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Topics Covered

GS-2

1. TULIP - Urban Learning Internship Program for providing opportunities to fresh Graduates in all ULBs & Smart Cities
2. SPIC MACAY's International Convention
3. YUKTI 2.0
4. Garib Kalyan Rojgar Abhiyaan

GS-3

5. Banking Regulation (Amendment) Ordinance, 2020
6. Navy Inducts Indigenously Developed Torpedo Decoy System
7. eBlood Services
8. Navigating the New Normal
9. Space sector reform
10. Infrastructure projects
11. Declaration of Kushinagar Airport in UP as International Airport
12. Additional investment by OVL towards further development of Shwe oil & gas project in Myanmar approved
13. Annual TB Report 2020
14. Nisarga
15. Kisan Credit Cards (KCC)
16. CHAMPIONS: Technology Platform
17. PM SVANidhi
18. Jal Jeevan Mission
19. Sahakar Mitra

GS-2

TULIP - Urban Learning Internship Program for providing opportunities to fresh Graduates in all ULBs & Smart Cities

Context

- Launched an online portal for 'The Urban Learning Internship Program (TULIP)'.

Details

- TULIP is a program for providing fresh graduates experiential learning opportunities in the urban sector.
- TULIP has been conceived according to the Budget 2020-21 announcement.
- **The TULIP portal has been developed by All India Council for Technical Education (AICTE) .**
- **Under the internship programme students will get to work for 100 smart cities under ministry of housing and urban development.**
- According to the TULIP portal, there are a total of 295,200 internships under 23,970 companies.
- Eligibility: Students having a degree of B. Tech, B planning, B. Arch, BA, BSc, BCom, LLB can register for internships as per their interest.

Benefits

- Short-term exposure to fresh graduates to enhance their professional development through experiential learning with ULBs and smart cities.
- Harnessing fresh energy and ideas towards ULBs and smart cities endeavours to solve critical challenges.

Eligibility Conditions

- Open only to Indian citizens.
- Not more than 18 months should have passed from the date of declaration of final year results to the date from which the internship is sought.
- Duration and extension of engagement
- The duration of the internship will be a minimum of 8 weeks up to 1 year.
- Stipend and other Allowances
- Amount of stipend/subsistence allowance/expenses would be payable at the discretion of the ULB/ smart city and there shall be no liability of providing any employment on the ULB or smart city, whatsoever.

Logistics

- Interns shall bring laptops/ mobile internet connectivity/ other devices etc. as needed by them.
- The interns shall normally arrange their own boarding/lodging/ transport to and from their place of stay to the place of internship.
- However, the ULB/smart city may reimburse transport/travel expenses incurred by the intern during the course of any assignment, which shall be at the sole discretion of the ULB/smart city.
- The ULB/smart city may, however if they so decide, support the interns, in whatever way they may deem fit, with resources essential for completion of the assignment as per their discretion.

Certificate of Internship

- A digitally signed and shareable certificate regarding successful completion of the internship shall be issued jointly by MoHUA, State Government, AICTE and the ULB/smart city.

SPIC MACAY's International Convention

- The **Society for the Promotion of Indian Classical Music And Culture Amongst Youth (SPIC MACAY)** is a voluntary youth movement.
- It promotes intangible aspects of Indian cultural heritage by promoting Indian classical music, classical dance, folk music, yoga, meditation, crafts and other aspects of Indian culture.
- It is a movement with chapters in over 300 towns all over the world.

- **SPIC MACAY was established by Dr. Kiran Seth in 1977 at IIT Delhi.**
- Some of its major activities include: FEST series, VIRASAT series, National Conventions for students and teachers, National School Intensives, Music in the Park, the SPIC MACAY Scholarship Programme, heritage walks, talks by eminent thinkers, yoga and meditation camps, screening of classic cinema etc

YUKTI 2.0

Context

- Union Minister of Human Resource Development, Shri Ramesh Pokhriyal ‘Nishank’, launched an initiative ‘YUKTI 2.0’.

Details

- It has been established to help systematically assimilate technologies having commercial potential and information related to incubated startups in our higher education institutions.
- Through this portal, the Ministry of Human Resource Development will endeavor to ensure that students, teachers and researchers in higher educational institutions are getting appropriate support to meet the requirements needed to advance their technologies and innovations.
- **YUKTI (Young India combating COVID with Knowledge, Technology and Innovation) web portal was launched in April 2020.**
- Ministry of HRD prepared the portal in view of Coronavirus.
- The portal intends to cover the different dimensions of COVID-19 challenges in a very holistic and comprehensive way.

Garib Kalyan RojgarAbhiyaan

Objectives

- Provide for immediate employment opportunities to returnee migrant workers and similarly affected rural populations.
- Saturate villages with public infrastructure and assets
- Set Stage for enhancing longer-term livelihood opportunities.

Details

- The Garib Kalyan RojgarAbhiyaan (GKRA) is a 125-day *Abhiyaan* launched by Prime Minister on 20th June, 2020
- The program addresses the issues of returnee migrant workers and similarly affected rural population by COVID-19 pandemic.
- The program uses multi-pronged strategy of providing immediate employment & livelihood opportunities to the distressed, to saturate the villages with public infrastructure and creation of livelihood assets to boost the income generation activities and enhance long term livelihood opportunities.
- The program focuses on 25 works in 116 selected districts across 6 States with a resource envelope of Rs 50,000 crore.

Sl. no.	Work Name
1	Community Sanitary Complexes
2	Gram Panchayat Bhawans
3	Works under Finance Commission funds
4	National Highway works
5	Water conservation & Harvesting works
6	Wells
7	Plantation works (including CAMPA Funds)
8	Horticulture
9	Anganwadi Centers
10	Rural housing works (PMAY-G)
11	Rural connectivity works (PMGSY) & Border road works
12	Railway works
13	Shyama Prasad Mukherjee RURBAN Mission
14	PM KUSUM works
15	Laying of Optic Fiber under Bharat Net
16	Works under Jal Jeevan Mission
17	PM Urja Ganga Project
18	Training through KVK for Livelihoods
19	Works through District Mineral Fund
20	Solid and liquid waste management works
21	Farm ponds
22	Cattle sheds
23	Goat Sheds
24	Poultry sheds
25	Vermi-composting

GS-3

Banking Regulation (Amendment) Ordinance, 2020

Context

- In pursuance of the commitment to ensure the safety of depositors across banks, the President has promulgated the Banking Regulation (Amendment) Ordinance, 2020.

Details

- The Ordinance amends the Banking Regulation Act, 1949 as applicable to Cooperative Banks.
- The Ordinance **seeks to protect the interests of depositors and strengthen cooperative banks by improving governance and oversight by extending powers already available with RBI in respect of other banks to Co-operative Banks as well for sound banking regulation, and by ensuring professionalism and enabling their access to capital.**
- The amendments do not affect existing powers of the State Registrars of Co-operative Societies under state co-operative laws.
- The amendments do not apply to Primary Agricultural Credit Societies (PACS) or co-operative societies whose primary object and principal business is long-term finance for agricultural development, and which do not use the word “bank” or “banker” or “banking” and do not act as drawees of cheques.
- The Ordinance also amends Section 45 of the Banking Regulation Act, to enable making of a scheme of reconstruction or amalgamation of a banking company for protecting the interest of the public, depositors and the banking system and for securing its proper management, even without making an order of moratorium, to avoid disruption of the financial system.

Navy Inducts Indigenously Developed Torpedo Decoy System

Context

- Indian Navy approved the contract for Advanced Torpedo Decoy System **Maareech** capable of being fired from all frontline warships.

Details

- Design & Development of this anti-torpedo decoy system has been undertaken indigenously DRDO labs (NSTL and NPOL).
- Bharat Electronics Limited, a Defence PSU, would undertake the production of this decoy system.
- The prototype of this system installed onboard a nominated naval platform had completed all user evaluation trials and demonstrated the features as per the Naval Staff Qualification Requirements.
- This induction not only stands testimony to the joint resolve of the Indian Navy and DRDO towards indigenous development of Defence technology, but has also given a major fillip to the Government's 'Make in India' initiative and the country's resolve to become 'Atmanirbhar' in niche technology.

e-Blood Services

Context

Union Minister of Health & Family Welfare launched the ‘eBlood Services’ mobile App.

Details

- It is developed by The Indian Red Cross Society (ICRS).
- This application is developed by the E-Raktkosh team of Centre for Development of Advanced Computing (CDAC) under the Digital India scheme.
- Through this App, four units of blood can be requisitioned at a time.

Navigating the New Normal

Launched by

- NITI Aayog, in partnership with Bill and Melinda Gates Foundation (BMGF), Centre for Social and Behavioural Change (CSBC), Ashoka University, and the Ministries of Health and WCD.

Details

- It is a behavior change campaign.
- Focusing on Covid-safe behaviours, especially wearing masks, during the 'Unlock' phase of the ongoing pandemic.
- The campaign has two parts.
 - **Web portal**, containing resources informed by behavioral science and the use of nudge and social norms theory, related to Covid-safe behavioural norms during the ongoing Unlock phase.
 - **Media campaign** focused on the wearing of masks.
- Navigating the New Normal" campaign will help normalize protective behaviours, especially mask-wearing.

Space sector reform

Context

- Union Cabinet chaired by Prime Minister approved reforms in the Space sector.
- **Aimed** at boosting private sector participation in the entire range of space activities.

Details

- The newly created Indian **National Space Promotion and Authorization Centre (IN-SPACe)** will provide a level playing field for private companies to use Indian space infrastructure.
- It will also hand-hold, promote and guide the private industries in space activities through encouraging policies and a friendly regulatory environment.
- The Public Sector Enterprise '**New Space India Limited (NSIL)**' will endeavour to re-orient space activities from a 'supply driven' model to a 'demand driven' model, thereby ensuring optimum utilization of our space assets.

Key Benefits

- The space sector can play a major catalytic role in the technological advancement and expansion of our Industrial base.
- The proposed reforms will enhance the socio-economic use of space assets and activities, including through improved access to space assets, data and facilities.
- These reforms will allow ISRO to focus more on research and development activities, new technologies, exploration missions and human spaceflight programme.
- Some of the planetary exploration missions will also be opened up to private sector through an 'announcement of opportunity' mechanism.
- India is among a handful of countries with advanced capabilities in the space sector. With these reforms, the sector will receive new energy and dynamism, to help the country leapfrog to the next stages of space activities.
- This will not only result in an accelerated growth of this sector but will enable Indian Industry to be an important player in global space economy. With this, there is an opportunity for large-scale employment in the technology sector and India becoming a Global technology powerhouse.

Infrastructure projects

Context

- The Union Cabinet chaired by Prime Minister took several landmark decisions needed boost to infrastructure across sectors, which are crucial in the time of the pandemic.

Animal Husbandry Infrastructure Development Fund set-up

Background

- In pursuance of recently announced AtmaNirbhar Bharat Abhiyan stimulus package, Cabinet approved setting up of Animal Husbandry Infrastructure Development Fund.
- Fund will have (AHIDF) amount of **Rs. 15000 crore.**
- Government had earlier approved the Dairy Infrastructure Development Fund (DIDF) worth Rs. 10,000 crores for incentivizing investment by cooperative sector for development of dairy infrastructure.
- The AHIDF would incentive infrastructure investments in dairy, meat processing and animal feed plants.
- The eligible beneficiaries under the Scheme would be **Farmer Producer Organizations (FPOs), MSMEs, Section 8 Companies, Private Companies and individual entrepreneur with only 10% margin money contribution by them. The balance 90% would be the loan component to be made available to them by scheduled banks.**
- Government of India will provide **3% interest subvention** to eligible beneficiaries.
- There will be **2 years moratorium period for repayment of loan with 6 years repayment period thereafter.**
- Government of India would also set up a Credit Guarantee Fund of Rs. 750 crore to be managed by NABARD which would provide credit guarantee to the projects which are covered under the MSME defined ceilings. Guarantee Coverage would be upto 25% of the Credit facility of the borrower.

Benefits

- There is huge potential waiting to be unlocked through private sector investment in the animal husbandry sector.
- AHIDF with the interest subvention scheme for private investors will ensure availability of capital to meet upfront investment required for these projects and also help enhance overall returns/ pay back for investors. Such investments in processing and value addition infrastructure by eligible beneficiaries would also promote exports.
- Since almost 50-60% of the final value of dairy output in India flows back to farmers, the growth in this sector can have significant direct impact on farmer's income.
- Size of dairy market and farmers' realization from milk sales is closely linked with development of organized off-take by cooperative and private dairies.
- Thus, investment of Rs. 15,000 crores through AHIDF would not only leverage several times more private investment but would also motivate farmers to invest more on inputs thereby driving higher productivity leading to increase in farmers income.
- The measures approved would also help in direct and indirect livelihood creation for about 35 lakh persons.

Declaration of Kushinagar Airport in UP as International Airport

Context

- Declaration of Kushinagar Airport in UP as International Airport.

Benefits

- The Buddhist Circuit is a key pilgrimage destination for 530 million practicing Buddhists across the globe. Hence declaration of Kushinagar Airport as an 'International Airport' will offer improved connectivity, wider choice of services at competitive costs to the air-travellers resulting in boosting of domestic/international tourism and economic development of the region.
- Around 200-300 devotees per day from Thailand, Cambodia, Japan, Burma, etc are coming and offering their prayers at Kushinagar. However, this International tourist destination has no direct connectivity, which has been a long pending demand of the visitors.
- Direct international connectivity to Kushinagar would substantially increase the number of foreigners and domestic tourists visiting Kushinagar, which will also provide an impetus to economic development of the region. The international airport is expected to boost the already growing tourism and hospitality ecosystem in the country.

Background

- Kushinagar is an important Buddhist pilgrimage site, where **Gautama Buddha attained Mahaparinirvana.**
- It is regarded as a very sacred Buddhist pilgrimage center where Buddhist pilgrims from all over the world come for a pilgrimage.

- Kushinagar is dotted with several other Buddhist sites in the nearby surroundings like Sravasti (238 km), Kapilvastu (190 km) and Lumbini (195 km) that makes it an attraction for both followers and visitors alike.
- Kushinagar already serves as the presenting site for Buddhist circuit pilgrimage spanning across India and Nepal. Union Cabinet has approved the proposal to declare Kushinagar Airport in Uttar Pradesh as an International Airport.

