



# **OCTOBER, 2022**



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CSE, ESE, PSUs, State Services Exams, SSC and Banking Exams

## 8<sup>th</sup> OCTOBER, 2022

#### SASTRA Ramanujan Prize, 2022

The SASTRA Ramanujan Prize for 2022 will be awarded to Yunqing Tang, Assistant Professor with the University of California, Berkeley, U.S.A.

#### **Key Highlights**

- The prize will be awarded at the International Conference on Number Theory at SASTRA University.
- The prize committee included Don Blasius, University of California, Los Angeles; Dan Goldston, San Jose State University; Ken Ono, University of Virginia; Jonathan Pila, Oxford University; Zeev Rudnick, Tel Aviv University; and Cam Stewart, University of Waterloo.
- Ms. Yunqing's works "display a remarkable combination of sophisticated techniques, in which the arithmetic and geometry of modular curves and of Shimura varieties play a central role.
- Tang's most recent joint work with Frank Calegari and Vesselin Dimitrov on modular equations is of great significance and also has ties with Ramanujan's own work.
- Ms. Yunqing, born in China, completed her B. Sc in Peking University in 2011, following which she went to Harvard University for higher studies. She completed her PhD in 2016 at Harvard under the supervision of Mark Kisin. After stints in Princeton University as a postdoctoral fellow, Instructor, and Assistant Professor, she joined UC Berkeley in July 2022 as Assistant Professor.
- The award, instituted by SASTRA in 2005 with a cash prize of \$10,000, is presented annually to individuals aged 32 and below, who made outstanding contributions in the field of mathematics, influenced by Srinivasa Ramanjuan in a broad sense.

## India's ranking in self-reliant arms production

**Context:** India has been ranked fourth among 12 countries in the Indo-Pacific in self-reliant defense production.

#### **Key Highlights**

- India stands at fourth position among 12 countries of the Indo-Pacific in self-reliant defense production, as per the study by the Stockholm International Peace Research Institute (SIPRI) that assessed self-reliance in arms production.
- China dominated the list leaving others behind by a long margin. China dominates the ranking, reaching a self-reliance score more than two and a half times higher than Japan's.
- Japan is second, South Korea is in third place, and Pakistan is at eighth place, according to the study.
- The study covered Australia, China, India, Indonesia, Japan, South Korea, Malaysia, Pakistan, Singapore, Taiwan, Thailand and Vietnam. Vietnam could not be included in the final ranking due to a lack of data.
- Despite the long-term efforts, India remains one of the largest importers of major arms globally. For the period 2016-20, India ranked as the second largest importer of arms.
- India is the second largest military spender in the region, after China.
- Of India's total volume of procurement in 2016-20, 84 per cent was of foreign origin.
- For China, imports accounted for only 8 percent of total procurement for the period.

#### 9<sup>th</sup> OCTOBER, 2022

#### Foreign Direct Product Rule (FDPR)

**Context:** US officials applied the Foreign Direct Product Rule (FDPR) to China's advanced computing and supercomputer industry to stop it from obtaining advanced computing chips.

- The provision called the foreign direct product rule, or FDPR, was first introduced in 1959 to control trading of US technologies.
- It essentially says that if a product was made using American technology, the US government has the power to stop it from being sold – including products made in a foreign country.

- The rule took center stage in August 2020, when it was used against China telecom company Huawei Technologies Co Ltd. American officials had tried to cut off Huawei's supply of semiconductors made using US technology.
- But it found that companies were still shipping to Huawei, the chips made in factories outside the United States.
- Eventually, US regulators found a choke point: Almost all chip factories contain critical tools from US suppliers. So they expanded the FDPR to control trade of chips made using US technology or tools. That move was a blow to Huawei's smart phone business, and US regulators used it on Russia and Belarus after the invasion of Ukraine to cut off chips.
- The United States had already placed a number of Chinese supercomputing companies on a restricted entity list, cutting them off from buying US chips. But those companies started to design their own chips and seek to have them manufactured.

## National Mobile Monitoring System (NMMS)

**Context:** The data from the Government of India reveal that in nine States and Union Territories the usage of the app is less than 50% or less.

