



News Analysis (23 Jul, 2019)

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Prime Minister's Research Fellows (PMRF) Scheme

In order **to attract meritorious students into research**, Government of India, in 2018 launched Prime Minister's Research Fellows (PMRF) Scheme, which offers **direct admission to such students in the Ph.D programmes** in IITs, IISERs and IISc.

- The scheme is aimed at attracting the talent pool of the country to doctoral (Ph.D.) programmes for carrying out **research in cutting edge science and technology domains, with focus on national priorities.**
- Under the scheme, students who have completed, or are pursuing, the final year of four year undergraduate or five year integrated M.Tech or five year integrated M.Sc. or five year undergraduate-postgraduate dual degree programmes or two year M.Sc. programmes in Science and Technology streams from IEST/IISc/IITs/NITs/IISERs and centrally funded IIITs or any other Institute / University recognized in India, are eligible for admission to full time Ph.D. programme in the IISc, IISERs and IITs.
- A fellowship of Rs.70,000/- per month for the first two years, Rs.75,000/- per month for the 3rd year, and Rs.80,000/- per month in the 4th and 5th year provided under the scheme.
- Apart from this, a **research grant of Rs.2.00 lakh per year** will be provided to each of the Fellows for a period of 5 years to cover their academic contingency expenses and for foreign/national travel expenses.
- With further modification, the scheme has been **opened for eligible students from all recognized institutions/universities** in the country.
- There will be a **rigorous review** of the performance of Prime Minister's Research Fellowship holders and continuation of the next year fellowship shall be contingent upon successful review.
- For attracting highly skilled researchers and scientists to pursue their R&D interests in Indian Institutions, several initiatives have been launched such as:
 - CV Raman Post-Doctoral Fellowship Scheme by University Grants Commission (UGC),
 - Ramanujan Fellowship,

- JC Bose Fellowship,
- Young Scientist Project Award,
- Women Scientist Scheme by Department of Science & Technology (DST), and
- **Global Initiative for Academic Network (GIAN)** launched by MHRD, seeks to tap the talent pool of scientists and entrepreneurs from abroad, including those of Indian origin to augment the country's existing academic resources.

Source: PIB

South Asians at Higher Health Risks

According to a study published in Nature Scientific Reports, South Asians, even those who move to other countries, are at a **higher risk of diabetes than people of most other ethnicities, the reason for this is their relatively low lean mass.**

Findings

- Mesolithic hunter-gatherer ancestors of South Asians were much taller, but low lean mass has characterised South Asians for at least 11,000 years, putting them at **higher risk of type-2 diabetes and other non-communicable diseases (NCDs)** such as heart disease, according to the study which analysed 197 archaeological and recent South Asian adult skeletons.
- Height decreased by 8.5cm in men and 7.7cm in women when South Asians transitioned from hunting and gathering to farming around 9,000 years ago, but their **lean mass (organ and muscle mass) has remained unchanged** over the past 11,000 years, the study said.
- The study suggests that while height is determined by nutritional factors, physique (bone breadth and lean mass) reflects ecological pressures.
- The ancient origins of low lean mass in South Asians would be most consistent with long-term adaptation to ecological pressures, rather than more recent dietary change or the impact of 19th-20th century famines exacerbated by British colonial policy.
- Low lean mass is present at birth in South Asian babies compared with European babies. Even after South Asian families migrate to other parts of the world, such as the UK, their children, after several generations still have low lean mass compared with children of European ancestry.
- People of South Asian ancestry are at a higher risk of diabetes, compared to their European counterparts, even after considering the risks like unhealthy diet, sedentary lifestyles and obesity.

Projection

Since changes in lean mass are unlikely over the next four to five generations, making

lifestyle interventions are crucial to containing NCDs, which account for 60% of all deaths in India.

Suggestions

- The implications of the study are that **low lean mass is a very ancient characteristic**, so it is unlikely to change much in the coming generations.
- This means that other interventions, especially the **promotion of healthy lifestyles**, are particularly critical to manage the growing health and economic burden of chronic diseases.
- **Building muscle mass and high fitness levels** have the potential for averting diabetes, and even heart disease.
- South Asians need to build lean muscle mass from an early age, so sports should be an integral part of school curriculum, along with muscle-building exercises and **enhanced protein intake**.

