Daily Current Affairs

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Chandrayaan-2

Why in news?

Recently ISRO Chairman has informed the media that The launch window for Chandrayaan-2 is March 25 - April 30 this year.

About Chandrayaan:

- Chandrayaan-2, India's second mission to the Moon is a totally indigenous mission comprising of an Orbiter, Lander and Rover.
- After reaching the 100 km lunar orbit, the Lander housing the Rover will separate from the Orbiter. After a controlled descent, the Lander will soft land on the lunar surface at a specified site and deploy a Rover.
- The mission will carry a six-wheeled Rover which will move around the landing site in semi-autonomous mode as decided by the ground commands.
- The instruments on the rover will observe the lunar surface and send back data, which will be useful for analysis of the lunar soil.
- The Chandrayaan-2 weighing around 3290 kg and would orbit around the moon and perform the objectives of remote sensing the moon.
- The payloads will collect scientific information on lunar topography, mineralogy, elemental abundance, lunar exosphere and signatures of hydroxyl and water-ice.
- If successful, Chandrayaan-2 will be the second mission to land a rover near the lunar south pole.
- According to ISRO, this mission will use and test various new technologies and conduct new experiments.

- The wheeled rover will move on the lunar surface and will perform on-site chemical analysis. The data will be relayed to Earth through the Chandrayaan-2 orbiter, which will piggyback on the same launch.

Design:

The mission is planned to fly on a Geosynchronous Satellite Launch Vehicle Mark III (GSLV Mk III) with an approximate lift-off mass of 3,877 kg (8,547 lb) from Satish Dhawan Space Centre on Sriharikota Island.

Orbiter

- The orbiter will orbit the Moon at an altitude of 100 km. The mission will carry five instruments on the orbiter. Three of them are new, while two others are improved versions of those flown on Chandrayaan-1.
- The approximate launch mass will be 2,379 kg.The Orbiter High Resolution Camera (OHRC) will conduct high-resolution observations of the landing site prior to separation of the lander from the orbiter.
- Interfaces between the orbiter and its GSLV Mk II launch vehicle have been finalised. The orbiter's structure was manufactured by Hindustan Aeronautics Limited and delivered to ISRO Satellite Centre on 22 June 2015.

Vikram lander

- The mission's lander is called Vikram, named after Vikram Sarabhai (1919-1971) who is widely regarded as the father of the Indian space programme.
- The Vikram lander will detach from the orbiter and descend to a lunar orbit of 30 km × 100 km (19 mi × 62 mi) using its 800 N (180 lbf) liquid main engines.
- It will then perform a comprehensive check of all its on-board systems before attempting to land on the lunar surface.
- Unlike Chandrayaan-1's Moon Impact Probe, the Vikram lander will make a soft landing, deploy the rover, and perform some scientific

activities for approximately 15 days.

- The approximate combined mass of the lander and rover is 1,471 kg. The preliminary configuration study of the lander was completed in 2013 by the Space Applications Centre (SAC) in Ahmedabad.
- Some associated technologies include a high resolution camera, navigation camera, hazard avoidance camera, an 800 N throttleable liquid main engine and attitude thrusters, altimeter, velocity meter, accelerometer, and the software needed to run these components.
- The lander's main engine has successfully undergone a high altitude test for a duration of 513 seconds, and closed loop verification tests of the sensors, actuators and software were completed in 2016.
- Engineering models of the lander began undergoing ground and aerial tests in late October 2016, in Challakere in the Chitradurga district of Karnataka. ISRO created roughly 10 craters on the surface to help assess the ability of the lander's sensors to select a landing site.

Rover

- The rover's mass will be about 27 kg and will operate on solar power. The rover will move on 6 wheels on the lunar surface, perform on-site chemical analysis and send the data to the orbiter above, which will relay it to the Earth station.
- The initial plan was for the rover to be designed in Russia and fabricated in India. However, after Russia proved unable to contribute to the mission, ISRO decided on designing and fabricating the rover itself. IIT Kanpur is developing three subsystems to provide mobility:

1. Stereoscopic camera-based 3D vision using two NAVCAMs in front of rover will provide the ground team controlling the rovers a 3D view of the surrounding terrain and help in path planning by generating a digital elevation model of the terrain.
2. Kinematic traction control - will enable the rover to negotiate the rough lunar terrain using independent steering provided on four of its wheels.
3. Control and motor dynamics - The rover will have six wheels, each driven by an independent electric motor. Four of the wheels will also be capable of independent steering. A total of 10 electric

motors will be used for traction and steering.