#### **Key Highlights**

- This year, the Union Government ordered making it mandatory to capture attendance of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) workers through government mobile application-National Mobile Monitoring System (NMMS) at work sites where 20 or more workers are employed.
- To record the attendance via mobile application, the mate or supervisor has to upload geo-tagged photographs of the workers.
- The entire exercise is aimed at encouraging transparency and citizen oversight.

- As per the data for September put out by the Union Ministry for Rural Development, there are only eight States, which have recorded 90% and above usage of the app.
- These include Assam (93.42%), Odisha (92%), Tamil Nadu (93%) along with Karnataka (92%), Kerala (91.5%), Tripura (91%), Uttarakhand (91%) and Puducherry (99%).
- There are still a host of shortcomings for which the worker ends up paying the penalty.
- The data from the Ministry reveal that in nine States and Union Territories the usage of the app is less than 50% or less.
- The Union Government has been repeatedly flagging misuse of MGNREGS funds by the State Governments.
- Andhra Pradesh, which has one of the largest MGNREGS workforce, used the NMMS app for recording attendance in September only in 21.48% of over 92,000 work sites. In Uttar Pradesh, out of 1.3 lakh work sites, only in 50.19% the muster roll was filled via the app.
- In the States which have been reporting high usage too, many workers end up suffering wage losses due to technical glitches.

## **10<sup>th</sup> OCTOBER, 2022**

#### Nobel Prize in Economic Sciences, 2022

Nobel Prize 2022 in Economics, also known as the Sveriges Riksbank Prize in Economic Sciences, was awarded to Ben S. Bernanke, Douglas W. Diamond and Philip H. Dybvig at the Royal Swedish Academy of Sciences in Stockholm. The US based researchers were given the prestigious award for their work on banks and financial crisis.

#### **Key Highlights**

 The committee said their work had shown in their research "why avoiding bank collapses is vital."

- Nobel prizes carry a cash award of 10 million Swedish kronor (nearly \$900,000) and will be handed out on Dec. 10.
- Their discoveries improved how society deals with financial crises
- Their analyses have been of great practical importance in regulating financial markets and dealing with financial crises.

## **Indian Space Conclave**

Context: Union Minister Dr Jitendra Singh addressed the Indian Space Conclave in Delhi on the occasion of first anniversary of the Indian Space Association, ISpA.

#### **Key Highlights**

- Dr Jitendra Singh recalled that while launching Indian Space Association (ISpA), a premier industry association of space and satellite companies on 11th October, 2021, Modi said, "Our approach to space reforms is based on four pillars-freedom to the private sector in innovation, the role of the government as an enabler, making youth future-ready and seeing the space sector as a resource for the progress of common man".
- Space reforms have unleashed the innovative potentials of start-ups and within a short span of time
- Innovative potential of young and private industrial enterprise will take a lead in the global space technology disruption in times to come.
- India's young technology wizards shall breach new barriers in the field of Space Technology while they set out to address the limitless opportunities offered by the Space Domain.
- The Minister hoped that ISpA keeping the motto of 'Atmanirbhar Bharat' high will usher in important technological advancements and investments in the country which will eventually create high-skill job opportunities, while following the government's approach to Space reforms.
- In conclusion, Dr Jitendra Singh said, the achievements of ISRO have earned us both Global recognition as well as admiration and it's no less

than an honour when ISRO is carving a special place in astronomical space with the World's largest constellation of remote-sensing satellites. The Minister underlined that ISRO will keep making India proud of its achievements.

#### **Developmental projects in Jamnagar**

Context: Prime Minister Narendra Modi laid the foundation stone and dedicated to the nation multiple projects worth around Rs 1450 crore related to irrigation, power, water supply and urban infrastructure in Jamnagar, Gujarat

#### **Key Highlights:**

- These projects include Kalavad Group Augmentation water supply scheme of Kalavad/Jamnagar Taluka Morbi-Maliya-Jodiya group Augmentation water supply scheme, Lalpur Bypass junction flyover Bridge, Hapa Market Yard Railway Crossing, and the refurbishment of the Sewer Collection pipeline and pumping station.
- The Prime Minister dedicated package 7 of Saurashtra Avtaran Irrigation (SAUNI) Yojana Link 3 (from Und Dam to Sonmati Dam), package 5 of SAUNI Yojana Link 1 (from Und-1 dam to SANI Dam) and Haripar 40 MW Solar PV project.
- The Prime Minister informed everyone that five resolutions of development have created a solid foundation for the state of Gujarat. The first resolution is People's (Jan) Shakti, the second is Gyan Shakti, the third is Water (Jal) Shakti, the fourth is Energy (Urja) Shakti and finally Raksha Shakti. "Gujarat is scaling new heights based on these five solid foundations".