Additional investment by OVL towards further development of Shwe oil & gas project in Myanmar approved

Background

- ONGC Videsh (OVL) has been associated with exploration and development of Shwe gas project in Myanmar since 2002, as part of a consortium of companies from South Korea, India and Myanmar. The Indian PSU, GAIL, is also a co-investor in this project.
- OVL has invested US\$ 722 million till 31st March 2019 in this project.
- The first gas from Shwe Project was received in July 2013 and plateau production was reached in December 2014. The Project has been generating positive cash flows since FY 2014-15.
- The Cabinet Committee on Economic Affairs approved additional investment of US\$ 121.27 million by ONGC Videsh Ltd (OVL) towards further development of Shwe oil & gas project in Myanmar.

Benefits

- The participation of Indian PSUs in oil & gas exploration and development projects in neighbouring countries is aligned with India's Act East Policy, and also part of India's strategy to develop Energy Bridges with its neighbours in addition to further strengthening India's energy security needs.

Annual TB Report 2020

Context

Ministry of Health and Family Welfare released the annual TB Report 2020.

The key achievements listed in the Report include:

- Around 24.04 Lakh TB patients have been notified in 2019. This amounts to a **14% increase in TB notification as compared to the year 2018.**
- Achieving near-complete on-line notification of TB patients through the NIKSHAY system.
- Reduction in the number of missing cases to 2.9 lakh cases as against more than 10 lakhs in 2017.
- Private sector notifications increased by 35% with 6.78 lakh TB patients notified.
- Due to easy availability of molecular diagnostics, the proportion of children diagnosed with TB increased to 8% in 2019 compared to 6% in 2018.
- Provision of HIV testing for all notified TB patients increased from 67% in 2018 to 81% in 2019.
- **Expansion of treatment services has resulted in a 12% improvement in the treatment success rate of notified patients. For 2019 it is 81% compared to 69% in 2018.**
- More than 4.5 lakh DOT Centers provide treatment covering almost every village across the country.
- NIKSHAY also expanded the provision of four Direct Benefit Transfers (DBT) schemes of the programme
 - NikshayPoshan Yojana (NPY) to TB patients
 - The incentive to Treatment Supporters
 - Incentive to Private Providers and
 - Transport incentive to TB patients in the notified tribal areas

About TB

- Tuberculosis (TB) is an infectious disease usually caused by *Mycobacterium tuberculosis* (MTB) bacteria.
- Tuberculosis generally affects the lungs, but can also affect other parts of the body.
- The classic symptoms of active TB are a chronic cough with blood-containing mucus, fever, night sweats, and weight loss.
- As of 2018, most TB cases occurred in the regions of South-East Asia (44%), Africa (24%) and the Western Pacific (18%),

- More than 50% of cases being diagnosed in eight countries: India (27%), China (9%), Indonesia (8%), the Philippines (6%), Pakistan (6%), Nigeria (4%) and Bangladesh (4%).

Nisarga

- **Severe Cyclonic Storm Nisarga** was the strongest tropical cyclone to strike the Indian state Maharashtra in June since 1891.
- It was also the first cyclone impact on Mumbai since Cyclone Phyan of 2009.
- Nisarga originated as a depression in the Arabian Sea and moved generally northward.
- India Meteorological Department (IMD) upgraded the system to a cyclonic storm, assigning the name *Nisarga*.
- Nisarga further intensified to a severe cyclonic storm and turned to the northeast, ultimately making landfall approximately 95 km south of Mumbai.
- Nisarga rapidly weakened once inland and dissipated.
- Nisarga was the second cyclone to strike the Indian subcontinent within two weeks time, after Cyclone Amphan, the first super cyclonic storm to have formed in the Bay of Bengal in the 21st century, devastated the state of West Bengal on May 2020.
- Making landfall in Maharashtra with winds of 110 km/h (70 mph), Nisarga became the strongest storm to strike the state in the month of June since 1891. Before Nisarga, only two depressions had struck Maharashtra in the month of June, in 1948 and 1980 respectively.

India Meteorological Department (IMD)

- The **India Meteorological Department (IMD)** is an agency of the Ministry of Earth Sciences of the Government of India.
- It is the principal agency responsible for meteorological observations, weather forecasting and seismology.
- IMD is headquartered in Delhi and operates hundreds of observation stations across India and Antarctica.
- Regional offices are at Mumbai, Kolkata, Nagpur and Pune.
- IMD is also one of the six Regional Specialised Meteorological Centres of the World Meteorological Organization.
- It has the responsibility for forecasting, naming and distribution of warnings for tropical cyclones in the Northern Indian Ocean region, including the Malacca Straits, the Bay of Bengal, the Arabian Sea and the Persian Gulf.

Kisan Credit Cards (KCC)

Context

- The Government will provide Kisan Credit Card (KCC) to 1.5 crore dairy farmers belonging to Milk Unions and Milk producing Companies within the next two months (1st June-31st July 2020) under a special drive.

Details

- The Department of Animal Husbandry and Dairying in association with Department of Financial Services has already circulated relevant circulars and KCC application format to all State Milk Federation and Milk Unions for implementing the same on a mission mode.
- Under the dairy cooperative movement, approximately 1.7 crore farmers are associated with 230 Milk Unions in the country.
- In the first phase of this campaign, the target is to cover all farmers who are members of dairy cooperative societies and associated with different Milk Unions and who do not have KCC.
- Farmers who already have KCC based on their land ownership, can get their KCC credit limit enhanced, though interest subvention shall be available only to the extent of Rs 3 lakhs.
- Although the general limit for KCC credit without collateral remains Rs. 1.6 lakh, but the case of farmers whose milk is directly procured by Milk Unions falls under tie up arrangements between the producers and processing units without any intermediaries, and hence the credit limits without Collateral can be upto Rs.3 lakh.
- This will ensure more credit availability for dairy farmers associated with Milk Unions as well as assuring repayment of loans to banks.

CHAMPIONS: Technology Platform

Context

- Prime Minister Shri Narendra Modi launched the technology platform **CHAMPIONS**.
- **CHAMPIONS** stands for **C**reation and **H**armonious Application of **M**odern Processes for **I**ncreasing the **O**utput and **N**ational Strength.

Detailed objectives of CHAMPIONS

- **Grievance Redressal:** To resolve the problems of MSMEs including those of finance, raw materials, labor, regulatory permissions etc particularly in the Covid created difficult situation;
- **To help them capture new opportunities:** including manufacturing of medical equipments and accessories like PPEs, masks, etc and supply them in National and International markets;
- **To identify and encourage the sparks:** i.e. the potential MSMEs who are able to withstand the current situation and can become national and international champions.

Details

- It is a technology-packed control room-cum-management information system.
- In addition to ICT tools including telephone, internet, and video conference, the system is enabled by Artificial Intelligence, Data Analytics, and Machine Learning.
- It is also fully integrated on a real-time basis with GOI's main grievances portal CPGRAMS and MSME Ministry's own other web-based mechanisms.
- The entire ICT architecture is created in house with the help of NIC in no cost. Similarly, the physical infrastructure is created in one of the ministry's dumping rooms in record time.
- As part of the system a network of control rooms is created in a Hub & Spoke Model.
- The Hub is situated in New Delhi in the Secretary MSME's office. The spokes are in the States in various offices and institutions of the MSME Ministry.
- As of now, 66 state level control rooms are created and made functional. They have connected through video conference also in addition to the portal of Champions.
- A detailed standard operating procedure (SOP) has been issued to the officers and staff have been deployed and training has been conducted for them.

PM SVANidhi

Context

- The Ministry of Housing & Urban Affairs and Small Industries Development Bank of India (SIDBI) have signed a Memorandum of Understanding (MoU) to engage SIDBI as the Implementation Agency for **PM Street Vendor's AtmaNirbhar Nidhi** (PM SVANidhi).

Details

- PM SVANidhi is a **Special Micro-Credit Facility for Street Vendors**.
- **Street vendors may now take a loan of Rs 10,000 to reestablish their businesses hit by the coronavirus-led nationwide lockdown.**
- **SIDBI will implement the PM SVANidhi Scheme under the guidance of Ministry of Housing & Urban Affairs.**
- It will also manage the credit guarantee to the lending institutions through Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE).
- It will develop and maintain a customized and integrated IT Platform providing end-to-end solutions, including documentation of all the processes and workflows for an end-to-end solution, through a Portal and a Mobile App, to ensure engagement and information flow between Urban Local Bodies (ULBs), Lending Institutions, Digital Payment Aggregators and other stakeholders.
- It will leverage the network of lending Institutions like Scheduled Commercial Banks (SCBs), Non-Bank Finance Companies (NBFCs), Micro Finance Institutions (MFIs), Co-operative Banks, Small Finance Banks (SFBs), Regional Rural Banks (RRBs), etc. for the Scheme implementation.

- To ensure effective implementation, SIDBI shall also provide a Project Management Unit (PMU), comprising of domain experts in training/ capacity building, project and platform management, Information Education and Communication (IEC), banking, NBFC and MFI sectors etc., for the period of PM SVANidhi i.e. upto March 2022.
- PM SVANidhi scheme, which aimed to benefit over 50 lakh street vendors.

Jal Jeevan Mission

Vision

- Every rural household has drinking water supply in adequate quantity of prescribed quality on regular and long-term basis at affordable service delivery charges leading to improvement in living standards of rural communities.

Mission

Jal Jeevan Mission is to assist, empower and facilitate:

- States/UTs in planning of participatory rural water supply strategy for ensuring potable drinking water security on long-term basis to every rural household and public institution, viz. GP building, school, Anganwadi centre, health centre, wellness centres, etc.
- States/UTs for creation of water supply infrastructure so that every rural household has Functional Tap Connection (FTC) by 2024 and water in adequate quantity of prescribed quality is made available on regular basis.
- States/UTs to plan for their drinking water security.
- GPs/rural communities to plan, implement, manage, own, operate and maintain their own in-village water supply systems.
- States/UTs to develop robust institutions having focus on service delivery and financial sustainability of the sector by promoting utility approach.
- Capacity building of the stakeholders and creating awareness in community on significance of water for improvement in quality of life.
- In making provision and mobilisation of financial assistance to states/UTs for implementation of the mission.

Objectives

The broad objectives of the Mission are:

- To provide Functional Household Tap Connection (FHTC) to every rural household.
- To prioritize provision of FHTCs in quality affected areas, villages in drought prone and desert areas, Sansad Adarsh Gram Yojana (SAGY) villages, etc.
- To provide Functional Tap Connection to schools, Anganwadi centres, GP buildings, health centres, wellness centres and community buildings.
- To monitor functionality of tap connections.
- To promote and ensure voluntary ownership among local community by way of contribution in cash, kind and/or labour and voluntary labour (*shramdaan*).
- To assist in ensuring sustainability of water supply system, i.e. water source, water supply infrastructure, and funds for regular O&M.
- To empower and develop human resource in the sector such that the demands of construction, plumbing, electrical, water quality management, water treatment, catchment protection, O&M, etc. are taken care of in short and long term.
- To bring awareness on various aspects and significance of safe drinking water and involvement of stakeholders in manner that make water everyone's business.

Components under JJM

The following components are supported under JJM:

- Development of in-village piped water supply infrastructure to provide tap water connection to every rural household.
- Development of reliable drinking water sources and/ or augmentation of existing sources to provide long-term sustainability of water supply system.
- Wherever necessary, bulk water transfer, treatment plants and distribution network to cater to every rural household.
- Technological interventions for removal of contaminants where water quality is an issue.
- Retrofitting of completed and ongoing schemes to provide FHTCs at minimum service level of 55 lpcd.

- Greywater management
- Support activities, i.e. IEC, HRD, training, development of utilities, water quality. laboratories, water quality testing & surveillance, R&D, knowledge centre, capacity building of communities, etc.
- Any other unforeseen challenges/ issues emerging due to natural disasters/ calamities which affect the goal of FHTC to every household by 2024, as per guidelines of the Ministry of Finance on Flexi Funds.

Sahakar Mitra

Context

- Sahakar Mitra Scheme on Internship Programme (SIP) was launched by Union Minister for Agriculture & Farmers' Welfare.
- This scheme is one of the latest schemes by the government since the Prime Minister launched the AtmaNirbhar campaign to achieve self-sustainability for the country.
- The NCDC has been part of such initiatives to provide innovative solutions for the cooperative sector.
- **The scheme will provide paid internships to attract the youth. The scheme would also rope in professionals from various academic institutions to develop professionals that can take various roles in the Farmers Producers Organizations (FPO).**
- The scheme also aims to train youth for entrepreneurial roles to tap into the large scale potential of the market. The scheme will provide the interns with valuable field experience.

