

PERFECT 7

Weekly Current Affairs

An Initiative of Dhyeya IAS



1 | High Precision Gene Editing Technology

In India

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|--|--|
| 2 FinCEN Files : Another Glimpse into Global Money Laundering | 5 Svamitva Scheme : Property Card for Rural Households |
| 3 Ups and Downs in Two Economies : India and Bangladesh | 6 India's Clean Energy Initiatives : Need Sustainable Financing |
| 4 New Farm Laws and Farmers' Future in India | 7 Global Population Projections by LANCET Study |

DHYEYA IAS : AN INTRODUCTION



Vinay Kumar Singh
Founder & CEO

The guiding philosophy of the institute, throughout, has been creation of knowledge base. Dhyeya IAS inculcates human values and professional ethics in the students, which help them make decisions and create path that are good not only for them, but also for the society, for the nation, and for the world as whole. To fulfill its mission in new and powerful ways, each student is motivated to strive towards achieving excellence in every endeavor. It is done by making continuous improvements in curricula and pedagogical tools.

The rigorous syllabi not only instills in them, a passion for knowledge but also attempts to teach them how to apply that knowledge in real-life situations. The programmes lay emphasis on well-rounded personality development of the students and also in inculcating the values of honesty and integrity in them.



Q.H. Khan
Managing Director

Dhyeya IAS is an institution that aims at the complete development of the student. Our faculty are hand-picked and highly qualified to ensure that the students are given every possible support in all their academic endeavors. It is a multi-disciplinary institution which ensures that the students have ready access to a wide range of academic material. Our brand of education has broad horizons as we believe in exposure. Our students are encouraged to widen their knowledge base and study beyond the confinements of the syllabus. We aim to lend a gentle guiding hand to make our students recognize their inner potential and grow on their own accord into stalwarts of tomorrow's society.

PERFECT 7 : AN INTRODUCTION



Kurban Ali
Chief Editor

With immense pleasure I would like to inform you that the new version of 'Perfect 7', from the Dhyeya IAS, is coming with more information in a very attractive manner. Heartily congratulations to the editorial team. The 'Perfect 7' invites a wider readership in the Institute. The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of the teacher is to nurture the skills and talents of the students as a facilitator. This magazine is going to showcase the strength of our Institute. Let this be a forum to exhibit the potential of faculties, eminent writers, authors and students with their literary skills and innovative ideas.

Please do visit our website www.dhyeyaias.com and our youtube channel for regular and updated information on current affairs.



Ashutosh Singh
Managing Editor

We have not only given the name 'Perfect 7' to our magazine, but also left no stone unturned to keep it 'near to perfect'. We all know that beginning of a task is most vital and full of challenges. So we met the same fate.

Publishing 'Perfect 7' provided us various challenges because from the beginning itself we kept our bar too high to ensure the quality. Right from the very first issue we had a daunting task to save aspirants from the 'misinformation' or 'overdose of information'. Focussing on civil services examination 'Perfect 7' embodies in itself perfect friend and guide in your preparation. This weapon is built to be precise yet comprehensive. It is not about bombardment of mindless facts, rather an analysis of various facets of the issues, selected in a systematic manner. We adopted the 'Multi Filter' and 'Six Sigma' approach, in which a subject or an issue is selected after diligent discussion on various levels so that the questions in the examination could be covered with high probability.

Being a weekly magazine there is a constant challenge to provide qualitative study material in a time bound approach. It is our humble achievement that we feel proud to make delivered our promise of quality consistently without missing any issue since its inception.

Your suggestions and popular demands always motivate us and keep our morale high.

May this version of 'Perfect 7' instill a new energy and a new spirit in you. We wish that the bond of affection between you and Dhyeya IAS reaches at a new height.



Send us your suggestions, comment, views and feedback for guiding us on

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PREFACE



Dhyeya family has decided to bring a new colourful and vibrant version of **'Perfect 7'** – a panacea for current affairs, which will add positive and dynamic energy in your preparation.

'Perfect7' is an outstanding compilation of current affairs topics as per the new pattern of Civil Services Examination (CSE). It presents weekly analysis of information and issues (national and international) in the form of Articles, News Analysis, Brain Boosters, PIB Highlights and Graphical Information, which helps to understand and retain the information comprehensively. Hence, **'Perfect 7'** will build in-depth understanding of various issues in different facets.

'Perfect7' is our genuine effort to provide correct, concise and concrete information, which helps students to crack the CSE. This magazine is the result of the efforts of the eminent scholars and the experts from different fields. **'Perfect 7'** is surely a force multiplier in your effort and plugs the loopholes in the preparation.

We believe in environment of continuous improvement and learning. Your constructive suggestions and comments are always welcome, which could guide us in further revision of this magazine.

Omveer Singh Chaudhary

Editor
Dhyeya IAS

As a proud jewel of Dhyeya IAS, **'Perfect 7'** now comes in a new coloured avatar. **'Perfect 7'** is a quintessential part of your preparation strategy for Civil Services Examination. A regular and manageable dose of current affairs will now reach you in new format, making it more reader friendly. Our humble attempt to serve you is surely rewarded by your appreciations. It encourages us to innovate and provide the best as per our ability.

A dedicated team of experts at Dhyeya IAS toils night and day to make your dream of Civil Services come true. I heartily thank and express my gratitude to the esteemed readers and all the people involved in making this magazine a shining star in the galaxy of Dhyeya IAS.

Rajat Jhingan

Editor
Dhyeya IAS

OUR TEAM

Founder & CEO	➤ Vinay Kumar Singh
Managing Director	➤ Q. H.Khan
Chief Editor	➤ Qurban Ali
Managing Editor	➤ Ashutosh Singh
Editors	➤ Omveer Singh Chaudhary ➤ Rajat Jhingan ➤ Jeet Singh ➤ Avaneesh Pandey
Editorial Support	➤ Prof. R. Kumar
Lead Authors	➤ Swati Yadav ➤ Anshuman Tiwari ➤ Ajay Singh ➤ Ahamad Ali
Authors	➤ Ashraf Ali ➤ Girraj Singh ➤ Hariom Singh ➤ Sneha Tiwari
Reviewers	➤ Ranjeet Singh ➤ Ramyash Agnihotri
Design & Development	➤ Sanjeev Kumar Jha ➤ Punish Jain
Promotion & Advertisement	➤ Gufran Khan ➤ Rahul Kumar
Graphics	➤ Krishna Kumar ➤ Krishna Kant Mandal ➤ Mukund Patel
Office Assistants	➤ Hari Ram ➤ Raju Yadav

Content Office



DHYEYA IAS
most trusted since 2003

DHYEYA IAS
302, A-10/11, Bhandari House,
Near Chawla Restaurants,
Dr. Mukherjee Nagar,
Delhi-110009



Contents

➤ 7 Important Issues & Subjective Questions Based on Them	01-19
➤ High Precision Gene Editing Technology in India	
➤ FinCEN Files : Another Glimpse into Global Money Laundering	
➤ Ups and Downs in Two Economies : India and Bangladesh	
➤ New Farm Laws and Farmers' Future in India	
➤ Svamitva Scheme : Property Card for Rural Households	
➤ India's Clean Energy Initiatives : Need Sustainable Financing	
➤ Global Population Projections by LANCET Study	
➤ 7 Important Brain Boosters	20-26
➤ 7 Important MCQs (based on Brain Boosters)	27-29
➤ 7 Important News	30-34
➤ 7 Important Practice Questions (for Mains)	35
➤ 7 Important Facts (for Prelims)	36
➤ 7 Important Quotes (for Essay and Answer Writing)	37

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7 IMPORTANT ISSUES

01

High Precision Gene Editing Technology in India

Why in News?

- ◆ Indian scientists have developed a new variant of currently popular gene editing tool, CRISPR-Cas9, and have shown that this variant can increase precision in editing genome while avoiding unintended changes in DNA.

Introduction

- ◆ Gene editing is the deliberate insertion, deletion, or replacement of a DNA sequence in the genome of a living cell.
- ◆ It uses a certain set of proteins called nucleases that make precise, targeted cuts in the DNA. They further noted that zinc finger

nucleases (ZFNs) and Transcription Activator-Like Effector Nucleases (TALENs) have been effectively used to edit genes in a wide variety of tissues and organisms.

- ◆ The discovery of CRISPR/Cas9, an adaptive version of the bacterial defence mechanism which, allows scientists to edit, cut, and replace genes more quickly, efficiently, and inexpensively than previous gene editing tools.
- ◆ It has the potential to alter any DNA sequence, whether in bacteria, plants, animals, or humans—in theory if not yet in practice.
- ◆ Gene editing has limitless applications across living

organisms, its benefits being in its applications on somatic or non-reproductive cells to prevent and treat human diseases such as sickle cell anemia, muscular dystrophy, Huntington's disease, thalassemia, and cancer.

- ◆ The experiment by He Jiankui, a Chinese researcher who claims to have produced genetically altered babies, has polarized the scientific community, and brought the potential benefits and pitfalls of gene editing into sharp focus—both in India and the world.

Nobel Prize, 2020

- ◆ The Nobel Prize in Chemistry for 2020 which was announced on October 7, has two women scientists as its recipients - Emmanuelle Charpentier, a French microbiologist working at the Max Planck Unit for the Science of Pathogens in Berlin, Germany, and Jennifer A. Doudna, a biochemist from the University of California, Berkeley, US shared the honour "for the development of a method for genome editing".

GEAC

- The Genetic Engineering Appraisal Committee (GEAC) functions in the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- It is a statutory body under the Environment Protection Act 1986. It is India's apex bio-technology regulator body.
- As per Under the EPA 1986 "Rules for Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells 1989, it is responsible for appraisal of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- The committee is also responsible for appraisal of proposals relating to release of genetically engineered (GE) organisms and products into the environment including experimental field trials.

- ◆ The two scientists (Emmanuelle Charpentier and Jennifer A. Doudna) have pioneered the use of CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) – Cas9 (CRISPR-associated protein 9) system as a gene-editing tool. In a short period of eight years since its discovery, the method has already made a significant impact in biology, medicine, and agriculture.
- ◆ It is not often that one sees practical applications of scientific findings in such a short time. The only other work with such a quick and revolutionary impact, is polymerase chain reaction (PCR) invented by Kary Mullis in 1983.
- ◆ The discovery of CRISPR can be traced back to 1987. This was when a group of Japanese researchers observed an unusual homologous DNA sequence bearing direct repeats with spacing in a eubacterial gene. Several important discoveries followed. In subsequent years, Francisco Mojica, Rodolphe Barrangou, Luciano Marraffini and Erik Sontheimer discovered CRISPR and showed it to be a bacterial adaptive immune system and to act on DNA targets. A notable discovery on the use of CRISPR as a gene-editing tool was by a Lithuanian biochemist, Virginijus Siksnys, in 2012. Siksnys showed that Cas9 could cut purified DNA in a test tube, the same discovery for which both Charpentier and Doudna were given the credit.

- ◆ Thus, the conspicuous exclusion of Siksnys from this year's Nobel, especially when the Nobel Prize can be given to three individuals (the will of Alfred Nobel has it that the Prize can only be shared among a maximum of three individuals), is going to raise discussions. This is especially noteworthy when Siksnys along with Charpentier and Doudna shared another coveted award, the Kavli Prize for Nanoscience, in 2018.
- ◆ However, the Nobel committee recognised Charpentier and Doudna as the sole discoverers for programming a Cas9 protein to cut a piece of DNA at a specific site with the help of a small piece of RNA, thereby proving the ability of CRISPR-Cas9 to function as a gene-editing tool.

High Precision Editing in India

- ◆ The laboratory experiments have been done in human-derived cells from patients of sickle cell anemia. The research has been done by scientists from the New Delhi-based Institute of Genomics and Integrative Biology (IGIB) of the Council of Scientific and Industrial Research (CSIR).
- ◆ Scientists across the globe have reprogrammed the naturally occurring gene-editing system CRISPR-Cas9 found in bacteria.
- ◆ This protein can be programmed to go to the preferred location in the genome and correct or edit defective strands of DNA. The technology, when used

precisely, may be used to treat different genetic disorders. However, the current technique faces significant challenges as the 'molecular scissors' could sometimes miss its target and result in unintentional results.