Diabetes is defined as a condition that occurs when the body cannot efficiently make use of glucose that serves as a source of energy for body cells. A hormone called Insulin controls blood sugar levels.

Diabetes is either caused by insufficient production of insulin by the pancreas or if the body cells not effectively responds to the **insulin** produced.

Diabetes Mellitus

- It is the inability of the body to effectively use or respond to the insulin produced by the body, and as a result, blood sugar levels cannot be regulated effectively. It is further classified into two types,
- **Type 1 Diabetes:** It occurs when the pancreas fails to produce sufficient insulin.
- **Type 2 Diabetes:** Type 2 diabetes is the most common type of diabetes. In this condition body does not use insulin properly. This is called insulin resistance. The main reason for the occurrence of type 2 diabetes is due to obesity and lack of exercise.

Source: HT

Draft Bill Banning Cryptocurrency

The **Inter-Ministerial Committee on Virtual Currency** constituted under the Chairmanship of **Subhash Chandra Garg** has submitted its report along with **Draft Bill 'Banning of Cryptocurrency & Regulation of Official Digital Currency Bill, 2019'**.

Provisions of the Draft Bill

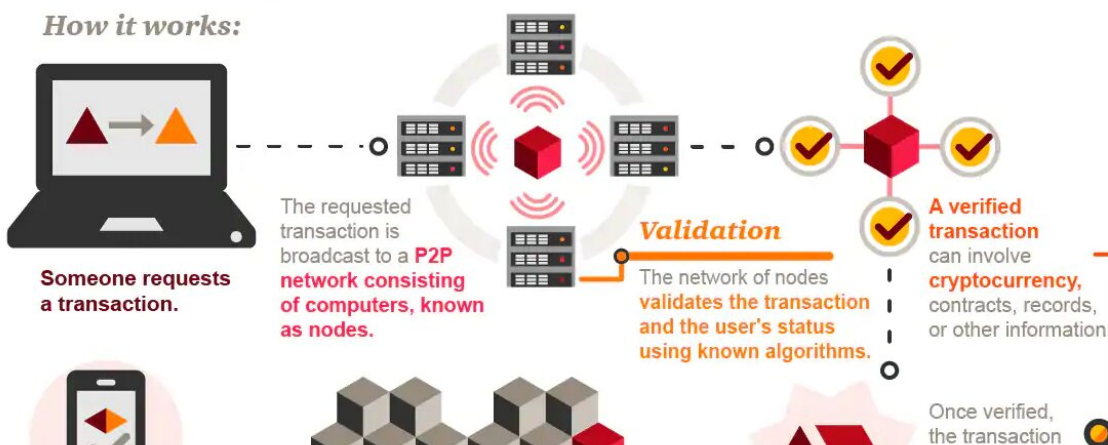
- **Cryptocurrency cannot be** used as legal tender or currency at any place in India.
- The bill prohibits everyone to mine, generate, hold, sell, deal in, issue, transfer, dispose of or use Cryptocurrency in the territory of India.
- The **Central Government** is allowed to declare **Digital Rupee** to be legal tender with the consent of the **Reserve Bank of India**.
- The **Reserve Bank** is empowered to declare any **official foreign digital currency** to be recognised as foreign currency in India.
- The use of **Distributed Ledger Technology** for creating a network for delivery of any financial or other services or for creating value, without involving any use of cryptocurrency is not prohibited.
- Direct or indirect use of Cryptocurrency shall be punishable with **fine** or imprisonment of **1 year** which may be extended to **10 years or both**.
- The maximum amount of fine that may be imposed upon a person for an offence shall be as follows:
 - **the higher of,-**
 - **three times the** loss or harm caused by the person; or
 - **three times the** gains made by the person.
- The Court is empowered to transfer any fees recovered, to the Consolidated Fund of India.
- The **Central Government** on the recommendation of investigating agency without being bound to it, is empowered to grant immunity for any offence under the act.
- The bill also provides that **no such immunity** can be granted by the Central Government in cases where the **proceedings for the prosecution** for any such offence have been instituted before the date of receipt of application for grant of such immunity.

