used to activate the RFID tags that came built in with around 74 lakh cars in the country following the 2013 Gazette Notification in this regard. These RFID tags are already fixed on the cars but are dormant. This App will convert these RFID tags into ETC Tag (FASTag).

Shri Deepak Kumar also informed that from 1st October 2017, all lanes of all 371 NHAI toll plazas in the country will become FASTag enabled. One lane in every toll plaza will be a dedicated FASTag lane where no other form of payment will be accepted. The other lanes, though FASTag enabled, can accept other forms of payment too. The dedicated FASTag lanes will become operational on all 371 NHAI toll plazas from 1st September 2017, he said.

In addition to the above, NHAI has also come up with Online sale of FASTags and offline sale through Common Services Centre (CSC) near toll plazas. FASTag can now be purchased online from Issuer Banks websites / NHAI website / IHMCL website and will be delivered by courier at the door step of the purchaser. Beginning tomorrow, 18th August, 2017, FASTags can also be bought from sale points of **Common Services Centre (CSC)** to be set up near toll plazas. CSC has a proven track record of making 20 crore Adhar Cards and achieving many other milestones of Digital India in short duration due to their vast network. It is expected that the association with CSC will give the ETC ecosystem a further boost.

More than 6 lakh FASTags have been sold so far. It is expected that these initiatives for improving the availability and access to FASTags will encourage more and more people to buy them. This will give the much needed push to the ETC project that aims to make travel more convenient, faster and environment friendly for people.

[To access the presentation on the mobile Apps click here.](#)

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India's Exclusive Rights to Explore Polymetallic Nodules from Central Indian Ocean Seabed Basin Extended by Five Years

India's Exclusive Rights to Explore Polymetallic Nodules from Central Indian Ocean Seabed Basin Extended by Five Years

India's exclusive rights to explore polymetallic nodules from seabed in Central Indian Ocean Basin (CIOB) have been extended by five years. These rights are over 75000 sq. km of area in international waters allocated by International Seabed Authority for developmental activities for polymetallic nodules. The estimated polymetallic nodule resource potential is 380 million tonnes, containing 4.7 million tonnes of nickel, 4.29 million tonnes of copper and 0.55 million tonnes of cobalt and 92.59 million tonnes of manganese. This has been approved unanimously in the 23rd session of International Seabed Authority (ISA) concluded on August 18, 2017 at Kingston, Jamaica.

India is the first country to have received the status of a pioneer investor in 1987 and was allocated an exclusive area in Central Indian Ocean Basin by United Nations (UN) for exploration and utilization of nodules. India is one among the top 8-countries/ contractors and is implementing a long-term programme on exploration and utilization of Polymetallic Nodules through Ministry of Earth Sciences. This includes survey and exploration, environmental studies, technology development in mining and extractive metallurgy, in which significant contributions have been made.

While, the extraction of metals from the polymetallic nodules lying at the deep ocean floor is not yet found to be economically viable at this stage, an area of about 7860 square km has been identified in the CIOB for the First Generation Mine Site on the basis of detailed surveys and analysis. Environmental studies for mining of deep-sea polymetallic nodules were also carried out to evaluate the possible impacts of mining on deep-sea environment.

A Remotely Operable Submersible (ROSUB 6000), capable of operating at 6000 m water depth was also developed and tested successfully at a depth of 5289 m. A remotely operable in-situ soil testing equipment was also developed for obtaining detailed geotechnical properties of the mining area at CIOB and tested successfully at 5462 m water depth.

A mining system is under development which has been tested for 500m water depth. Metallurgical process routes for extracting copper, nickel and cobalt from polymetallic nodules have been developed and tested in a demonstration pilot plant set up on semi-continuous basis at Hindustan Zinc Limited, Udaipur with a capacity to process 500 kg nodules per day.

International Seabed Authority (ISA) is a UN body set up to regulate the exploration and exploitation of marine non-living resources of oceans in international waters. India actively contributes to the work of International Seabed Authority. Last year, India was re-elected as a member of Council of ISA. India's nominees on Legal and Technical Commission and Finance Committee of the ISA were also elected last year.

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PM reviews progress of Soil Health Cards and PMFBY**PM reviews progress of Soil Health Cards and PMFBY**

The Prime Minister, Shri Narendra Modi, today reviewed the progress of two key schemes related to the agriculture sector - Soil Health Cards; and Pradhan Mantri Fasal Bima Yojana.

The Prime Minister was informed that 16 States/UTs have completed the first cycle of Soil Health Cards distribution, and the remaining States are likely to complete the same within weeks.

Reviewing the progress, the Prime Minister said that appropriate checks should be undertaken for variation, both within a sampling grid, and across different soil testing labs. This would help ensure quality in the reports, he added.

The Prime Minister also emphasized that soil health cards should be printed in the local dialect of the area, so that the farmers are able to read and understand them easily.

Encouraging the rapid adoption of latest technology, the Prime Minister said that soil testing should eventually be possible through hand-held devices. He urged officials to explore the possibility of involving start-ups and entrepreneurs in this exercise.

On Pradhan Mantri Fasal Bima Yojana, the Prime Minister was informed that in the Kharif season of 2016, and Rabi season of 2016-17, claims of over Rs. 7700 crore have already been paid, and over 90 lakh farmers have been benefited.

Officials also said that latest technology including smartphones, remote sensing, satellite data and drones are being used for speedy data collection with regard to crop insurance claims.

Senior officials from Ministry of Agriculture, NITI Aayog and PMO were present during the review meeting.

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Dogged by delays, but cloud seeding project is finally up and cruising

A special fitted aircraft which will spray chemical to induce rainfall, as part of the cloud seeding project "Varshadhari", taking off from Jakkur airfield, after the inauguration, in Bengaluru on August 21, 2017. The cloud seeding project, taken up by Rural Development and Panchayat Raj (RDPR) department at three places including Bengaluru, Gadag and Yadgir, at the cost of state's exchequer a whopping Rs 35 crore. Photo: K. Murali Kumar | Photo Credit: [K MURALI KUMAR](#)

While the Goods and Services Tax (GST) regime and Central clearances delayed Project Varshadhari, a cloud seeding initiative, by at least 10 days, a government ceremony and the frills accompanying it saw a weather modification aircraft miss its date with the clouds.

On Monday, the 60-day, 35-crore programme was launched at Jakkur Aerodrome with the hope of seeding clouds in a 20-sq. km area at Magadi. Though the modified flight was scheduled to take off at 2.45 p.m., by the time the photo-ops were done and the last-minute decision to flag off with the 'Kannada' flag fulfilled, the aircraft — carrying three State Ministers — had lost its clearance window for take-off.

It then had to wait for more than an hour until trainee aircraft from the nearby Air Force base at Yelahanka finished their sorties.

According to members of the project monitoring committee, Magadi was chosen as there was an expectation of conducive cloud formation on Monday afternoon. But it was only at 4.50 p.m. that the flight took off, and most of the clouds had passed by then. In the end, three flares of chemicals were fired and two clouds seeded.

"The best time for seeding is generally between 1 p.m. and 4 p.m. With the function and the delays, the clouds dissipated. But this was just an experimental flight to show how the system works," an official said.

Behind schedule

Over the next 60 days, a small plane will spray chemicals on 'growing clouds' in the hope of condensing water particles and increasing precipitation.

Though the project has been launched to capitalise on monsoons clouds, H.K. Patil, Minister for Rural Development and Panchayat Raj, said it was 10 days behind schedule. "There were delays in getting Central clearances and because of GST," he said.

As reported by *The Hindu*, three weather-monitoring radars were stuck at the Kempegowda International Airport for over a week because of confusion over GST. The aircraft and radars were being imported from the United States and this required clearance from numerous Central agencies.

However, Mr. Patil said there was still enough time to increase rains in the seeded areas by 15-20%.

Full system within a week

With the weather-monitoring radars still being commissioned, cloud seeding will commence fully within the next four days, said H.P. Prakash Kumar, chief engineer, Rural Development and Panchayat Raj Department, and project in-charge. "For the next few days, we will try to seed

clouds in southern Karnataka, based on where rain-bearing clouds are and if the areas to benefit are rain-deprived. Once the radars are set up, we will extend this to the three basins,” he said.

Better equipment

It was in 2003 that Project Varuna, a cloud seeding project, was launched by the then Minister for Water Resources H.K. Patil. While the results of that project have been subject to debate, this time around the monitoring committee of meteorologists and cloud physicists expects better results. “The radars and the aircraft are more sophisticated and whether clouds are seeded can be assessed within 10 or 15 minutes. This will increase the success rate of seeding,” said Ram Sagar, senior scientist at the Indian Institute of Astrophysics.

Mature sandalwood trees in Bengaluru to have anti-theft sensors to alert guards

Local magistrate has remanded Siddalinga Swamy in judicial custody for 10 days

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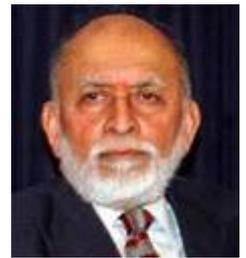
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70 years of Independence

Special Feature – I-Day 2017

India's Atomic Energy Programme



***Dr. M.R. Srinivasan**

India entered the atomic age, more correctly the nuclear age, on 4th August 1956 when Apsara, India's first nuclear reactor, went into operation. This reactor was designed and built by India with the nuclear fuel supplied from the United Kingdom under a lease agreement. Our second reactor for research purposes, CIRUS, was built with cooperation with Canada and went into operation in the early 1960's. The research reactors were platforms for conducting research in neutron physics, studies in the behaviour of materials under neutron irradiation and for production of radio isotopes. The latter are very useful for diagnostics and treatment of various ailments, especially cancer, and also very useful in industrial applications, especially for the purpose of non-destructive testing.

Electricity production using nuclear energy commenced in October 1969 when the two reactors at Tarapur were put into service. The Tarapur Atomic Power Station (TAPS) was built by General Electric of USA and is now in its forty-eighth year of service. Tarapur supplies the lowest cost non-hydro electric power in the country. India's second nuclear power station came up in Rajasthan, near Kota, the first unit of which went into operation in August, 1972. The first two units at Rajasthan were built in collaboration with Canada, who pioneered reactors that could use natural uranium as fuel. They, however, required heavy water, present in extremely small quantities in ordinary water and can be extracted through complex processes.

India's third nuclear power station came up at Kalpakkam, near Chennai. This station was designed and built by India, on its own. All the material and equipment were produced in the country. This was a huge challenge as Indian industry at that time, had no experience in making complex equipment required for nuclear applications. Special materials like nuclear fuel, zirconium components and heavy water production required extensive work in the laboratories of the Bhabha

Atomic Research Centre (BARC). Pilot plants were built and later scaled up to industrial plants. Industry had to be trained in special manufacturing processes and novel quality testing procedures introduced. Thus, when the first unit of the Madras Atomic Power Station (MAPS) started up in July 1983, India joined a small group of countries which could design and build nuclear power units on their own.