- ◆ One of the most widely used Cas9 enzymes in gene editing is *Streptococcus pyogenes* Cas9 (SpCas9) and its engineered variants.
- ◆ They have been used for several gene-editing applications across different platforms. The significant concerns remain regarding their off-targeting at multiple locations across the genome.
- ◆ To overcome these challenges, Indian researchers used another naturally occurring Cas9 from bacteria called *Francisella novicida*.
- ◆ The researchers have found that the protein FnCas9 shows a negligible binding affinity to off-targets. This property makes it highly specific and eliminates the challenges faced by SpCas9. In the study, the researchers found that FnCas9 showed higher homology-directed repair and negligible off-targeting.
- ◆ The New technique by Indian Scientists has been applied to correct DNA derived from patients of sickle cell anemia.
- ◆ The researchers said that FnCas9-mediated correction of the sickle cell mutation in patient-derived induced pluripotent stem cells

was highly precise. Therefore this therapeutic genome editing can be for a wide variety of genetic disorders.

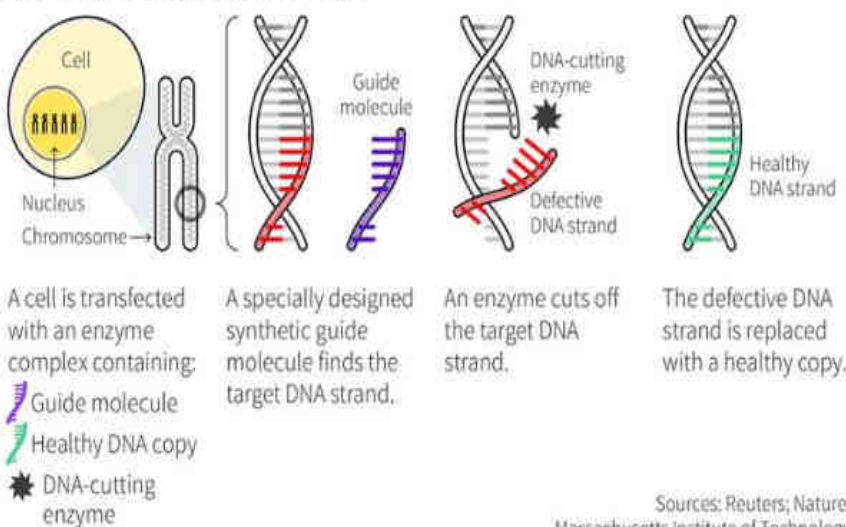
Urgent Need for Regulation in India

- ◆ In India, several rules, guidelines, and policies backed by the “Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells, 1989” notified under the Environment Protection Act, 1986, regulate genetically modified organisms.
- ◆ The above Act and the National Ethical Guidelines for Biomedical and Health Research involving human participants, 2017, by the Indian Council of Medical Research (ICMR), and the Biomedical and Health Research Regulation Bill implies regulation of the gene-editing process. This is especially so in the usage of its language “modification, deletion or removal of parts of heritable material”.
- ◆ However, there is no explicit mention of the term gene editing. It is time that India came up with a specific law to ban germline editing and put out guidelines for conducting gene-editing research giving rise to modified organisms.

DNA editing

A DNA editing technique, called CRISPR/Cas9, works like a biological version of a word-processing programme's “find and replace” function.

HOW THE TECHNIQUE WORKS



- ◆ India does not have clarity on either regulatory standards or a regulatory authority. The Biotechnology Regulatory Authority Bill, 2013, meant to create a regulator, has lapsed.

Way Forward

- ◆ Genome Editing is a technology which has massive benefits but also has immense potential for disruption. India lacks a robust regulatory mechanism and laws which can deal specifically with such complex technologies.
- ◆ There have been already many global incidents which have raised the alarm to regulate the given sector and to prevent it from being

misused. India has talent and expertise for genome editing and research, thus a proper regulatory body with supporting laws is the need of the hour. <<<>>>

General Studies Paper- III

Topic:

- Achievements of Indians in Science & Technology; indigenization of technology and developing new technology.

Topic:

- Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.

Q. India lacks a robust mechanism to regulate the field of genome editing, which is highly complex field and has very high potential for damages in case of mis-use. Discuss.

02

FinCEN Files : Another Glimpse into Global Money Laundering

Why in News?

- ◆ The global financial industry is under the spotlight again after a cache of leaked documents show years of transactions handled by the world's largest banks linked to money laundering, corruption and fraud.
- ◆ The report dubbed the FinCEN files- Financial Crimes Enforcement Network, released by the International Consortium of Investigative Journalists and based on leaked documents obtained by BuzzFeed News, said that in some cases the banks kept moving illicit funds after receiving warnings from U.S. officials.

Introduction

- ◆ Investigating a massive stockpile of leaked government documents, BuzzFeed News along with a consortium of international journalists uncovered that a large group of major banks allegedly approved trillions of dollars of potentially suspect criminals from around the world.
- ◆ These dubious transactions are carried out despite bank staff warning against their potential relation to crime, enriching potential suspects "and their shareholders while facilitating the work of terrorists, kleptocrats, and drug kingpins".
- ◆ The leaked documents involve approximately about \$2 trillion worth of transactions, revealing

how some of the world's biggest banks have allowed criminals to move dirty money around the world.

FinCEN and FinCEN Files

- ◆ FinCEN is the US Financial Crimes Enforcement Network. These are the people at the US Treasury who combat financial crime. Concerns about transactions made in US dollars need to be sent to FinCEN, even if they took place outside the US. Suspicious activity reports, or SARs, are an example of how those concerns are recorded.
- ◆ Banks are required to file Suspicious Activity Reports, or SARs, with the US government within 30 or 60 days of learning of a questionable transaction. The reports aren't necessarily indicative of criminal conduct or other wrongdoing but reflect compliance officers' concerns.
- ◆ The FinCEN files comprise 2,657 documents, including 2,121 suspicious activity reports, most of which were files that banks sent to the US authorities between 2000 and 2017. These documents contain Suspicious Activity Reports (SARs) that banks and other financial institutions submit to the US Treasury Department's FinCEN, when certain transactions raise flags of money laundering or other illegal activity.
- ◆ The documents are some of international banking's most closely guarded secrets. They are

so closely protected, the report claims that they were never meant to be available to the public.

- ◆ In effect, they are crucial red flags raised by banks that point law-enforcement agencies to further investigation. Banks use them to report suspicious behaviour, but they are not proof of wrongdoing or crime. Hence, these are not evidence of illegality.
- ◆ Almost 80 per cent of these SARs involving transactions worth \$2 trillion were reported by top global banks such as Deutsche Bank, Bank of New York Mellon (BMYM), Standard Chartered Bank, Citibank, and JP Morgan Chase.
- ◆ The documents were leaked to Buzzfeed News and shared with a group that brings together investigative journalists from around the world.

Indian Banks in FinCEN

- ◆ At least 44 Indian banks have been flagged in connection with transactions by Indian entities and individuals in a set of SARs filed by US banks with the watchdog agency, the FinCEN.
- ◆ As per one set of records where addresses linked to parties are in India, Indian banks figure in SARs linked to over 2,000 transactions valued at over \$1 billion between 2011 and 2017. Significantly, there are thousands of transactions linked to Indian entities and

businessmen where the Indian senders or beneficiaries have addresses in foreign jurisdictions.

- ◆ Records investigated show that Indian banks mentioned in the SARs include: state-owned Punjab National Bank (290 transactions); State Bank of India (102); Bank of Baroda (93); Union Bank of India (99) and Canara Bank (190), among others.
- ◆ Among private banks who figure in the SARs are HDFC Bank (253 transactions); ICICI Bank (57); Kotak Mahindra Bank (268); Axis Bank (41) and IndusInd Bank (117) among others.
- ◆ Indian banks figure in the SARs primarily because they are “correspondent banks” to the foreign banks which have filed these SARs and figure in the network through which these transactions have been effected.
- ◆ There are cases, records show, where “suspicious transactions” have been carried out through the international payment gateway of foreign banks. In others, foreign branches of Indian banks such as a State Bank of India account in Canada and an account of Union Bank of India in UK have been used by clients for carrying out part of the transactions in question.
- ◆ Key to this is the correspondent banking relationship — an arrangement over which there has been growing concern as regulators crack down on secrecy of offshore transactions.
- ◆ Under this, one bank (correspondent) holds deposits

owned by other banks (respondents) and provides payment and other services to those respondent banks. Through correspondent banking relationships, banks can access financial services in different jurisdictions and provide cross-border payment services to their customers.

Significance

- ◆ There have been a number of big leaks of financial information in recent years, including:
 - ◆ 2017 Paradise Papers - A huge batch of leaked documents from an offshore legal service provider Appleby and corporate services provider Eterra. The two operated together under the Appleby name until Eterra became independent in 2016. They revealed the offshore financial dealings of politicians, celebrities and business leaders.
 - ◆ 2016 Panama Papers - Leaked documents from the law firm Mossack Fonseca showed more about how wealthy people were using offshore tax regimes to their benefit.
 - ◆ 2015 Swiss Leaks - Documents from HSBC's Swiss private bank showed how it was using the country's banking secrecy laws to help clients avoid paying tax.
 - ◆ 2014 LuxLeaks contained documents from the accountancy firm Price Waterhouse Coopers (PwC) showing that big companies were using tax deals in Luxembourg to reduce the amount they were having to pay.

- ◆ The FinCEN papers are different because they are not just documents from one or two companies - they come from a number of banks.
- ◆ They highlight a range of potentially suspicious activity involving companies and individuals and also raise questions about why the banks which had noticed this activity did not always act on their concerns.

FIU-IND

- ◆ Financial Intelligence Unit – India (FIU-IND) is the central authority for receiving, processing, analysing and disseminating information relating to suspicious financial transactions in India. FIU-IND reports to the Economic Intelligence Council headed by the Finance Minister. FIU-IND receives information about suspicious transactions, analyses and processes such information, and disseminates the information to appropriate national and international authorities, to support anti-money laundering efforts.
- ◆ FIU-IND is also responsible for coordinating and strengthening efforts of national and international intelligence and enforcement agencies in pursuing the global efforts against money laundering and related crimes. FIU-IND is, however, not a regulatory authority or a law enforcement authority.

Money Laundering Defined in India

- ◆ Money Laundering has been defined under the (Indian) Prevention of Money-Laundering

Act, 2002 (PMLA) as the offence of 'directly or indirectly attempting to indulge, or knowingly assisting, or knowingly being a party or being actually involved in any process or activity connected with the proceeds of crime, including its concealment, possession, acquisition or use and projecting or claiming it as untainted property'. Proceeds of crime means 'any property derived or obtained directly or indirectly, by any person as a result of a criminal activity relating to an offence specified in the schedule to the PMLA, including the value of any such property or where such property is taken or held outside the country, then the property equivalent in value held within the country or abroad'.

- ◆ The primary enforcement authority under the PMLA is the Directorate of Enforcement, which also serves as the enforcement agency in connection with contraventions of exchange control laws.
- ◆ Anti-money Laundering Provisions in India
 - ◆ PMLA and the Prevention of Money-Laundering (Maintenance of Records) Rules, 2005
 - ◆ The Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015.

- ◆ Benami Transactions (Prohibition) Act, 1988 as amended by Benami Transactions (Prohibition) Amendment Act, 2016.
- ◆ Narcotics, Drugs and Psychotropic Substances Act, 1985.
- ◆ SEBI's Guidelines for Anti-Money Laundering Measures, 2006 and other KYC requirements.
- ◆ RBI's Know Your Customer Direction, 2016 (RBI-KYC Direction) and RBI Master Circular – Know Your Customer norms / Anti-Money Laundering standards/Combating Financing of Terrorism /Obligation of banks and financial institutions under PMLA, 2002 (RBI Master Circular).
- ◆ Anti-Money Laundering/ Counter Financing of Terrorism – Guidelines for Insurers.
- ◆ Fugitive Economic Offenders Act, 2018

Way Forward

- ◆ Financial services globally have been one of the major lifelines of all the major economies. Money transfer and transactions has been under scanner for a long time when it comes to protecting the wealth of the nation and decrementing crime and tax evasion. Despite 2008 sub-prime crisis and London

Inter-bank Offered Rate (LIBOR) scam, still financial markets are not able to contain the transfers of ill gotten money. This raises serious question about the intent and implementation of any such laws.

- ◆ Indian banks being named as facilitators of such transactions bring to point the need of tighter RBI control over banks and close supervision of NGO funding. There is no fixed regulatory body for monitoring suspicious transactions and flow of ill-gotten money in India, seems now we need such an organisation.