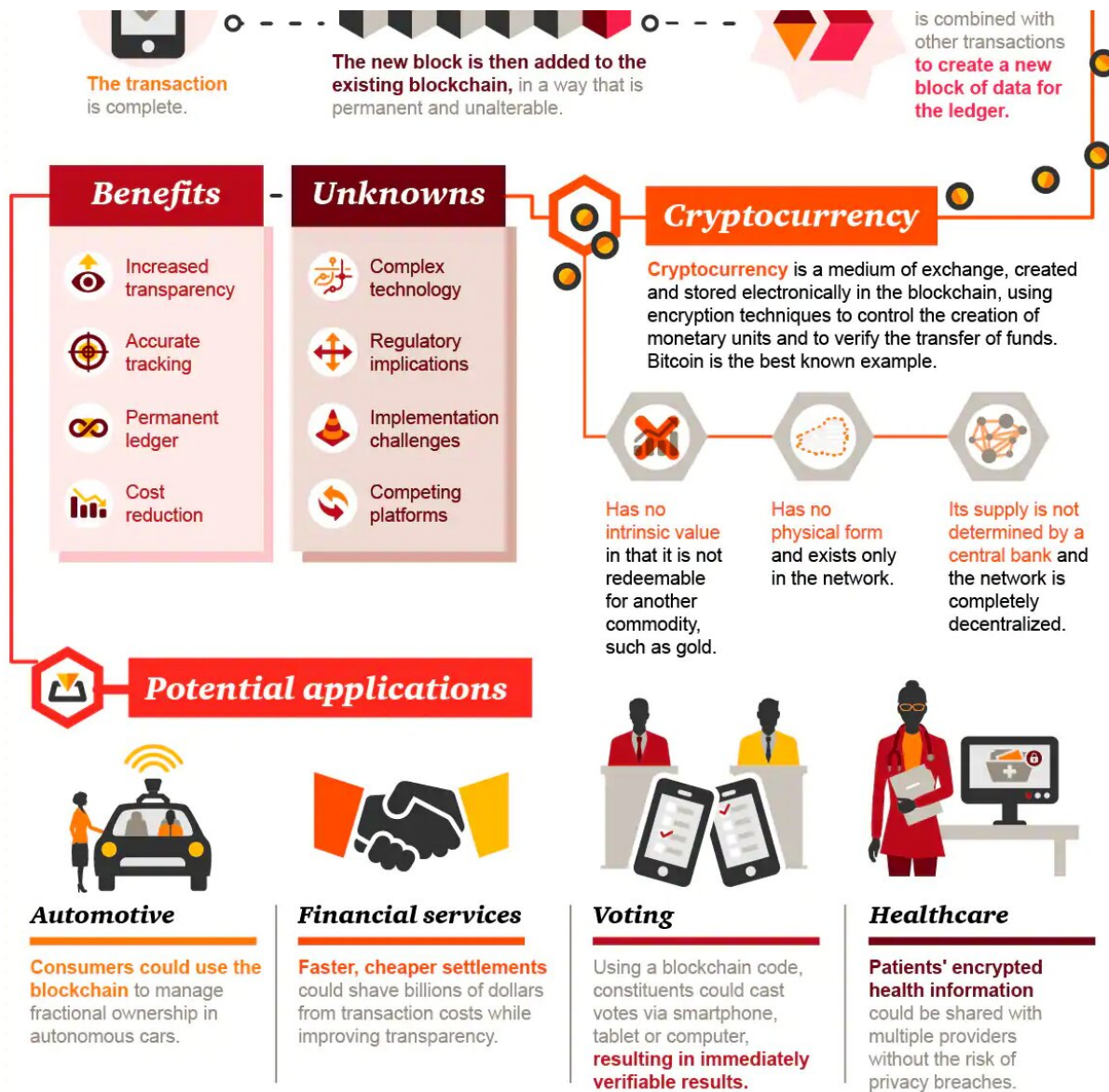
A look at *blockchain technology*

What is it?

The **blockchain** is a decentralized ledger of all transactions across a peer-to-peer network. Using this technology, participants can confirm transactions without the need for a central certifying authority. Potential applications include fund transfers, settling trades, voting, and many other uses.