National Food Security Act, 2013

Why in news?

Recently Chief Minister of Mizoram called on Union Minister of Consumer Affairs, Food & Public Distribution, for enhancement of coverage under National Food Security Act.

About National Food Security Act:

Overview

- As passed by the Parliament, Government has notified the National Food Security Act, 2013 on 10th September, 2013 with the objective to provide for food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity.
- The Act provides for coverage of upto 75% of the rural population and upto 50% of the urban population for receiving subsidized foodgrains under Targeted Public Distribution System (TPDS), thus covering about two-thirds of the population.
- The eligible persons are entitled to receive 5 Kgs of foodgrains per person per month at subsidised prices of Rs. 3/2/1 per Kg for rice/wheat/coarse grains.
- The existing Antyodaya Anna Yojana (AAY) households, which constitute the poorest of the poor, will continue to receive 35 Kgs of foodgrains per household per month.
- The Act also has a special focus on the nutritional support to women and children. Besides meal to pregnant women and lactating mothers during pregnancy and six months after the child birth, such women are also be entitled to receive maternity benefit of not less than Rs. 6,000.
- Children upto 14 years of age are entitled to nutritious meals as per

the prescribed nutritional standards. In case of non-supply of entitled foodgrains or meals, the beneficiaries will receive food security allowance.

- The Act also contains provisions for setting up of grievance redressal mechanism at the District and State levels. Separate provisions have also been made in the Act for ensuring transparency and accountability.

Status of Implementation of the Act

- The Act is now being implemented in all the States/UTs, and 80.72 crore persons are being covered out of intended coverage of 81.34 crore persons.
- In Chandigarh, Puducherry and urban areas of Dadra & Nagar Haveli, the Act is being implemented in the cash transfer mode, under which food subsidy is credited directly into the bank accounts of beneficiaries, who then have the choice to buy foodgrains from the open market.

Salient Features:

- Coverage and entitlement under Targeted Public Distribution System (TPDS) : Upto 75% of the rural population and 50% of the urban population will be covered under TPDS, with uniform entitlement of 5 kg per person per month.
- However, since Antyodaya Anna Yojana (AAY) households constitute poorest of the poor, and are presently entitled to 35 kg per household per month, entitlement of existing AAY households will be protected at 35 kg per household per month.
- State-wise coverage :Corresponding to the all India coverage of 75% and 50% in the rural and urban areas, State-wise coverage will be determined by the Central Government.
- The then Planning Commission (now NITI Aayog) has determined the State-wise coverage by using the NSS Household Consumption Survey data for 2011-12.
- Subsidised prices under TPDS and their revision : Foodgrains under TPDS will be made available at subsidised prices of Rs. 3/2/1 per kg

for rice, wheat and coarse grains for a period of three years from the date of commencement of the Act.

- Thereafter prices will be as fixed by the Central Government from time to time, not exceeding MSP. It has been decided by the Government to continue the above mentioned subsidized prices upto June, 2019.
- In case, any State's allocation under the Act is lower than their current allocation, it will be protected upto the level of average offtake under normal TPDS during last three years, at prices to be determined by the Central Government.
- Existing prices for APL households i.e. Rs. 6.10 per kg for wheat and Rs 8.30 per kg for rice has been determined as issue prices for the additional allocation to protect the average offtake during last three years.

Identification of Households : Within the coverage under TPDS determined for each State, the work of identification of eligible households is to be done by States/UTs.

Nutritional Support to women and children: Pregnant women and lactating mothers and children in the age group of 6 months to 14 years will be entitled to meals as per prescribed nutritional norms under Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes. Higher nutritional norms have been prescribed for malnourished children upto 6 years of age.

Maternity Benefit : Pregnant women and lactating mothers will also be entitled to receive maternity benefit of not less than Rs. 6,000.

Women Empowerment : Eldest woman of the household of age 18 years or above to be the head of the household for the purpose of issuing of ration cards.

Grievance Redressal Mechanism : Grievance redressal mechanism at the District and State levels. States will have the flexibility to use the existing machinery or set up separate mechanism.