General Studies Paper- II

Topic:

- Important aspects of governance, transparency and accountability, e-governance-applications, models, successes, limitations and potential; citizens charters, transparency & accountability and institutional and other measures.

General Studies Paper- III

Topic:

- Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention.

Q. What are FinCEN files and how are they significant globally? Also, discuss the impact of Indian banks being names in them.

03

Ups and Downs in Two Economies : India and Bangladesh

Why in News?

- ◆ India is set to drop below Bangladesh in terms of per capita gross domestic product (GDP) this year, according to the International Monetary Fund (IMF), owing to the nationwide lockdown imposed to contain the spread of the COVID-19 pandemic.
- ◆ According to IMF-World Economic Outlook (WEO), Bangladesh's per capita GDP in dollar terms is expected to grow 4% in 2020 to \$1,888. On the other hand, India's per capita GDP is expected to decline 10.5% to \$1,877 – the lowest in the last four years. The GDP figure for both countries is at current prices.

Introduction

- ◆ India's per capita GDP is expected to decline by 10.5 per cent to USD 1,877 in 2020 while Bangladesh's per capita GDP is expected to rise by 4 per cent to USD 1,888. This projection is being seen as a major setback for the present government since the report states that five years ago, India's per capita GDP was nearly 40 per cent higher than that of Bangladesh.
- ◆ Added to this, since GDP figures are at current prices, India is likely to become the third poorest country in South Asia with only Pakistan and Nepal reporting lower per capita GDP. The report also states that the Indian economy will be the worst hit due to the COVID-19 pandemic in South Asia.
- ◆ According to data available, Bangladesh's per capita GDP grew at a CAGR of 9.1 per cent in the last five years, as against India's 3.2 per cent. Bangladesh's growth story comes on the back of booming export sector and a healthy growth in savings and investment rates.

- ◆ However, IMF has predicted that India will recover faster than most of the nations, including Bangladesh, next year. In 2021, India's per capita GDP is predicted to grow at 8.2 percent to USD 2,030, as against Bangladesh's expected growth of 5.4 per cent to USD 1,990.
- ◆ IMF's WEO database also notes India's economic contraction this year will be its worst since the 1990-91 economic crisis. IMF has forecasted India's GDP to contract by 10.3 per cent in 2020-21.

Bangladesh's Healthy Report Card

- ◆ While the immediate cause of India's economic slump may be attributed to the nationwide lockdown triggered by the COVID-19 pandemic, it cannot afford to ignore the slow but steady progress Bangladesh has shown in social indicators over the years.
- ◆ While India's per capita GDP will again climb ahead of Bangladesh the following year, the latter will overtake India in per capita GDP once again in 2025, if IMF's latest World Economic Outlook is to be believed.
- ◆ Bangladesh has one-third of its population below 14 years, has seen strong economic growth as well. In 2018, its GDP growth was 7.9 percent compared to India's 6.8 percent and 2.9 percent for the United States.
- ◆ The services sector contributes to over 50 per cent of GDP in Bangladesh although agriculture is the largest employer, the International Labour Organization (ILO) has observed. Even the impact of the 2007-08 global financial crisis was muted by the strength of the low-cost garment industry, ILO's

Monitoring and Assessing Progress on Decent Work (MAP) programme has noted.

- ◆ One of Bangladesh's key achievements is curbing infant mortality rate (IMR) the fastest among the developing nations. The IMR (in deaths per 1000 live births) has fallen steeply in the past decade - from 40.5 in 2009 to 25.6 in 2019. Last year, India's IMR stood at 28.
- ◆ Bangladesh has virtually eliminated the practice of open defecation through a sustained campaign, much before India launched its ambitious 'Swachh Bharat' (Clean India) mission. By 2016, 99 percent of Bangladeshi citizens had access to toilets.
- ◆ Despite these achievements, Bangladesh often finds itself in the news over the issue of legal/illegal migration of its nationals to other countries, including India. The fact is that working-class migrants, mostly uneducated, are a major contributor to Bangladesh's economic growth. A 2017 World Bank report says international migration eases the pressure on the domestic economy by absorbing up to 500,000 workers each year. Remittances from migrant workers combined with garment exports account for almost a quarter of the country's GDP.

Implications of Bangladesh's Economic Success

- ◆ Rapid and sustained economic growth in Bangladesh has begun to alter the world's mental maps of the subcontinent. Over the last five decades and more, South Asia, for most purposes, has meant India and Pakistan. The economic rise of Bangladesh is changing some of that.

- ◆ A decade ago, Pakistan's economy was \$60 billion larger than Bangladesh. Today, Bangladesh's weight is bigger than Pakistan by the same margin. A US dollar today gets you 85 Bangladeshi taka and 162 Pakistani rupees.
- ◆ Bangladesh's economic growth can accelerate regional integration in the eastern subcontinent. Instead of merely praying for the revival of SAARC, Delhi could usefully focus on promoting regionalism among Bangladesh, Bhutan, India and Nepal.
- ◆ Economic success of Bangladesh is drawing attention from a range of countries in East Asia, including China, Japan, South Korea, and Singapore. The US, which traditionally focused on India and Pakistan, has woken up to the possibilities in Bangladesh.
- ◆ Economic rise of Bangladesh could boost India's national plans to accelerate the development of its eastern and north-eastern states.
- ◆ The focus has been on comparisons based on GDP measured at current, market exchange rates and this yields "conclusion" of Bangladesh eclipsing India. But market exchange rates are not appropriate for welfare comparisons across time and countries
- ◆ The former CEA said there is need to measure real GDP in local currency after taking out effects of inflation and then, convert all local currency estimates of real GDP into comparable dollars. He noted that more appropriate basis is GDP at constant, purchasing power parity (PPP) exchange rates.
- ◆ IMF's historical numbers are themselves based on countries' local currency GDP estimates which are subject to uncertainty for both India and Bangladesh. And IMF forecasts can also be off.

Dismal Projection

- ◆ The de-growth projection comes after India reported a contraction in its GDP for the June quarter at 23.9%, making it the worst performer among G20 economies.
- ◆ The Reserve Bank of India admitted that the economy will contract 9.5% in FY21, with a mild recovery in economic activity in the March quarter.
- ◆ What makes this situation even worse is that till five years ago, India's per capita GDP was nearly 40% higher than Bangladesh's.
- ◆ In the last five years, Bangladesh's per capita GDP has grown at a compound annual growth rate of 9.1%, compared with 3.2% growth reported by India during the same period.

- ◆ HSBC Bank had predicted that Bangladesh would be the 26th largest economy in the world by 2030.
- ◆ Currently India is the sixth largest economy. (US, China, Japan, Germany, UK, India, France etc.)

Way Forward

- ◆ Needless to say, that Bangladesh will at some point have a higher per-capita income than India. This is because India has a higher population than Bangladesh so even though we have a higher GDP in absolute levels, the per capita figure could be smaller in future years. The point here is not to compete or deny the existence of Bangladeshi advantage, rather to see it as an opportunity for having a prosperous neighbourhood and scope for regional integration.
- ◆ India needs to fix its own economic slowdown. India is a mammoth economy as compared to Bangladesh. Actions like export orientation, competitive manufacturing and integration with world markets are the need of the hour.



Snub, Denial and Wrong Data

- ◆ On 'more appropriate' economic metric, Bangladesh has not surpassed India and is unlikely to be in future, former chief economic adviser Arvind Subramanian said, asserting that GDP per capita is an estimate for one indicator of the average standard of welfare in a country.
- ◆ Government sources had emphasised that India's GDP in terms of purchasing power parity was 11 times more than that of Bangladesh in 2019.

General Studies Paper- III

Topic:

- Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

Q. Bangladesh registering higher GDP growth than India at current prices can be seen as an opportunity for India rather than some challenge. Discuss.

04

New Farm Laws and Farmers' Future in India

Why in News?

- Indian democracy has been at full play in reaction to the new farm laws. While the government hailed it as a historic decision. The Opposition parties described the passing of these farm laws as “a dark day for farmers” and a “sell out to corporate sharks”.
- However, both sides of the political spectrum want farmers' incomes to increase. The Opposition parties want to ensure that through higher and more effective minimum support prices (MSP), while the government is offering greater choices to farmers through markets, without demolishing the existing MSP system.

Introduction

- MSP regime was the creation of the era of scarcity in the mid-1960s. Indian agriculture has, since then, turned the corner from scarcity to surplus. The policy instruments of dealing with shortages are different from those dealing with surpluses.
- India has abundant availability of wheat and rice, more than what is being consumed at home at current price and income levels. For the last 5-7 years, our public stocks are overflowing above buffer stock norms, giving a “problem of plenty”, and our exports have been record high.

CLEARING THEIR STANCE

While the opposition parties have raised several concerns over the passing of the new farm bills, central govt has made some clarification



- Procurement at MSP will continue. The MSP for Rabi season will be announced next week
- Mandis will not stop functioning. Under the new system, farmers will have the option to sell their produce at other places in addition to the mandis

10,000 farmer producer organizations are being formed throughout the country. These FPOs will work to ensure remunerative pricing for farm produce

- In a surplus economy, unless we allow a greater role for markets and make agriculture demand-driven, the MSP route can spell financial disaster.
- This transition is about changing the pricing mix — how much of it should be state-supported and how much market-driven. The new laws are trying to increase the relative role of markets without dismantling the MSP system.

Changing Focus of MSP

- A perusal of the MSP dominated system of rice and wheat shows that the stocks with the government are way above the buffer stock norms. The economic cost of procured rice comes to about Rs 37/kg and that of wheat is around Rs 27/kg. The cost to company (CTC) of departmental labour of the Food Corporation of India is six to eight

times higher than contract labour in the market. No wonder, market prices of rice and wheat are much lower than the economic cost incurred by the FCI. In Bihar's rural areas, for example, one can easily get rice in the retail market at Rs 23-25/kg. The bottom line is that grain stocks with the FCI cannot be exported without a subsidy, which invites World Trade Organisation's (WTO) objections.

- The real bill of food subsidy is going through the roof but that is not reflected in the Central budget as the FCI is asked to borrow more and more. The FCI's burden is touching Rs 3 lakh crore. We are simply postponing a financial crisis in the food management system.
- Need of hour is to firstly shift to pulses and oil-seeds, so that their production can be encouraged and protein rich sources can be made affordable.

- ◆ Secondly wheat and rice are getting rotten up in FCI's godowns which can't be brought to market, as they will pull down the market prices and farmer's won't be able to sell their produce. Thus, we have shortage in markets despite bumper crops year after year. MSP in wheat and rice are not just a financial disaster, but also food wastage.

Shanta Kumar Committee

- ◆ Government had set up a six-member committee in 2014 to suggest restructuring or unbundling of FCI to improve its financial management and operational efficiency in procurement, storage

and distribution of food grains. The committee chairperson, Shanta Kumar, had submitted the report to Prime Minister Narendra Modi on January 2015.

- ◆ It recommends a relook at coverage of 67 percent of population under the existing Food Security Act. It recommends restricting food security benefit to 40 per cent of the population. The reason is that government neither has that much funds to cover all the people nor it actually does, so keeping the percentage to realistic level is recommended.
- ◆ It also seeks to link subsidised price of cereals to MSP price. The

amount of grains entitlement per person should be increased to 7 kg from existing 5 kg under National Food Security Act.

- ◆ The committee recommended gradual introduction of cash transfers in the public distribution system.
- ◆ The committee has also recommended abolishing levy rice. The Union government has already taken steps to do away with procurement of levy rice from rice mills. Under levy rice policy, government buys certain percentage of rice (varies from 25 to 75 per cent in states) from the mills compulsorily, which is called levy rice. Mills are allowed to sell only the remainder in the open market.
- ◆ The committee has recommended full deregulation of fertiliser sector and calls for providing cash fertiliser subsidy of Rs 7,000 per hectare to farmers.
- ◆ The committee has recommended revisiting MSP policy. It says the government should focus on MSP of pulses and oilseed. This recommendation comes in the backdrop of skewed MSP policy, which concentrates only on wheat and rice. Rest of the 21 commodities, other than wheat and rice, get neglected. It observed:
 - ◆ Only 6 per cent farmers get MSP.
 - ◆ Around 40-50 per cent leakages in PDS.
 - ◆ Between 40-50 per cent beneficiaries do not get it grains they are entitled to.