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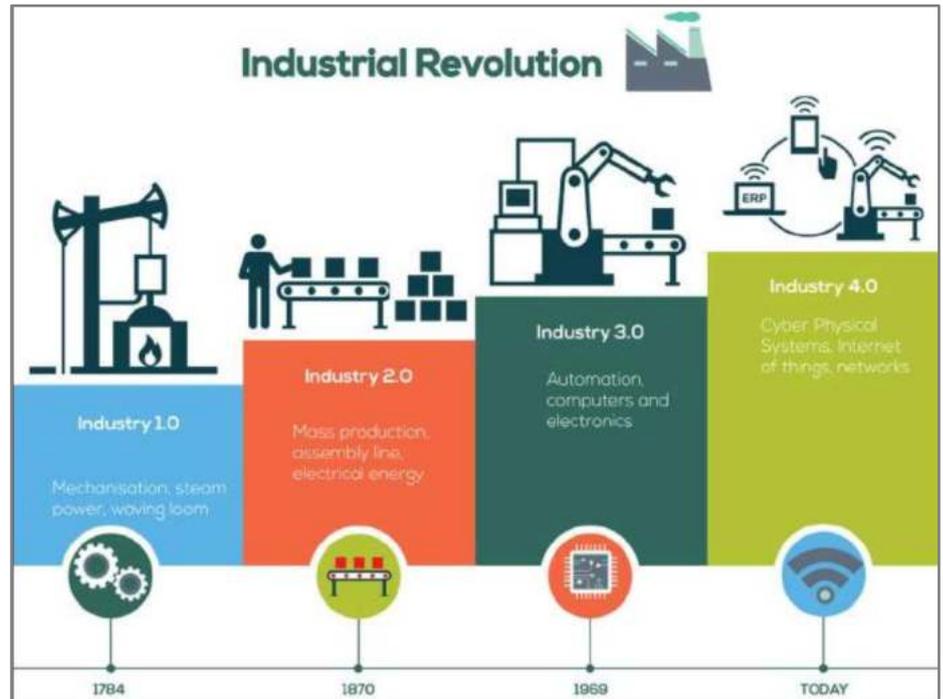
INDEX:

1. Industry 4.0
2. AIM: Fostering Innovation
3. Social Media: The Force Multiplier
4. Digital Platforms
5. Localisation Through AI
6. Real-Time Monitoring for Development
7. R&D Expenditure & Scientific Publications
8. 'GOAL' Programme for Tribal Youth
9. Online Learning in Lockdown

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Industry 4.0

- We are in the midst of a significant transformation regarding the way we make products, thanks to the digitisation of manufacturing. This transition is so compelling that it is being called **Industry 4.0** to represent the fourth revolution that has occurred in manufacturing.
- Industry 4.0 is signaling a change in the traditional manufacturing landscape. Also known as the Fourth Industrial Revolution, Industry 4.0 encompasses three technological trends driving this transformation: **connectivity, intelligence and flexible automation.**
- From the beginning of civilisation, human beings have tried to increase their capacity and power.
- At first they were using equipment made of wood or rocks but with the advancement of science they explored modern and efficient equipment, and this process is going on.
- Machines are one of the greatest inventions of humans. Industrial revolutions have a huge impact on our society and they also affect the world economy.
- The first industrial revolution came with the advent of mechanisation, steam power and water power.
- The second industrial revolution revolved around mass production and assembly lines using electricity.
- The third industrial revolution came with electronic and IT systems and automation.



The fourth industrial revolution

- The **fourth industrial revolution is associated with cyber-physical systems.**
- Industry 4.0 describes the growing trend towards automation and data exchange in technology and processes within the manufacturing industry, including: **The Internet of Things (IoT), The Industrial Internet of Things (IIoT), Cyber-physical Systems (CPS), Smart Manufacturing, Smart Factories, Cloud Computing, Additive Manufacturing, Big Data, Robotics, Cognitive Computing, Artificial Intelligence and Blockchain etc.**
- This automation creates a manufacturing system whereby the machines in factories are augmented with wireless connectivity and sensors to monitor and visualise an entire production process and make autonomous decisions.
- It is further estimated that wireless connectivity and the augmentation of machines will be greatly advanced with the full rollout of 5G.
- This will provide faster response times, allowing for near real-time communication between systems. The fourth industrial revolution also relates to digital twin technologies.
- These digital technologies can create virtual versions of real-world installations, processes and applications.
- This can then be robustly tested to make cost effective decentralized decisions.
- These virtual copies can then be created in the real world and linked, via the Internet of Things allowing for cyber-physical systems to communicate and cooperate with each other and human staff to create a joined up real-time data exchange and automation process for Industry 4.0 manufacturing.
- As Industry 4.0 unfolds, computers are connected and communicate with one another to ultimately make decisions without human involvement.
- A combination of cyber-physical systems, the Internet of Things and the Internet of Systems make Industry 4.0 possible and the smart factory a reality.
- As a result of the support of smart machines that keep getting smarter as they get access to more data, our factories will become more efficient and productive and less wasteful. Ultimately, it is the network of these

machines that are digitally connected with one another which create and share information that results in the true power of Industry 4.0.

Radical Pace of Innovation

- We are connecting innovation more than ever before. Innovation is fundamentally undergoing a radical change.
- The scale, scope, and complexity are things we have certainly never experienced. It is exposing us to exponential technologies. We seem to have caught up in such levels of velocity, scope, and systems impact –it is seemingly exponential, occurring at faster rates of change.
- Companies are radically overhauling entire systems of production, management, and governance on a constant basis of change.
- We have unprecedented processing power, storage capacity, and access to various avenues of knowledge.
- These are being combined with emerging technology in fields such as artificial intelligence, robotics, 3D printing, nanotechnology, biotechnology, material science, and quantum computing.
- It is creating fresh challenges and opportunities within innovation. The world is facing greater disruption and an increasing innovation pace and actually caught up in a very revolutionary period.
- The days of simple product innovation are dwindling. Currently, the technology, talent, and new innovation ecosystems are emerging; building greater complexities into our final innovation offerings. Intelligent automation and technology are fueling this new industrial revolution.
- And this unprecedented, exponential pace of change is increasingly reliant on collaborative platforms to realize the result which is more radical innovations.
- Organisations everywhere are facing mounting pressure to transform—to shift from product centric business models to new models focused on creating and capturing different sources of new value propositions.
- Product innovation is continually giving way to new concepts that have technology built into them.
- Our innovation has become increasingly complex, connected, and contextual. Industry value chains are being radically redesigned to accommodate connected worlds being more reliant on everything being digital.
- The products and services are enhanced through the digital capabilities that boost their value and worth. New materials are making our assets more durable and resilient, and data and analytics provide valuable feedback needed to build even better services and performance for the future. Innovation is the unlocking mechanism.
- The consequences of the fourth industrial revolution can be seen in the shifts of our emphasis taking place around innovation. Industry is focusing more on technological innovation.
- It is constantly looking at the changes to the existing business models to reflect these changes, and further integrating innovation systems to explore entirely new business models.
- We can say that innovation is becoming reliant on the fourth revolution and how it is all connecting all of us, to provide the future growth through greater collaboration.
- Recognizing the transforming potential will revolutionize how we manage innovation going forward. Emerging Digital Business Models We need to appreciate new digital business models and their impact. We are increasingly reliant on digital engineering and science. There is scope to have radically different product development and processes to manage.
- The traditional supply chain has a very different potential when factories and operations become highly connected and start operating as Industry 4.0 entities. The new business models will emerge from the way they can be operated, be responsive in the supply networks.
- All this requires digital management. As we connect more, the customer experiences can hugely benefit. We can target, sell, and market on greater connecting knowledge platforms.
- We can understand channel choice and provide more tailored presales and post-sales support to manage the entire lifecycle as we continue to build the connected industry 4.0 ecosystems.
- Further, Blockchain technology is not only disrupting banking and finance, but it also has the potential to impact many industries and community as a whole. For instance, this technology can enable a car to respond as per the need by installing a digital wallet based on Blockchain technology.
- This wallet works by logging all transactions made involving the vehicle, including maintenance, modifications, charging or filling up gas. It makes it possible to predetermine the total cost of ownership and calculate return on investment for the car on a very detailed level.

Industry 4.0 Post COVID-19

- Industry 4.0 is not only as relevant as it was before the global COVID-19 emergency; it is actually far more relevant moving forward.

- The world is gripped by the pandemic. The global supply chain is experiencing a level of disruption that has never been seen before. Some manufacturers have ceased production completely, some have seen greatly reduced demand and others have seen a huge increase in demand.
- Every manufacturer is impacted by this crisis in some way and for many this poses an existential threat.
- The business drivers of Industry 4.0 pre-crisis were focused on competitive advantage, cost reduction, productivity, sustainability and innovation. The goal was to make smooth businesses to run better. The focus for many manufacturers now is survival first and foremost and beyond that, damage limitation.
- The immediate financial impact on manufacturers is already resulting in a huge reduction in non-essential spending and investments.

Now, the bigger question is-Is Industry 4.0 relevant anymore?

We believe Industry 4.0 is not only as applicable as it was before but it is actually far more relevant moving forward. The priorities for most manufacturers today fall into three distinct Stages:

- **Stage 1 – Survival;**
- **Stage 2 – Recovery;**
- **Stage 3 –Business as usual in the new post-crisis paradigm.**
- The goal for all manufacturers will be to get to Stage 3 as soon as possible at the lowest cost. In defining the operating model for Stage 3 they will factor-in lessons learnt from the crisis and try to build a more resilient and agile business. One of the major weaknesses is a lack of real-time visibility across the business. Visibility that is essential to support critical business decisions. For example- What is the demand for products and where can we manufacture them? What are our current raw materials, work-in progress and finished goods inventory levels? What is our manufacturing capacity, both in terms of human resources and asset availability?
- Another key learning from the crisis will be driven by manufacturers' reliance on human capital and the impacts of social distancing. If we go one level deeper than the supply chain view, then manufacturing in particular will be highlighted as a big area for improvement. During the crisis, production plans would have been changing on a much higher frequency as a result of changing demands and availability of raw materials, key staff and assets.
- Manufacturing has a much higher volume and frequency of transaction than the supply chain.COVID-19 is causing radical shifts in work flow across the globe as millions practice social distancing and comply with self-quarantine recommendations.
- The pandemic's dramatic appearance has accelerated numerous trends while slowing others. Although, there is no doubt that COVID-19 is a transformative force, it is not bringing us into Industry 5.0.
- Although businesses have had reason to embrace digital workflows in the past, COVID-19 has provided another strong incentive to move towards a smart factory, complete with smart manufacturing or smart printing processes.

COVID-19 Leading to Digital Transformation

- The integration of digital infrastructure to streamline public health to respond to the COVID-19pandemic is very crucial in the context of epidemic forecasting and decision-making, one such example in India is the **Aarogya Setu app** by Government of India.
- This application is official COVID-19tracker. This explains that digital contact tracing is conferring a new form of immunity–digital immunity.
- The fastest scalable solution to India's COVID-19 challenge was to employ digital technology for diagnosis and for contact tracing. Aarogya Setu app can also be tapped for providing telemedicine, especially in remote parts, during this moment of crisis.
- This digital infrastructure implementation increasingly fuels the digital transformation initiatives within an organisation as well. But due to the pandemic, the transition will see significant changes in industries especially in technology, food delivery services, customer service, and virtual events.
- In the present situation, we are seeing major occurrences worldwide, including soaring adoption of online services, an enormous requirement for internet services, and enhanced connectivity among industries, regardless of their sizes.
- The impact of the COVID-19pandemic has demonstrated the value of IT and digital transformation across industries and businesses and they must utilise this time to speed up the transition.
- It has been demonstrated in the enhanced corporate ability of long-distance collaborative work, wide recognition of the value of digital transformation and information technology among all employees, and the ability to market online and business development.

- To conclude, in the time of Corona virus crisis, Digital Industry4.0 plays a vital role in envisioning and modeling outbreaks.
- As the pandemic continues to spread around the world, it will become imperative for organisations to look for new solutions or ways to stay a head of the competition. Because most enterprises will fail to spot their financial targets due to supply-chain disruptions and lowered customer demand.
- Organisations that adapt their technological capacity and investments on digital platforms can alleviate the impact of the COVID-19 and keep their businesses running in the long term. So, as companies move to become more digital, I believe they can drive more value in terms of customer experience as digital solutions enable business-customer relationships on screens rather than in person.
- Going forward, many organisations may adopt remote working agreements as strategies to reduce costs, improve productivity, and increase worker satisfaction.
- Many manufacturers are increasing efforts to equip their human workers with digital connected-worker tools that incorporate safety checks into workflows, ensure collaboration with colleagues when physical contact is off the cards, and other such processes that ultimately balance business continuity and employee health.
- This is also the dawn of a new era where 'frontline' workers and desk workers are harmonized with tools that can support the flow of collaboration and data, where something that happens on the factory floor initiates a communication or workflow in the back office.
- Although, the concept of using connected-worker technology to empower workers around safety, quality and productivity may be heightened right now, it will still be just as critical to build business resiliency after this pandemic is over.
- What most of us consider normal has already fundamentally shifted. Manufacturers who understand and act on this new normal will have ample opportunities for growth in this era of Industry 4.0.

AIM: Fostering Innovation

The Rise of Social Entrepreneurship

- Sustainable development is the practice of improving human life while protecting the environment. It is perhaps the most important and the most formidable long-term challenge that the world faces.
- Creative thinking has always been essential for improving national well-being. New inventions and innovations in agriculture, mass production, transportation and communication during the Industrial Revolution were largely responsible for proving Economist, Thomas Malthus wrong, who predicted that the world couldn't support an exponentially increasing population.
- While social entrepreneurs have existed since the beginning of time, the relatively recent surge of social entrepreneurship is part of a larger and more recent context. It is emerging at a historical juncture, when the traditional distinctions between business and civil society organisations between who should provide public and private goods, are blurring.

The infographic features the AIM logo (Atal Innovation Mission) and the NITI Aayog logo (National Institute for Transforming India, Government of India). The title is 'Atal Tinkering Lab (ATL)'. It lists five key points:

- ATLs in India: 5,441 schools covering (6,046,146)
- ATL is an approach of central government to create an environment of scientific temperament, innovation, creativity amongst Indian students
- Its aim is to enhance necessary skills among students which will help them to develop their professional and personal skills
- ATL is a workspace where young minds can shape their ideas and learn innovation skills
- ATLs come under Atal Innovation Mission (AIM) which is monitored by NITI Aayog

At the bottom, it includes the 'my GOV' logo, the text 'मेरी सरकार', the website 'Register at: https://manipur.mygov.in/', and social media handles like '@manipurmygov' along with icons for YouTube, Twitter, Instagram, and Facebook.

- **Social entrepreneur is a creature of his or her time—a hybrid that combines the driving passion for improving a lot of excluded groups with the practical, innovative and opportunistic traits of the entrepreneur.**
- Social entrepreneurs are focused on the delivery of public goods using business approaches.
- They are too busy finding the solutions that will allow all people to participate as active producers and consumers in the local, national and global economies.

India, the Innovator: Gathering Momentum

- The last few years have seen innovation in India reach a tipping point with the emergence of innovative Indian companies, the large-scale social innovations and now the big impact innovations in public service. Social enterprises are beginning to leverage Innovation.
- **SKS Microfinance** has successfully innovated on the Grameen Bank Microfinance Model. This Business Model Innovation has figured out a unique way to ‘scale up’ the penetration and impact of a Microfinance organisation. SKS has acquired a membership of 5.7 million, across 16 States in 11 years.
- **Akshay Patra** is the world’s largest NGO-run school meal program—it reaches 10 million children across five States of India, six-days a week. And they serve freshly cooked meals at Rs. 1.50 per meal. This was achieved through a ‘technological Innovation: to prepare meals on large scale in a short time’ and a ‘logistics innovation-to reach the meals to the schools’.
- A number of other large scale Innovations like **Goonj**— creating rural value from urban waste in a manner that is mutually dignified and MV Foundation—a new way to take kids out of child labor and into schools are bringing through Non-linear solutions for the country’s huge developmental challenges.