## 11<sup>th</sup> OCTOBER, 2022

## Modhera: India's first solar-powered village

Context: Prime Minister Narendra Modi declared Modhera village, which is home to the famous Sun Temple, as India's first solar-powered village.

### **Key Highlights**

- Making Modhera the country's first round-the-clock solar-powered village involved developing a groundmounted solar power plant and more than 1,300 rooftop solar systems on residential and government buildings.
- The government used to produce electricity and citizens purchased it but the people are not only getting free electricity, they even make money by selling the extra power generated.
- Here, the household owners and farmers are generators and users of electricity. Whatever extra power is generated, they sell it to the government.
- Thus, not only are their power bills reduced to zero, they can even make some extra income by selling power to the government.

### **India's Forex Reserves**

**Context:** India's forex reserves have fallen by \$110 billion in the last 13 months as the rising inflation, capital outflows and appreciating dollar created a turmoil in the foreign exchange market.

#### **Key Highlights**

- The central bank has been selling dollars from the forex kitty to defend the rupee amid pressures caused majorly by global developments.
- The rupee hit a record low of 82.33 against the dollar recently.
- With this, forex reserves have plummeted by \$110 billion from the record high of \$642.45 billion.
- India's forex reserves have tumbled by \$96 billion this year to \$538 billion.
- Another major reason for the decline in forex reserves is capital outflows by foreign portfolio investors (FPIs) as the US Federal reserve started the monetary policy tightening and interest rate hikes.
- The valuation loss, reflecting the appreciation of the US dollar against major currencies and decline in gold prices also played a part in the decline in foreign exchange reserves.

 During the current financial year (up to September 28), the US dollar has appreciated by 14.5 percent against a basket of major currencies. Rupee has depreciated by 7.4 per cent against the US dollar during the same period.

#### **Global Scenario**

- According to Bloomberg, global foreign currency reserves have fallen some 7.8% to \$12 trillion this year.
- Japan spent some \$20 billion to slow the yen's slide in its first intervention to boost the currency since 1998. That's 19% of the loss of reserves this year.
- Korean foreign reserves amounted to \$417 billion, having taken a \$20 billion hit from the previous month.
- The yuan has fallen 11% against the dollar and could finish the year with its biggest decline against the greenback since 1994.
- In late September this year, the euro coped with its 20-year low against the US dollar.

## Shri Mahakaleshwar Temple Extension Project

**Context:** Prime Minister Narendra Modi inaugurated the first phase of the 850 crore Mahakaleshwar Temple Corridor Development Project in Ujjain.

- With the Mahakaleshwar temple decked up in celebratory lights and decoration, Prime Minister Narendra Modi inaugurated the new corridor named Shri Mahakal Lok.
- The first phase of the Mahakal corridor, which will be known as "Mahakal Lok", has been constructed for 351 crores.
- After Varanasi's Vishwanath temple and Uttarakhand's Kedarnath shrine, Mahakal temple is the third 'jyotirlinga' temple to undergo extensive renovations.
- The Rs 800-crore Mahakal corridor is four times the size of the Kashi Vishwanath corridor, which was inaugurated late last year by the Prime Minister.