MSP – In Brief

- MSP-based procurement by the government has its origin in the rationing system introduced by the British during World War II. A department of food came up in 1942. After Independence, it was upgraded into the ministry of food. Those were the times when India faced acute food shortages. When the Green Revolution started in the 1960s, India was actively looking to shore up its food reserves and prevent shortages. The MSP system finally started in 1966-67 for wheat and was expanded further to include other essential food crops. This was then sold to the poor under subsidised rates under the public distribution system.
- The MSP is a minimum price guarantee that acts as a safety net or insurance for farmers when they sell particular crops. These crops are procured by government agencies at a promised price to farmers and the MSP cannot be altered in any given situation. The concept of MSP, therefore, protects the farmers in the country in situations where crop prices fall drastically. Wheat and rice are among the top crops that are procured by the government at MSP from the country's farmers. A total of 22-23 crops are procured under MSP.
- The MSP is set by the central government for select crops, based on recommendations it receives from the Commission for Agricultural Costs and Prices (CACP).

- ◆ How much foodgrains does FCI procure?
 - ◆ Total wheat procured: 12 per cent of total production
 - ◆ Total paddy procured: 2 per cent of total production
- ◆ The committee has recommended that FCI should involve itself in full-fledged grains procurement only in those states which are poor in procurement which are Eastern Uttar Pradesh, Bihar, West Bengal and Assam.
- ◆ In the case of those states which are performing well, like Haryana, Punjab, Andhra Pradesh, Chhattisgarh, Madhya Pradesh and Odisha, the states should do the procurement, the panel has said.

Farm Bills - In-brief

- ◆ The Farmers Produce Trade and Commerce (Promotion and Facilitation) Bill, 2020 allows farmers to sell their produce outside APMC mandis to whoever, even the end customer, offers a higher price.
- ◆ The second one — The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Bill, 2020 — allows farmers to enter into a contract farming agreement the buyer for procurement of crops at pre-approved prices.

The three Farm Bills seek to :

Break the monopoly of government-regulated mandis and allow farmers to sell directly to private buyers

Provide a legal framework for farmers to enter into written contracts with companies and produce for them

Allow agri-businesses to stock food articles and remove the government's ability to impose restrictions arbitrarily



WHAT ARE THE FARM REFORM BILLS?

- ◆ The Essential Commodities (Amendment) Bill which declassifies items like onions, cereals, pulses, potatoes, edible oilseeds and oils as essential items in normal circumstances.

- ◆ Farmers are upset with the three farm bills because none of them mentions anything about MSP.
- ◆ Other, concern is related to the fear that there will be dominance of corporates and private sector in agriculture sector if the sector is deregulated by the government or allows private participation.

Way Forward

- ◆ Currently, no system is perfect, be it the one based on MSP or that led by the markets. But the MSP system is much more costly and inefficient, while the market-led system will be

more sustainable provided we can “get the markets right”.

- ◆ The pricing system has its limits in raising farmers' incomes. More sustainable solutions lie in augmenting productivity, diversifying to high-value crops and building supply chains well-oiled by industrial processing capabilities.

General Studies Paper- III

Topic:

- Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.

Q. Improving agricultural prosperity needs to break away from the shackles of the mechanisms which are now inefficient, but keeping in mind the best interests of farmers not the intermediaries. Discuss.

05

Svmitva Scheme : Property Card for Rural Households

Why in News?

- Recently, Prime Minister Narendra Modi has launched the physical distribution of property cards under the 'SVAMITVA' ((Survey of Villages and Mapping with Improvised Technology in Village Areas) scheme via video conferencing, and asserted that it is a "historic move" set to transform rural India.

Svmitva Yojana

- SVAMITVA scheme is meant to create a record of land ownership in rural areas using modern technology.
- The scheme is piloted by the Panchayati Raj ministry and

has been launched on April 24 2020, the Panchayati Raj Diwas. Currently, the scheme is launched in six states - Haryana, Karnataka, Madhya Pradesh, Maharashtra, Uttar Pradesh and Uttarakhand.

- The need for this scheme was felt since several villagers in the rural areas do not have papers proving ownership of their land. In most states, survey and measurement of the populated areas in the villages has not been done for the purpose of attestation/verification of properties.
- It is also aimed to fill the above gap to provide ownership rights to people in the villages. It is expected to go a long way in

settling property rights in rural hinterlands and likely to become a tool for empowerment and entitlement, reducing social strife on account of discord over properties.

- The residential land in villages will be measured using drones to create a non-disputable record. It is the latest technology for surveying and measuring of land.
- The scheme will be carried out in close coordination with the Central Panchayati Raj ministry, Survey of India, Panchayati Raj departments and Revenue departments of various states.
- Drones will draw a digital map of every property falling within the geographical limits of a village and demarcate the boundaries of every revenue area.
- Property card for every property in the village will be prepared by states using accurate measurements delivered by drone-mapping. These cards will be given to property owners and will be recognised by the land revenue records department.
- The delivery of property rights through an official document will enable villagers to access bank finance using their property as collateral.
- The property records for a village will also be maintained at the Panchayat level, allowing for the collection of associated taxes from the owners. The money generated

E-Gram Swaraj Portal

- With a vision to strengthen digitalization in Panchayats for the purpose of empowering rural India, a unified tool e-Gram SWARAJ portal has been developed by the Ministry for effective monitoring and evaluation of works taken up in the Gram Panchayats.
- e-Gram SWARAJ unifies the planning, accounting and monitoring functions of Gram Panchayats. It's combination with the Area Profiler application, Local Government Directory (LGD) and the Public Financial Management System (PFMS) renders easier reporting and tracking of Gram Panchayat's activities.
- It provides a single window for capturing Panchayat information with the complete Profile of the Panchayat, details of Panchayat finances, asset details, activities taken up through Gram Panchayat Development Plan (GPDP), Panchayat information from other Ministries/ Departments such as Census 2011, SECC data, Mission Antyodaya survey report etc.
- For the year 2020-21, around 2.43 lakh Gram Panchayats have finalized their GPDP on e-Gram SWARAJ. Further, around 1.24 lakh Gram Panchayats have transacted online using the e-Gram SWARAJ Online Payment Module.
- E-Gram Swaraj aims to bring in better transparency in the decentralised planning, progress reporting and work-based accounting.

from these local taxes will be used to build rural infrastructure and facilities.

- ◆ Freeing the residential properties including land of title disputes and the creation of an official record is likely to result in appreciation in the market value of the properties.
- ◆ The accurate property records can be used for facilitating tax collection, new building and structure plan, issuing of permits and for thwarting attempts at property grabbing.
- ◆ Property card will clear the way to buy and sell property without any dispute for the villagers. After getting the property card, easy access to loans from banks on their houses would be ensured.
- ◆ The new technology like using drones in mapping and survey, accurate land records of every village can be created. Due to accurate land records, development related work in the village will also be easier which would be another benefit of these property cards.

Benefits

- ◆ Ownership of land and house plays a big role in the development of the country. When there is a record of property, citizens gain confidence and new avenues of investment open. Loan is easily

available from the bank on record of property, employment and self-employment avenues open.

- ◆ SVAMITVA Scheme will help in strengthening the Panchayati Raj system.
- ◆ It will make village management easier for our gram panchayats, in a systematic way like municipalities and municipal corporations.

Bringing Technology to Grassroot Administration

- ◆ This Pandemic has thrown at us new challenges and problems which we have never imagined, but it also taught us a very good lesson with a strong message. It has taught us that we have to be self-reliant and self-sufficient. It has taught us that we should not look for solutions outside the country.
- ◆ Every village has to be self-sufficient enough to provide for its basic needs. Similarly every district has to be self-sufficient at its level, every state has to be self-reliant at its level and the whole country has to be self-reliant at its level.
- ◆ In the last five years nearly 1.25 Lakh Panchayats have been connected through broadband from a mere 100 before. Similarly, the number of Common Service Centres had crossed 3 Lakhs.

- ◆ Since mobile phones are being manufactured in India, the cost of smartphones has become cheaper and the low cost smartphones have reached every village and this would further strengthen the digital infrastructure at village level.
- ◆ The progress of Panchayats will ensure the development of the nation and democracy.

Way Forward

- ◆ Pandemic has thrown the economy and lives out of gear. Everyone globally and locally has responded to the pandemic in their own ways. Panchayati Raj administration in India is linked to the masses and works at the grass-root level. Linking them with technology and providing smart solutions will help not just in the time of pandemic but also in the long-term.
- ◆ Land records are crucial to the lives of rural folk. Many a times there are disputes over the ownership, title, measurement etc. Digitisation of such records and settling the disputes, frees up people from time-wasting court cases and administrative hassles.

General Studies Paper- III

Topic:

- Land reforms in India.

Q. Discuss the role technology can play in the third-tier of administration highlighting the benefits of Swamitva Yojana and e-Gram Swaraj Portal.

06

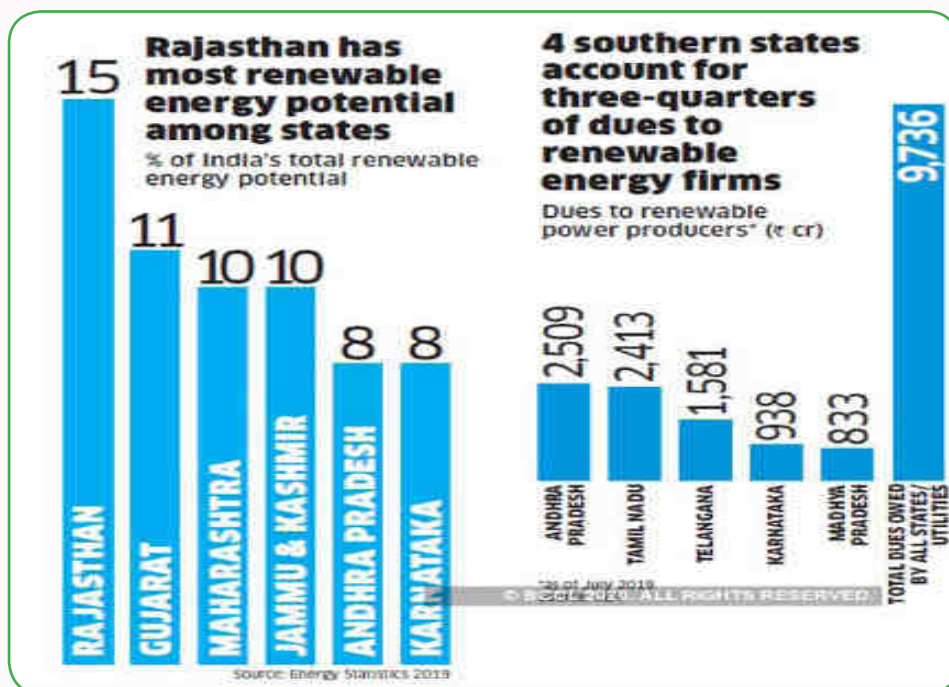
India's Clean Energy Initiatives : Need Sustainable Financing

Why in News?

- India is an energy hungry country. As a developing nation the need for energy increases exponentially. As India has been a responsible party to the Paris Climate Deal and United Nations Framework Convention on Climate Change (UNFCCC), India has been promoting clean energy vigorously.
- With expansion in clean energy initiatives, there is a need for sustainable financing of such long-term projects, specially when they are of national importance. India has set the bar high for its renewable energy targets which also calls for increased financing.

Introduction

- India is making good progress in its national efforts to meet the various SDG 7 targets. These include to measures to ensure universal access to modern energy, including electricity and clean cooking (SDG 7.1), to foster the deployment of renewables and to increase the share of renewable energy consumption in the global energy mix (SDG 7.2) and to double the rate of energy efficiency improvements (SDG 7.3) Both the energy and emission intensities of India's gross domestic product (GDP) have decreased by more than 20% over the past decade.



This represents commendable progress even as total energy related carbon dioxide (CO₂) emissions continue to rise.

- India's per capita emissions today are 1.6 tonnes of CO₂, well below the global average of 4.4 tonnes, while its share of global total CO₂ emissions is some 6.4%.
- Recent International Energy Agency (IEA) analysis shows that in 2018, India's investment in solar PV was greater than in all fossil fuel sources of electricity generation together. Large-scale auctions have contributed to swift renewable energy development at rapidly decreasing prices. By December 2019, India had deployed a total of 84 GW of grid-connected renewable electricity capacity. By comparison, India's total generating capacity reached 366 GW in 2019. India is

making progress towards its target of 175 GW of renewables by 2022.