Atal Innovation Mission

- Recognising this need, the Government of India has set up Atal Innovation Mission (AIM) to promote a culture of innovation and entrepreneurship in the country.
- AIM’s objective is to develop new programmes and policies for fostering innovation in different sectors of the economy, provide platform and collaboration opportunities for different stakeholders, create awareness and create an umbrella structure to oversee innovation ecosystem of the country.

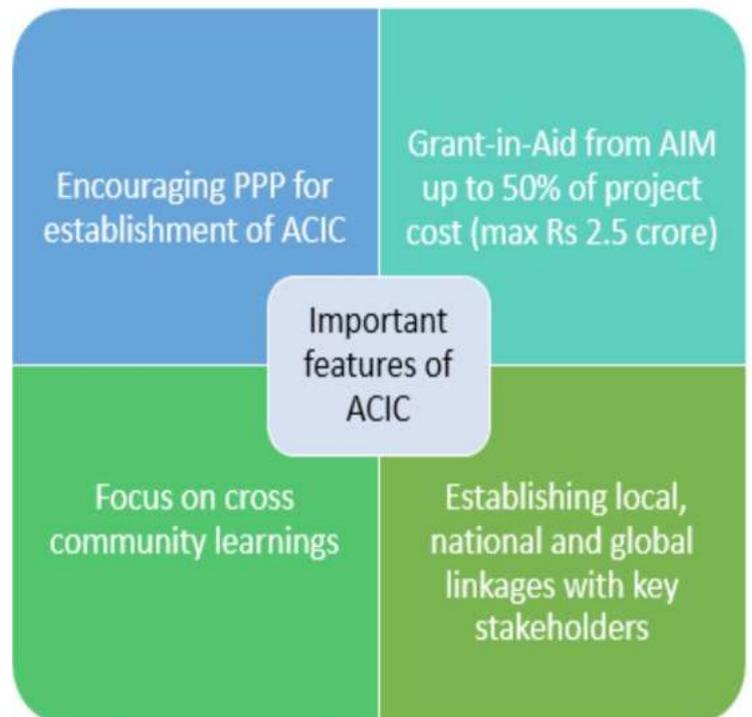
Six major initiatives taken in first year of its establishment:

1. Atal Tinkering Labs- Creating problem-solving mindset across schools in India.
2. Atal Incubation Centres- Fostering world-class startups and adding a new dimension to the incubator model.
3. Atal New India Challenges- Fostering product innovations and aligning them to the needs of various sectors/ministries.
4. Mentor India Campaign- A national Mentor network in collaboration with public sector, corporate and institutions, to support all the initiatives of the mission.
5. Atal Community Innovation Centre- To stimulate community centric innovation and ideas in the unserved /underserved regions of the country including Tier 2 and Tier 3 cities.
6. ARISE- To stimulate innovation and research in the MSME industry.

Initiatives under Atal Innovation Mission

1. Atal Tinkering Labs - at School Level

- Over the last two years, AIM has launched the establishment of thousands of Atal Tinkering Labs enabling students from grade 6 to grade 12 to have access to and tinker with innovative tools and technologies like 3D printers, robotics, miniaturized electronics do-it-yourself kits, thus stimulating a problem solving innovative mindset to solve problems in the community they are in.



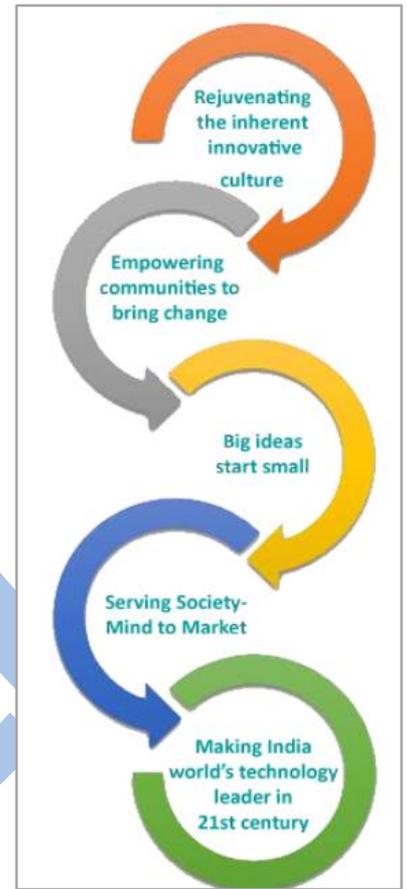
- Atal Tinkering Labs are being established in schools nationwide with 4880+ operational in 650+ districts and over 2 million students having access to ATLS.

Some activities related to ATL Operational Excellence, Proactive Promotion of Innovation & Thought Leadership, Collaborations & Partnerships and New Initiatives by AIM:

- 2000+ ATL Teachers Trained with Corporate Partners.
- ATL Gandhian Challenge - launched in all schools along with UNICEF.
- India Stamp Creativity challenge- launched with UNICEF and India Post.
- PM India Innovative Learning DHRUV Program –AIM invited as key partner by MHRD.
- Russia AIM SIRIUS ATL Student Innovation Exchange finalized.
- Singapore Inspreneur 3.0 ATL showcasing of Top 6Innovations.

2. Atal Incubators at Universities, Institutions, Industry Level

- To promote creation of a supporting ecosystem for start-ups and entrepreneurs, AIM has been establishing world-class incubators called Atal Incubation Centres(AICs) in universities.
- Institutions, corporate, etc. that would foster world-class innovative start-ups and become scalable and sustainable enterprises.
- To date, AIM has selected 102 universities / institutions / private players to establish world class Incubators each of which will foster creation and nurturing of 40-50 world class Startups every four years.
- 50+ of them are already operational with 900+ operational Startups and the remaining will be operationalised during this year.
- Indo French Knowledge Summit at Lyon - 5 AIC startups - received immediate funding interest by VCs.
- Youth-Co Lab Sustainable Innovation Challenge along with UNDP–based on Gandhian Values.
- Entrepreneur World Cup National Innovation Challenge - CCAMP AIC Startup emerged as India winner.
- Ongoing discussions and interests expressed for Incubator and Startup collaborations by Indo German, Netherlands, Swedish, French, Australian Embassies, US India Business council, etc.
- Bill and Melinda Gates Foundation partnership in AIC/Startup Training.
- UNLEASH Startups Challenge with Netherlands embassy support.



3. Atal Community Innovation Centres - Serving Unserved and Under-Served Regions of India

- To promote the benefits of technology led innovation to the unserved/underserved regions of India including Tier 2, Tier 3 cities, aspiration districts, tribal, hilly and coastal areas, AIM is setting up Atal Community Innovation Centres with a unique partnership driven model wherein AIM would grant up to Rs. 2.5 crore to an ACIC subject to a partner proving equal or greater matching funding. Over 300+ Applications have been received across the country and 50+ ACICs will be established during the next two years.
- 300+ Applications received to date and over 1300 registrations.
- 25 ACICs to be operationalized during FY2020-21.

4. Atal New India Challenges - Product and Service Innovations with National Impact

- To create product and service innovations having national socio-economic impact, AIM has launched over 24 Atal New India Challenges in partnership with five different ministries and departments of central government. 52 winners have been selected for grant aid and hand holding by Incubators/mentors of AIM out of 950+ applications received for the same.
- 24 ANICs launched, 5 Ministries supported.
- 26 winners selected and announced for first tranche disbursement, 26 shortlisted for handholding with incubators for subsequent disbursement.

5. Applied Research and Innovation for Small Enterprises (ARISE) - to Stimulate MSME Industry Innovation

- To promote innovation in a phased manner in the MSME/Start-up sector AIM will be launching ARISE along with partner Ministries so that great research ideas are converted to viable innovative prototypes followed by product development and commercial deployment.

6. Mentorship and Partnerships - with Public, Private sector, NGOs, Academia, Institutions

- To enable all the initiatives to succeed, AIM has launched one of the largest mentor engagement and management program “**Mentor India – The Mentors of Change**”.
- To date, AIM has over 10000+ registrations nationwide on AIM with 4000+ of them allocated to ATLS and AICs. What’s even more promising is that other government agencies are also leveraging Innovation for Inclusive Growth.
- The Defense Institute for High Altitude Research (DIHAR) in Ladakh has played an innovative and transformational role in accelerating the socioeconomic development of Ladakh.
- Many initiatives like solar energy based low-cost Green Houses, zero energy based storage have transformed the vegetable and animal productivity and output, and even raised the tree line above 13000 ft.
- Additionally, the Government of Karnataka partnered with the **Azim Premji Foundation** to innovate primary education in government schools.
- They have instituted an innovative process to assess the school’s capability to build student competencies rather than mere marks.
- This will lead to many more students passing out of primary school having acquired the basic competencies.
- The growing innovation momentum in Corporates, Social Enterprises, NGO’s and government agencies is beginning to have a significant impact.
- More and more organisations have embedded Innovation cells into their organisation structure.
- This reinforces our belief that ‘Innovation is for India, what quality was for Japan; a transforming agent’. Let’s build this momentum to the point it makes India the Innovation Capital of the world.

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Social Media: The Force Multiplier

Context

- When the World Wide Web was born in the 1990s, its initial users (referred to as “early adopters”) were from the technology community—engineers, innovators, academicians, researchers etc.

- Governments were not amongst these early adopters—they took to it only later. But when they did, it came as a resounding signal of the internet's mainstream impact, as also an endorsement for its relevance, scale, and transformative role across the world.
- Three decades later, the internet has been truly adopted by governments across the globe with full gusto.
- **Social media has become a game changer in the way federal, regional, and local government agencies are engaging, interacting, and communicating with citizens.**
- The Indian Government has been at the forefront of these emerging trends—it has rapidly adopted the latest digital technologies and embraced new forms of social media communication tools in the discharge of its governance and administrative duties.
- **e-GOVERNANCE Digital India Programme is aimed at transforming India into a digitally empowered society and knowledge economy. This initiative is anchored by the Ministry of Electronics and Information Technology (MeitY),** but is implemented across the federal framework of the country covering central, state, and local organizations in both the public and private space.
- The beauty of the new age social media tools lies in their universality and pervasiveness. They are easy to install and use and have a simplified user experience. While the physical world is constrained by the limitations of distances and boundaries, the virtual world is all encompassing—indeed we are all part of a continuous global village.
- **As Bill Gates famously said - “The Internet is becoming the town square for the global village of tomorrow”.** All this has meant that Indians coming from different socioeconomic backgrounds, irrespective of their educational levels, are able to use and benefit from applications like WhatsApp, Facebook, Twitter, Instagram, LinkedIn—these have all become household names.
- Most of these apps are available in multiple Indian vernacular languages (besides English). Inexpensive mobile phones, cheap bandwidth and data-plans, vernacular content—all these factors acting in consort have helped in amplifying social media's reach and impact even in the rural hinterlands of the country beyond the large cities and towns.
- Most government departments and agencies now maintain an active presence on the popular social media channels. They have created official accounts, have large number of followers, and regularly share news updates, departmental notifications, or public announcements on their channels. Not just departmental accounts even executive officers, bureaucrats, politicians, ministers etc. are active on social media and regularly cross share (or re tweet) each others' updates.

Here is a compilation of twelve ways in which Indian Government agencies are using social media as a force multiplier in their work:

Crisis / Disaster Management

- Whenever there is a big, unexpected crisis, citizens tend to panic and look for directions and advisories from their elected representatives.
- The government machinery springs into action and they need to emphatically communicate to citizens the SOP (standard operating procedures) to be adopted.
- What adds to the heat of the moment is the possibility of (panic induced) rumours that may lead citizens astray.
- Social media is now increasingly being used by governments to reach out to citizens during such crisis.
- **Two recent examples bear out this trend—the first one is a cyclone alert from the National Disaster Management Agency (NDMA) on India's eastern coasts (in the state of Odisha), while the other one is an advisory from PIB (Indian Government's Press Information Bureau) to citizens for the lockdown imposed due to COVID-19.**

Citizen Engagement

- One of the best roles social media can play is to act as a medium for continuous engagement between governments and its citizens.
- Citizens should feel their governments are participatory and welcoming, and be able to contribute their ideas, comments and suggestions in policy formulation and program implementation.
- The Indian Government's MyGov platform has proven to be popular with citizens in this regard. Apart from MyGov, other social media channels used by the Indian Government (Twitter, Facebook, WhatsApp, Instagram) also promote citizen engagement, participation, and transparency in this important relationship.

Citizen Grievances & Support

- Social media has emerged as a very impactful, real-time channel for citizen grievances and support.
- Most citizen services (specially the public facing ones) maintain active accounts on social media and encourage citizens to directly reach out with their grievances.
- Given all this is happening in full public view, there is pressure on the service providers to resolve the issue (if possible, in real-time, else with some delay), while appearing fair, transparent, and responsive for everyone to see.
- Sometimes when the query gets resolved quickly, citizens express their gratitude and elation immediately.
- This expression can act as an authentic validation or testimonial for the service.

Law & Order

- Amongst governmental agencies, police departments are arguably one of the most active users of social media channels. This is because their jobs hover around real-time, public facing situations, which are frequently subject to rumours, false alerts etc.
- They are required to display trust in their public dealings and communicate unequivocally. The Police frequently needs to make public announcements—something that social media is well-suited for.

Hiring & Recruitment

- Some government agencies are using social media hiring channels for attracting best-in-class talent for their job vacancies. “LinkedIn” is a popular online recruitment platform—here is an example of a vacancy posted by NISG (National Institute of Smart Government) for technical positions in UIDAI (Unique Identification Authority of India) which runs the Government of India’s Aadhaar program. LinkedIn offers two advantages—it is a publishing tool for job postings, and it also has over 500 million registered users across the world (including 62 million Indian users). They can readily view these vacancies and apply if interested.