Our fourth nuclear power station came up at Narora, on the banks of river Ganga. This site has experienced earthquakes in the vicinity. So we evolved designs capable of withstanding any foreseeable earthquake that could visit the site. We also standardized the design of a 220 MW unit that could be built at a number of sites in the country. The first unit of Narora started up in October 1989. In the next twenty years, India built and commissioned eleven 220 MW units and two 540 MW units, all based on its own technology called 'Pressurised Heavy Water Reactors'. To accomplish this task, India also built up a strong heavy water production capability and fuel production, including mining of uranium in Jharkhand. Indian industry was mobilized to produce the entire range of equipment and materials to support the nuclear power programme.

Since India was keen to augment the nuclear capacity rapidly, it entered into a collaboration with the former Soviet Union in 1988 to build two 1000 MW reactor power units using enriched uranium as fuel. Due to the implosion of the Soviet Union in 1990 and the economic difficulties India faced at the time, the Indo-Russian project was put on the back burner. In 1998, India and Russia decided to embark on this project, and work at site commenced in 2003. When the commissioning activities on the first unit were in progress, the accident in Fukushima, Japan, occurred in March 2011. This triggered a strong opposition to the project amongst people living in the neighborhood. It took considerable time and patient explaining to inform the public at large about the safety features at Kudankulam and also how the site conditions there were completely different from those at the Japanese site. The first unit at Kudankulam went into operation in 2014 and the second in 2016.

India now has twenty-one reactor units in service. The first unit at Rajasthan supplied by Canada has been out of service due to some equipment deficiencies. The other units with a total capacity of 6700 MW have been operating reliably. The plant load factor for the five years from 2011 to 2016 has been about 78%. The nuclear power units have been supplying power at Rs. 2 to Rs. 3.50 per kwh (Kilowatt hour). In fact the cost of power from Tarapur has been less than Rs. 1/kwh. For Kudankulam units 1 and 2, it is about Rs. 4 per kwh.

The cost of installing Indian designed and built nuclear power unit is about Rs. 16.5 crores/MW. For the Russian reactors, the cost is about Rs. 22 crores/MW. Since the fuelling cost of the Russian reactors is lower than those of the Indian reactors, both of them produce power at about Rs. 5/kwh. This cost, when escalated to the time horizon of 2023-24, will come to about Rs. 6.5 per kwh. Coal based power in regions far away from coalfields would cost more in the same time horizon. Solar power for recent projects costs about Rs. **2.5/kwh**, but an expenditure of Rs. 2 /kwh is needed to connect the solar units to the grid system, taking the total cost to **Rs. 4.5/kwh**.

India signed cooperation agreements with the USA and France in 2008 and they provided for building nuclear power units designed in these countries to be set up in India. Negotiations have been going on from then on. However, the leading nuclear power plant builder in the US, namely Westinghouse filed for bankruptcy a few months ago. AREVA of France lost a lot of money on their nuclear fuel business following the Fukushima accident. The French government allocated the nuclear reactor business to their national electric utility, Electricite' de France. There is considerable uncertainty, therefore, with regard to cooperation with USA and France.

Given this scenario, the Government of India decided to build ten India designed 700 MW Pressurized Heavy Water Reactors in June 2017. The Nuclear Power Corporation had scaled up the 540 MW size units to 700 MW and started work, two at Kakrapara (Units 3 and 4) and two at Rajasthan (Units 7 and 8). This is one of the biggest single commitments in nuclear power, after the Fukushima accident of 2011. This programme will provide Indian industry with sustained workload for a period of a decade and establish India firmly as an important player in this field.

Work has commenced on Units 3, 4, 5 and 6 at Kudankulam. Russia has offered to build six 1200 MW units at a second site to be identified by India. As a parallel activity, India has designed the 'Indian Pressurised Water Reactor' of 900 MW capacity, using enriched uranium as fuel. Work on two such units may be taken up soon, to be followed thereafter by series building. At Kalpakkam, the Prototype Fast Breeder Reactor of 500 MW is in the process of commission. Two reactors of 600 MW of similar design may follow. The Bhabha Atomic Research Centre has completed the design of a 300 MW reactor called 'Advanced Thermal Reactor' which would use thorium. Our long term plans to use thorium depend on fast reactors and thorium based systems.

Not elaborated in this article are activities in the field of research, reprocessing of spent fuel, development of accelerators and so forth. The department of Atomic Energy has been actively engaged in supplying radio isotopes to hospital and industry, in the use of radiation technologies for preventing spoilage of marine foods, spices and for enhancing the shelf life of onions, mangoes and other food articles, as well as in sterilization of medical products.

We may thus foresee, in the decades ahead, nuclear energy making an important contribution as carbon-free energy, and nuclear technologies offering benign solutions in enhancing the quality of life of our people.

**The author is Former Chairman and presently Member, Atomic Energy Commission.*

Views expressed in the article are author's personal.

(The feature has been contributed by PIB Chennai)

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70 years of Independence

Special Feature – I-Day 2017

Self reliance in food – Green and White revolution

With special reference to North East India



*Dr. Prarthana Rajkumari

This is an era of 'Partivartan' – time for some revolutionary changes! Our Prime Minister Mr. Narendra Modi has started campaigning for a multicolour revolution referring to a second green revolution with protein-rich pulses, a white revolution with cattle and livestock, a saffron 'energy' revolution with solar energy, and a blue revolution on clean water and the welfare of the fishermen. Among these, Green and White Revolution have already influenced the life of the Indian to a great extent. As far as food security is concerned, India cannot compromise on food self-sufficiency and there has to be a number of short-term as well as long-term initiatives to be taken. Shri Modi's attention to the sufferings of farmers during election campaign has raised a lot of hope among the under-privileged community.

Green Revolution was aimed to increase the production of food-grains that resulted in a drastic reduction in imports. Because of this Green Revolution we are now self-sufficient in food-grains and have sufficient stock in the central pool and sometimes in a position to export food-grains also. Green Revolution brought a large scale farm mechanisation which created demand for different types of machines and requisite for chemical fertilizers, pesticides, insecticides, weedicides, etc. also increased considerable. Subsequently, an agro based industry has come up creating a large number of employments in the country.

It seems that North East, though rich in natural resources, has lagged behind since Independence. Prime Minister said that the second Green Revolution should start from the East and if that happens, it will begin from Assam. Accordingly, the Ministry of Agriculture has included Assam in the list of eastern states to be covered by the second Green Revolution. Among the eastern states, Assam has received the best performance award for National Food Security Mission (NFSM) – rice in 13 NFSM districts. The mission aims to increase the production and productivity of rice.

With so much water, fertile land and hardworking farmers North East has the potential to contribute immensely in achieving the target of doubling the farmers' income by the year 2022. As the Prime Minister laid the foundation stone of Indian Agricultural Research Institute (IARI) in Gogamukh, Assam, it can be expected that it will impact the entire region in a positive way and agriculture needs will be developed in line with the requirements of the 21st century. Farmers will get benefitted from the changing technology as well.

The North East can excel in the field of organic farming as well. Diverse agro-climatic conditions, varied soil types and abundant rainfall have endowed the region with promising horticulture and value added products that can be marketed within the country and abroad. The diverse agro-climatic situations in the region offer excellent scope for growing different horticultural crop groups like fruits, vegetables, spices, medicinal and aromatic plants. A wide range of tropical, sub-tropical and temperate fruits such as lemon, mandarin, pineapple, passion fruit, banana, ginger, turmeric, and vegetables, both indigenous and exotic, are grown in the region. In terms of its contribution to the national production, the region accounts for about 5.1% (fruits) and 4.5% for vegetables.

Moreover, a unique advantage the region has that it is gifted with suitable agro climatic condition very different from rest of country due to its climatic diversity, meandering altitudes and production of varied crop groups. In fact, the uniqueness of North Eastern market is that one can enjoy fresh off-season crop groups in one state from the neighbouring states where its season has just started due to this climatic diversity.

White Revolution is the concerted efforts on a cooperative level to increase milk supply through which Indian Dairy Industry has grown to the extent that milk output has not only topped the world, but also represents sustained growth in the availability of milk and milk products. The dairy sector is now the largest contributor in the agricultural sector to the nation's GDP.

National Dairy Development Board (NDDB) formed in 1965 to promote, plan and organise dairy development through cooperatives launched Operation Flood in 1970 which is considered to be the world's largest dairy development programme. Under this programme professionals were employed for marketing and application, and science and technology to link the rural producers with urban consumers.

But if we talk about North East India, consumption of milk and milk products is much lower due to divergent food habit and less availability of milk. Assam is the largest producer of milk followed by Tripura. In recent times a notable increase in milk production is seen in Tripura mainly due to improvement in milk breed. Prompt financial assistance from government and constructive motivation in form of training engrossed the state to become successful in this field.

The country's market leader, Amul, has started operations in the state giving a tough competition to the West Assam Milk Producers' Cooperative Union Limited (Wamul) that sells its products under the brand name Purabi, which has become a household name and has met with some success in recent years. According to Economic Survey of Assam, the Dairy Development Department has been focussing on increasing milk production as well as creating processing facilities for economic uplift of rural dairy farmers.

To make the country self-reliant in agriculture and food security, instead of providing a particular amount of food grains every month, the focus should be on making the villages take care of their own needs which may help in removing hunger in the long term. Strategic planning and implementation is necessary to develop agriculture and make region marginally, if not significantly, surplus in food production by integrating research, extension and education duly supported by a time bound reforms in land tenure system in each state.

**Author is Assistant Professor in College of Agriculture, Dhuburi, Assam.*

Views expressed in the article are author's personal.

(This feature has been contributed by PIB Guwahati)

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India's Exclusive Rights to Explore Polymetallic Nodules from Central Indian Ocean Seabed Basin Extended by Five Years

India's Exclusive Rights to Explore Polymetallic Nodules from Central Indian Ocean Seabed Basin Extended by Five Years

India's exclusive rights to explore polymetallic nodules from seabed in Central Indian Ocean Basin (CIOB) have been extended by five years. These rights are over 75000 sq. km of area in international waters allocated by International Seabed Authority for developmental activities for polymetallic nodules. The estimated polymetallic nodule resource potential is 380 million tonnes, containing 4.7 million tonnes of nickel, 4.29 million tonnes of copper and 0.55 million tonnes of cobalt and 92.59 million tonnes of manganese. This has been approved unanimously in the 23rd session of International Seabed Authority (ISA) concluded on August 18, 2017 at Kingston, Jamaica.

India is the first country to have received the status of a pioneer investor in 1987 and was allocated an exclusive area in Central Indian Ocean Basin by United Nations (UN) for exploration and utilization of nodules. India is one among the top 8-countries/ contractors and is implementing a long-term programme on exploration and utilization of Polymetallic Nodules through Ministry of Earth Sciences. This includes survey and exploration, environmental studies, technology development in mining and extractive metallurgy, in which significant contributions have been made.

While, the extraction of metals from the polymetallic nodules lying at the deep ocean floor is not yet found to be economically viable at this stage, an area of about 7860 square km has been identified in the CIOB for the First Generation Mine Site on the basis of detailed surveys and analysis. Environmental studies for mining of deep-sea polymetallic nodules were also carried out to evaluate the possible impacts of mining on deep-sea environment.