- In September 2019, the prime minister of India had announced that India's electricity mix would eventually include 450 GW of renewable energy capacity by 2030. Progress towards these targets will require a focus on unlocking the flexibility needed for effective system integration. Also the challenges of financing such a huge expansion of infrastructure is also more calling specially when the economy is hard-hit by the pandemic.
- At a recent summit organized by the International Solar Alliance (ISA), Prime Minister Modi expressed his confidence about India surpassing its RE target for 2022, going beyond 175 GW to reach 220 GW capacity by 2022. However, achieving this

requires capacity installation of 36GW annually, as per Institute for Energy Economics and Financial Analysis. This in turn requires further capital flow from both Indian and international investors.

Financing Challenges

- ◆ Lack of policy stability: International investors seek policy certainty. India has seen too much policy inconsistency and change, as well as state-centre conflicts.
- ◆ Lack of long-term financing: For RE projects, we need to have long term financing as short-term financing is not suitable for infrastructural projects. Shortage of long-term finance blunts low-carbon development progress.
- ◆ Various risks associated with low-carbon projects: Technology risk as most of these technologies are relatively new, leading to investors postponing their investments in the expectation of cost going down further. Then, there is feasibility risk owing to lower rate of return. Exchange rate risk as manufacturing low-carbon technologies is dependent on cross-country supply chain and is heavily depending on trade, hence exchange rate risk is high. There are also other risks such as political risk, operational risk, etc. The World Bank found that in the 2011-17 period, institutional investors had not financed a single infrastructure project in South Asia, primarily because investing in emerging market infrastructure is perceived as high risk.

- ◆ Lower rate of return in low-carbon projects: Clean energy technologies are often earlier in the development stage and not always commercially viable compared to conventional technologies. This makes these technologies more expensive and riskier ventures. Even though SDGs are important, rate of return matters the most to investors.
- ◆ Lack of capacity in market actors: Investment in low-carbon projects are also undermined by lack of familiarity, limited information and knowledge, and limited expertise about green infrastructure among investors.

Recommendations

- ◆ Develop a holistic strategy on renewable energy, encompassing both supply and use, for electricity, heating and cooling as well as transport to fully harness India's large untapped potential.
- ◆ The government needs to ensure policy certainty, better centre-state coordination on renewable energy development, and explore innovative financial solutions to attract more funds.
- ◆ Adapt the design of competitive auctions by Solar Energy Corporation of India Ltd (SECI) to ensure India can meet the 2022 renewable electricity targets by:
 - ◆ setting out annual procurement trajectories;
 - ◆ strengthening pre-qualification criteria;

- ◆ adjusting the price caps to ensure commercial viability of high-quality projects; and
- ◆ mitigating all project-related risks.
- ◆ Adopt a medium- to long-term target for renewable electricity for the period beyond 2022 to give investors certainty.
- ◆ Support further growth of distributed renewable energy – notably the solar PV rooftop market – by strengthening and clarifying incentives to implement business models that offer customers standardised solar PV rooftop systems, based on international and national best practice experience.
- ◆ Ensure compliance with RPOs imposed by state regulators.
- ◆ Strengthen the financial viability of DISCOMs by ensuring the full implementation of the UDAY scheme.
- ◆ Maximise India's significant potential for sustainable bioenergy, comprising implementation of the policy on transport biofuels to scale up conventional and advanced biofuel production while ensuring sustainability criteria are met, realising the potential to scale up bioenergy in the sugar and cement industries, and scaling up EfW (energy-from-waste), using best practice throughout the supply chain.
- ◆ Asian economies are still bank dominated and there are constraints in banking sector for long-term finance. In order to have

sustainable finance, we need to have such organisations that hold long-term money such as pension funds, insurance companies so that substantial investments can be made for longer duration.

- ♦ Supporting the domestic solar manufacturing industry with off-take assurances, better solar tariff caps, and by encouraging exports.
- ♦ Rationalising GST on solar and wind power equipment using one standard, fixed national rate.
- ♦ Clearing land acquisition and transmission connectivity-related operational bottlenecks and inefficiencies for renewable energy projects, and putting a renewed focus on renewable energy hubs and industrial solar parks with state governments shouldering land acquisition and grid connection risks, thereby reducing investor risk and ensuring non-arable land is preferenced.

India on Track

- ♦ At the end of November 2019 grid-connected renewable electricity capacity reached 84 GW, with 32 GW coming from solar photovoltaic (PV), around 37 GW from onshore wind and the remainder from small hydro.

♦ Solar PV has been on a rapid rise in recent years. To increase investment in renewable electricity in a cost-effective way, India has introduced national competitive auctions for wind and solar PV

♦ To ensure continuous progress in the growth of renewables, auction design, grid connections and the financial health of the power distribution companies (DISCOMs) are critical elements for reform. This task has already been in motion and DISCOM reforms have been undertaken.

♦ World Bank has signed deal with International Solar Alliance for boosting investments in solar technology.

♦ An analysis of the data shows that key investment deals in Indian renewable energy generation during 2019/20 totalled \$8.4 bn.

- ♦ Over 63% included capital investment by five renewable energy companies – Greenko Energy Holdings, ReNew Power, Adani Green energy, Infrastructure Leasing & Financial Services (IL&FS), and Sterling and Wilson - while 46% was contributed by five investors: General Insurance Corporation (GIC) and Abu Dhabi Investment Authority (ADIA), Orix, Temasek, Total and Shapoorji Pallonji, and Khurshed Daruvala .

♦ Further analysis echoes this investment trend with the majority of the biggest deals packaged as equity investment or green bonds, followed by mergers and acquisition (M&A) and finally initial public offering (IPO).

♦ Almost half (48%) of the total investment was for generalised renewable energy, with 41% targeting the solar sector and 10% to wind. Only 1% of the total investment during 2019/20 was for storage or solar pumps.

Way Forward

- ♦ As the renewable energy targets are being met, India is being able to manage its finances well in tandem of the demand. But there are still certain policy lacunae and certain tax related structures which need to be stream lined. Making renewable energy affordable and ubiquitous is also the need. It may require subsidy or reduced taxation by the government. 

General Studies Paper- III

Topic:

- Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

Q. Discuss the financing aspect of India's renewable energy projects in the light of India's target for renewable energy in energy mix and investment options.

07

Global Population Projections by LANCET Study

Why in News?

- India is estimated to have the largest working-age population by 2100, followed by Nigeria, China and the US, despite a huge decline in the number of workers, according to a study published in Lancet recently.
- Global population is expected to peak in 2064 at 9.73 billion and then decline to 8.79 billion in 2100.

Key Highlights of the Study

- Huge declines in the number of workers are seen in China and India by researchers who projected the number of working-age individuals (aged between 20 and 64 years) for the 10 largest countries by population in 2017.
- The researchers estimated the population from 2018 to 2100 for 195 countries and territories with the standard cohort-component method of projection using estimates from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017.
- Global population will peak in 2064 at 9.73 billion and then decline to 8.79 billion in 2100, considering statistical models of fertility, mortality and migration.
- India, Nigeria, China, the US and Pakistan are likely to be the five largest countries by population in 2100.
- By 2050, 151 countries are projected to have a total fertility



rate (TFR)—the average number of children born per woman—lower than the replacement level (TFR <2.1), and 183 nations will have a TFR lower than replacement by 2100.

- Between 2017 and 2100, the study said, 23 countries, including Japan, Thailand, and Spain, are projected to have population declines greater than 50%. China, whose population is expected to decline by 48%, is projected to become the largest economy by 2035 before the US overtakes it in 2098.
- DR Congo, Pakistan, India, and Indonesia are forecasted to have the lowest life expectancies among the large countries, ranging from 76.9 years in DR Congo to 79.5 years in Indonesia.

Report Methodology

- Lancet forecasted population from 2018 to 2100 for 195 countries and territories with the standard cohort-component method of projection, using estimates from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017.
- This approach uses inputs of population by age and sex in 2017, sex ratios at birth in 2017 (kept constant through 2100), and forecasts for age-specific fertility rates, age-specific mortality rates, and net migration for all locations through 2100.
- Each location's population was projected separately, starting from a mid-year estimate of population in 2017.

- ◆ This analysis complies with the Guidelines on Accurate and Transparent Health Estimate Reporting.

Need to Study Patterns

- ◆ Understanding potential patterns in future population levels is crucial for anticipating and planning for changing age structures, resource and health-care needs, and environmental and economic landscapes.
- ◆ Population forecasts and scenarios are an important planning and risk management tool for governments, businesses, non-governmental organisations, and individuals.
- ◆ Governments need short-term and mid-term scenarios to estimate need for schools, hospitals, and other public services; to help inform infrastructure investments with long-term benefits; to plan for the necessary skills and knowledge for the future workforce; and to invest wisely in health research and development resources.
- ◆ Governments need long-term scenarios to understand potential environmental, military, geopolitical, and other risks and to implement prevention or mitigation strategies.
- ◆ Population scenarios are equally important for businesses that are engaged in investments with long-term returns, such as those in the pharmaceutical industry and in industries connected to heavy infrastructure projects.

- ◆ Global population forecasts appear to depend primarily on two key issues: the pace of fertility decline, and what happens to countries when fertility levels drop below a total fertility rate (TFR) of 2.1, traditionally considered the minimum rate necessary for generational replacement of the population (the replacement level).

Fertility Decline

- ◆ By the year 2100, Indian women will have 1.29 children. Since each woman must have two children to replace herself and her husband, this will result in a sharp population decline.
- ◆ However, it is difficult to believe that this predicted fertility rate of 1.29 for India is less than the projected 1.53 for the United States and 1.78 for France. Fertility decline in western countries is due to retreat from the family system.
- ◆ In the 1950s, India's Total fertility rate (TFR) was nearly six children per woman; today it is 2.2. The family planning initiatives and forced sterilisation during the Emergency led to a meagre 17% decline in TFR from 5.9 in 1960 to 4.9 in 1980. However, between 1992 and 2015, it had fallen by 35% from 3.4 to 2.2.
- ◆ 18 States and Union Territories have a TFR below 2, the replacement level.

Impact of Demographic Change

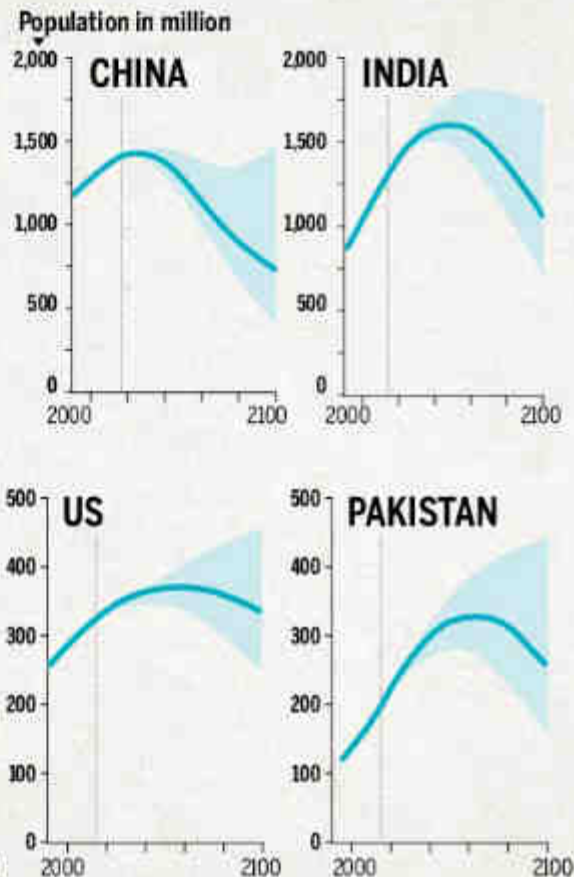
- ◆ With all other things being equal, the decline in the numbers of working-aged adults alone will reduce GDP growth rates.