Foreign Relations

- Social media bridges the distance between nations on the internet. Many government agencies are using social media channels effectively to engage with their foreign counterparts.
- Embassies and foreign consulates are active on Twitter & Facebook, engaging with each other or sharing important updates to their citizens.

Business & Industry Relations

- Government agencies partner with businesses, industry bodies and trade organisations on a regular basis for policy, consultations, networking etc.
- Businesses play a key role in driving social media’s impact by contributing significantly to the internet economy via advertising, paid services etc.
- Many monetization models on the internet (wholly or partially) rely on enterprises, B2B (business to business) and large corporations with large advertising and marketing budgets, which contributes to the nation’s economy.
- The two examples shared on the left exemplify this—the first is a Facebook post from Ministry of Commerce & Industry showing the Minister addressing an industry gathering, while the second is an invitation on Twitter for an industry summit on Education by the Indian Consulate in Indonesia.

Live Traffic Updates

- Real time traffic updates and advisories get regularly shared in the metropolitan cities via the local Traffic Police social media accounts.
- These updates are helpful to commuters in avoiding traffic jams or taking detours to save time.
- Often these live updates are picked up by local FM radio channels that do their civic bit, by sharing it on with live audiences that have tuned into the channel while on the roads.

Government Procurement

- The government (as an entity) is the largest producer and buyer of goods and services in the country. It’s buying (or procurement) is largely based on open tendering process, which gives everyone a chance to participate in an unbiased, non-discriminatory way.
- Hence, tender notices have to be published publicly on the main outreach channels.
- Traditionally, tender notices were advertised in newspapers; now with the advent of e-tendering, these notices are increasingly getting posted on social media channels as well.

Crowd sourcing Ideas & Innovation

- The internet is fundamentally participatory in character—people openly share their knowledge, skills, and experiences in the belief that others can benefit from it. Sometimes this is free, or there may be some incentives for it.
- Crowd sourcing is a popular activity on the internet, where you get to tap into the collective “wisdom of the crowds”. On the left is an example on how the Indian Government’s community participation platform MyGov is leveraging crowd sourcing, by hosting a “Logo Design Competition” for an upcoming government heritage complex.
- Citizens are invited to contribute their logo entries for the contest, which has an accompanying cash prize to generate excitement and motivate participants.

Citizen Service-Delivery Apps

- The government has launched various service delivery apps for its citizens. Social media is a key channel to drive awareness about these apps and get people to download them. Because these apps are mass targeted, the intent is to make them “go viral” and spread via “word-of-mouth” from person to person.
- Social media channels like Twitter, Facebook, WhatsApp are best-suited for this virality. The two examples here showcase this—DigiLocker is meant for digitised documents & certificates, while UMANG is like a gateway (or a directory) to multiple government services. While these apps have their individual social media handles, they are also promoted by the government departments.

Transparency & Accountability

- Citizens want ready access to government departments and its functioning officers. Given the size and expanse of the official setup, it is often not easy to figure out who is the concerned officer-in-charge (in whose jurisdiction the case falls) and their contact details. Social media can come to the rescue in some cases.
- Such measures reduce bureaucracy, while promoting transparency and accountability in the eyes of the citizens.

Digital Platforms

Context

- It is imperative for governments to provide accurate, useful and upto-date information to people, particularly through times of crisis.
- During COVID-19 pandemic, Indian government’s use of digital technology and providing information on national portals, mobile apps or through social media platforms is the game changer to reach to them asses.
- Timely information, direct money transfer to the poor, needy and vulnerable groups can help save many lives and at this point the digital apps developed by the government are playing an important role in responding to the crisis.
- Prime Minister also while addressing the nation on 12th May, 2020 gave a call for ‘self-reliant India’ and mentioned how with direct benefit transfer during corona crisis, government has been able to transfer funds directly to the actual beneficiary accounts and able to curb corruption and leakages.

Aarogya Setu App

- **The ‘Aarogya Setu’ App enables people to assess themselves the risk for their catching the corona virus infection.** It calculates this based on people’s interaction with others, using cutting-edge bluetooth technology, algorithms and artificial intelligence.
- Once installed in a smart phone through an easy and user-friendly process, the app detects other devices with AarogyaSetu installed that come in the proximity of that phone.
- The App can then calculate the risk of infection based on sophisticated parameters if any of these contacts is tested positive.
- The App is helping the government to take necessary and timely steps for assessing risk of spread of COVID-19 infection, and ensuring isolation where required.
- The App’s design ensures privacy-first and the Government, after apprehensions from some people has assured users about the data safety and security of the app. The personal data collected by the App is encrypted using state

of-the-art technology and stays secure on the phone till it is needed for facilitating medical intervention and is available in 11 languages.

Chatbot

- **The Government of India has launched a WhatsApp chatbot so that the citizens can get instant and authentic answers to all of their queries related to the Corona virus pandemic.** Users have to drop a 'Hi' on the number +91-9013151515 or can call on the MyGov Corona Helpdesk to get answers to pertinent queries such as the symptoms of the deadly disease, nearest COVID-19 testing facility.

Corona Kavach

- **It is a COVID-19 tracker application,** created by the Union Ministry of Electronics and Information Technology in collaboration with the Ministry of Health and Family Welfare. This application provides users with real time location of infected users who have activated the 'Kavach' feature.

COVID-19 Feedback

- This application has been developed by the centre to get direct feedback from people who have undergone corona virus treatment in the country.

COVID-19 National Helpline

- A 24x7 National Helpline number +91-11-23978046 and toll-free number 1075 have been launched where people can access corona related information by the government. Also, the centre has an e-mail id: ncov2019@gov.in to attend to queries of people related to the disease.

SAMPRAC

- **Defence Research and Development Organisation (DRDO) has developed an app called 'SAMPRAC' to enable tracking people under quarantine.**
- It is a software that includes an app that can be installed on the smart phones of the infected COVID-19 patients.
- It is a server-side application that is used by the state authorities to track the patients. The system enables defencing, AI-based automated face recognition (between selfie taken during registration and subsequent selfies sent by the patient), and would have the capability to display the information to the state official on a map which can be colour-coded to depict hotspots and containment zones.
- Honest usage of this app can give them an option of home isolation instead of isolation in a government facility. It is expected to drastically reduce the overhead of tracking every patient under home isolation, thereby reducing the load on the state machinery.
- The official can easily track the violators and can also perform random checks. The violators would be shown in red on a map if they break the geo-fence or their selfie(s) does not match; in blue if their smart phones stop sending periodic updates; and in green if everything is found satisfactory.

Direct Benefit Transfer (DBT)

- It is a scheme by Government of India to transfer the benefits and subsidies of various social welfare schemes like LPG subsidy, MNREGA payments, old-age pension, scholarships etc. directly in the bank account of the beneficiary.
- **The government's technology-driven direct benefit transfer (DBT) has been crucial in implementing PM Garib Kalyan Yojana that was rolled out to provide relief to the poor and vulnerable amid the COVID-19 crisis.**
- About 20 crore women from low income groups having Jan Dhan account were given direct benefit transfer of Rs. 500/- per month for free with Rs. 10,025 crore already transferred.
- During the lockdown, direct benefit transfer of Rs. 2,000 each was provided to 8.19 crore beneficiaries under Pradhan Mantri Kisan Samman Nidhi (PM KISAN) scheme.
- 8 crore beneficiaries of Ujjwala LPG scheme have been offered 3 cylinders free of cost.
- 2.20 crore building and construction workers received financial support worth Rs. 3,950 crore because of DBT.
- Besides, 6.81 free cylinders reached Ujjwala Yojana beneficiaries and over 12 lakh EPFO holders benefitted from the withdrawal of non-refundable withdrawal advance, which amount to Rs. 3,360 crore.

SAHYOG

- The Survey of India (SoI) has developed an e-platform that collects geo tagged information on the nation's critical infrastructure in order to help the government and public health agencies take critical decisions in response to the current COVID-19 pandemic situation.
- **The platform has geo-located information of hospitals, testing labs, quarantine camps, containment and buffer zones as well as information on biomedical waste disposal sites.**
- The mobile based application, called SAHYOG, works as a key tool in helping community workers carry out the government's objectives of door-to-door surveys, contact tracing, deliveries of essentials items and to create focused public awareness campaigns.
- This platform and app have been created to enhance the efforts of the government in improving its response system at this crucial time.
- The platform strengthens the public health delivery system of the State and central governments and subsequently provides the necessary geospatial information support to citizens and agencies dealing with the challenge related to health, socio-economic distress, and livelihood challenges.

Some other technology apps developed by the government and playing an important role during COVID- 19 crisis are:

BHIM App

- BHIM (Bharat Interface for Money) is an Indian mobile payment app developed by the National Payments Corporation of India (NPCI), based on the Unified Payments Interface (UPI). It was launched on 30th December, 2016 and helps in facilitating e-payments directly through banks as a drive towards cashless transactions.
- Transactions on BHIM are nearly instantaneous and can be done 24/7 including weekends and bank holidays.
- BHIM also allows users to check the current balance in their bank accounts and to choose which account to use for conducting transactions, although only one can be active at any time.

RuPay

- It is a card scheme, conceived and launched by the National Payments Corporation of India to fulfil the Reserve Bank of India's vision to have a domestic, open and multilateral system of payments. RuPay facilitates electronic payment at all Indian banks and financial institutions.

IRCTC

- Through the mobile app by Indian Railway Catering and Tourism Corporation Limited (IRCTC) consumers need not stand in long queues and can book e-tickets from home.

GeM

- It is an e-commerce portal or the government e-Marketplace, which has been created to allow government departments to buy their requirements from various vendors without cash or physical payments.

UMANG App

- UMANG (Unified Mobile Application for New-age Governance) is a Government of India all-in-one single unified secure multi-channel multi-platform multi-lingual multiservice freeware mobile app for accessing over 1,200 central and state government services in multiple Indian languages.

SWAYAM

- **It is an online education programme initiated by the Government of India to achieve the principles of education policy by providing access, equity and quality.**
- The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged.
- The Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.
- It is done through a platform that facilitates hosting of all the courses, taught in classrooms from Class 9 till post-graduation to be accessed by anyone, anywhere at any time.
- More than 1,000 specially chosen faculty and teachers from across the country have participated in preparing these courses which are available free of cost.
- These courses are of great help to learners as they have been designed by one of the best faculties from India and follow four quadrant approach to learning.
- Thus, by installing and using the government apps, Indian citizens can save time, money as these apps are proving to be of great help during COVID-19 pandemic, playing a significant role in responding and reaching to the needy and vulnerable groups.



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The banner features a blue background with a white and yellow illustration of a woman in a yellow jacket pointing at a computer screen. The screen shows a thumbs-up icon and a speech bubble. There are also several books and a speech bubble with a thumbs-up icon on the right side of the illustration.

Localisation through AI

Context

- Artificial intelligence has started to change the very face of local language technologies, products, tools, services and features.
- As a result, developers have been able to simplify and augment user experiences and facilitate better productivity for Indian language users.
- This has paved the way for innovative user-device interactions and access to intelligent technologies, many of them running in the cloud, on platforms and suites such as Windows, Android, Office 365 and Google Docs.
- As artificial intelligence makes its presence felt in the productivity space, a typical local language user is waking up to a process of transformation happening around him.
- As a result, developers have been able to simplify and augment user experiences and facilitate better productivity for Indian language users.
- Virtual assistants now understand verbal commands given in Hindi.
- These revolutionary developments in local language technologies are surely going to benefit the developers and the users alike but things can also be seen from the broader perspective of digital inclusion to using a keyboard to input text nor you necessarily have to learn another language to interact with people unfamiliar with your language.
- Such experiences are not entirely uncommon for English language users, however, for typical Indian language users it is a relatively new phenomenon and they are loving it.
- These revolutionary developments in local language technologies are surely going to benefit the developers and the users alike but things can also be seen from the broader perspective of digital inclusion. Language agnostic



computing is one important aspect of digital inclusion which has started taking place due to the new developments in language technology space, now powered by artificial intelligence.

- **Virtual assistants such as Google Assistant and Amazon Alexa now understand verbal commands given in Hindi.** While Cortana, the virtual assistant that comes with Windows 10, is yet to understand spoken commands in Indian languages, it can translate text from English to Hindi, Bangla, Tamil, Urdu and many other languages. Just say, “Hey Cortana, translate- the weather today is very good- in Hindi.” The intelligent interactive application will dutifully pronounce the Hindi translation besides transcribing it in Devanagari and Roman scripts- “Aaj mausam bahut achchha hai”.
- Such AI enabled experiences inside the operating system will be very useful to non-Hindi speakers such as tourists and businessmen apart from common PC users who may want to get Cortana’s help for some quick translations.

Translations inside Office Suites

- Office applications take advantage of Microsoft Translator which in turn leverages the machine translation engine, empowered by the latest generation neural machine translation technologies.
- Google Docs too can accomplish the task for you. Both the Office suites draw their power from services running at a cloud server. Such experiences of communication among people using different languages may go a long way in breaking the linguistic barriers. Importantly, language translation is not just an add-on service but it’s a core part of Microsoft products and services.
- Apart from the Internet and mobile (like on Bing and Microsoft Translator for Android), its power can be experienced in familiar productivity and communication applications including Word, Excel, PowerPoint, Outlook, and Skype.
- The recently released data of Census of India 2011 indicates a robust growth in the number of people speaking local languages.
- Rise in these numbers coupled with increased technological awareness, expectations and a higher per capita income are expected to encourage a greater demand for local language products and services.
- Products enriched by artificial intelligence have the potential to empower this section of society and help boost overall productivity.

Presentations Break Language Barriers

- Considering the way business opportunities are emerging in different parts of the country, you may need to connect with variety of audience at state capitals and tier 2/3 cities and in such situations this powerful plugin from Microsoft can make your life easier by converting your presentations into multiple local languages, saving a great deal of time and resources.
- Not just this, the plugin can also generate automated live captions in an Indian language as you speak in English or any other supported world language. It is not just about saving you from some hassle but empowering you in ways you may not have thought were possible.
- The power of artificial intelligence has started to change the way we work with local languages. Technologies that work in an intensely complex manner in the background appear so simple and friendly to use, in your own language, when accessed from inside Windows and Office.
- Microsoft Translator app on Android and iOS can recognise and translate content from typed or printed text, spoken word and even from photos. If you happen to visit Russia or China, you need not worry about navigating the streets of Moscow or Beijing as when you click an image of a billboard or road sign, Microsoft Translator can promptly translate the Russian or Mandarin text inside the photo into Hindi.
- In contrast, if a foreign tourist on a visit to a city like Jaipur or Agra wants to convey his thoughts in Hindi, he can do so by speaking into the Microsoft Translator app as his words get translated into Hindi and pronounced.
- Google’s Indic Keyboard can recognise Hindi handwriting. Similarly, Windows now has a Handwriting panel that too can do the trick.
- If you have a PC with a touch-screen you can use your stylus to write on the panel. Writing in the Hindi will show handwriting recognition results in Hindi and the content also gets transcribed.