A Remotely Operable Submersible (ROSUB 6000), capable of operating at 6000 m water depth was also developed and tested successfully at a depth of 5289 m. A remotely operable in-situ soil testing equipment was also developed for obtaining detailed geotechnical properties of the mining area at CIOB and tested successfully at 5462 m water depth.

A mining system is under development which has been tested for 500m water depth. Metallurgical process routes for extracting copper, nickel and cobalt from polymetallic nodules have been developed and tested in a demonstration pilot plant set up on semi-continuous basis at Hindustan Zinc Limited, Udaipur with a capacity to process 500 kg nodules per day.

International Seabed Authority (ISA) is a UN body set up to regulate the exploration and exploitation of marine non-living resources of oceans in international waters. India actively contributes to the work of International Seabed Authority. Last year, India was re-elected as a member of Council of ISA. India's nominees on Legal and Technical Commission and Finance Committee of the ISA were also elected last year.

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2,855 villages in U.P. under water, toll touches 82

The flood situation in Uttar Pradesh remained alarming on Tuesday with reports of 10 more deaths, taking the toll to 82 in the current wave of floods in the State.

“As many as 2,855 villages in 25 districts are inundated affecting a population of over 22 lakh,” the Relief Commissioner’s office said here, citing a flood report as on Monday.

Around 50,000 people had taken shelter in camps in eastern U.P. where there was no let-up in flood fury as the raging waters of rivers emanating in Nepal caused havoc in vast areas, it said.

Bihar reported 37 more deaths on Tuesday, taking the toll to 341. Prime Minister Narendra Modi will make an aerial survey of the flood-affected districts of Bihar on August 26, said Deputy Chief Minister Sushil Kumar Modi. Army choppers, the NDRF and PAC (flood) jawans continued rescue operations. Incessant rain and swollen rivers impeded rescue work and evacuation of people to safer areas, reports said.

The flood situation in Assam improved further on Tuesday with water receding from human habitations and fields. No fresh deaths were reported in the State and the toll stood at 70, an Assam State Disaster Management Authority report here said. In the wave of floods this year, 2.83 lakh big and 1.71 lakh small animals, besides 4.73 lakh poultry have been affected. Infrastructure such as roads, bridges, embankments and culverts have been damaged by the floods in Barpeta, Kokrajhar, Dhemaji, Dhubri, Nagaon and Dibrugarh districts.

In Himachal Pradesh, one man is feared to have drowned in the swollen Govind Sagar Lake in Bilaspur district. Thirteen houses were damaged following heavy rain.

A new committee will find a lasting solution to the flooding and erosion in Assam

Sarbananda Sonowal

Assam Chief Minister

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Cabinet approves New Central Sector Scheme - "Pradhan Mantri Kisan Sampada Yojana"**Cabinet approves New Central Sector Scheme - "Pradhan Mantri Kisan Sampada Yojana"**

The Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi, has approved the renaming of the new Central Sector Scheme - SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) as "Pradhan Mantri Kisan Sampada Yojana (PMKSY) " for the period of 2016-20 coterminous with the 14th Finance Commission cycle. Earlier, CCEA in its meeting held in May, 2017 approved the new Central Sector Scheme - SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) with same allocation and period .

Objective:

The objective of PMKSY is to supplement agriculture, modernize processing and decrease Agri-Waste.

Financial Allocation:

PMKSY with an allocation of Rs. 6,000 crore is expected to leverage investment of Rs. 31,400 crore, handling of 334 lakh MT agro-produce valuing Rs. 1,04,125 crore, benefit 20 lakh farmers and generate 5,30,500 direct/ indirect employment in the country by the year 2019-20.

Impact:

- The implementation of PMKSY will result in creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet.
- It will provide a big boost to the growth of food processing sector in the country.
- It will help in providing better prices to farmers and is a big step towards doubling of farmers' income.
- It will create huge employment opportunities especially in the rural areas.
- It will also help in reducing wastage of agricultural produce, increasing the processing level, availability of safe and convenient processed foods at affordable price to consumers and enhancing the export of the processed foods.

Measures to give a boost to Food Processing Sector:

Food Processing Sector has emerged as an important segment of the Indian economy in terms of its contribution to GDP, employment and investment. During 2015-16, the sector constituted as much as 9.1 and 8.6 per cent of GVA in Manufacturing and Agriculture sector respectively.

The manifesto of NDA Government stresses upon incentivizing the setting up of food processing industry for providing better income for the farmers and creating jobs.

Government has taken various other measures to boost food processing sector as follows:

(a) To provide impetus to investment in food processing and retail sector, govt. has allowed 100% FDI in trading including through e-commerce, in respect of food products manufactured and / or produced in India. This will benefit farmers immensely and will create back - end infrastructure and significant employment opportunities.

(b) The govt. has also set up a Special Fund of Rs. 2000 crore in NABARD to make available affordable credit at concessional rate of interest to designated food parks and agro processing units in the designated food parks.

(c) Food and agro-based processing units and cold chain infrastructure have been brought under the ambit of Priority Sector Lending (PSL) to provide additional credit for food processing activities and infrastructure thereby, boosting food processing, reducing wastage, create employment and increasing farmers' income.

Background:

PMKSY is an umbrella scheme incorporating ongoing schemes of the Ministry like Mega Food Parks, Integrated Cold Chain and Value Addition Infrastructure, Food Safety and Quality Assurance Infrastructure, etc. and also new schemes like Infrastructure for Agro-processing Clusters, Creation of Backward and Forward Linkages, Creation / Expansion of Food Processing & Preservation Capacities.

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Cabinet approves MoU between India and Nepal for laying down implementation arrangement for construction of a new Bridge over Mechi River at Indo-Nepal border**Cabinet approves MoU between India and Nepal for laying down implementation arrangement for construction of a new Bridge over Mechi River at Indo-Nepal border**

The Union Cabinet chaired by Prime Minister Shri Narendra Modi today approved a Memorandum of Understanding (MoU) to be signed between India and Nepal for laying down implementation arrangement on Cost sharing, Schedules and Safeguard issues for starting construction of a new Bridge over Mechi River at Indo-Nepal border.

The estimated cost of construction of the bridge is Rs. 158.65 crore, which would be funded by Government of India through ADB loan. The new bridge is part of up-gradation of the Kakarvitta (Nepal) to Panitanki Bypass (India) on NH 327B covering a length of 1500 meters including a 6 lane approach road of 825 meters. Mechi Bridge is the ending point of Asian Highway 02 in India leading to Nepal and provides critical connectivity to Nepal.

The construction of the bridge will improve regional connectivity and has potential to strengthen cross border trade between both the countries and cementing ties by strengthening industrial, social and cultural exchanges.

National Highway and Infrastructure Development Corporation (NHIDCL) under Ministry of Road Transport & Highways has been designated as the implementing agency for this project. DPR for this project has been prepared and alignment of bridge has been finalized in consultation with Government of Nepal.

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Govt. tweaks norms to boost UDAN

All 13 passenger seats will be considered for subsidy.

The Civil Aviation Ministry on Thursday announced increasing viability gap funding for helicopter operators, diluting exclusivity clause and relaxed other norms to facilitate more participation in its regional connectivity scheme, UDAN. The government announced that all 13 passenger seats for helicopters will be considered for subsidy under the scheme.

States including, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, North Eastern region, Andaman and Nicobar and Lakshadweep islands have been designated as priority areas. Airline operators flying from these priority areas will be allowed to operate 14 weekly departures as against the limit for seven weekly flights for other routes.

The Ministry also abolished the 150-km minimum distance required between two airports to be qualified for operations under the scheme. It said airline operators may issue no-objection certificates to other airlines willing to operate on the same route.

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The importance of data in smart cities

During the London 2012 Olympics the Transport for London (TfL) network needed to manage 18 million local journeys made by spectators. One can only imagine the volume of data generated during this time; the data and analytics, mostly from the games, was utilized by TfL to predict the number of people who were likely to use public transport during that time, in order to ensure that the system was running effectively.

With the evolution of technology changing the way we live and work, it is only a matter of time before governments around the world upgrade their infrastructure to offer citizens efficient services through smart cities, where enormous amounts of data moves within complex information supply chains.

Yet, smart cities are not about constantly introducing new technologies. Data sources are everywhere around us, ranging from smart phones and computers, to Global Positioning System (GPS) and social media sites. Effective analysis and utilization of this data is going to be a key factor for success in the smart cities initiative, by making the data available in one place through a framework that is clean, well labelled and allows better processing and consumption.

This global trend of rapid urbanization that makes a strong case for smart cities, is also reflected in India. The government's Make in India initiative states that investments of approximately \$1.2 trillion will be required over the next 20 years across transportation, energy, and public security to build smart infrastructure. Besides the government and industry, participation of start-ups and citizens is cardinal in closing the last mile and feedback loop in this process, morphing the 3Ps of Public Private Partnership into the 4Ps (Participative PPP). This necessitates the involvement of citizens, enabling smart decisions on deploying solutions, implementing reforms, and designing post-project structures that make smart city developments sustainable.

One way to increase data collection and citizen participation at the grass-root level is to have an artificial intelligence (AI) system that is flexible and adaptive. In a country where we are short of nearly 500,000 doctors, based on the World Health Organization (WHO) norm of 1:1000 population, AI-based healthcare systems can study past patient data and medical records, process data quickly, and even help doctors detect dormant signs of diseases that may manifest later.

The Indian government is already increasingly collecting data in machine-readable forms, and as technologies reach a level where they can rival any human in a real-time and cost-effective way, AI can help in grievance redressal, law and order, and health and education. From that point of view, there are opportunities for AI to be more deeply ingrained across the Make in India, Skill India, and Digital India programmes.

Even so, there are two concerns here, the first being the need for effective utilization of the existing data. According to Gartner, the lack of a holistic, framework-based approach and a viable revenue model are stalling large-scale smart city projects in India. The framework-based approach takes into consideration the current state of the physical and IT infrastructure of the city, the city's challenges, the citizens' needs, and the existing capabilities of the city machinery to deliver critical services. This helps identify the gaps in various hardware, software, network, connectivity, security and information management infrastructure that must be bridged to implement a scalable, future-proof and cost-effective smart city service delivery infrastructure.

The second key consideration that needs to be taken into account is the fact that for the smart cities initiative to take off successfully, massive amounts of data will need to be monitored. Not

only will this data be in the public domain, it will also be in the personal domain. This, naturally, brings up the question of security and privacy—indicating a need for stringent regulations to ensure data security.

It is true that there is no set template that can address all the questions being raised; the need of the hour is to effectively analyse the current state of the infrastructure and identify need gaps, encourage citizens to become more active participants in the smart city design, and build a culture of innovation and collaboration that will help realize the vision of a smart city.

Prakash Mallya is managing director of the sales and marketing group at Intel Technology India Pvt Ltd.

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A new score in waste management

Rich source Cotton stalks are first treated to breakdown the complex organic polymers present in it. | Photo Credit: [K Ananthan](#)

Scientists from CSIR's National Institute for Interdisciplinary Science and Technology (CSIR-NIIST), Thiruvananthapuram have been able to turn waste into wealth. They have produced ethanol from discarded cotton-stalks by using a combination of chemical and biological techniques. India has about 9.4 million hectares under cotton cultivation and every hectare generates 2 million tonnes of cotton stalk wastes. The results were published in *Bioresource Technology*.