- ◆ Fewer people on the planet in every year between now and 2100 mean less carbon emission, less stress on global food systems, and less likelihood of transgressing planetary boundaries.
- ◆ In countries with slower economic growth and with rising shares of the population who are retired compared with those who are still working, the fiscal sustainability of national health insurance and social security programmes will be challenged. In 2100, if labour force participation by age and sex does not change, the ratio of the non-working adult population to the working population might reach 1.16 globally, up from 0.80 in 2017.
- ◆ Having fewer individuals in the age group of 15 to 64, might reduce innovation in economies, and fewer workers in general might reduce domestic markets for consumer goods, because many retirees are less likely to purchase consumer durables than middle aged and young adults. Developments such as advancements in robotics could substantially change the trajectory of GDP per working-age adult, reducing the effect of the age structure on GDP growth. However, these effects are very difficult to model at this stage. Furthermore, the impact of robotics might have complex effects on countries for which the trajectory for economic growth might be through low-cost labour supply.

The Lancet

- The Lancet is an independent, international weekly general medical journal founded in 1823 by Thomas Wakley. Since its first issue (October 5, 1823), the journal has strived to make science widely available so that medicine can serve, and transform society, and positively impact the lives of people.
- The journal has editorial offices in London, New York, and Beijing.
- The journal publishes original research articles, review articles ("seminars" and "reviews"), editorials, book reviews, correspondence, as well as news features and case reports.

POPULATION PROJECTIONS FOR SELECT COUNTRIES IN 2100



Way Forward

- ◆ Policy options to adapt to continued low fertility, while sustaining and enhancing female reproductive health, will be crucial in the years to come.
- ◆ India is projected to have the second largest net immigration in 2100, with an estimated half a million more people immigrating to India in 2100 than emigrating out.
- ◆ Among the 10 countries with the largest populations in 2017 or 2100, India is projected to have one of the lowest life expectancies (79.3 years in 2100, up from 69.1 in 2017).
- ◆ Staying fixated on the notion that revising State allocation of Central resources based on current population rather than population from 1971 punishes States with successful population policies is short-sighted.
- ◆ It is time for India to accept the fact that being the most populous

nation is its destiny. It must work towards enhancing the lives of its current and future citizens. 📊📈📉

General Studies Paper- I

Topic:

- Role of women and women's organizations, Population and associated issues, Poverty and developmental issues, Urbanization, their problems and their remedies.

Q. With change in demographics, there is a need to adapt policies for resource distribution and economic priorities. Discuss the given statement in the light of Medical Journal Lancet Report regarding population trends by 2100.

7

IMPORTANT BRAIN BOOSTERS

01

Kamdhenу Deepawali Campaign

1. Why in News?

- Encouraged by the response to Gaumaya Ganesha Campaign which encouraged usage of eco-friendly material in manufacture of idols for the Ganesha Festival based on the appeal made by Prime Minister Shri Narendra Modi, Rashtriya Kamdhenu Aayog (RKA) has started a nation-wide campaign to celebrate “Kamdhenу Deepawali Abhiyan” this year on the occasion of Deepawali festival.



5. Need for RKA

- Livestock economy sustains nearly 73 million households in rural areas.
- Even though, the country is largest producer of milk, the average milk yield in India is only 50% of the world average.
- The low productivity is largely due to deterioration in genetic stock, poor nutrition and unscientific management.
- The trend needs to be reversed and popular perception about cow and cow based agriculture and cow based industry need to be corrected immediately for social and economic rejuvenation of society particularly poor in rural areas.

2. The Campaign

- Through this campaign, the RKA is promoting extensive use of cow-dung/ Panchgavya products during this Diwali Festival. Manufacture of Cow dung based Diyas, Candles, Dhoop, Agarbatti, Shubh-Labh, Swastik, Samrani, Hardboard, Wall-piece, Paper-weight, Havan samagri, Idols of Lord Ganesha and Goddess Lakshmi for this year’s Diwali festival has already started.
- RKA aims reaching 11 crore families to ignite 33 crore Diyas made of cow-dung during this year’s Deepawali festival.
- Apart from generating business opportunities to thousands of cow-based entrepreneurs / farmers/ women entrepreneurs, the use of cow-dung products will lead to cleaner and healthier environment. It will help in making Gaushalas ‘Atma Nirbhar’ too.
- By providing an environment friendly alternative to Chinese made Diyas, the campaign will boost up Make in India vision and mission of Prime Minister Shri Narendra Modi and also promote ‘Swadeshi’ movement while reducing environmental damage.

3. About the Aayog

- The Government of India has constituted the “Rashtriya Kamdhenu Aayog” to organize animal husbandry on modern and scientific lines and to take steps for preserving and improving breeds, and prohibiting the slaughter, of cows and calves and other milch and draught cattle.
- Its objective includes the conservation, protection and development of cows and their progeny; for proper implementation of laws with respect to prohibition of slaughter and / or cruelty to cows and for giving direction to the cattle development programmes.
- As per 2012 livestock census, India has 300 million bovine population; out of this 191 million are cattle (cows) and 108.7 million buffaloes. The cattle and buffalo genetic resource is constituted by 43 breeds of cattle and 16 breeds of buffaloes. Among the bovine population, 216 million are females and 84 million are males. 5.2 million cattle are abandoned as per livestock census 2012.
- India is the global leader in milk production with peak milk production of 176.35 MMT during 2017-18.

4. Policy Enabler

- The Rashtriya Kamdhenu Aayog will provide enabling environment, develop a policy framework and shape guidelines aimed at achieving following:
 - Sustainable development and genetic upgradation of genetic resources of cows in India.
 - Conservation and development of Indigenous Breeds of cows and improved management of cows of the country.
 - Enhanced production and productivity throughout country, leading to higher farm income and better quality of life for the dairy farmers.
 - Protection and promotion of the interest of dairy cooperatives, Livestock Development Agencies, farmer producer companies and dairy industries in the country.
 - Effective implementation of laws for welfare of the cows and its progenies in the country and proper working of Gaushals, Gosadans and Pinjrapoles and other organizations/institutes for protection and development of cows and their progenies.

02 Codex Alimentarius Commission

1. Why in News?

- Prime Minister has released commemorative coins of Rs 75 denomination to mark the 75th Anniversary of Food and Agriculture Organization (FAO) through video conferencing.
- He also dedicated to the nation, 17 recently developed biofortified varieties of crops.



2. Codex Alimentarius Commission

- The Codex Alimentarius, or "Food Code" is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission. The Commission, also known as CAC, is the central part of the Joint Food and Agriculture Organization/ World Health Organisation FAO/WHO Food Standards Programme and was established by FAO and WHO to protect consumer health and promote fair practices in food trade. It held its first meeting in 1963.
- Voluntary in nature, Codex standards can be general or specific and are recognised by WTO Agreements as reference standards
- Core Codex texts, typically deal with hygienic practice, labelling, contaminants, additives, inspection & certification, nutrition and residues of veterinary drugs and pesticides and apply horizontally to products and product categories.
- Currently, the Codex Alimentarius Commission has 189 Codex Members made up of 188 Member Countries and 1 Member Organization (The European Union). India became the member of Codex Alimentarius in 1964.

3. World Food Day

- World Food Day 2020 is observed on October 16 every year to tackle global hunger and strive to eradicate hunger across the world.
- This year the World Food Day 2020 theme is "Grow, nourish, sustain. Together. Our actions are our future".
- World Food Day is an annual celebration in the honour of the founding date of the Food and Agriculture Organization launched by the United Nations in the year 1945. World Food Day 2020 is also marking the 75th anniversary of FAO.
- World Food Day is calling for global solidarity to help all populations, and especially the most vulnerable, to recover from the crisis, and to make food systems more resilient and robust so they can withstand increasing volatility and climate shocks, deliver affordable and sustainable healthy diets for all, and decent livelihoods for food system workers.
- This will require improved social protection schemes and new opportunities offered through digitalization and e-commerce, but also more sustainable agricultural practices that preserve the Earth's natural resources, our health, and the climate.

4. Food and Global Efforts

- The Nobel Peace Prize 2020 was awarded to World Food Programme (WFP) "for its efforts to combat hunger, for its contribution to bettering conditions for peace in conflict-affected areas and for acting as a driving force in efforts to prevent the use of hunger as a weapon of war and conflict.
- The WFP, which was established in 1961 at the behest of the US president Dwight Eisenhower, is the world's largest humanitarian organisation committed towards its global goal of ending hunger by the year 2030.
- In 2015, eradication of world hunger became one of the UN's Sustainable Development Goals (SDGs) and WFP is the UN's primary instrument in achieving that goal. Other UN agencies that work towards providing food security include the World Bank, the Food and Agriculture Organisation (FAO) and the International Fund for Agricultural Development (IFAD).

5. India's Efforts for Food Security

- Efforts to increase agricultural productivity
 - ☛ National Food Security Mission
 - ☛ Rashtriya Krishi Vikas Yojana (RKVY) now renamed as Rashtriya Krishi Vikas Yojana- Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (RKVY-RAFTAAR)
 - ☛ Electronic national agriculture market (eNAM)
 - ☛ Pradhan Mantri Fasal Bima Yojana
 - ☛ Integrated Schemes on Oilseeds, Pulses, Palm oil and Maize (ISOPOM)
 - ☛ Irrigation and soil and water harvesting programme
- Efforts to make food affordable and accessible
 - ☛ Mid-day meals
 - ☛ Anganwadi systems
 - ☛ Subsidies via Targeted-Public Distribution System (TPDS)
 - ☛ The National Food Security Act (NFSA), 2013
 - ☛ National Nutrition Mission (POSHAN Abhiyaan)

03

Greater Male Connectivity Projects

1. Why in News?

- India and Maldives recently concluded USD400 million Line of Credit (LoC) agreement for the implementation of the Greater Male Connectivity Project (GMCP), which is the single-largest connectivity and infrastructure project in the island nation.



2. About Project

- Maldivians have often highlighted the disparity between capital Male and the atolls that can be reached only via boat service.
- The GMCP, a 6.7 km bridge and causeway network connecting Male, with islands Villingili, Gulhifalhu and Thilafushi, is the second significant connectivity project in the Indian Ocean archipelago, coming two years after the China backed \$200 million Sinamale Bridge, or the China-Maldives Friendship Bridge connecting airport island of Hulhule with the capital, was inaugurated.
- The scheme is composed of three navigation bridges of 140 m main span across the deep channel between each island, 1.41 km of marine viaduct in deep water, 2.32 km marine viaduct in shallow water or on land, and 2.96 km of at-grade roads.
- To use renewable energy as a sustainable measure in infrastructure, solar power will be used for road lighting, navigation lighting, deck cell lighting, CCTV and lighting on sign gantry and architectural lighting.
- Solar panels will be installed on top of the lamp posts and along discrete lengths of the bridge parapets.

3. Other Major Projects

- India has engaged in 7 major infrastructure projects in the country under 800 million USD Line of Credit, and these include:
 - Development of an international port at Gulhifalhu;
 - Establishment of water supply and sewerage networks across 34 islands spanning 16 atolls;
 - Development of roads and storm water drainage along with reclamation works in Addu atoll in southern Maldives;
 - Establishment of a Cancer Hospital in Hulhumale;
 - Expansion of the Hanimaadhoo Airport in northern Maldives;
 - Construction of a Cricket Stadium in Hulhumale; and
 - Expansion of facilities for the Maldives Industrial Fisheries Company.

4. Current India-Maldives Relations

- India has announced \$250 million special financial assistance to help the Maldives as it tries to cope with the economic strain gravely aggravated by the pandemic.
- According to the UNDP, the Maldives is amongst the worst affected countries in Asia region and potentially globally, due to the impact of COVID-19.
- In its latest outlook the Asian Development Bank has also observed that output in Maldives is expected to shrink by a fifth in 2020, the sharpest GDP forecast revision in the sub region, then grow by 10.5% in 2021."
- During COVID-19 crisis to demonstrate the nation's 'Neighbourhood First' policy and commitment, India rushed food and medical supplies to other SAARC member-nations. India sent 6.2 tonnes of medical supplies aboard an Indian Air Force (IAF) transporter.
- In relatively recent times, India rushed large quantities of drinking water when the desalination plants of capital Male got burnt in December 2014.

5. Dynamic Relation

- Signs of strains began to show up in bilateral relations, when then president Abdulla Yameen began identifying with his new international friend in China. Yemen became the first Maldivian President to visit China, preceded by China's Xi Jinping doing so earlier. But current government posed more trust with India and weighs foreign policy in practical terms.
- Previous Maldivian government was pitching India against China for better bargains. This policy is shunned by current government.
- India-Maldives civilian cooperation at the government level had got a real boost when in 1987, New Delhi rushed its Air Force personnel to restore order and democracy ('Operation Cactus') in the country after a group of Sri Lankan Tamil mercenaries sought to overthrow the legitimate Government.
- India and Maldives both, are founding members of SAARC. As India has 'Neighbourhood First' policy, Maldives has 'India First Policy'.