Screen Reader Connects with Hindi

- That Narrator, the screen reader from Microsoft, can speak Hindi is not just an important development from the local language perspective but also from the standpoint of people with disability.
- The application can read out commands, menus and text on the screen besides explaining the desktop environment it operates in.

- Disability, coupled with inability to use English language, multiplies the challenges that people with disability face as most accessible technologies and tools don't understand Indian languages.
- Unfortunately, most people with disability come from the not-so-privileged section of society which is often deprived from quality education and hence finds it difficult to converse in English.
- Accessible tools such as Narrator, with their ability to narrate text in Hindi, will make an empowering impact on the lives of common local language users and not just people with disability.

Predicting Your Thoughts

- The intelligent app brings artificial intelligence to your phone keyboard as it learns from your actions and predicts the next word you are about to type.
- The app works in 24 Indian languages including Hindi and can save you the effort of typing a few hundred characters every day.
- Microsoft has been working with Indian languages for over two decades since the launch of **Project Bhashain 1998**, allowing users to input localised text easily and quickly using the Indian Language Input tool. The company has recently made available the Microsoft Indian language Speech Corpus, offering speech training and test data for Telugu, Tamil and Gujarati`.
- Microsoft also recently announced support for email addresses in multiple Indian languages across most of its email apps and services.
- Also, as part of the latest Windows update, added Tamil 99 virtual keyboard to Windows10. Through its global Local Language Program (LLP),it provides people access to technology in their native language.
- This includes Language Interface Packs for Indian languages like Hindi, Kannada, Bengali, Malayalam, amongst others.

Real-Time Monitoring for Development

The Importance of Real-Time Monitoring

- The use of real-time monitoring(RTM) to support national systems strengthening is growing, primarily due to the ubiquitous penetration of mobile phones into global audiences. According to the International Telecommunication Union, in 2011alone, there were six billion mobile subscribers—with 79 per cent of them in the developing world (Abaza and Marschollek, 2017).
- This has been a boon in countries and regions where mobility and physical connectivity challenges can affect the diffusion of knowledge of key issues, which can stymie progress against key health and socioeconomic indicators. India is no stranger to RTM systems, having been one of the early adopters of mobile and digital technology in the low-and-middle-income world. It has 1.16 billion telecommunication subscribers in the world, as of March2019 (TRAI, 2019), and has been adding nearly six million subscribers per month (TRAI, 2019).
- In fact, the Ministry of Health's National Health Portal has shortlisted a whopping 72monitoring platforms that have been authorised to track indicators from health records in hospitals to mapping water supply sources (2020).
- Development programmes are actively embracing RTM approaches across a range of sectors; from maternal health to nutrition and water, sanitation and hygiene (WASH)-to improve planning, monitoring, and decision making efforts.
- During this COVID-19 response, it has become an even greater priority to invest in RTM models that adhere to physical distancing protocols.
- Caseloads are increasing rapidly with shorter doubling times and countries are scrambling every day to better understand what is influencing the outcomes as quickly as possible.
- Real-time monitoring that allows low-touch data collection and dissemination would therefore be best in this context, as proven before during the Ebola and H1N1 outbreaks, both which had similar contact restrictions.
- **The practice of real-time monitoring for strengthening national monitoring systems has been employed by UNICEF and government partners to strengthen health, education, water and sanitation and social protection systems around the world.**
- As of 2019, 77 UNICEF country offices including India's are using real time approaches enabled by the use of information and communication technologies which enable faster retrieval and analysis of data and information, than paper based or other traditional systems.

- When using real-time approaches, data and information is provided more rapidly than before and allows stakeholders to monitor progress towards goals by rapidly accessing and reviewing data and information, seeing trends, and identifying corrective actions required based on informed evidence-based decisions within a day, or in some cases, within a few hours.
- Therefore, it is an efficient solution to monitoring needs and objectives. Just as important to keep in mind is that RTM approaches are only effective where the capacity to utilise frequent data and insights is sufficient and responsive; otherwise, the approach may have a negative effect of creating extra data collection burden without commensurate response.

When implemented, RTM integration helps to:-

- Provide a monitoring platform for communities and governments to track progress towards shared goals
 - Identify supply, demand and bottlenecks in service delivery chains
 - Increase accountability of government to the rapid delivery of services
 - Improve service delivery to hard-to-reach communities through informing corrective measures
 - Assess and educate consumers and beneficiaries on relevant knowledge, practices and attitudes.

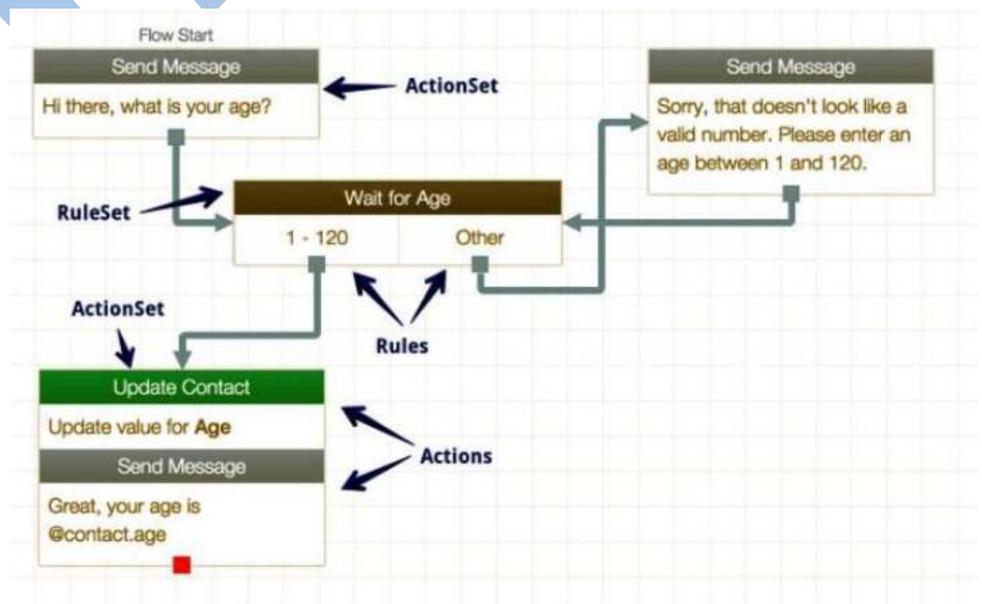
Scalable Routine Data Collection and Dissemination System

- In 2014, UNICEF, in partnership with Nyaruka Ltd, released RapidPro, a globally accessible and free open source routine data systems application RapidPro “collects data via short message service (SMS) and other communication channels (e.g. voice; social voice; social media channels, such as Facebook Messenger, Telegram, WhatsApp) to enable real-time data collection and mass communication with target end-users, including beneficiaries and front line workers.”(UNICEF, 2020).
- Its prior avatar, RapidSMS, was launched in 2008 to send text messages and was mainly used in Africa to monitoring child health and HIV interventions; however, there was a call for more functionality that options not dependent on paid telecommunication lines. In 2015, the RapidPro Surveyor application was created to provide a chat-like interface on smartphones without network connectivity (Dial, 2018).
- It has in part been successfully taken up because of its flexibility in information capture and delivery, and because it has been critical in helping UNICEF and other organizations deliver timely data to government partners and others to help inform key policies and programming decisions.
- **RapidPro** has been developed to be a ‘global public good’ by UNICEF and the ambition is to garner investment to encourage the buy-in of real-time monitoring systems in 110 countries by 2021.

It functions through the integration of the following key elements:

Flows:

- Flows are the set of interactions based on user responses to questions, which determine what the subsequent action is. By using flow architecture, the creator can establish automated and complex text and voice pathways without program resistance.



Example of a flow concept that can be coded for on the platform. The channel for this can be anything from SMS to voice to social media. (Source: <http://rapidpro.github.io/flows/concepts/>)

Channels

- These are used to send and receive messages. This includes SMS, voice, and social media, and can be used either to push data as part of education campaigns out or collect it from users for monitoring and assessment purposes. New channels are being added to RapidPro.

Campaigns

- Flows, channels and messages come together under a campaign, which is the automated framework for RapidPro-based RTM. This allows both communication with users on a large-scale and personalization based on user feedback, through flow architecture.

Analytics

- Analytics displays the data generated by interactions with end users, by displaying results in real-time within RapidPro or sending them to a customised dashboard for further visualisation, generating a custom report, or exporting to Excel for additional analysis.

Integration into Various Countries' Programmes

- Albeit being available for less than a decade, RapidPro has already been leveraged for a range of purposes across countries, from soliciting feedback from adolescents on what health issues matter to them to monitoring knowledge and attitudes around water, sanitation and hygiene programmes. Below are a few global examples that illustrate its functionalities:

(i) Water, Sanitation and Hygiene Status in Rural India

- In 2019, RapidPro was piloted in two of India's most populous states, Uttar Pradesh and Bihar, which carried almost 30 per cent burden of open defecation globally (Coffey et. al. 2014) at the start of Swachh Bharat Mission, to assess the status of sanitation services and related knowledge.
- UNICEF India used the interactive voice response (IVR)—or, automated calling with pre-recorded messages—as the communication channel. UNICEF's field offices supported their respective state governments in developing the application according to each state's needs, and the IVR flows were launched in four districts: Gaya in Bihar; Sonbhadra, Mirzapur and Bhadoi in UP.
- Various categories of questions on sanitation and hygiene access and usability were asked in multiple-choice format to users identifying as
 - (i) members of rural households,
 - (ii) swachh grahis (community sanitation workers) and
 - (iii) Gram pradhans (village heads) to ensure reliability and a holistic perception around sanitation services. This allowed the governments to not only appreciate the tool for its flexibility and scaled reach, but also to receive rapid inputs to questions they were interested in. In UP, for example, approximately 3,500 users responded to the calls, and the crowd sourced responses indicated that 92.1 per cent of households have functional toilets and 96 per cent of households with them had all members using the toilets.

(ii) U-Report: A Global Tool

- U-Report is a free messaging tool built using RapidPro in 2011 and is currently used by UNICEF and partners in 60 countries, benefitting 8 million users (UNICEF, 2020 (b)).
- Its objective is to encourage participation of youth, through popular social media channels, in a safe environment in which they do not feel judged for asking about critical or sensitive issues.
- Its function, as opposed to the convention RTM objectives, is to provide a conversational option.
- Its most popular functions are to provide feedback—through polls for participants via social media—by providing knowledge and information on specific issues that participants want to build their capacities on.
- Its success has broadened its reach to the general populous. As of 30 March, 2020, U-Report has been used for assessing knowledge, practices and attitudes around COVID-19 across 43 countries, with responses collected from over 2.2 million people.
- In India, UNICEF recently collected 23,000 responses from 28 states and four union territories, to a U-Report survey assessing the general population's existing understanding of the COVID -19 pandemic and the sources of information that they rely on.
- The results showed that, even with the inundation of messages received through WhatsApp, 67 per cent of respondents cited the television as their primary source of information and one-fifth of the users found it difficult to practice social distancing, this especially from rural respondents.

(iii) Real-time Monitoring of Social Cash Transfer Programme in Nepal

- UNICEF Nepal supports the Government of Nepal in monitoring social cash transfers disbursed in 'child grant' expansion districts, through RapidPro. In Nepal, a quarter of the population lives in poverty, meaning that many children are affected by multiple deprivations.

- The RapidPro pilot started in 2018 and targets mothers receiving cash transfers from the government with SMS and IVR messages that help improve both governance accountability and knowledge within the beneficiary population.
- The tool sends out polls through IVR to beneficiaries about grant implementation and delivery, and pushes key information about the child grant programme in general, to ensure that recipients know about registration and payment days.
- Through the platform over 68,000 children's caregivers were reached, as per mid-2019, and almost 30 percent being actively responsive to IVR calls.
- This monitoring effort showed that 47 per cent of beneficiaries reported spending child grants on education and 36 per cent on nutrition. Some also gave feedback on the challenges in accessing the transfers, which will help the government figure out pointed solutions based on the user's area of residence.

Lessons Learned

- While RapidPro has been received positively in the global community, its success, again, is very much dependent on how it is utilised by the users i.e. governments, development partners and other stakeholders.

The following are key lessons garnered from various countries' range of interventions, as well as recommendations for going forward:

- Flexible real-time monitoring options such as RapidPro are important for development.
- Accountability and transparency is hard to maintain and manage at a large scale, when hundreds of thousands to millions of people are involved in progressing towards a national goal.
- RapidPro offers a structured and low-touch approach that allows for just that, and ensures that the data is being analysed in accordance to the objectives defined.
- Governments and other users should cater for the time required to set up logistical arrangements internally and with data network operators, develop and pilot questions or messages that will be useful and not redundant, create functional dashboards, train implementers on utilizing the data and its representations, and so on.
- It is important to keep equity in mind, especially when seeking to include the most marginalized and vulnerable.
- Implementers should realise that RTM platforms are not the end all of information and require scrutiny at all steps to ensure that the right respondents are being included directly or through complementary efforts.
- Another key population to keep in mind is women, who customarily have lesser access to digital communication options, yet are often the most likely to take up social issues and roles as community leaders.
- Regardless of which tool itself is used, the overall objective should be to collect and inform policies based on data that is as representative as the population being served by a government or any implementer.
- When considerations around equity, feasibility and personalization needs are taken into account, RapidPro offers itself as a highly viable option for a gamut of programmatic objectives that can inform everything from grassroots action to national guidelines.