The stalks were first treated with an acid, alkali and different enzymes to breakdown the complex organic polymers of the stalk. "The agro-residues are tough in nature and we need chemical pre-treatment to break down the complex structure of the stalk," explains Meera Christopher, research scholar at NIIST and first author of the paper.

The acid helps to remove hemicellulose, a polymer of the cell wall and the alkali extracts lignin, a binding matrix in the cell wall, made of complex phenolics. These treatments expose cellulose, the major component made of glucose to the action of enzymes.

The cellulose was further treated using enzymes to convert it into glucose.

Fermentation

To convert the glucose into ethanol, fermentation using a novel yeast strain was carried out. "We isolated the yeast-*Saccharomyces cerevisiae*-RRP-03N, from a rotting wild fruit we found in the Silent Valley National Park in Palakkad, Kerala. In spite of several inhibitors of microbial growth produced during chemical treatment, the yeast performed better than distiller's yeast strains in fermenting the cotton stalk hydrolysate," says Dr. Rajeev K Sukumaran, Head of the Biofuels and Biorefineries Section, at NIIST and the corresponding author of the paper.

The yeast showed a glucose conversion efficiency of 76% and the entire glucose was utilised by the yeast in just 24 hours and converted into alcohol. This performance was superior to any other organism reported for fermentation of cotton stalk. The final alcohol obtained can be made to fuel grade bioethanol (>99% purity), after distillation and dehydration using molecular sieves, which is an existing technology practised in the distilleries.

Bioethanol

Bioethanol has a number of advantages over conventional fuels as it comes from a renewable resource. It is mandatory to blend 10% ethanol with petrol. Bioethanol presently in use is obtained by fermentation of sugar cane molasses which is a byproduct of sugar production, and has food value. Most of this first generation ethanol finds its way into consumer applications, primarily as liquor. Converting the agro-residues to ethanol reduces the food vs fuel competition," explains Meera.

Further studies should be carried out for commercial viability and large-scale production.

A study of nearly 300 people living in different parts of India found that nine single-base variants (single-nucleotide polymorphisms or SNPs) account

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Study linking temperature, farm suicides challenged

Some academics have challenged a recent study that said that “temperature during India’s main agricultural-growing season has a strong positive effect on annual suicide rates”.

The paper, titled “Climate change and agricultural suicides in India” and authored by Tamma A. Carleton, has been published in the *PNAS* journal (Proceedings of the National Academy Sciences of the United States).

The study had used State-level data from 1967 to 2013 to suggest that an increase in temperature by a degree Celsius a day can cause 70 suicides.

The evidence, it said, leads to the conclusion that crop damage by extreme temperatures leads to economic hardship and suicide.

In a press note, T. Jayaraman and Kamal Kumar Murari of the Tata Institute of Social Sciences and Madhura Swaminathan of Indian Statistical Institute said they considered these claims to be baseless. “These claims are a consequence of the uncritical use of data, bad assumptions, flawed analysis and unacceptable neglect of the existing literature on global warming and Indian agriculture as well as farmer suicides,” they said.

Wrong premise

The academics noted that the author incorrectly used suicide data, wrongly identified extreme temperatures for crop production, took only kharif as the relevant agricultural season to consider extreme temperatures, and wrongly identified the relevant crops.

As a result, the meaning of the correlation that the author claimed to find between extreme temperatures and suicides was unclear.

They said the paper used State-level data on suicides, both urban and rural. “How can urban suicides be included in an analysis of agricultural suicides,” they asked.

The paper ignored the fact that the suicide data, taken from the National Crime Records Bureau, had separated farmer suicides from those of other occupational categories only after 1995.

The author did not analyse individual crops but only considered a few such as rice, wheat, sorghum, sugar, maize and millet.

Cotton, closely associated with farmer suicides, was a notable omission as are a host of other cash crops. The author also ignored the Rabi season.

The paper considered temperatures above 20 degrees Celsius as extreme temperatures.

This was flatly contradicted by what was known of the temperature dependence of crop production, the academics noted.

Jaggi Vasudev’s Rally for Rivers claims they will, but this is not based on the most nuanced science

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Ocean forecasting system unveiled

The Indian National Centre for Ocean Information Services (INCOIS) of the Ministry of Earth Sciences here inaugurated the Ocean Forecasting System for Comoros, Madagascar, and Mozambique at the third Ministerial Meeting of Regional Integrated Multi-Hazard Early Warning System for Asia and Africa (RIMES), held at Port Moresby, Papua New Guinea, on Friday.

The ocean forecast and early warning information on high wave, currents, winds, tides, sub-surface ocean conditions cater to users like fishermen, coastal population, tourism sector, coastal defence officials, marine police, port authorities, research institutions and offshore industries of these countries.

Safety at sea

These ocean services are aimed towards safety at the sea.

The system would offer oil spill advisory services, high wave alerts, port warnings, forecast along the ship routes in addition to tsunami and storm surge warnings and help in search and rescue operations.

New system launched

M. Rajeevan, Secretary, Ministry of Earth Sciences, and Chair, RIMES Council, launched the system for operational use in the presence of David Grimms, President of World Meteorological Organization (WMO); Wesley Nukund, Minister for Disaster Management, Papua New Guinea; Soulaimana Kaambi, Deputy Minister, Comoros; Abdullahi Majeed, Minister of Disaster Management, Maldives; Anura Priyadharshana Yapa Yapa, Minister of Disaster Management, Sri Lanka; Subbaiah, Director of RIMES; Balakrishnan Nair, Head, ISG, INCOIS and Director General of Metrology and Disaster Management of 48 countries of Indian and Pacific Ocean region.

The INCOIS has already been providing these operational services to the Maldives, Sri Lanka and Seychelles.

The Ministerial council and the WMO lauded and placed on record the initiatives of INCOIS/India in providing the ocean forecast and early warning services to the Indian Ocean countries and taking a leadership in ocean services in the Indian Ocean region.

Real-time data

“The Ocean Forecast System developed for the Indian Ocean countries and the real-time data from their territories also help to improve the ocean forecast and early warning system for the Indian coast too,” said Balakrishnan Nair, Head, Ocean Science and Information Services, Hyderabad.

Wave surge (*kallkadal*) and coastal flooding that occurred from July 28 to August 3 in 2016 along Kerala and West Bengal were well predicted and real-time data from Seychelles were highly beneficial for predicting these incidents, as many of these remotely forced waves originated from the southern and western Indian Ocean, he added.

The ocean forecast and early warning services were most essential for safe navigation and operations at sea and the blue economic growth of many of these Indian Ocean rim countries and island nations.

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Why does the 2022 target for rooftop solar seem ambitious?

The government has set itself a target of 100 GW of solar power by 2022, of which 60 GW is to come from utilities and 40 GW from rooftop solar installations. While the 60 GW target seems achievable, the country is lagging behind on the target set for rooftop solar.

What is rooftop solar?

Rooftop solar installations — as opposed to large-scale solar power generation plants — can be installed on the roofs of buildings. As such, they fall under two brackets: commercial and residential. This simply has to do with whether the solar panels are being installed on top of commercial buildings or residential complexes.

What are the benefits?

Rooftop solar provides companies and residential areas the option of an alternative source of electricity to that provided by the grid. While the main benefit of this is to the environment, since it reduces the dependence on fossil-fuel generated electricity, solar power can also augment the grid supply in places where it is erratic.

Rooftop solar also has the great benefit of being able to provide electricity to those areas that are not yet connected to the grid — remote locations and areas where the terrain makes it difficult to set up power stations and lay power lines.

What is the potential for rooftop solar in India?

The Ministry of New and Renewable Energy has pegged the market potential for rooftop solar at 124 GW. However, only 1,247 MW of capacity had been installed as of December 31, 2016. That is a little more than 3% of the target for 2022, and 1% of the potential.

Why is it not being adopted widely?

One of the major problems with rooftop solar — and what affects solar energy generation in general — is the variability in supply. Not only can the efficiency of the solar panels vary on any given day depending on how bright the sunlight is, but the solar panels also produce no electricity during the night. Arguably, night is when off-grid locations most need alternative sources of electricity.

The solution to this is storage. Storage technology for electricity, however, is still underdeveloped and storage solutions are expensive. So, while some companies will be able to afford storage solutions for the solar energy they produce, most residential customers will find the cost of installing both rooftop solar panels and storage facilities prohibitive. Residential areas also come with the associated issues of use restrictions of the roof — if the roof is being used for solar generation, then it cannot be used for anything else.

Another major reason why rooftop solar is not becoming popular is that the current electricity tariff structure renders it an unviable option.

Many states have adopted a net metering policy, which allows disaggregated power producers to sell excess electricity to the grid. However, the subsidised tariffs charged to residential customers undermine the economic viability of installing rooftop solar panels. The potential profit simply does not outweigh the costs.

That said, imports of cheap solar panels are continuously placing a downward pressure on prices and so this scenario could change in the future. Commercial applications of rooftop solar are already viable in most states.

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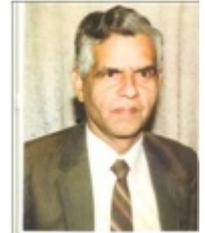
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70 years of Independence

Special Feature – I-Day 2017

Swift Surge Forward in Tourism sector



***O P Sharma**

Alongside rapid strides on other spheres, the Tourism sector in India now is surging forward; swiftly and surely. Gradually, our country with rich cultural heritage, dotted with many spots with nature's bounty and charms, sublime environs and numerous other attractions, pilgrimage places depicted as "Incredible India" is gaining popularity for its destinations. Tourist traffic is attaining new heights with this sector in top gear and still moving ahead to gradually tap its vast potential. Our nation is carving out its due share and status in the global tourism industry.

Tourism, a pivotal sector as a driver of social integration and economic development, is growing at impressive pace in recent years. Domestic travels for pilgrimages, business and varied other factors, is as old as our society. While there were just 17, 000 inbound tourists on the eve of our Independence, presently the figure for tourist traffic has shot up very significantly. But keeping in view the high potential, there is more scope for giving further boost to India's tourism industry. Due to some tangible bold initiatives and promotional schemes taken by the present regime, this sector will certainly go up carving out its due share in the global tourism and travel sphere.

Ever since achievement of Independence, keeping in view the vital importance of tourism, concrete policies and elaborate plans have been implemented in a phased manner with the result that steadily there has been growth and development in tourist trade. More sustained endeavors are required to secure larger share in global tour and travel sectors.

Latest figures indicate that tourism generated 14.02 lakh crore (US\$220 billion) or 9.6 per cent of the nation's GDP in 2016 and supported 40.343 million jobs, which is 9.3 per cent of its total employment. This sector is predicted to grow at an annual rate of 6.8 per cent to 28.49 lakh crore (US\$440 billion) by 2027, which is 10 per cent of our GDP. To quote an instance, India's medical tourism estimated to be worth US\$3 billion, which is projected to grow further to \$7–8 billion by 2020. It is pertinent to point out that in 2014 nearly 184, 300 foreign patients traveled to India to for medical treatment. About 88.90 lakh foreign tourists arrived in India in 2016 as compared to 80.27 lakh during the previous year, recording a growth of 10.7 per cent. Domestic tourist visitors numbered nearly 1,036.35 million in 2012, an increase of 16.5 per cent from 2011. Pilgrim-tourism too is registering ever-increasing numbers every year. The Prime Minister,

Narendra Modi has underscored need for involvement of youth power in projection and promotion of tourism industry.