How it works:





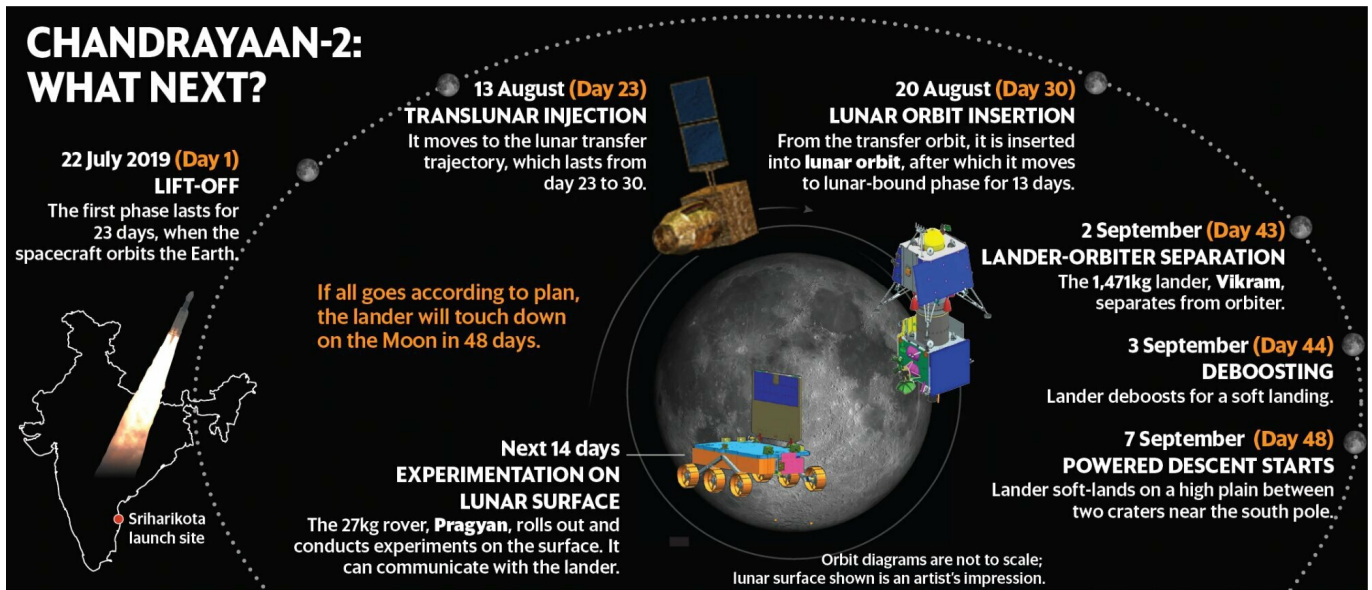
- **Digital Rupee** means a form of currency **issued** digitally by the **Reserve Bank** and **approved** by the **Central Government** to be legal tender.
- **Blockchain** is one type of a **distributed ledger**.

Source: Livemint

Chandrayaan-2 : Launched Successfully

India's Geosynchronous Satellite Launch Vehicle (**GSLVMkIII-M1**), successfully launched the **Chandrayaan-2** spacecraft into the earth orbit.

The Chandrayaan-2 is now revolving round the earth with a **perigee** (nearest point to Earth) of 169.7 km and an **apogee** (farthest point to Earth) of 45,475 km.



- Chandrayaan-2 is India's second mission (after Chandrayaan-1) to the moon and comprises a fully indigenous **Orbiter, Lander (Vikram)** and **Rover (Pragyan)**.
The Rover Pragyan is housed inside Vikram lander.
- The mission aims to expand our knowledge and understanding of the **origin and evolution** of the **Moon** through a detailed study of its **topography, mineralogy, surface chemical composition, thermo-physical characteristics** and **atmosphere**.
- After Chandrayaan-2, the **Indian Space Research Organisation (ISRO)** has **planned the launch** of its solar mission, **Aditya-L1**, in the first half of 2020 to study the **Sun's corona**.

Aditya-L1

- The satellite will be launched during 2019 – 2020 timeframe by **PSLV-XL** from **Sriharikota**.
- Aditya L-1 is a follow on mission to **Aditya 1** (that was meant to observe only the solar corona). It will provide observations of the sun's **photosphere** (soft and hard X-ray), **chromosphere** (Ultra Violet) and **corona** (Visible and Near infrared rays).

Source: TH

JATAN: Virtual Museum Software

Archaeological site museums under **Archaeological Survey of India (ASI)** have been **digitised** through **JATAN** software.

- **JATAN** is a virtual museum builder software, that enables creation of **digital collection management system** for Indian museums and is deployed in several national museums across India.
- **It's objective** is to make a **digital imprint** of all the objects preserved in museums and

help researchers, curators and other people interested in the field.