R&D Expenditure & Scientific Publications

Context

- The country's gross expenditure in R&D has tripled between 2008 & 2018 driven mainly by Government sector and scientific publications have risen placing the country internationally among the top few.
- This is as per the R&D Statistics and Indicators 2019-20 based on the national S&T survey 2018 brought out by the National Science and Technology Management Information System (NSTMIS), Department of Science and Technology (DST).
- The report shows that with the rise in publication, the country is globally at the 3rd position on this score as per the NSF database, 3rd in the number of Ph.D. in science & engineering.
- The number of researchers per million population has doubled since 2000.
- The survey included more than 6800 S&T Institutions spread across varied sectors like central government, state governments, higher education, public sector industry, and private sector industry in the country, and a response rate of more than 90% was achieved.

Some of the key findings of the report are the following

India's gross expenditure in R&D has tripled between 2008 & 2018

- The Gross expenditure on R&D (GERD) in the country has been consistently increasing over the years and has nearly tripled from Rs. 39,437.77 crore in 2007-08 to Rs. 1,13,825.03 crore in 2017-18.
- India's per capita R&D expenditure has increased to PPP \$ 47.2 in 2017-18 from PPP \$ 29.2 in 2007-08.
- India spent 0.7% of its GDP on R&D in 2017-18, while the same among other developing BRICS countries was Brazil 1.3%, Russian Federation 1.1%, China 2.1% and South Africa 0.8%.

Extramural R&D support by central S&T agencies has increased significantly

- DST and DBT were the two major players contributing 63% and 14%, respectively of the total R&D Expenditure & Scientific Publications RESEARCH extramural R&D support in the country during 2016-17.
- Women participation in extramural R&D projects has increased significantly to 24% in 2016-17 from 13% in 2000-01 due to various initiatives undertaken by the Government in S&T sector.
- As on 1st April 2018, nearly 5.52 lakh personnel were employed in the R&D establishments in the country.

The number of researchers per million populations has doubled since 2000

- Number of researchers per million populations in India has increased to 255 in 2017 from 218 in 2015 and 110 in 2000.
- India's R&D expenditure per researcher was 185 ('000 PPP\$) during 2017-18 and was ahead of Russian Federation, Israel, Hungary, Spain and UK.
- India occupies 3rd rank in terms of number of Ph. D.'s awarded in Science and Engineering (S&E) after USA (39,710 in 2016) and China (34,440 in 2015).

India is placed 3rd among countries in scientific publication as per NSF database

- During 2018, India was ranked at 3rd, 5th and 9th in scientific publication output as per the NSF, SCOPUS and SCI database respectively
- During 2011-2016, India's growth rate of scientific publication as per the SCOPUS and SCI database was 8.4% and 6.4% as against the world average of 1.9% and 3.7%, respectively.
- India's share in global research publication output has increased over the years as reflected in publication databases.

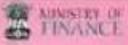
India is ranked at 9th position in terms of Resident Patent Filing activity in the world

- During 2017-18 a total of 47,854 patents were filed in India. Out of which, 15,550 (32%) patents were filed by Indian residents
- Patent applications filed in India are dominated by disciplines like Mechanical, Chemical, Computer/Electronics, and Communication.
- According to WIPO, India's Patent Office stands at the 7th position among the top 10 Patent Filing Offices in the world.

'GOAL' Programme for Tribal Youth

- The GOAL (Going Online As Leaders) programme of the Ministry of Tribal Affairs (MoTA) has been launched in partnership with Facebook. The programme is designed to provide mentorship to tribal youth through digital mode. The digitally-enabled program envisages to act as a catalyst to explore hidden talents of the tribal youth, which will help in their personal development as well as contribute to all-round upliftment of their society.

Online Learning in Lockdown

 **MINISTRY OF FINANCE**

Aatmanirbhar Bharat Abhiyan

Technology Driven Education with Equity post-COVID

- **PM eVIDYA- A programme for multi-mode access to digital/online education to be launched immediately; consisting of:**
 - **DIKSHA for school education in states/UTs: e-content and QR coded Energized Textbooks for all grades (one nation, one digital platform)**
 - **One earmarked TV channel per class from 1 to 12 (one class, one channel)**
 - **Extensive use of Radio, Community radio and Podcasts**
 - **Special e-content for visually and hearing impaired.**
 - **Top 100 universities will be permitted to automatically start online courses by 30th May, 2020.**
- **Manodarpan-An initiative for psychosocial support of students, teachers and families for mental health and emotional wellbeing to be launched immediately.**
- **New National Curriculum and Pedagogical framework for school, early childhood and teachers will be launched: integrated with global and 21st century skill requirements**
- **National Foundational Literacy and Numeracy Mission for ensuring that every child attains Learning levels and outcomes in grade 5 by 2025 will be launched by December 2020**

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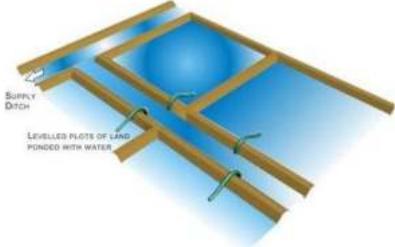
KURUKSHETRA

Irrigation in India

Historic background

- Irrigation is a very ancient science. Irrigation has been practiced in India from time immemorial and so has been the construction of canals.
- Irrigation practices have been found in Indus civilizations, Vedic age.
- Rigveda mentions about Irrigation. Indian scholar Pāṇini, mentions tapping several rivers for irrigation.
- The most widespread irrigation system in India was undertaken in India in the medieval period by the Sultanate rulers.
- These irrigation projects were continued by the subsequent rulers of northern India, particularly the Mughal rulers till the early eighteenth century.
- The British built the colonial canal networks on these medieval canal systems.
- India's irrigation covered crop area was about 22.6 million hectares in 1951, and it increased to a potential of 90 mha at the end of 1995, inclusive of canals and groundwater wells.
- Currently, India has the world's largest groundwater well equipped irrigation system (China with 19 mha is second, USA with 17 mha is third).
- As of 2018, Irrigated area accounts for nearly 48.8 per cent of the 140 million hectare (mha) of agricultural land in India. The remaining 51.2 per cent is rainfed.

Types of irrigations

Irrigation type	Features	Advantages	Short comings
Check Basin and Border Strip Irrigation	<ul style="list-style-type: none"> • Surface irrigation involves the application of water by gravity flow to the surface of the field. • This is also the most widely used method among Indian farmers in different crops and cropping systems. 	<ul style="list-style-type: none"> • Check basin is the easiest and least costly method. 	<ul style="list-style-type: none"> • Highly inefficient: less than 20 percent of the water is taken up by the plant. • Water logging and soil salinity problems may occur by overuse of water.

<p>Furrow Irrigation</p>	<ul style="list-style-type: none"> • Furrow irrigation is a type of surface irrigation in which trenches or “furrows” are dug between crop rows in a field. • Farmers flow water down the furrows (often using only gravity) and it seeps vertically and horizontally to refill the soil reservoir. • The furrow method of irrigation is generally used to irrigate row crops and vegetables. • It is suited to soils in which the infiltration rates are between 0.5 and 2.5 cm/hr. 	<ul style="list-style-type: none"> • Easy to adopt • furrow irrigation or its modified version i.e. raised bed system and 20–30 percent savings in irrigation water can be achieved by switching over to raised bed furrow irrigation systems. 	<ul style="list-style-type: none"> • Excessive water intake and deep percolation losses are major limitations for irrigation through furrows and border strips. • Water logging and soil salinity problems may occur by overuse of water.
<p>Surge Flow Irrigation</p>	<p>Surge flow irrigation, the intermittent application of water in a series of on and off modes of constant or variable time spans.</p>	<ul style="list-style-type: none"> • It has the potential of reducing intake and percolation losses. • Increases the irrigation efficiencies and conserving irrigation water. 	<p>Water logging and soil salinity problems may occur by overuse of water.</p>
<p>Sprinkler Irrigation</p>	<ul style="list-style-type: none"> • Sprinkler irrigation systems imitate natural rainfall. • Water is pumped through pipes and then sprayed onto the crops through rotating sprinkler heads. • In this system the water is delivered to the crops from drop tubes that extend from the sprinkler’s arm. 	<ul style="list-style-type: none"> • When applied together with appropriate water-saving farming techniques, LEPA can achieve efficiencies as high as 95 percent. • Since this method operates at low pressure, it also saves as much as 20 to 50 percent in energy costs compared with conventional systems. 	<ul style="list-style-type: none"> • They are more costly to install and operate because of the need for pressurized water. • Electricity is required. • Suitable for larger fields.
<p>Drip Irrigation:</p>	<ul style="list-style-type: none"> • Drip irrigation systems apply water slowly on or below the soil surface as discrete or continuous drips. • Tiny streams, or miniature spray through emitters or applicators placed along a water delivery line adjacent to the plant row. • Water logging and salinity are also completely absent under drip method of irrigation. 	<ul style="list-style-type: none"> • Evidences show that the water use efficiency increases up to 100 percent in a properly designed and managed drip irrigation system. • Drip method of irrigation helps to reduce the over- 	<ul style="list-style-type: none"> • High initial investment. • Requirement of power. • Higher maintenance in case of damages. • Suitable for larger lands.

	<ul style="list-style-type: none"> • Fertigation: The application of fertilizers through the irrigation system (fertigation) became a common practice in modern irrigated agriculture. 	<p>exploitation of groundwater that partly occurs because of inefficient use of water under surface method of irrigation.</p> <ul style="list-style-type: none"> • It also helps in attaining early maturity of crops, higher quality produce, increased crop yields and higher fertiliser-use efficiency. • It results in reduction in weed growth, less labour requirement and less electric power consumption. 	
<p>Subsurface Drip Irrigation</p>	<ul style="list-style-type: none"> • Subsurface Drip Irrigation (SDI) is a low-pressure, low volume irrigation system that uses buried tubes to apply water. • The applied water moves out of the tubes by soil matrix suction. Wetting occurs around the tube and water moves out in the soil all directions. 	<p>The potential advantages of SDI are:</p> <ol style="list-style-type: none"> a) water conservation, b) enhanced fertiliser efficiency, c) uniform and highly efficient water application, d) elimination of surface infiltration problems and evaporation losses, e) flexibility in providing frequent and light irrigations, f) Reduced problems of disease and weeds, g) lower pressure required for operation. 	<ul style="list-style-type: none"> • High cost of initial installation • Increased possibility for clogging, especially when poor quality water is used. • High maintenance.
<p>Regulated Deficit Irrigation</p>	<ul style="list-style-type: none"> • Regulated Deficit Irrigation (RDI) is an optimising strategy under which crops are allowed to sustain some degree of water deficit and yield reduction. • During RDI the crop is exposed to certain level of water stress either during a particular period or throughout the growing season. 	<ul style="list-style-type: none"> • Increase Water Use Efficiency (WUE) of the crop by eliminating irrigations that have little impact on yield and to improve control of vegetative growth (improve fruit size and quality). • RDI is a sustainable way to cope with water scarcity since the allowed water deficits favour water saving, control of percolation and runoff return 	

		<p>flows and the reduction of losses of fertilizers and agrochemicals. It provides for leaching requirements to cope with salinity and the optimization approach leads to economic viability.</p>	
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Issues of irrigation in India

Irrigation efficiency

- Efficiency of irrigation is very low, since less than 40 percent of the applied water is actually used by the crops.

Population

- India has a very formidable and challenging task of feeding 17.5 percent of the world's human population from a meagre 2.3 percent of land area which is further constrained by the fact that the country has only 4 percent of the global water resources at its disposal.
- country also has to provide feed and fodder to 11 percent of the world's livestock population

Water availability and water stress

- In India, per capita availability of water has decreased from 2209 m³/year in 1991 to 1545 m³/year in 2011 and it is estimated to decline further upto 1140m³/ year in the year 2050.
- Furthermore, demand for water from various sectors viz. irrigation, drinking water, industry, energy and others is expected to rise from 710 billion cubic metre (BCM) in the year 2010 to 843 BCM in the year 2025 and further to 1180 BCM in the year 2050
- According to a 2018 NITI Aayog report, currently 600 million Indians face high to extreme water stress and about two lakh people die every year due to inadequate access to safe water. By 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people.

As per the international norms, a country is classified as water stressed and water scarce if per capita water availability goes below 1700 cubic meter and 1000 cubic meter, respectively.

Per capita annual water availability has declined to 1508 cubic meter in 2014 from 5177 cubic meter in 1951.

The per capita availability of water is estimated to decline further to 1465 cubic meter by 2025 and 1235 cubic meter by 2050. If it declines further to around 1000- 1100 cubic meter, then India could be declared as

Increase in cultivation

- The new emerging demands of the relatively more-affluent Indian population, particularly its middle class, coupled with a net cultivated area unlikely to exceed 143 million hectare (mh) in 2050 as well as an estimated rainfed agriculture to cover around 45 percent of
- How will the country meet the target of 355 mt for foodgrains, 180 mt for vegetables, 182 mt for milk, 15 mt for meat, and 16 mt for fish by 2030, warranting an improvement of 50–100 percent over the current production, in a situation where the natural resources base is continuously degrading

Excessive use of ground water

- As per a World Bank report, India withdrew a total of 761 billion cubic meter ground water in 2018 out of which 688 billion cubic metre was used for agriculture. This is 90 percent of the total ground water withdrawn in a year.
- The other side of the problem is that out of the total water volume needed for agriculture, 70 percent is groundwater today.
- In seven out of India's 10 most populous cities, the depth to groundwater has increased significantly over the last two decades. This is an alarming situation because India is the biggest user of groundwater. According to a report 'Freshwater Strategy 2017-2021', India extracts more groundwater than China and the US the next two biggest pullers of groundwater combined.

- According to the data from NASA's Gravity Recovery and Climate Experiment, Northwest India had the highest groundwater depletion rates in the world in 2002–2008, even though precipitation was above normal for the period.
- **Inadequate maintenance**, low cost recovery,
- **Under-utilisation**: Only 74 percent of created potential has been utilized in India.
- **Uncontrolled water delivery**, siltation: Excessive irrigation is one of the problem in India. It is also leading to salination of soil.
- **Tail-end water deprivation** is the problem of canal irrigation
- **Inequitable and unpredictable water supply** among the farmers over space and time lead to the injudicious use of water in the irrigation commands and increase in inequity within the same unit of command area.