As per the report of World Economic Forum on global travel and tourism, India ranks 40th out of 136 nations across the globe. Now with the present Government's emphasis on improvement of roads network, high-speed railway and air services, higher hotel accommodation, business opportunities, cashless payment system, clean environ and liberalized visa system and suitable human resources, the tourist traffic is expected to further grow up swiftly.

The Union Ministry of Tourism and all the States have to work as partners for working on suitably- designed national policies and plans for sustained growth of tourism. Visa policy has been rightly liberalized and vigorous world-wide campaign of "Incredible India" is yielding encouraging results. It is envisaged to give a further fillip to tourism sector and upgrade India's status in the global tourist traffic. E-tourist visa facility extended to over 150 countries and UDAN scheme among others, will go a long way in promoting domestic and foreign tourism.

There are well-designed tour packages and tourist-cum-pilgrim-circuits to suit all sorts of visitors. The Indian tourism and hospitality industry is key driver of growth among the services sector. Tourism is also a potentially large employment generator besides being a significant source of foreign exchange for the country. Every citizen has to abide by spirit of "Aatithi Devo Bhave" (every tourist is our honoured guest) and act as voluntary ambassador of tourism to attract more tourists.

India's rising middle class and increasing disposable incomes has continued to support the growth of domestic and outbound tourism. Domestic Tourist Visits (DTVs) has grown by 15.5 per cent year-on-year to nearly 1.65 billion during 2016. Foreign visitors have significantly gone up and India's foreign exchange earnings (FEEs) have through tourism increased by 32 per cent and touched US\$ 2.278 billion in April, 2017. India is expected to move up five spots to be ranked among the top five business travel market globally by 2030, as business travel spending in the country is expected to treble until 2030 from US\$ 30 billion in 2015. Foreign Tourist Arrivals (FTA) in India have witnessed an impressive growth in the last three years. During April, 2017, it stood at 7.40 lakh compared to 5.99 lakh in April 2016 and 5.42 lakh in April 2015. There has been a significant rise in Non-Residential Indians (NRI) travelling to India as well.

In the Union Budget 2017-18, more initiatives have been taken to give a boost to the tourism and hospitality sector by setting up five special tourism zones, special pilgrimage or tourism trains and worldwide launch of Incredible India campaign among others.

The Union Tourism Ministry and State Governments, Private sector, NGOs and each citizen must jointly put in their best to realize the country's full tourism potential and take lot of more innovative initiatives to make India a global tourism hub.

The concerted and innovative initiatives will certainly give further impetus to both domestic

and foreign tourism to realize India's full potential for positive results to emerge as a major player in the world tourism industry.

**Author is Jammu-based free-lance journalist.*

Views expressed in the article are author's personal.

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MNRE & GIZ Signs Agreement to Improve Framework Conditions for Grid Integration of Renewable Energies

MNRE & GIZ Signs Agreement to Improve Framework Conditions for Grid Integration of Renewable Energies

The Ministry of New and Renewable Energy (MNRE), Government of India and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH India on behalf of the Government of the Federal Republic of Germany signed an agreement on technical cooperation under the “Indo-German Energy Programme – Green Energy Corridors (IGEN-GEC)” here today . The main objective of this programme component is to improve the sector framework and conditions for grid integration of renewable energies.

In the distinguished presence of Minister of State (IC) for Power, Coal, New & Renewable Energy and Mines Shri Piyush Goyal and the German Ambassador to India, H.E. Dr. Martin Ney, the agreement was signed by Dr. Wolfgang Hannig, Country Director, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH India and Mr. A.N. Sharan, Joint Secretary, Ministry of New and Renewable Energy (MNRE).

Speaking on the occasion, Shri Goyal said “ am delighted that this relationship between GIZ and India will result in improve market mechanisms and regulations, help us train manpower, to ensure grid stability & integration of renewables into grid and ensure safer & secure grid and a grid which can take cyber challenges” . Shri Goyal further added that Germany is a very reliable partner country and has been supporting India in achieving its goal for sustainable development through bilateral cooperation for almost six decade now.

Dr. Ney added “When in July 2012 Power Grid Corporation of India submitted a comprehensive and well elaborated “Transmission Plan for Envisaged Renewable Capacity” to MNRE it paved the way for India’s ambitious goals to transform its power system by significantly increasing the share of renewable energies in the energy mix. Also in Germany’s “Energiewende” the evacuation and grid integration of renewable energy plays a pivotal role with major technological and fiscal challenges. Both the countries have very constructive dialogue under the Indo-German Energy Forum (IGEF).

Being committed to this objective, GIZ and MNRE will work on improving market mechanisms and regulations for integration of Renewable Energies; advancing technical and institutional conditions in specified target states, regions and on a national level; adding human capacities to handle systemic (strategic, managerial, financial, technical) Renewable Energies integration in an efficient and effective manner.

The IGEN-GEC programme is commissioned by the Federal Ministry for Economic Cooperation

and Development (BMZ) and jointly implemented by Ministry of New and Renewable Resources (MNRE), Ministry of Power (MoP), Government of India and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). This programme component supports the implementation of the Renewable Energy Management Centre (REMCs), Green Energy Corridors scheme of the Government of India which is a prerequisite for large scale grid integration of renewable energy thus contributing to achieve the 175 GW target of the Government of India for renewable energy generation capacity by 2022.

Based on the Indo-German Consultations held on 11th April 2013 in Berlin, both countries confirmed collaboration on the Green Energy Corridors. In the subsequent bilateral development cooperation negotiations, it was agreed that Germany will provide concessional loans of up to 1 billion Euros through KfW (German Development Bank) and up to 10 million Euros under technical assistance in forecasting, balancing, market design, network management and demand side energy efficiency, implemented by GIZ. These contributions have been further increased in 2015 and 2016 by concessional loans up to 400 million Euros for transmission infrastructure and up to 7 million Euros for training activities in the photovoltaic solar rooftop sector and energy efficiency in residential buildings under technical assistance through GIZ.

It was added that India & Germany will further benefit each other in the journey towards sustainable development. Economic growth and a cleaner world with successful continuation of cooperation & fruitful exchange.

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First hybrid clone species 205 was developed for sub-tropical climate and it was launched in 1918 for commercial farming: Shri Radha Mohan Singh

First hybrid clone species 205 was developed for sub-tropical climate and it was launched in 1918 for commercial farming: Shri Radha Mohan Singh

Sugarcane farmers can make the best of intercropping technique and increase their income by growing oilseeds, pulses, potatoes, and cucumber with cane: Shri Singh

Shri Radha Mohan Singh address a gathering at “100 years of Excellence In Sugarcane Research and “New India Manthan – Sankal Se Siddhi” events organise by ICAR

Union Agriculture and Farmers Welfare Minister, Shri Radha Mohan Singh addressed a gathering at “100 years of Excellence In Sugarcane Research: variety 205 to variety 0238” (sugarcane variety) and “New India Manthan – Sankal Se Siddhi” events, organised by ICAR- Sugarcane Breeding Institute, Regional Centre, Karnal here. Shri Singh informed the gathering that with the help of Sir Dr Venkatraman, for the first time, hybrid clone variety 205 (*Saccharum officinarum* and *Saccharum spontaneum*) was developed for sub-tropical climate, which was launched in 1918 for commercial farming. The hybrid clone led to 50% increase in sugarcane production in North India and popular species like *Saccharum Barberi* and *Saccharum Sinensis* were left far behind.

Shri Radha Mohan Singh said that after developing species 205, Sugarcane Breeding Institute developed several other hybrid clones for sub-tropical condition and they remained sought after for a long time. After that, the institute developed species 312, first amazing cane variety for the subtropical climate in 1928 and in 1933, it developed species 419 for tropical climate.

Shri Singh said during three years of Modi government, a significant increase in sugarcane yield and sugar recoveries have been witnessed in the northern states after expansion of species 0238 in the region. In the last season, 0238 was cultivated in 36% cane area in Uttar Pradesh, 63% in Punjab, 39% in Haryana, 17% in Uttarakhand and 16% in Bihar. Shri Radha Mohan Singh said species 0238 and 0118 have become the first choice of sugar mills in north India. The sugarcane farmers are reaping higher yield from the species 0238 and sugar mills are getting more sugar. Sugarcane farmers can make the best of intercropping technique and increase their income by growing oilseeds, pulses, potatoes, and cucumber with cane.

Union Agriculture Minister said that he is not only here to celebrate the 100 years of Excellence In Sugarcane Research, but also to share that the nation is celebrating the 75th anniversary of Quit India Movement. On August 9, 1942, using sacrifice, penance, and courage as their tool, the youth pledged to free India from barbarous British Rule and the movement led to the country's freedom in 1947. Shri Singh said that the grand campaign of the country's independence from 1942 to 15 August 1947 is remembered as Sankalp Se Siddhi.

In the end, Shri Radha Mohan Singh urged people to make a pledge to build a New India by 2022 when we celebrate 75th anniversary of Independence and take honesty to the

highest level.

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Smart Agriculture Conclave on 30th-31st August, 2017**Smart Agriculture Conclave on 30th-31st August, 2017****Curtainraiser**

Keeping in line with the vision of the Hon'ble Prime Minister of India for “**the need for effective decision making in agriculture that integrates science, technology, innovation and the farm ecosystem by asking for an ‘Evergreen Revolution’ the need is to modernise all aspects of agriculture to this purpose by bringing to bear quality analysis of the ecosystem, well-thought decisions and an efficient use of cutting-edge science technology to the very complex Indian farm environment**”, Department of Bio-Technology(DBT), Ministry of Science & Technology, is holding a ‘Smart Agriculture Conclave’ on 30th - 31st August, 2017.

The expected outcome of the Conclave is to provide a roadmap for setting up a cloud-service “FarmerZone” where the right kind of agri data is collated leading to maximum impact, vis-a-vis farmer needs and make this data useful for the farmer, (data related to weather, disease and pest surveillance and control, soil, market etc). The Department is collaborating with different stake holders: international, national and industry to set up a “FarmerZone”.

The “**FarmerZone**” would be a multi-purpose window for solutions and will be available for farmers anywhere in the world. Solutions will provided at the farm, similar to that done by e-commerce companies at the doorstep. The farmer can access the service directly or through an intermediate structure such as local co-operatives. The FarmerZone will include a MarketZone where farmers can directly sell their produce which can be picked up by directly from the farm.

Partners:

International: Research Councils, United Kingdom and United States Department of Agriculture (USDA)

Industry: Infosys, Microsoft Research and Jain Irrigations

NGOs : GODAN, Ekgaon, FARMER

Participants: Experts from UK, USA and India

Conclave will focus on small and marginal land-hold farmers who constitute a major component of Indian agriculture and challenges faced by them in context of soil, diseases, weather, impact of climate change and market supply chain.