04

Turkey's Seismic Survey in Eastern Mediterranean

1. Why in News?

- Turkey's navy has issued an advisory saying that the Turkish ship Oruc Reis will carry out a seismic survey in the eastern Mediterranean over the next ten days, a step likely to revive tensions with NATO ally Greece.
- Two other vessels, the Ataman and Cengiz Han along with Oruc Reis exploration ship will continue works in an area including the south of Greek island of Kastellorizo until October 22.



2. Competing for Energy

- Turkey and Greece have overlapping claims to areas of gas-rich waters in the Eastern Mediterranean. Greece's position is that each of its islands—and there are thousands of them—is entitled to its own continental shelf with exclusive drilling rights.
- The European Union (EU) has stood firmly behind Greece and last July sanctioned Turkey for carrying out seismic surveys off the north Cypriot coast. It has repeatedly warned Turkey against carrying out further exploration.
- Turkey says that is an unfair interpretation of international law that unjustly encroaches on its own exclusive economic zone.
- In recent months, Turkey and Greece have each sought to bolster their territorial claims by drawing up exclusive maritime economic zones with Libya and Egypt, respectively.

3. Flare-up Incidents

- In July, Turkey put out a naval alert - known as a Navtex - that it was sending its Oruc Reis research ship to carry out a drilling survey in waters close to the Greek island of Kastellorizo, a short distance from the coast of south-west Turkey.
- Both countries announced military exercises in sections of a broad area between Crete and Cyprus, where the Turkish research vessel Oruc Reis is carrying out seismic research escorted by Turkish warships.
- Greece says the vessel is over its own continental shelf, where it has exclusive rights on potential undersea gas and oil deposits, and has sent its own warships to shadow the Turkish flotilla.
- Turkey is also prospecting for hydrocarbons in waters where Cyprus claims exclusive economic rights.

4. EU Council on the Issue

- Greece and Cyprus pushed for a tougher European Union response to Turkey's natural gas exploration in contested Mediterranean waters at an EU summit in early October 2020, but were essentially told to hold off until another leaders' meeting in December.
- Last month, Ankara withdrew Oruc Reis from contested waters to "allow for diplomacy" ahead of a European Union summit.
- After the summit the bloc said it would punish Turkey if it continued its operations in the region, in a move Ankara said further strained Turkey-EU ties.
- Germany emphasised the complicated relation between EU and Turkey and the issue of migration crises, thus favoured for "constructive relationship with Ankara" and stressed upon diplomatic solution.

5. Threat of Economic Sanctions

- France and Germany have declared that Turkey had only "weeks" to revise its stance and stop provocations, but declined to give a strong ultimatum.
- French President Emmanuel Macron said after the EU summit that leaders had reaffirmed support for Greece and Turkey, but were also open to talks with Ankara.
- EU leaders had agreed on Oct. 2 to give Turkey until early December before considering economic sanctions and Germany, which has so far led diplomatic talks with Ankara, wants to give dialogue a chance because of close EU-Turkey trade ties.
- Cyprus is frustrated that, in addition to the Turkish exploration ship off a Greek island, Turkey has sent another vessel to Cyprus's economic zone to conduct seismic surveys.

05

Water Life Mission - Lab on Wheels

1. Why in News?

- The supply of clean and safe water is essential for public health therefore, ensuring supply of water along with regular testing is imperative. The Jal Jeevan Mission (JJM) of the Ministry of Jal Shakti aims to provide tap water connection to every rural home by 2024.
- Taking cognizance of the pressing need for water testing, government of Haryana has come up with a novel approach by launching a State-of-the-Art Mobile Water Testing Laboratory Van, fully equipped with multi-parameter system containing analyzers/ sensor/ probes/ instruments meant for water testing.



2. Lab on Wheels

- This mobile water testing lab van has been uniquely designed and fully loaded with latest technologies and features.
- It is GPS enabled for location tracking and the analyzed sample data can be transmitted to a centralized PHED server via GPRS/ 3G connectivity with power backup.
- It also provides On-site recording and reporting of results through a smart phone or similar device with the ability to send results direct to a web based secure central server.
- This mobile van also has a fully automated sensor-based analysis controlled by centrally commanded software. The LED display unit in the mobile lab gives an instant display of the results immediately after analysis.
- The lab is capable of measuring different water quality parameters like pH, alkalinity, TDS, hardness, residual chlorine, zinc, nitrite, Fluoride, turbidity and micro-biological test of water samples.
- This mobile lab will help in quickly identifying the water quality problem on the spot at site.

3. Jal Jeevan Mission

- Jal Jeevan Mission is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India.
- The programme will also implement source sustainability measures as mandatory elements, such as recharge and reuse through grey water management, water conservation, rain water harvesting.
- The Jal Jeevan Mission will be based on a community approach to water and will include extensive Information, Education and communication as a key component of the mission.
- JJM looks to create a jan andolan for water, thereby making it everyone's priority.

4. Objectives of Jal Jeevan Mission

- To provide Functional 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.

5. Jal Shakti

- Ministry of Jal Shakti is a ministry under Government of India which was formed in May 2019.
- This was formed by merging of two ministries; Ministry of Water Resources, River Development & Ganga Rejuvenation and Ministry of Drinking Water and Sanitation.

06

Self-sufficiency in Supercomputing

1. Why in News?

- A Memorandum of Understanding (MoU) was signed between Centre for Development of Advanced Computing (C-DAC) and Director of National Supercomputing Mission (NSM) Host Institutes for establishing Supercomputing Infrastructure with Assembly and Manufacturing of Critical Components at IISC Bangalore, IIT Kanpur, IIT Roorkee, IIT Hyderabad, IIT Guwahati, IIT Mandi, IIT Gandhinagar, NIT Trichy, NABI Mohali.



2. Aiming for Self-Reliance

- National premier academic and research institutes like the IISc, IITs, NIT, NABI are par excellence and are renowned globally for their technical expertise.
- C-DAC endeavours to enhance India's capability, empower scientists and researchers with state-of-the-art Supercomputing facilities, attain global competitiveness and ensure self-reliance in the strategic area of Supercomputing Technology leading towards the Exascale Computing.
- The mission as stated by C-DAC is to Establish Dependable and Secure Exa-Scale Ecosystem with innovative designs, disruptive technologies and Expert Human resource.
- C-DAC has to develop our own indigenous Hardware encompassing Exascale Chip Design, Design and Manufacture of Exascale Server Boards, Exascale Interconnects and Storage including Silicon-Photonics at C-DAC in line with Atmanirbhar Bharat to achieve complete Self Reliance.

3. National Supercomputing Mission

- The 2020-21 is an important year for India's National Supercomputing Mission (NSM). The mission was set up to provide the country with supercomputing infrastructure to meet the increasing computational demands of academia, researchers, MSMEs, and startups by creating the capability design, manufacturing, of supercomputers indigenously in India.
- A first of its kind attempt to boost the country's computing power, the NCM is steered jointly by the Ministry of Electronics and IT (MeitY) and Department of Science and Technology (DST) and implemented by the Centre for Development of Advanced Computing (C-DAC), Pune and the Indian Institute of Science (IISc), Bengaluru.
- The target of the mission was set to establish a network of supercomputers ranging from a few Tera Flops (TF) to Hundreds of Tera Flops (TF) and three systems with greater than or equal to 3 Peta Flops (PF) in academic and research institutions of National importance across the country by 2022.
- This network of Supercomputers envisaging a total of 15-20 PF was approved in 2015 and was later revised to a total of 45 PF (45000 TFs), a jump of 6 times more compute power within the same cost and capable of solving large and complex computational problems.
- The Mission envisages empowering our national academic and R&D institutions spread over the country by installing a vast supercomputing grid comprising of more than 70 high-performance computing facilities.
- These supercomputers will also be networked on the National Supercomputing grid over the National Knowledge Network (NKN).

4. Objectives of NSM

- To make India one of the world leaders in Supercomputing and to enhance India's capability in solving grand challenge problems of national and global relevance
- To empower our scientists and researchers with state-of-the-art supercomputing facilities and enable them to carry out cutting-edge research in their respective domains
- To minimize redundancies and duplication of efforts, and optimize investments in supercomputing
- To attain global competitiveness and ensure self-reliance in the strategic area of supercomputing technology

07 Food for Peace

1. Why in News?

- Nobel Peace Prize for 2020 has been awarded to the World Food Programme (WFP), of the United Nations (UN) system, for its contribution to combating hunger in conflict and disaster-struck sites.
- The Norwegian Nobel Committee took note of the WFP's life-saving role in the year of the pandemic, staving off catastrophes of hunger in Yemen, Congo, Nigeria, South Sudan and Burkina Faso.



2. Award for Combating Hunger

- In 2015, eradication of world hunger became one of the UN's Sustainable Development Goals (SDGs) and WFP is the UN's primary instrument in achieving that goal.
- Other UN agencies that work towards providing food security include the World Bank, the Food and Agriculture Organisation (FAO) and the International Fund for Agricultural Development (IFAD).
- The decision to honour the WFP echoes the advice of another peace laureate from 1949, Lord John Boyd Orr, the first head of the FAO that peace cannot be built on empty stomachs.
- WFP was awarded the peace prize "for its efforts to combat hunger, for its contribution to bettering conditions for peace in conflict-affected areas and for acting as a driving force in efforts to prevent the use of hunger as a weapon of war and conflict."
- The recognition that the WFP has received can help the humanitarian organisation prepare for a decade of ambition and help meet the Sustainable Development Goals (SDG). Of central importance is SDG 2 — achieving zero hunger by 2030.

3. World Food Programme

- The WFP, which was established in 1961 at the behest of the US president Dwight Eisenhower, is the world's largest humanitarian organisation committed towards its global goal of ending hunger by the year 2030. Eisenhower proposed to the UN General Assembly on September 1, 1960, that a, "workable scheme should be devised for providing food aid through the UN system."
- WFP provides food assistance in two ways, either by way of providing food or by meeting people's food-needs by providing cash-based transfers.
- WFP runs entirely on public donations and was able to raise over \$8 billion last year. Its donors include governments, corporations and individuals.
- The cash-based transfers were launched for the first time in 2005 in response to the tsunami in Sri Lanka.
- The organisation estimates hunger by the prevalence of undernourishment. The UN defines undernourished or food-deprived people as those individuals whose food intake falls below the minimum level of dietary energy requirements.

4. Hunger Situation

- In 2019, the WFP provided assistance to close to 100 million people in 88 countries who are victims of acute food insecurity and hunger.
- In 2019, 135 million people suffered from acute hunger, the highest number in many years. Most of the increase was caused by war and armed conflict.
- The coronavirus pandemic has contributed to a strong upsurge in the number of victims of hunger in the world.
- In countries such as Yemen, the Democratic Republic of Congo, Nigeria, South Sudan and Burkina Faso, the combination of violent conflict and the pandemic has led to a dramatic rise in the number of people living on the brink of starvation.
- The World Food Programme was an active participant in the diplomatic process that culminated in May 2018 in the UN Security Council's unanimous adoption of Resolution 2417, which for the first time explicitly addressed the link between conflict and hunger.

7 MCQ's WITH EXPLANATORY ANSWERS

(Based on Brain Boosters)

01 Kamdhenu Deepavali Campaign

Q1. With reference to the Kamdhenu Deepavali Campaign, consider the following statements:

1. Kamdhenu Deepavali Campaign will be implemented by Rashtriya Kamdhenu Aayog (RKA)
2. Rashtriya Kamdhenu Aayog (RKA) will promote dhoop, diyas, candles, agarbatti, idols etc made of cow dung under Kamdhenu Deepavali Campaign

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: (c)

Explanation: Both the statements are correct.

Encouraged by the response to Gaumaya Ganesha Campaign which encouraged usage of eco-friendly material in manufacture of idols for the Ganesha Festival based on the appeal made by Prime Minister Shri Narendra Modi, Rashtriya Kamdhenu Aayog (RKA) has started a nation-wide campaign to celebrate "Kamdhenu Deepawali Abhiyan" this year on the occasion of Deepawali festival.