Solutions

Sustainable agriculture

- The sustainability in agriculture i.e. for crops/ cropping systems primarily depends upon the availability of water in its optimum quantity and acceptable quality. Agriculture might not sustain its productivity if irrigation is not sustainable and water supplies are not reliable.

Micro Irrigation

- Case studies suggest that micro-irrigation has benefited farmers significantly.
- Electricity consumption has been reduced by about 31 percent, the irrigation cost has also decreased by an average of 32.3 percent.
- There was about a 28 percent reduction in total fertilizer consumption in the surveyed states. Microirrigation has enhanced average productivity of fruits and vegetables by about 42.3 percent and 52.8 percent, respectively mainly because of crop spacing, judicious use of water and other inputs.
- All the surveyed states reported increase in farmers' income in the range of 20 percent to 68 percent with an average increase of 48.5 percent.

Terms

- **Efficiency**: In irrigation systems, efficiency is typically defined as the amount of water used by the plant divided by the total amount of water applied to the field.
- **Crop per drop**, the idea of growing more food with the same amount of water or less, generally increasing the productivity of water.
- Of the three major irrigation systems, in general, gravity irrigation systems are considered the least efficient, sprinkler systems more efficient, and micro-irrigation as the most efficient.
- Using the pressure terminology, unpressurized systems are generally less efficient than pressurized systems.

Efficient Water Management Practices

- **Laser Land Levelling**: Proper land levelling is one of the management options which is generally ignored by most farmers. It increases the water application efficiency which leads to higher yields as well as rise in water use efficiency.
- **Irrigation Scheduling**

Agronomic water saving Practices

- **Contour Tillage**: Soil cultivation is made along the land slope and the soil is left with small furrows and ridges that prevent runoff. This technique is also effective to control erosion and may be applied to row crops and small grains provided that field slopes are low. This is one of the techniques to increase better use of the rain water, especially in rainfed areas.
- **Broad Bed Planting**: Cultivation of crop on broad beds and irrigation is applied in furrows. This method helps to save 30–40 percent water and typically suitable for close planted field crops and horticultural row crops.
- **Conservation Tillage (CT)**: CT includes zero tillage and retention of crop residuals on the soil surface at planting. Crop residues acts as mulches and reduce evaporation losses and protect the soil from direct impact of raindrops, thus controlling crusting and sealing processes. CT helps to maintain high levels of organic matter in the soil thus it is highly effective in improving soil infiltration and controlling erosion which results in increase of WUE.
- **Mulch**: Mulching with crop residues on soil surface shades the soil, slows water overland flow, improves infiltration conditions, reduces evaporation losses and also contributes to control of weeds and therefore of non-beneficial water use.

- **Addition of Organic Manures:** Increasing or maintaining the amount of organic matter in the upper soil layers provides for better soil aggregation, reduced crusting or sealing on soil surface and increased water retention capacity of the soil.
- **Addition of Clay or Hydrophilic Compound:** This technique increases the water retention capacity of the soil and controls deep percolation. Thus, water availability in soils with low water holding capacity is increased.
- **Control of Acidity:** Lime application to soils with high pH favours more intensive and deep rooting, better crop development and contributes to improved soil aggregation, thus producing some increase in soil water availability.
- **Weed Control Measure:** Adoption of appropriate weed control techniques to alleviate competition for water and transpiration losses by weeds is very important agronomic practice to increase water use efficiency in different crops and cropping systems.
- **Integrated Pests Management (IPM):** IPM techniques aim to increase crop productivity with the same amount of other inputs like water, fertilizers etc. Pests cause severe losses to the different crops and cropping systems. However, timely control of the severe pests and diseases of different crops will not only increase the productivity and profitability to the farmers but also improve water use efficiency and water productivity.

Technology as a solution

- **Artificial Intelligence (AI):** These programmes will help farmers determine which crops to grow and anticipate potential threats by combining historical information about weather patterns and crop performance with real-time data.
- **Robotics:**
 - Autonomous drones and the data they provide can help in crop monitoring, soil assessment, plant emergence and population, fertility, crop protection, crop insurance reporting in real time, irrigation and drainage planning and harvest planning.
 - **Agrirobot:** Saving Water and Spraying Pesticides robots helps to automate the irrigation
- **Sensor-based Control:** This method leverages real-time measurements from locally installed sensors to automatically adjust irrigation timing to the exact temperature, rainfall, humidity and soil moisture present in a given environment. This data is also supplemented with historic weather information to ensure farmers are able to anticipate unfavourable conditions.
- **Signal-based Control:** Unlike sensor-based controls, these smart irrigation systems rely on weather updates transmitted by radio, telephone or web-based applications. These signals are typically sent from local weather stations to update the “evapotranspiration rate” of the irrigation controller.

Sustainable agriculture

What?

- Sustainable agriculture is a form of agriculture aimed at meeting the needs of the present generation without endangering the resource base of the future generations.
- Holistic and systematic approach is essential for achieving sustainability.

Features

- Such systems must be resource-conserving, socially supportive, commercially competitive and environmentally sound.
- Such systems aim to produce qualitative and nutritious food without harming human health and ecosystem.
- **Avoid the use of** synthetically compounded fertilisers, pesticides, growth regulators and livestock feed additives.
- **Use** crop rotations, crop residues, animal manures, legumes, green manures, off-farm organic wastes, appropriate mechanical cultivation, and mineral bearing rocks to maintain soil fertility and productivity.

Ways to sustain agricultural productivity:

- **Soil management** through conservation agriculture, organic farming, integrated nutrient management system and on-farm residue management;
- **Efficient water resource management** techniques like right method of irrigation, micro-irrigation, life-saving irrigation, use of mulches etc.;

Crop management includes right time of sowing, cultivation of suitable crops and varieties in rotation, inter cropping, mixed-cropping, integrated pests management, etc.

Schemes for Water Conservation

Jal Shakti Abhiyaan

- Government launched a campaign for water conservation and water security named Jal Shakti Abhiyaan.
- The Abhiyaan aims to focus on integrated demand and supply management of water at the local level,
- It intends to create local infrastructure for source sustainability using rainwater harvesting, groundwater recharge and management of household wastewater for reuse.
- JSA is a time-bound, mission-mode water conservation campaign.
- The JSA has two phases.
 - The first phase ran from July 1 to September 15, 2019 for all states and Union Territories; and
 - the time period of the second phase was from October 1 to November 30, 2019 for states and UTs receiving the retreating monsoon (Andhra Pradesh, Karnataka, Puducherry and Tamil Nadu).
- During the campaign, officers, groundwater experts and scientists from the Government of India worked together with state and district officials in India's most water-stressed districts or districts with critical or over-exploited groundwater levels as per the Central Ground Water Board (CGWB) 2017 for water conservation and water resource management by focusing on accelerated implementation of five target intervention.
- The JSA aims at making water conservation a *jan andolan* through asset creation and extensive communication.
- The JSA is a collaborative effort of various ministries of the Government of India and State Governments.
- Under the JSA, teams of officers from the central government will visit and work with the district administration in 1592 water-stressed blocks in 256 districts to ensure five important water conservation interventions such as water conservation and rainwater harvesting, renovation of traditional and other water bodies/ tanks, reuse, borewell recharge structures, watershed development and intensive afforestation.
- These water conservation efforts will also be supplemented with special interventions including the development of Block and District Water Conservation Plans, promotion of efficient water use for irrigation and better choice of crops through Krishi Vigyan Kendras.
- A large-scale communications campaign has also been planned alongside the JSA involving mass mobilisation of different groups including school students, college students, swachha grahis, Self Help Groups, Panchayati Raj Institution members, youth groups (NSS/NYKS/NCC), defence personnel, ex-servicemen and pensioners, among various others.

Worldometer

- According to the Food and Agriculture Organization (FAO), globally irrigated agriculture represents 20 percent of the total cultivated land,
- Irrigated land contributes to 40 percent of the total food produced worldwide.
- Presently, irrigation water-use accounts for 80 percent of the available water.
- It is estimated that irrigation requirement has to be lowered to the level of 68 percent of the total demand by 2050
- The Economic Survey 2018–19 suggests that “focus should shift from ‘land productivity’ to ‘irrigation water productivity’”.

Pradhan Mantri Krishi Sinchayee Yojana:

- **Pradhan Mantri Krishi Sinchai** is a national mission to improve farm productivity and ensure better utilization of the resources in the country.
- The decision was taken on 1 July 2015 at the meeting of Cabinet Committee on Economic Affairs (CCEA), which in turn was headed by the Prime Minister, Narendra Modi.
- The scheme has been approved with an outlay of 50000 crore for period of 5 years (2015-16 to 2019-20).
- PMKSY was formulated by amalgamating the then-running schemes like
 - Accelerated Irrigation Benefit Programme (AIBP) of the Ministry of Water Resources, River Development and Ganga Rejuvenation,
 - Integrated Watershed Management Programme (IWMP) of Department of Land Resources (DoLR) and
 - the On Farm Water Management (OFWM) of Department of Agriculture and Cooperation (DAC).
- The scheme has been divided into 99 prioritized projects with different timelines. Total expected expenditure in the complete project is estimated to be 77595 crore rupees with Central share of 31342 crore rupees.
- Total irrigation potential utilisation after completion of the entire project is expected to be 76.03 lakh hectares.
- Many projects which were at standstill such as Gosikhurd (2.5 lakh ha.) Maharashtra, were streamlined and put on track for timely completion.
- The major objective of the PMKSY has been to

- achieve convergence of investments in irrigation at the field level,
 - expand cultivable area under assured irrigation,
 - improve on-farm water use efficiency to reduce wastage of water,
 - enhance the adoption of precision-irrigation and other water saving technologies,
 - enhance recharge of aquifers and introduce sustainable water conservation practices by exploring the feasibility of reusing treated municipal-based water for peri-urban agriculture and attract greater private investment in precision irrigation system.
 - The scheme also aims at bringing concerned ministries, departments, agencies, research and financial institutions engaged in recycling of water, under a common platform, so that a comprehensive and holistic view of the entire “water cycle” is taken into account and proper water budgeting is done for all sectors namely, household, agriculture and industries.
- The programme is supervised and monitored at the national level by an Inter-Ministerial National Steering Committee (NSC) under the Chairmanship of the Prime Minister with Union Ministers of all concerned Ministries.
 - Accordingly, on August 6,
 - At the state level the scheme is administered by a State Level Sanctioning Committee (SLSC) chaired by the Chief Secretary of the respective states.
 - The details of the project under PMKSY, as per a 2017 Water Resources Ministry release, are as under3:
 - Apart from this, to encourage stakeholders like water user associations, institutions, corporate sector, individuals, Non-Governmental Organisations (NGOs), gram panchayats, urban local bodies to adopt innovative practices of groundwater augmentation like creating awareness through people’s participation, rainwater harvesting and artificial recharge, promoting water use efficiency, recycling and reuse of water.
 - The government in 2007 launched the Groundwater Augmentation Awards and National Water Award.

Jal Jeevan Mission

Vision

- Every rural household has drinking water supply in adequate quantity of prescribed quality on regular and long-term basis at affordable service delivery charges leading to improvement in living standards of rural communities.

Mission

Jal Jeevan Mission is to assist, empower and facilitate:

- States/UTs in planning of participatory rural water supply strategy for ensuring potable drinking water security on long-term basis to every rural household and public institution, viz. GP building, school, Anganwadi centre, health centre, wellness centres, etc.
- States/UTs for creation of water supply infrastructure so that every rural household has Functional Tap Connection (FTC) by 2024 and water in adequate quantity of prescribed quality is made available on regular basis.
- States/UTs to plan for their drinking water security.
- GPs/rural communities to plan, implement, manage, own, operate and maintain their own in-village water supply systems.
- States/UTs to develop robust institutions having focus on service delivery and financial sustainability of the sector by promoting utility approach.
- Capacity building of the stakeholders and creating awareness in community on significance of water for improvement in quality of life.
- In making provision and mobilisation of financial assistance to states/UTs for implementation of the mission.

Objectives

The broad objectives of the Mission are:

- To provide Functional Household Tap Connection (FHTC) to every rural household.
- To prioritize provision of FHTCs in quality affected areas, villages in drought prone and desert areas, Sansad Adarsh Gram Yojana (SAGY) villages, etc.
- To provide Functional Tap Connection to schools, Anganwadi centres, GP buildings, health centres, wellness centres and community buildings.
- To monitor functionality of tap connections.
- To promote and ensure voluntary ownership among local community by way of contribution in cash, kind and/or labour and voluntary labour (*shramdaan*).

- To assist in ensuring sustainability of water supply system, i.e. water source, water supply infrastructure, and funds for regular O&M.
- To empower and develop human resource in the sector such that the demands of construction, plumbing, electrical, water quality management, water treatment, catchment protection, O&M, etc. are taken care of in short and long term.
- To bring awareness on various aspects and significance of safe drinking water and involvement of stakeholders in manner that make water everyone's business.

Components under JJM

The following components are supported under JJM:

- Development of in-village piped water supply infrastructure to provide tap water connection to every rural household.
- Development of reliable drinking water sources and/ or augmentation of existing sources to provide long-term sustainability of water supply system.
- Wherever necessary, bulk water transfer, treatment plants and distribution network to cater to every rural household.
- Technological interventions for removal of contaminants where water quality is an issue.
- Retrofitting of completed and ongoing schemes to provide FHTCs at minimum service level of 55 lpcd.
- Greywater management
- Support activities, i.e. IEC, HRD, training, development of utilities, water quality laboratories, water quality testing & surveillance, R&D, knowledge centre, capacity building of communities, etc.
- Any other unforeseen challenges/ issues emerging due to natural disasters/ calamities which affect the goal of FHTC to every household by 2024, as per guidelines of Ministry of Finance on Flexi Funds.

AGRI-UDAAN

- Aim: 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.
- Nodal agencies: 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).
- 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.

Strategy for Artificial Intelligence in India

- Nodal agency: NITI Aayog.
- It is aimed at focusing on economic growth and social inclusion.
- The Government signed an MOU with IBM to use AI to secure the farming capabilities of Indian farmers.
- The pilot study will be conducted in states like Madhya Pradesh, Gujarat and Maharashtra. After the pilot study, IBM's Watson decision platform will provide a farm-level solution for improving the agriculture sector.