Smart Agriculture conclave aims to underpin the challenges faced by farmers and discuss the possible cloud based solutions accessible to the remotest farmer to see as to:

How existing farm- related data can be accessed, collated, curated and translated into information useful for the farmer

Identification of technological gaps in data acquisition and transfer from farm to cloud and vice versa.

Creating an interface for the usage of advanced cyber-physical systems, machine learning and artificial intelligence, to collect- and analyse- data and create a service for the farmer, which will cater to the farmer's needs and requirements (disease and pest surveillance, climate change: biotic and abiotic stress etc and advice thereof)

Data availability for algorithm development is the key and how best to use AI, cloud computing and drone/phone mapping etc for creating a viable, usable FarmerZone are all expected to be discussed at the two-day Conclave.

The Minister for Science & Technology and Earth Sciences will attend the concluding session to review the outcomes of the Conclave.

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Formulation of a new Industrial Policy

Formulation of a new Industrial Policy

The Department of Industrial Policy and Promotion, Ministry of Commerce and Industry initiated the process of formulation of a new Industrial Policy in May 2017. Since the last Industrial Policy announced in 1991, India has transformed into one of the fastest growing economies in the world. With strong macro-economic fundamentals and several path breaking reforms in the last three years, India is equipped to deploy a different set of ideas and strategies to build a globally competitive Indian industry. The new Industrial Policy will subsume the National Manufacturing Policy.

A consultative approach has been taken for industrial policy formulation wherein six thematic focus groups and an online survey on DIPP website have been used to obtain inputs. Focus groups, with members from government departments, industry associations, academia, and think tanks have been setup to delve deep into challenges faced by the industry in specific areas. The six thematic areas include Manufacturing and MSME; Technology and Innovation; Ease of Doing Business; Infrastructure, Investment, Trade and Fiscal policy; and Skills and employability for the future. A Task Force on Artificial Intelligence for India's Economic Transformation has also been constituted which will provide inputs for the policy.

It is proposed that the new Industrial Policy will aim at making India a manufacturing hub by promoting 'Make in India'. It will also suitably incorporate the use of modern smart technologies such as IOT, artificial intelligence and robotics for advanced manufacturing.

Hon'ble Minister of State(i/c) for Commerce & Industry Smt Nirmala Sitharaman will hold consultations with stakeholders, including industry captains, think tanks and State governments in Chennai, Guwahati and Mumbai. The Industrial Policy is likely to be announced in October 2017.

DIPP invites comments, feedback, suggestions from the public regarding framing of the new Policy. A discussion paper in this regard is attached herewith. All comments, suggestions, feedback on the new Industrial Policy may be sent to DIPP at kokila.jayram@nic.in or jsvk-dipp@nic.in by September 25, 2017.

[Click here to see the Attachment](#)

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70 years of Independence

Special Feature – I-Day 2017

HARNESSING INLAND WATERWAYS FOR GREENER ECONOMY AND INCLUSIVE GROWTH



***Archana Datta Mukhopadhyay**

A sound and efficient transport infrastructure is the key to boosting economic growth and in turn, to alleviating poverty and promoting sustainable development. Inland water transport system ensures both, by way of providing access, mobility and connectivity and generating employment at the grassroots with lesser environmental footprint and cost.

In our civilization, rivers have played a crucial role as a mode of transport in carrying people and goods. Even in the present era, many countries depend heavily on inland water transport, especially for large and bulky cargo.

India is a land of rivers. It has 7500-km long coastline with approximately 14,500 kms of navigable waterways. This offers a huge potential for developing a cheaper and greener mode of transport. But only a very small percentage of trade is currently being carried out through these waterways and coastlines. Coastal shipping accounts for only 6 % and inland water transport for about 0.4% of trade.

Nearly 60 % of goods today travel by congested roads 25 % by rail networks. This slows down the movement of cargo, adds to uncertainties, increases the costs of trade, and leaves deep environmental footprints. It has been found that logistics costs in India account for about 18 percent of the country's GDP, which is much higher than China, USA, UK and many other countries. This makes Indian goods costlier and hence less competitive. As per World Bank analysis, the cost of transport of one tonne of freight over a km by road is Rs 2.28, by rail Rs 1.41

and Rs 1.19 for waterways. So logistics costs in the country can be brought down considerably by transporting more and more goods by waterways.

In this era of energy crisis, waterways have been found to be a fuel efficient, environment friendly and cost effective mode of transport, besides having the capacity to ease pressure on rail and road sectors. Inland Waterways Authority of India (IWAI), which came up in October 1986, acts as the nodal agency for optimum utilization of the vast untapped potential of our inland waterways.

The National Waterways Act, 2016, was an important watershed in the direction of developing the untapped potential of our inland waterways. Under the Act, 111 inland waterways across twenty four states have been declared as National Waterways (NWs). IWAI will be taking up projects for developing these waterways as environment friendly and sustainable modes of transport.

The first of such projects is the World Bank aided Jal Vikas Marg project on River Ganga, or the National Waterways 1. The objective of the project is to develop the stretch of river between Allahabad and Haldia to make it navigable for vessels with 1,500-2,000 tonne dead weight capacity. This is close to the carrying capacity of a goods train. For this, the project will develop a navigational channel of 2.2 to 3.0 meters depth and 35- 45 metre width. Multi-modal terminals are being constructed at Varanasi, Haldia, and Sahibganj, besides a Navigational Lock at Farakka. Modern systems of river information, training and conservancy works, night navigation facilities, and other modern facilities like channel marking, navigational lock, etc. are being developed to for efficient and safe movement of vessels. Phase-I of the project covers the Haldia—Varanasi stretch of the river. Once operational, the waterway will form part of a larger multi-modal transport network having linkage with the Eastern Dedicated Rail Freight Corridor and also with the area's existing network of highways. The cargo from the Gangetic states of Bihar and Uttar Pradesh now takes circuitous land routes to reach the sea ports of Mumbai in Maharashtra and Kandla in Gujarat. The development of NW1 will help these states to send some of their freight to the Kolkata-Haldia complex, thus making the movement of freight more reliable with less logistical costs.

A joint venture is afoot with Thompson Design Group, Boston (USA) and Infrastructure Architecture Lab of Massachusetts Institute of Technology, to identify the best locations for construction of 18 ferry terminals in six cities, namely, Allahabad, Varanasi, Patna, Munger, Kolkata and Haldia on NW1. The feasibility study takes into account the capacity of freight and passenger movements of each city with a view to integrating these terminals with the existing transportation networks and facilities of each city.

The NW1 has the future of emerging as the leading logistical artery for the entire northern India, which passes through one of India's most densely populated areas and resource-rich regions, and generates an estimated 40 percent of India's traded goods. The region's teeming markets also attract goods from other parts of the country. The network of a water- road-rail link will help the

region's industries and manufacturing units to have a seamless flow of goods to markets in India and abroad. Further, it will also give wider market access to the farmers of this agriculturally-rich Gangetic plain.

Since the river Ganga occupies a special place in the social, cultural and environmental milieu of our country, the Inland Waterways Authority of India (IWAI) follows the principles of 'working with nature' to protect the river's diverse fauna and aquatic biodiversity. For this, minimum dredging is being undertaken for passage of large barges carrying up to 2,000 tonnes of cargo. In places where large shoals and islands exist, temporary structures of natural materials like bamboo are only used to channelize the water. IWAI is also ensuring that water traffic does not impact the two aquatic wildlife sanctuaries that fall along this stretch of the river -- the Kashi Turtle Sanctuary at Varanasi and the Vikramshila Dolphin Sanctuary at Bhagalpur.

IWAI is in the process of developing thirty seven more NWs in the next three years. Ro-Ro transportation has started between Dhubri and Hatsingamari and slipway facilities are being constructed at Pandu on River Brahmaputra, or NW-2. Normal development works are ongoing on NW-3. The development of NW-4 (Kakinada- Puducherry Canal along with Krishna & Godavari Rivers), NW- 5 (East Coast Canal with Brahmani & Mahanadi Delta), NW-16 (Barak), NW-37 (Gandak), NW-40 (Ghagra) and NW-58 (Kosi) also are in progress.

While developing the waterways, the legal framework governing inland waterways vessels is also being revamped. A new Bill is on the anvil to amend the century old inland Vessels Act, 1917, in keeping with needs of the modern inland water transport and the required legal framework. The 2017 Bill addresses the existing lacunae regarding variation of standards of inland vessels across the states. As per the Draft Bill, Central Government would be the nodal authority to stipulate uniformly applicable standards and measures for safe navigation of inland Vessels.

Once fully operational, the integrated system of water-road and rail network will herald a new era of inclusive growth and green economy in India.

**Archana Datta is a former civil servant. She was Director General (News), AIR and Doordarshan.*

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Cabinet approves MoU between India and Brazil for cooperation in the fields of Zebu Cattle Genomics and Assisted Reproductive Technologies

Cabinet approves MoU between India and Brazil for cooperation in the fields of Zebu Cattle Genomics and Assisted Reproductive Technologies

The Union Cabinet chaired by Prime Minister Shri Narendra Modi was apprised of Memorandum of Understanding (MoU) signed between India and Brazil for cooperation in the fields of Zebu Cattle Genomics and Assisted Reproductive Technologies. The MoU was signed in October, 2016.

The MoU will strengthen the existing friendly relations between India and Brazil and promote development of Genomics and Assistant Reproductive Technologies (ARTs) in Cattle through joint activities to be implemented through mutually agreed procedures.

An implementation committee shall be created with an equal number of representatives of each party for the purpose of regularly determining the activities and developing work plans and subsequently their evaluation.

It will be done through joint projects in the fields of Productivity Improvement of cattle and buffaloes, for the purpose of broadening the existing knowledge base on sustainable dairy development and institutional strengthening.

The MoU would promote and facilitate scientific cooperation and setting up of genomic selection programme in Zebu Cattle through (a) application of genomic in Zebu Cattle and their crosses and buffaloes (b) application of assisted reproductive technologies (ARTs) in cattle and buffaloes (c) capacity building in genomic and assisted reproductive technology (d) Related research and development in Genomics and ART in accordance with the respective laws and regulations of the two countries and is covered under Rule 7 (d) (i) of the Second Schedule of the Government of India (Transaction of Business) Rules, 1961.

AKT/VBA/SH

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Harvey makes landfall in Louisiana

At sea: A home surrounded by flood waters in Houston; and, right, the Interstate 10 highway, which was closed due to flooding. AP David J. Phillip

After pouring record rains on Texas, Tropical Storm Harvey made a second landfall on Wednesday to strike Louisiana, a State that still bears deep scars from 2005's Hurricane Katrina.

The second hit comes five days after the monster storm slammed onshore as a Category Four hurricane, pummeling the U.S. Gulf coast with torrential rains that turned neighbourhoods into lakes in America's fourth largest city, Houston.

Harvey made its second landfall just west of the town of Cameron, the National Hurricane Center said, with "flooding rains" drenching parts of southeastern Texas and neighbouring southwestern Louisiana.

Louisiana residents braced for Harvey's ferocious maximum sustained winds nearing 45 miles (72 km) per hour, with forecasters predicting another five to 10 inches (13 to 25 cm) of rain could pour on the region.