- Mahakal Maharaj Mandir Parisar Vistar Yojna is a plan for the expansion, beautification, and decongestion of the Mahakaleshwar temple and its adjoining area in the Ujjain district. The redevelopment project is being carried out in two phases. The first phase of the Mahakal Temple expansion project has been completed as per the schedule.
- According to the plan. the 2.82-hectare Mahakaleshwar temple grounds will be expanded to 47 hectares and developed by the Ujjain district administration over two phases.
- The plaza and the Mahakal temple are connected by a 900-meter pedestrian corridor that is adorned with 108 paintings and 93 statues that tell the tales of Lord Shiva, including the Shiv Vivah, Tripurasur Vadh, Shiv Puran, and Shiv Tandav Swaroop. Along this pedestrian strip, there are 128 convenience stores, restaurants, shops, florists, and other businesses.
- The Mahakal Lok has been constructed with 15,000 tonne of stone from Rajasthan. A 384-meter-long mural wall has been built with a total of 81 murals across the campus. The walls have 25 different stories of Lord Shiva.
- Rudrasagar, a lake that abuts the temple, has also been rejuvenated. This had become a drain with the sewerage of twelve thousand homes falling directly into the pond without any treatment. Now a separate line has now been constructed for the sewer and the lake itself has been filled with clean water, and a regular supply from the river Shipra has been established.
- The Rs 800-crore Mahakal corridor is four times the size of the Kashi Vishwanath corridor, which was inaugurated late last year by the Prime Minister.
- A visiting plaza with two entrances, or Dwaars, known as the Nandi Dwaar and the Pinaki Dwaar, is one of the features of the first phase of the Vistar Yojna. Up to 20,000 pilgrims can congregate in the tourist plaza at once. Additionally, a plan for traffic flow has been created with consideration for how visitors enter the city and get to the temple.

## **12<sup>th</sup> OCTOBER, 2022**

## **OPEC+**

Context: The grouping of the world's largest oilproducing countries, the OPEC and its allies, together known as OPEC+, decided to cut oil production by 2 million barrels per day (bpd).

#### **Key Highlights**

- OPEC+, the oil producer group comprising the Organization of the Petroleum Exporting Countries (OPEC) plus allies including Russia, announced a production cut of up to 2 million barrels a day, in spite of weeks of lobbying by US officials against such a move.
- OPEC+ is a group of 23 oil-exporting countries which meets regularly to decide how much crude oil to sell on the world market, and together account for 40% of all crude oil production.
- The 2-million-barrel production cut, represents around 2% percent of the global oil supply.
- The cut is supposed to take place from November.
- It is the biggest reduction by OPEC+ since 2020, when it cut production by more than nine million barrels per day in response to the COVID pandemic.
- The move is designed to boost the cost of oil, which has fallen below \$90 from a peak of \$122 in June.
- This cut in production will result in further soaring of oil prices and likely to make inflation worse.

#### Betiyan Banein Kushal

Context: The Ministry of Women and Child Development (MWCD), in partnership with the Ministry of Skill Development and Entrepreneurship (MSDE) and Ministry of Minority Affairs organized "Betiyan Banein Kushal", an inter-ministerial conference on nontraditional livelihoods (NTLs) for adolescent girls on the occasion of the International Day of the Girl Child.

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### **Key Highlights**

- Union Minister for Women and Child Development Smriti Irani has announced to make available special skill sets for girls and boys in all 7000 Child Care Institutions so that they become financially empowered.
- The programme included an interaction between Smt. Smriti Zubin Irani and a group of adolescent girls who have overcome child marriage, genderbased discrimination and financial hardships to carve a niche for themselves in NTLs.
- During this interaction, the Minister said that the Ministry of WCD will also work towards counselling to girls for choosing academic streams after school and making available skill sets to those in Child Care Institutions to facilitate their financial independence and empowerment.
- This initiative will be rolled out in all Child Care Institutions from next month. Mrs. Irani said her Ministry will also work on how it can help in providing counselling to the girls for choosing the right academic streams.
- The MWCD also launched the BBBP manual which lays out operational guidelines and avenues for convergence between ministries and departments, and announced the setting up of a Skills management portal for BBBP on 21st-century skills focusing on life and employability skills, entrepreneurship skills, digital literacy and financial literacy skills.

## **Tele-MANAS Initiative**

Establishing a new milestone in the field of mental health on the occasion of World Mental Health Day, Tele Mental Health Assistance and Networking Across States (Tele-MANAS) initiative of Union Ministry of Health & Family Welfare was launched virtually by Karnataka Governor Thawar Chand Gehlot.

#### **Key highlights**

• Acknowledging the mental health crisis in wake of the COVID-19 pandemic and an urgent need to establish a digital mental health network that will withstand the

challenges amplified by the pandemic, government of India announced National Tele Mental Health Programme (NTMHP) in the Union Budget 2022-23.