Cost of intra-State transportation & handling of foodgrains and FPS Dealers' margin: Central Government will provide assistance to States in

meeting the expenditure incurred by them on transportation of foodgrains within the State, its handling and FPS dealers' margin as per norms to be devised for this purpose.

Transparency and Accountability: Provisions have been made for disclosure of records relating to PDS, social audits and setting up of Vigilance Committees in order to ensure transparency and accountability.

Food Security Allowance: Provision for food security allowance to entitled beneficiaries in case of non-supply of entitled foodgrains or meals.

Penalty : Provision for penalty on public servant or authority, to be imposed by the State Food Commission, in case of failure to comply with the relief recommended by the District Grievance Redressal Officer.

INS Kohassa

Why in news?

Naval Air Station (NAS) Shibpur will be commissioned as INS Kohassa on 24 Jan 19 by Admiral Sunil Lanba, Chief of Naval Staff.

Highlights:

- INS Kohassa has been named after a White- Bellied Sea Eagle, which is a large bird of prey endemic to Andaman and Nicobar Islands (ANI).
- NAS Shibpur was established in 2001 as a Forward Operating Air Base (FOAB) for surveillance in North Andaman.
- Located in the northern most part of the islands, the airfield holds strategic importance not only for the security of the islands but also for its overall development.
- With the addition of this airfield, the Andaman & Nicobar Command's (ANC) ability to operate independently from all the regions of the ANI will get a great boost.

- Basing of an independent naval unit with the requisite facilities and manpower will enhance overall operational capabilities of ANC.
- It will open up the opportunity for permanent basing of aircrafts at the Naval Air Station. Presently, it provides detached operations of smaller aircrafts of Indian Navy, Indian Air Force and Coast Guard with an airstrip of 1000m length.
- INS Kohassa will become the third Naval Air Base in Andaman after INS Utkrosh at Port Blair and INS Baaz at Campbell Bay.
- Post commissioning, the station will function as a base for joint operation of both military and civil aircraft in keeping with the UDAN scheme of the government.
- As part of Phase II expansion plan, the runway length would subsequently be extended to 3000m. This will enable the operation of wide-bodied civil and defence aircrafts in the future.

Status Paper on Government Debt

Why in news?

The ***Central Government*** today released the Eighth Edition of the Status Paper on the Government Debt, which provides a detailed analysis of the Overall Debt Position of the Government of India.

Key Facts:

- The Central Government has been bringing-out an Annual Status Paper on Government Debt since 2010-11.
- This paper provides a detailed analysis of the Overall Debt Position of the Government of India.
- This paper enhances transparency by providing a detailed account of debt operations during the year and an assessment of the health of the public debt portfolio based on internationally accepted debt performance indicators.
- The paper also covers details of fiscal deficit financing operations of

the Central Government during the year 2017-18. The overall liabilities of the Central Government are on a medium-term declining trajectory and Government's Debt Portfolio is characterised by prudent risk profile.

- Government is primarily resorting to market linked borrowings for financing its fiscal deficit. Conventional indicators of Debt sustainability, i.e., Debt/GDP ratio, interest payment to revenue receipts, shares of short-term Debt/External Debt/FRBs in total debt indicate that the debt profile of the Government is comfortably placed in terms of debt sustainability parameters and is consistently improving.
- The Paper also provides Debt Management Strategy of the Central Government for the years 2018-21 which will guide the borrowing plans of the Government.

India's First Lithium Ion Giga Factory

Why in news?

Bharat Heavy Electricals Limited (BHEL) and Libcoin are in dialogue to form a world class consortium to initially build 1GWh lithium ion battery plant in India.

Highlights:

- Its capacity will be scaled up to 30GWh in due course. With this, India has finally taken steps into its energy security and clean energy commitment to the world.
- This project will bring energy independence by replacing oil imports with abundant renewable. This project also includes "Made by India, for India", with focus on core-cost components manufactured domestically.
- It will also create integrated manufacturing ecosystem resulting in self-reliance and lower cost.

- A holistic view of the supply chain in combination with cutting edge digital technologies to replace high CAPEX and high OPEX processes will be the highlight of this project in India.
- Various Indian cities including Delhi have been struggling to cut down their pollution level for last several years and electric transportation has been considered as one of the viable approaches to cut down emission.
- The number of electric cars in the world already hit million-mark last year and the International Energy Agency has projected almost 140 million electric cars globally by 2030, if countries meet Paris climate accord targets, in which India has already committed to actively participate.