They expected Harvey will gradually weaken to a tropical depression by Wednesday night, meaning maximum sustained winds should slow. But low-lying New Orleans was still girding for the storm, just a day after the 12-year anniversary of Katrina, which ravaged the vulnerable city famous for its jazz music and cuisine.

The New Orleans branch of the National Weather Service said a heavy rain threat remained over southeast Louisiana and southern Mississippi through Thursday, when relatively drier weather is finally slated to arrive. One night prior to the second landfall, New Orleans Mayor Mitch Landrieu tweeted to "remind #NOLA that we are not yet in the clear", urging residents to "remain vigilant and cautious".

In Texas emergency crews were still struggling to reach hundreds of stranded people in a massive round-the-clock rescue operation — but the National Weather Service tweeted that weather conditions there were to at last improve. The storm had transformed roads into rivers in America's fourth-largest city, driving more than 8,000 people into emergency shelters.

Houstonians woke up on Wednesday from a night-time curfew declared by Mayor Sylvester Turner aimed at aiding search efforts and thwarting potential looting in the flood-ravaged city. U.S. media reports indicated the death toll could have risen to 30, and authorities feared confirming more once the worst had past and search teams could again travel roads.

Six million impacted

The National Weather Service said over six million Texans have been impacted by 30 inches or more of rain since Friday.

President Donald Trump toured the Harvey disaster zone in Texas on Tuesday.

The National Weather Service tweeted that Harvey appears to have broken a U.S. record for most rain from a single tropical cyclone, with nearly 52 inches (132 cm) recorded in the town of Cedar Bayou.

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Build it and they will come

It has long been recognized that infrastructure investment plays a key role in growth. It promotes rapid industrialization through cheaper and more efficient movement of goods, people, and ideas across places. Despite the increasing importance of infrastructure, the literature on the economic impact of infrastructure on growth is still small relative to its policy importance. Tight fiscal space and broader issues of governance, doing business, climate change and competition policy have made it more challenging for infrastructure investments to get the increased attention they deserve from policymakers. India is a good testing ground to examine how the twists and turns in infrastructure investments have affected growth.

In 1999, then prime minister Atal Bihari Vajpayee laid the foundation stone for the Golden Quadrilateral Highway project. The Golden Quadrilateral is the longest road project in India and the fifth-longest highway in the world, connecting four major cities: Delhi, Mumbai, Chennai and Kolkata.

We examined the impact of Golden Quadrilateral roads investment in a recent paper (*Highway To Success* by Ejaz Ghani, Arti Grover Goswami and William R. Kerr, *The Economic Journal*). This is one of the first explorations of how proximity to a major new road network affects the organization of manufacturing activity, especially the location of new plants, through industry-level sorting and the efficiency of resource allocation.

The Golden Quadrilateral project provided a huge boost to manufacturing activity and productivity in districts located within 10km of the network. What's more, the new road infrastructure facilitated the movement of growing young firms out of the congested big cities in search of cheaper land and buildings.

Districts located within 10km of the Golden Quadrilateral network experienced substantial increases in entry levels of new enterprises, and higher productivity in the manufacturing sector. The Golden Quadrilateral project resulted in a 49% overall output increase from initial levels for the average district located on the Golden Quadrilateral network. There was greater formal sector manufacturing growth and entrepreneurship in districts located within the Golden Quadrilateral network.

These estimates suggest about 43% of the observed increase in Indian manufacturing activity to the Golden Quadrilateral upgrades, with the rest due to general expansion of Indian manufacturing or other district traits. By contrast, districts near to the north-south and east-west (NS-EW) highway did not experience any change in activity. Upgrades were scheduled for the NS-EW highway at the same time, but were postponed, making it a great placebo case.

Spatial and territorial development

Understanding how infrastructure projects affect economic activity is important for policymakers and regional analysis because these impacts identify how infrastructure investments shape spatial development, growth of regions and the distribution of industrialization and income. Spatial development, where some industries move from urban to rural areas or from core to peripheries of cities, is evident in many countries, and is associated with the efficient placement of industries.

The Golden Quadrilateral project has encouraged efficient decentralization by making intermediate cities more attractive to manufacturing entrants. For instance, moderate-density districts—like Surat in Gujarat or Srikakulam in Andhra Pradesh—that border the Golden Quadrilateral highway registered a more than 100% increase in new output and new establishment counts after the

Golden Quadrilateral upgrades.

These results suggest that the improved transport connectivity enabled manufacturing establishments to efficiently locate in intermediate cities. More importantly, the upgrades were associated with better allocative efficiency as measured by the extent to which the employment of an industry is contained in the industry's most productive plants. Industries that were initially positioned along the Golden Quadrilateral showed improved allocative efficiency compared to industries initially positioned on the NS-EW highway that was never built.

Transport has particular importance in India because of government control over land and building rights, leading some observers to state that India has transitioned from its "licence raj" to a "rents raj". Given India's distorted land markets, the heightened connectivity brought about by the Golden Quadrilateral upgrades was particularly important for efficient sorting of industry across spatial locations.

Infrastructure and financial development

Business dynamics, entrepreneurship and firm growth also require a deeper interaction of banking/finance conditions and infrastructure access than is understood in the growth literature so far. Rapid urbanization and demographic changes call for an acceleration of investment in infrastructure, yet, it is difficult to ascertain the efficiency of such investments without pre-existing financial development. Specifically, when contemplating a large-scale infrastructure investment into local areas, it is important to identify whether a strong finance market needs to be in place first or whether financial development appropriately mirrors and develops alongside major investment efforts.

So, the question remains: if you build it, will they come? If yes, this is an important insight for policymakers and nation builders as they can proceed with projects in confidence that the complements of financial markets will work themselves out. If the answer is no, the information is perhaps even more important as it suggests that large-scale investment can only proceed after local conditions have been vetted for sufficient development.

Adequate transportation infrastructure is an essential ingredient for economic development and growth. Business leaders, policymakers, and academics describe infrastructure as a critical hurdle for sustained growth that must be met with public funding, but to date there is a limited understanding of the economic impact of those projects and their financial forms.

Ejaz Ghani is lead economist at the World Bank.

Comments are welcome at theirview@livemint.com

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Managing embankments

Life had come to a standstill in the [Ganga-Brahmaputra floodplains](#) where large tracts of land were reeling under floods. Everywhere there were submerged houses, broken bridges, and wasted railway tracks. The fury of the waters in the Kishanganj and Katihar districts of Bihar had cut off the road and rail services in north Bengal, and consequently Northeast India's connectivity by rail with the rest of India. On such occasions, schools routinely turn into relief centres and schoolchildren are forced to take a "flood vacation". Access to water and sanitation is difficult. Open defecation is common, and the use of contaminated water leads to a peak in water-borne diseases. Agricultural land is either covered with sand or remains waterlogged.

Further accentuating the misery is the failure of embankments — the gold standard for flood protection. An embankment is an uplifted earthen structure constructed along the river channel to artificially reduce the size of the floodplains by constricting floodwaters to a narrow stretch. The land outside the embankment is supposed to be safe from floods. However, embankment breach resulting in flooding the "safe" areas is routine. We need a paradigm shift in the way these embankments are managed. It is important to involve the community that is close to the embankment in its management. Only then can we break the build-and-forget mentality that currently rules the bureaucracy.

Bihar floods: when home is a highway

Our study of over 100 villages in the Ganga-Brahmaputra floodplains found that villages in these areas are exposed to diverse water-related hazards depending on their location vis-a-vis an embankment. Those located inside the embankment are vulnerable to floods and riverbank erosion, and those outside, in the "safe" areas, are prone to extended periods of inundation. This takes place when the construction of an embankment causes the drainage lines to be blocked, the regulators in the embankments become dysfunctional, or when there is a backflow of the larger river in spate. The people in these "safe" areas suffer from a perennial fear of embankment breach, which is not entirely unfounded. In Bihar in 2008, there was a colossal embankment breach in the Kosi river basin. This year too, in parts of Assam, Bihar and West Bengal breaches have caused flooding. Only in a few cases have newly constructed embankments been able to protect villages located outside them from floods. Despite this, in flood-prone areas with no embankments, people still articulate the need for embankments.

Till now, embankments have been managed by irrigation or flood-control departments. However, the communities near the embankments are best positioned to take care of them. The responsibility of embankment management could be devolved to the community, while the ownership right resides with the state. But this task of decentralisation will not be easy when society is fractured along the lines of caste, class, and religion. We must remember then that disaster is non-discriminatory and affects all.

To incentivise collective action from the community, the state has to create an enabling institutional environment. The community-based organisations (embankment management committees) should be empowered to earn revenue from the embankments through levying tolls (as most embankments are also used as roads), and undertake plantation activities (and sale of the harvest). In areas where villages exist both inside and outside the embankment, their interests conflict. In such cases, efforts could be made to ensure that the former has a greater share of the revenue. This will dissuade them from causing a breach. While the irrigation or flood-control departments might issue tenders for periodic maintenance activity, the committees could act as a partner to partly implement the same, or act as a monitoring agency. Payment to contractors could be conditioned upon a joint inspection by the irrigation department and the embankment

management committees.

Promoting decentralised management systems is yet to be tested for embankment management, even as participatory irrigation and joint forest management are established practices. But if the past teaches us something, it is that build-and-forget cannot be an option for embankments. If we have to shift from reactive flood protection to year-round flood governance, we must design ways of embankment management in flood-prone areas. Participatory embankment management could be the way forward.

Nirmalya Choudhury is a Consultant for Tata Education and Development Trust, and member of the research team at Centre for Development and Research, Pune

The new U.S. Fed Chairman is unlikely to opt for policies that might upset the President's plan

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Powering aspirational India

How much electricity is needed by India? To answer this, one approach is to follow a top-down econometric model whereby one examines growth in the economy, looks at the relationship between [economic growth and energy requirements](#), and incorporates influence of technological and policy changes exogenously. The alternative is a bottom-up approach, whereby one estimates demand based on equipment saturations, efficiencies and usage.

A simple method is to look around and draw conclusions. As per data for 2014 published by the International Energy Agency, average global per capita electricity consumption is 3030 kWh (kWh is colloquially known as a unit). The corresponding figure for India is about 805 units, and for developed countries of the OECD, it is 8,028. A majority of the OECD countries are in the temperate climate zone. Therefore, let us examine the scene around India: the corresponding figure for Singapore is 8,844, for Malaysia 4,646 and for Thailand 2,566. The projected global average per capita consumption by the middle of the century is 7,500 units. We can use this data to set a target which India can aim at.

An emphasis on energy conservation and improvement in energy efficiency of industry and household gadgets will help in reducing electricity consumption, but bringing it down to below 5,000 units per annum to enjoy a standard of living enjoyed by citizens of OECD countries seems difficult. Assuming India's population by the middle of century will be about 1.6 billion and transmission and distribution losses will come down to the lowest technically feasible value of about 7%, India must plan to generate about 8,600 Billion Units (BU) to provide 5,000 units per capita per annum to its citizens.