- Tele-MANAS aims to provide free tele-mental health services all over the country round the clock, particularly catering to people in remote or underserved areas.
- The programme includes a network of 23 telemental health centres of excellence, with NIMHANS being the nodal centre and International Institute of Information Technology-Bangalore (IIITB) providing technology support. Indian Institute of Technology (IIT) Bengaluru and National Health Systems Resource Centre (NHRSC) will provide the technical support.
- The Union government aims to open at least one Tele-MANAS Cell in each State/UT.

## **13<sup>th</sup> OCTOBER, 2022**

## **The Global Forest Sector Outlook 2050**

**Context:** "The Global Forest Sector Outlook 2050: Assessing future demand and sources of timber for a sustainable economy" report was released at the 26th Session of the Food and Agriculture Organization Committee on Forestry in Rome.

#### **Key findings**

- Demand for wood products like mass timber and man-made cellulose fiber used as cellulose for nonrenewable materials may increase by up to 272 million cubic meters by 2050, according to a new report.
- In developing countries, it will lead to the creation of around 1 million jobs.
- The global threats to climate, biodiversity and a healthy environment are mainly caused by the excessive use of non-renewable materials.
- This has led to political interventions to accelerate the decarbonisation of economies and to introduce a circular bioeconomy.

- Consumption of primary processed wood products - sawnwood, veneer / plywood, particle / fibreboard and wood pulp — is expected increase to 3.1 billion cubic meter (bcm) by 2050 from 2.2 bcm in 2020, according to The global forest sector outlook 2050: Assessing future demand and sources of timber for a sustainable economy.
- The predictions were calculated using the Global Forest Products Model, where projections depend on the historical patterns of wood products production and trade.
- It further predicted that industrial roundwood (IRW) is prone to uncertainties arising from climate changedriven policy interventions in naturally regenerated production forests as well as the productivity and expansion of planted forests.
- Future demands for IRW may be met by a combination of planted forests especially from the Global South and naturally regenerated temperate as well as boreal forests, the analysts noted.
- An additional 33 million hectares of 'highly productive plantation forest' will be needed to meet the increasing IRW demand up to 2050, if the area of naturally regenerated forests remains the same, the authors observed.
- A total of \$40 billion (Rs 3.3 lakh crore) per annum in investment will be required to maintain and expand IRW production by 2050, according to the report. Another \$25 billion per annum will be needed for modernisation and in establishing industries.
- The report further observed that wood energy consumption by 2050 will be shaped by the traditional use of fuelwood in regions of sub-Saharan Africa and Southern Asia as well as the projected role of modern biomass to generate renewable energy.
- The global consumption of fuelwood from forests in 2050 can range from 2.1-2.7 bcm, compared to 1.9 bcm in 2020 — an 11-42 per cent rise.
- In 2020, around 2.3 billion people relied on woodfuel as their primary source of energy for cooking and heating, the report stated. These will remain the main sources of energy for households in emerging economies till 2050.

#### Global Food Security Platform

Context: Responding to rising food insecurity, World Bank's private sector investment arm, the International Finance Corporation (IFC) has launched \$6 billion financing facility to strengthen the private sector's ability to respond to the crisis and help support food production.

- The war in Ukraine and an uneven global recovery from the COVID-19 pandemic have added to rising levels of hunger and malnourishment, which already have been worsened by climate change and increasingly severe weather events that are damaging harvests and reducing yield.
- A core part of the financing, which will be provided through the new Global Food Security Platform (the Platform), will support sustainable production and delivery of food stocks to countries affected by food instability.
- Support will be aimed at facilitating trade of food commodities, delivery of inputs to farmers, supporting efficient production in major origins, including Ukraine, and effective distribution of food products in destination countries.
- Financing will also focus on long-term actions to improve the resilience of the global food system and lessen its climate and ecological footprint.
- This includes investing in increasing efficient crop production, improving access to fertilizers, greening fertilizer production and use, reducing crop loss and food waste, improving supply chain efficiency, and mitigating infrastructure bottlenecks.
- The \$6 billion will be used to support private sector companies along the food value chain by leveraging IFC's sectoral expertise in agribusiness, manufacturing, infrastructure, and technology, as well as the financial sector and trade finance
- The platform will supplement the World Bank's commitment of US\$30 billion in response to the food crisis.

 IFC is also stepping up engagements with other partners, including development finance institutions, foundations, banks as well as a range of private companies, in order to mobilize collective action to address global food security challenges.