- **Designed and developed** by Human Centres Design and Computing Group, **Centre for Development of Smart Computing (C-DAC) Pune**.
- The digital imprints (of preserved objects and monuments) created using the JATAN software are integrated in the **national digital repository and portal** for making them accessible to the public.

The National portal and digital repository (developed by C-DAC, Pune) for museums of India provides an integrated access to theme based **collections** and **artefacts** (in terms of sculptures, paintings, manuscripts, weapons, coins and numerous other categories of artefacts) irrespective of the **physical** and **geographical** locations of museums.

- Centre for Development of Smart Computing (C-DAC) Pune has also developed **“Darshak”**, a **mobile-based application** aimed at improving the museum visit experience among the **differently-abled**.

It allows real-time museum visitors gather all details about objects or artifacts simply by scanning a QR code placed near the object.

Centre for Development of Advanced Computing

- C-DAC is the premier **Research & Development organization** of the **Ministry of Electronics and Information Technology** (MeitY) for carrying out R&D in IT, Electronics and associated areas.
- India's first supercomputer **PARAM 8000** was indigenously built (in 1991) by the Centre for Development of Advanced Computing.

Source: PIB

Sarus Crane

The annual census conducted by the state forest department of Uttar Pradesh has revealed that the Sarus crane population in Ghaziabad has been stagnant over the period of five years.

- The **Sarus Crane is the tallest flying bird** in the world and was declared as the **state bird of Uttar Pradesh (UP) in 2014**.
- It is listed as **vulnerable** on the **International Union for Conservation of Nature (IUCN)** red list.
- According to **World Wildlife Fund (WWF)**, their population is now on the decline with only 15,000-20,000 in India (a majority of which are in UP).
- The Sarus is listed under schedule IV of the Wildlife (Protection) Act, 1972.

Species listed in Schedule IV are protected, but the penalties are much lower.

- Sarus Cranes are known to live in association with humans and well watered plains, marshland, ponds, and **wetlands** (like **Dhanauri wetland in UP**) which are suitable for

their forage and nesting.

- Human activities, habitat loss, predation by feral dogs, mongoose and snakes, and hunting being counted as the major threats to the species.

Source: HT

Kakinada Hope Island

The project named “**Development of Kakinada Hope Island, Konaseema (Andhra Pradesh) as World Class Coastal & Eco Tourism Circuit**” which was sanctioned under the Swadesh Darshan Scheme has been completed.

About Hope Island

- It is tadpole shaped island formed 200 years ago by sand formation in the East Godavari district.
- It is situated 10 km from **Coringa Wildlife Sanctuary** and Sri Kukkuteswara Swamy Temple.

Swadesh Darshan Scheme

- The **Ministry of Tourism (MoT)** launched the **Swadesh Darshan Scheme** as a **Central Sector Scheme in 2014-15** with the objective of improving connectivity and infrastructure of tourism destinations to enrich overall tourist experience, enhance livelihood and employment opportunities and to attract domestic as well as foreign tourists to the destinations.
- The projects for development are identified in consultation with the State Governments/UT Administrations.
- **Theme based circuits** include Buddhist, Coastal, Desert, Eco, Heritage, Himalayan, Krishna, North-eastern, Ramayan, Rural, Spiritual, Sufi. Tirthankar, Tribal and Wildlife circuits

Source: PIB

Trauma Care Centres for Road Accident Victims

The Government of India has taken initiatives towards setting up of Trauma Care Facilities along National Highways, under the scheme “Capacity Building for Developing Trauma Care Facilities on National Highways”.

- The overall objective of the scheme is to **bring down preventable deaths due to road accidents** by developing a pan-India trauma care network.

- The scheme provides for setting up a designated trauma center at every 100 km on NHs.

WHO's Global Burden of Disease Project

- According to this project, road traffic accidents (RTA) cause over 1.27 million deaths a year.
- Road Traffic injuries are consistently one of the top three causes of death for people aged 5 to 44 years.
- It is estimated that unless immediate actions are taken road deaths will be the fifth leading cause of death by 2030, leading to an estimated 2.4 million deaths per year.
- Over 90% of the world's fatalities on the roads occur in low-income and middle-income countries, which have only 48% of the world's vehicles.
- In India, accidental injury is one of the leading causes of mortality and morbidity.
- India has just one per cent of total vehicles in the world but accounts for six per cent of total road accidents.

Source: PIB