Many don't have power in 'power-surplus India'

The cumulative average growth rate of electricity generation in India for the period 2006-07 to 2015-16 was close to 6%. In 2016-17 generation by utilities was 1,242 BU. Data for generation from non-utilities is not yet available, but one can assume it to be around the same as in 2015-16, i.e. 168 BU. The total generation was thus 1,410 BU. Assuming a population of 1.3 billion, it translates to a per capita generation of 1,100 units. Thus, electricity generation projected for 2050 is six times the total generation in 2016-17 and in terms of per capita generation, it is about 4.5 times. India has a long way to go.

The target of per capita availability of 5,000 units per annum is very modest because of several reasons. The percentage share of electricity in total energy consumption is increasing. As per estimates by the International Atomic Energy Agency, this share was 34.8% in 2015 for Middle East and South Asia, and is projected to increase to 52% in 2050. The Government of India has announced policy initiatives such as electricity and housing for all, accelerated infrastructure development, Make in India, electrification of transport, etc. which call for more electricity and on a reliable basis.

Many have opined that we should return to a frugal way of living and consume less electricity. Can one expect the young in India to do that when electricity consumption is continuously rising elsewhere in the world? Aspirational India has a desire to work and live in air-conditioned spaces, reduce the drudgery of home work by using electrical appliances, entertain itself by deploying the best theatre system, commute in comfort in non-polluting transport and so on. Once basic amenities are available, an ordinary Indian will become an aspirational Indian.

Human lives have become more productive because of electrical lighting and indoor climate control. Indoor heating for climate control increased productivity in countries in colder regions of

the world and air-conditioning is doing that now in tropical countries, including India.

Given this backdrop, we must maximise the use of low-carbon energy sources, i.e. hydropower, variable renewable energy (VRE), and nuclear power. Last year hydroelectricity generation was 122 BU; exploiting the additional potential will take time.

A NITI Aayog report says India's solar and wind energy potential is greater than 750 GW and 302 GW respectively. Assuming a load factor of 20%, this could generate 1,840 BU. All these numbers are rough estimates, but make it clear that the total possible generation from hydropower and VRE can at best be about a quarter of the projected requirement of 8,600 BU.

Wherefrom will India get the rest of electricity? The share of electricity generated by nuclear power must be ramped up as soon as possible and large investments must be made in research and development in electricity storage technologies to derive full benefit from VRE sources. Until installed capacity based on low-carbon sources picks up, fossil fuels have to continue playing their role. Recent moves such as the Cabinet nod to the construction of 10 indigenous pressurised heavy water reactors, taking further steps for the construction of units 3-6 at Kudankulam, and completing all steps towards operationalisation of the nuclear cooperation agreement with Japan are all steps in the right direction.

R.B. Grover is Homi Bhabha Chair, Department of Atomic Energy and a Member of the Atomic Energy Commission

The new U.S. Fed Chairman is unlikely to opt for policies that might upset the President's plan

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Navodaya Vidyalayas to go Solar

Navodaya Vidyalayas to go Solar

Minister of Human Resource Development Shri Prakash Javadekar today directed the Navodaya Vidyalaya Samiti (NVS) to take measure for adoption of solar energy in all Navodaya Vidyalayas. Chairing the 35th Meeting of Executive Committee of Navodaya Vidyalaya Samiti in New Delhi today, he asked the Samiti to seek the guidance of Ministry of Power to speed up the process.

He applauded the performance of the Navodaya Vidyalaya students in 10th and 12th Board and particularly the impressive performance of NV students in IIT-JEE Advance and NEET. He noted with satisfaction that out of the 14183 NV students who appeared in NEET, 11875 qualified in the examination of which 7000+ already placed in various good medical colleges. Navodaya Vidyalayas have already become a brand for quality education and the recent successes have further enhanced its brand.

Acknowledging the important role being played by some of the NVS alumni in guiding students voluntarily to prepare for competitive examinations, Shri Javadekar directed the NVS to use social media network to connect with more such NVS alumni. This, he said, would broad-base the voluntary involvement of alumni and have a positive impact on the progress of Vidyalayas. He also appealed to NV alumni to come forward in a big way to support their Alma matter.

Shri Javadekar also desired that the teachers who are deputed for training abroad through scholarship should be asked to share a report on their learning and its utility for the system.

He also directed that water and solar energy harvesting should form part of proposals in the new building plans and explore the possibility of having water harvesting and Bio-Gas plants in existing campuses.

While reviewing the functioning of NVS, the Minister directed the Samiti to conduct study of positive impact of: 1) Student-Teacher living together 2) Teachers living together in school campus and 3) Health improvement of students.

The minister appreciated the efforts of the Samiti in filling up all posts of teachers in North Eastern region.

Hon'ble Minister of State of Human Resource Development Shri Upendra Kushwaha, Secretary School Education Shri Anil Swarup, Joint Secretaries and Financial Advisor of MHRD and NVS Commissioner, other Members and senior officials from the Samiti were also present.

GG/AK/RK

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Record production of horticulture crops in the country during 2016-17 is estimated to be around 300 million tones

Record production of horticulture crops in the country during 2016-17 is estimated to be around 300 million tones

The area under horticulture crops has increased from 24.5 million ha to 25.1 million ha in 2016-17

Record Fruit production during the current year, estimated to be 93.7 million tones

Record production of vegetables is estimated to be around 176 million tonnes

Flowers is estimated to be around 2.3 million tonnes

Record production of Plantation crops estimated to be around 18.3 million tonnes

Record production of Spices is estimated to be around 8.2 million tonnes

Third Advance Estimates of Area and Production of various Horticulture Crops for the year 2016-17

The Department of Agriculture, Cooperation and Farmers Welfare has released the Third Advance Estimates of Area and Production of Horticulture Crops for 2016-17. These estimates are based on the information received from different State/UTs in the country.

The following table summarizes the Third Advance Estimates of area and Production of horticulture crops for the year 2016-17 along with Second Advance Estimates for 2016-17 and Final Estimates for 2015-16:

(Area in '000 Ha, Production in '000MT)

Total Horticulture	2016-17 (Third Advance Estimate)	2016-17 (Second Advance Estimate)	2015-16 (Final)	% change of 2016-17 (Third Adv. Est.) with respect to:	
				2016-17 (Second Adv. Est.)	2015-16 (Final Est.)
Area	25109	24925	24472	0.7	2.6
Production	299853(record)	295164	286188	1.6	4.8

Highlights of the “Third Advance Estimates” for 2016-17:

- The record production of horticulture crops in the country during 2016-17 is estimated to be around 300 million tonnes which is 4.8% higher as compared to the previous year's i.e. 2015-16 estimates.
- The area under horticulture crops has increased from 24.5 million ha to 25.1 million ha in 2016-17, recording an increase of 2.6% over previous year.
- Fruit production during the current year is estimated to be record 93.7 million tonnes which is about 3.9% higher than the previous year.
- Production of vegetables is estimated to be record around 176 million tonnes which is 4.2% higher than the previous year.

Ø With 21.7 million tonnes estimated **onion** production in the country, there is an increase of 3.8% over the previous year. The major onion producing States are Maharashtra, Karnataka, Madhya Pradesh, Bihar and Gujarat.

Ø **Record potato** production in the country has increased from 43.4 million tonnes to 48.2 million tonnes in the current year which is 11.1% higher than the previous year. Major Potato growing States are Uttar Pradesh, West Bengal, Bihar, Gujarat, Madhya Pradesh and Punjab.

Ø During the current year **tomato** production is estimated to be around 19.5 million tonnes which is 4.3% higher than the previous year. The major tomato growing States are Madhya Pradesh, Andhra Pradesh, Karnataka, Odisha and Gujarat etc.

- Production of flowers is estimated to be around 2.3 million tonnes which is 4.3% higher than the previous year.
- Production of Aromatics & Medicinal Plants is estimated to be around 1.04 million tonnes which is 2% higher than the previous year.
- During the current year the record production of Plantation crops (areca nut, cashewnut, cocoa and coconut) is estimated to be around 18.3 million tonnes which is 10.2% higher than the previous year.
- Record production of spices is estimated to be around 8.2 million tonnes which is 17.4% higher than the previous year.

[Kindly click here for Data](#)

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DBT's Smart Agriculture Conclave sets the stage for FarmerZone: The future of agriculture**DBT's Smart Agriculture Conclave sets the stage for FarmerZone: The future of agriculture**

The Department of Biotechnology (DBT), under the Ministry of Science and Technology, convened the Smart Agriculture Conclave in New Delhi from August 29 – 31 2017, in partnership with the UK's Biotechnology and Biological Sciences Research Council (BBSRC) and Research Councils UK (RCUK) India. The objective of this conclave was to set the stage for "FarmerZone" - a collective open-source data platform for smart agriculture which will use biological research and data to improve the lives of small and marginal farmers. It is envisaged that "FarmerZone" will help cater to all needs of the farmer, from dealing with climate change, weather predictions and soil, water, and seed requirements to providing market intelligence.

FarmerZone has been envisioned by the DBT and aligns with the Indian Prime Minister, Mr. Narendra Modi's call for effective decision-making in agriculture that integrates science, technology, innovation and the farm ecosystem.

With the agricultural conclave, DBT aims to advance the process of technological intervention to help small and marginal land-holding farmers, who constitute a major component of Indian agriculture.

The conclave identified the challenges faced in each agro-climatic region, and discussed possible solutions through scientific interventions. The FarmerZone platform will connect farmers and scientists, government officials, thought leaders in agriculture, economists and representatives from global companies who work in the big-data and e-commerce space to bring about technology-based localised agri-solutions.

The platform will work on getting relevant quality data related to agriculture into the cloud, develop sentinel sites to help link with farmers and evolve PPP based enterprises for data delivery.

Food security is a global concern and the livelihoods of hundreds of millions of families depend on small-scale agriculture. The conclave worked to address this challenge collectively and showcased the enormous research strength of India and its international partners in a global context, to achieve impact and build strong and sustainable research and innovation partnerships.

Over two days, national and international experts in policy, IT, agritech companies, academics, farmers and representatives, along with research and innovation agencies from India, the UK, the US and other countries, brought ideas, implementable solutions and discussed their potential role in building new partnerships that will help co-design and develop "FarmerZone" - a public good that can be scaled up and applied across a number of different agro-climatic zones across the world.

The conclave was chaired by Secretary DBT Prof VijayRaghavan, who stated: "This

conclave has brought together a diverse group of stakeholders ranging from farmers, scientists and businesses from the national and international arena, who share DBT's vision to use research and technology to deliver "FarmerZone" that will focus on solutions in the farming ecosystem, especially for small and marginal farmers."

British High Commissioner to India Sir Dominic Asquith KCMG, said the joint initiative at the official as well as the academic level will further strengthen burgeoning relationship between the UK and India, and will go a long way to put to effect the enthusiasm of the Prime Ministers of both the nations to use research, innovation and technology for people's benefits.

Deputy Executive, International for BBSRC Mr Steve Visscher CBE, said: "The UK Research Councils have a strong, growing partnership with India – a vital research nation. BBSRC and RCUK India are delighted to work with DBT to help make their vision of "FarmerZone" a reality that will benefit India and other areas in the world. This partnership demonstrates the vital role that research and innovation has in delivering prosperity and addressing shared global challenges."

HK

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