## Prime Minister's Development Initiative for North East Region (PM-DevINE)

Prime Minister's Development Initiative for North East Region (PM-DevINE) has been approved by the Union Cabinet chaired by Prime Minister Narendra Modi.

#### **Key Highlights**

- It is a Rs. 6,600 crore schemes to support infrastructure, industries and other livelihood projects in the Northeastern states.
- The new scheme, to be implemented during the remaining four years of the 15th Finance Commission from 2022-23 to 2025-26, is a 100 per cent Central government-funded plan.
- It will be administered by the Ministry of Development of North Eastern Region (DoNER).
- Efforts will be made to complete the PM-DevINE projects by 2025-26 so that there are no committed liabilities beyond this year and this implies front-loading of the sanctions under the scheme in 2022-23 and 2023-24 primarily.
- The PM-DevINE will lead to the creation of infrastructure, support industries, social development projects and create livelihood activities for youth and women, thus leading to employment generation.
- Measures would be taken to ensure adequate operation and maintenance of the projects sanctioned under the PM-DevINE so that they are sustainable e.g to limit construction risks of time and cost overrun, falling on the government projects would be implemented on an engineering-procurementconstruction (EPC) basis, to the extent possible.
- The scheme will be implemented by the DoNER ministry through the North Eastern Council (NEC) or central ministries or agencies.

- The objectives of the PM-DevINE are to: fund infrastructure convergently, in the spirit of PM Gati Shakti, support social development projects based on the needs of the NE region, enable livelihood activities for youth and women and fill the development gaps in various sectors.
- PM-DevINE will provide support to infrastructure and social development projects which may be larger in size and will also provide an end-to-end development solution instead of isolated projects.
- It will also ensure that there is no duplication of project support under the PM-DevINE with any of the other schemes of the DoNER ministry or those of any other ministry and department.

## 14<sup>th</sup> OCTOBER, 2022

#### **Slender Loris**

**Context:** The Tamil Nadu government notifies the country's first Kadavur Slender Loris sanctuary. The sanctuary will be covering 11,806 hectares in the Karur and Dindigul districts of the State.

- Slender Lorises are small nocturnal animals, which are classified as endangered by the International Union for Conservation of Nature (IUCN), and are listed under the Schedule I of the Wildlife (Protection) Act of India, 1972.
- The species is considered endangered by the International Union for the Conservation of Nature (IUCN).
- The sanctuary will play a vital role in conserving the species and is another milestone in Tamil Nadu's conservation efforts.
- The species has a broad range of ecological roles and importance to play in the terrestrial environment. The survival of the Kadavur depends on its habitat improvement, conservation efforts, and mitigation of threats.

## Cyber Security Exercise (PowerEX)

Indian Computer Emergency Response Team (CERT-In) in collaboration with Power-CSIRTs (Computer Security Incident Response Teams in Power sector) designed and conducted a cyber security exercise 'PowerEX' for 193 power sector utilities, Ministry of Electronics & IT said in a release.

## **Key Highlights**

- The objective of the exercise was to "Recognize, Analyse & Respond to Cyber Incident in IT and OT Systems".
- The theme of the exercise was defending cyber induced disruption in IT and OT infrastructure and the event was hosted by CERT-In on its exercise simulation platform.
- It helped officials working in power sector utilities to learn, practice and respond to the cyber threats.

## **IMF's remark on Indian Economy**

**Context:** The International Monetary Fund (IMF) Managing Director Kristalina Georgieva lauded India's economic growth.

- IMF Managing Director Kristalina Georgieva said that India deserves to be called a bright spot on this otherwise dark horizon because it has been a fast-growing economy, even during these difficult times.
- IMF's Deputy Director of Fiscal Affairs Department, Paolo Mauro had earlier termed Narendra Modi government's Direct Benefit Transfer scheme, as 'logistical marvel' considering the sheer size of the country. Mauro had said that there is a lot to learn from India's DBT scheme that seeks to help people who are at low-income levels.
- India's economy posted double-digit growth of 13.5 percent in April-June quarter, as a favourable base effect and improved activities following the relaxation of pandemic-led restrictions outweighed the rippling effects of geopolitical and global concerns.
- Digitisation was playing a big role in India's success. "Among the remarkable success in digitisation in India from digital ID to providing all services and support on the basis of digital access."