Through this campaign, the RKA is promoting extensive use of cow-dung/ Panchgavya products during this Diwali Festival. Manufacture of Cow dung based Diyas, Candles, Dhoop, Agarbatti, Shubh-Labh, Swastik, Samrani, Hardboard, Wall-piece, Paper-weight, Havan samagri, Idols of Lord Ganesha and Goddess Lakshmi for this year's Diwali festival has already started.



02 Codex Alimentarius Commission

Q2. Consider the following statements:

1. India is also a member of Codex Alimentarius Commission.
2. World Food Day is celebrated across the globe to commemorate the founding of FAO.
3. Food Code issue by Codex Alimentarius Commission is mandatory for its signatories and is binding in nature.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) None of the Above

Answer: (a)

Explanation:

Statement 1 and 2 are correct. Codex Alimentarius Commission has 189 Codex Members made up of 188 Member Countries and 1 Member Organization (The European Union). India became the member of Codex Alimentarius in 1964.

World Food Day is an annual celebration in the honour of the founding date of the Food and Agriculture Organization launched by the United Nations in the year 1945. World Food Day 2020 is also marking the 75th anniversary of FAO.

Statement 3 is incorrect. The Codex Alimentarius, or "Food Code" is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission. Voluntary in nature, Codex standards can be general or specific and are recognised by WTO Agreements as reference standards.



03 Greater Male Connectivity Projects

Q3. With reference to the India-Maldives relations, consider the following statements:

1. Greater Male Connectivity Project (GMCP) will be one of the largest projects in the island nation undertaken by India for which USD400 million Line of Credit (LoC) has been given.
2. GMCP is the first infrastructure project being carried out by India in Maldives.
3. Maldives, like India is also a founding member of SAARC.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 1 and 3 only
- c) 2 and 3 only
- d) All of the Above

Answer: (b)

Explanation:

Statement 1 is correct. India and Maldives on Monday concluded USD400 million Line of Credit (LoC) agreement for the implementation of the Greater Male Connectivity Project (GMCP), which is the single-largest connectivity and infrastructure project in the island nation.

Statement 2 is incorrect. India has engaged in 7 major infrastructure projects in the country under 800 million USD Line of Credit.

Statement 3 is correct. India and Maldives both, are founding members of SAARC. As India has 'Neighbourhood First' policy, Maldives has 'India First Policy'.



04 Turkey's Seismic Survey in Eastern Mediterranean

Q4. Consider the following statements:

1. Oruc Reis is the name of a ship belonging to Turkey which is meant to conduct seismic surveys in the Mediterranean Sea.
2. Oruc Reis is the only Turkish ship to conduct surveys in the contested waters which are contested between Turkey and Greece.

Which of the following statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: (a)

Explanation:

Statement 1 is correct. Turkey's navy has issued an advisory saying that the Turkish ship Oruc Reis will carry out a seismic survey in the eastern Mediterranean over the next ten days. Oruc Reis research ship is also to carry out a drilling survey in waters close to the Greek island of Kastellorizo, a short distance from the coast of south-west Turkey.

Statement 2 is incorrect. Two other vessels, the Ataman and Cengiz Han along with Oruc Reis exploration ship will continue works in an area including the south of Greek island of Kastellorizo. Turkey and Greece have overlapping claims to areas of gas-rich waters in the Eastern Mediterranean. Greece's position is that each of its islands—and there are thousands of them—is entitled to its own continental shelf with exclusive drilling rights.



05 Water Life Mission - Lab on Wheels

Q5. Consider the following statements with reference to the Jal Jeevan Mission:

1. Jal Jeevan Mission is meant to provide safe drinking water to all households in rural India by 2024.
2. Lab on wheels is launched by Haryana government under Jal Jeevan Mission to measure water quality and identify problem issues on the spot.
3. Jal Jeevan Mission is a scheme under Ministry of Jal Shakti.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 1 and 3 only
- c) 2 and 3 only
- d) All of the Above

Answer: (d)

Explanation: Statement 1 and 2 are correct. Jal Jeevan Mission is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India. The programme will also implement

source sustainability measures as mandatory elements, such as recharge and reuse through grey water management, water conservation, rain water harvesting.

Government of Haryana has come up with a novel approach by launching a State-of-the-Art Mobile Water Testing Laboratory Van, fully equipped with multi-parameter system containing analyzers/sensor/ probes/ instruments meant for water testing.

Statement 3 is also correct. Ministry of Jal Shakti is a ministry formed by merging of two ministries; Ministry of Water Resources, River Development & Ganga Rejuvenation and Ministry of Drinking Water and Sanitation.



06 Self-sufficiency in Supercomputing

Q6. Consider the following statements:

1. National Supercomputing Mission is a mission under the aegis of NITI Aayog and is implemented by Department of Telecommunications.
2. The target of the mission was set to establish a network of supercomputers whose computing power ranges from a few Tera Flops (TF) Peta Flops (PF).
3. Multiple premiere institutes in India will be undertaking the functions related to supercomputing infrastructure with assembly and manufacturing of critical components.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) None of the Above

Answer: (b)

Explanation:

Statement 1 is incorrect. National Super Computing Mission is steered jointly by the Ministry of Electronics and IT (MeitY) and Department of Science and Technology (DST) and

implemented by the Centre for Development of Advanced Computing (C-DAC), Pune and the Indian Institute of Science (IISc), Bengaluru.

Statement 2 and 3 are correct. The target of the mission was set to establish a network of supercomputers ranging from a few Tera Flops (TF) to Hundreds of Tera Flops (TF) and three systems with greater than or equal to 3 Peta Flops (PF) in academic and research institutions of National importance across the country by 2022. The Mission envisages empowering our national academic and R&D institutions spread over the country by installing a vast supercomputing grid comprising of more than 70 high-performance computing facilities.



07 Food for Peace

Q7. With reference to the World Food Programme (WFP), consider the following statements:

1. Nobel Peace Prize, 2020 has been awarded to WFP for combating hunger.
2. WFP is one of the major UN institutions which are working to meet SDG-2 (zero hunger by 2030).

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: (c)

Explanation: Both the statements are correct. Nobel Peace Prize for 2020 has been awarded to the World Food Programme (WFP), of the UN system, for its contribution to combating hunger in conflict and disaster-struck sites.

In 2015, eradication of world hunger became one of the UN's Sustainable Development Goals (SDGs) and WFP is the UN's primary instrument in achieving that goal. WFP runs entirely on public donations and was able to raise over \$8 billion last year. Its donors include governments, corporations and individuals.



7

IMPORTANT NEWS

01

Ban on Import of Air Conditioners with Refrigerants

- ◆ Government of India has banned import of air conditioners with refrigerants. This move is came in the midst of India's campaign to be self-reliant by promoting domestic manufacturing of such goods.
- ◆ China and Thailand are the top exporters of air-conditioners to India, as per government data. Together the two contribute over 90% of India's imports of the good.

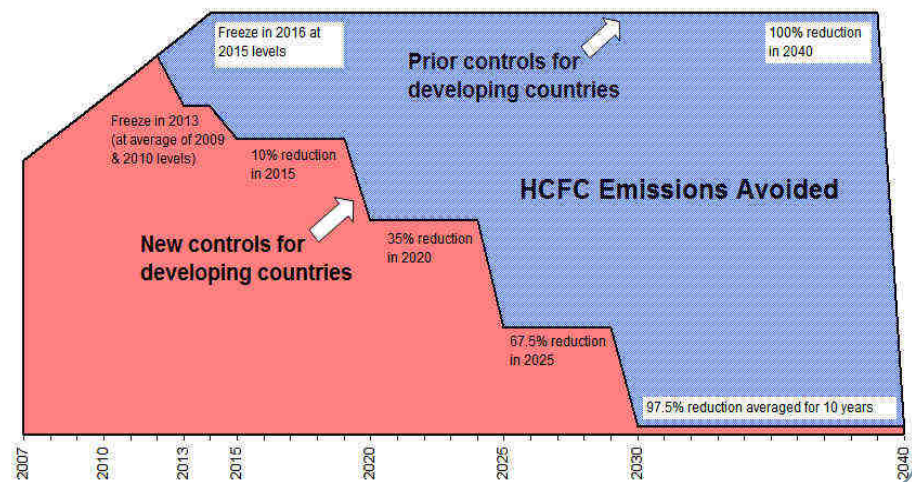
Background

- ◆ In June, the government imposed curbs on imports of certain new pneumatic tyres used in motor cars, buses, lorries and motorcycles. Before that prohibitions were placed on imports of items ranging from televisions to select defence equipment.

What are HCFCs and R-22?

- ◆ Hydrochlorofluorocarbons (HCFCs) are chemicals that are mainly used

New Stronger Montreal Protocol Controls Reduce Developing Country HCFC Emissions about 58 Percent



as refrigerants. Unfortunately, releases of HCFCs deplete the Earth's protective ozone layer and contribute to climate change.

- ◆ R-22 is an HCFC refrigerant that is often used in air-conditioning equipment. To protect the Earth's protective ozone layer, the United

States is phasing out R-22, along with other chemicals.

- ◆ As the United States phases out refrigerant R-22, you will need to make informed choices when servicing, repairing, or replacing an existing air-conditioning unit or when purchasing a new unit. < > < >

02

Kaleshwaram Lift Irrigation Project

- ◆ The National Green Tribunal (NGT) has held that environmental clearance (EC) to Kaleshwaram Lift Irrigation Project (KLIP) was granted ex post facto, after completion of substantial work,

by the Ministry of Environment, Forests and Climate Change (MoEF&CC) "in violation of law". It has also observed that accountability needs to be fixed and remedial measures be taken.

About Kaleshwaram Lift Irrigation System

- ◆ The Kaleshwaram Lift Irrigation System is considered to be one of the world's largest multi-purpose projects. It is designed to

provide water for irrigation and drinking purposes to about 45 lakh acres in 20 of the 31 districts in Telangana, apart from Hyderabad and Secunderabad. The cost of the project is Rs 80,000 crore, but is expected to rise to Rs 1 lakh crore by the time it is completely constructed by the end of 2020.

- ◆ This project is unique because Telangana will harness water at the confluence of two rivers with Godavari by constructing a barrage at Medigadda in Jayashankar Bhupalpally district and reverse pump the water into the main Godavari River and divert it through lifts and pumps into a huge and complex system of reservoirs, water tunnels, pipelines and canals.



- ◆ The project has set many records with the world's longest water tunnels, aqueducts, underground surge pools, and biggest pumps. By the time the water reaches Kondapochamma Sagar, the last reservoir in the system, about 227 kms away in Gajwel district, the Godavari water would have been

lifted to a height of 618 metres from its source at Medigadda.

- ◆ The total length of the entire Kaleshwaram project is approximately 1,832 km of which 1,531 km is gravity canals and 203 km comprise water tunnels. There are 20 water lifts and 19 pump houses in the project.

03

Genome India project

- ◆ The Department of Biotechnology (DBT) has identified Pune as a key centre in Maharashtra under the landmark 'Genome India' project. Under this project, scientists will identify genetic variation leading to different traits in Indians. A total of 10,000 genetic samples have to be collected across India in the next two years and, in Pune, scientists are looking at four major Maharashtrian sub-groups to be recruited for the research project.
- ◆ In a country of 1.3 billion people, there are approximately 4,500 well-defined ethnic groups, and this diversity also implies that biomedical research from other

populations of the world cannot be merely extrapolated for Indians.

What is a genome?

- ◆ Every organism's genetic code is contained in its Deoxyribose Nucleic Acid (DNA), the building blocks of life. The discovery that DNA is structured as a "double helix" by James Watson and Francis Crick in 1953, for which they won a Nobel Prize in 1962, was the spark in the long, continuing quest for understanding how genes dictate life, its traits, and what causes diseases.

Genome India' Project

- ◆ The project is being spearheaded

by the Centre for Brain Research at Bengaluru-based Indian Institute of Science as the nodal point of about 20 institutions, each doing its bit in collecting samples, doing the computations, and then the research. Its aim is to ultimately build a grid of the Indian "reference genome", to understand fully the type and nature of diseases and traits that comprise the diverse Indian population. For example, if the Northeast sees a tendency towards a specific disease, interventions can be made in the region, assisting public health, which make it easier to battle the illness.

04

Special Card for Transgenders

- ◆ The government is deliberating on making a special identity card for transgender community members that will help in linking them with various social welfare schemes.
- ◆ Transgender identity card will link transgenders with the social welfare schemes for the community. However, the plan has not been finalised yet but deliberations were held on the identity card.



in exercise of the powers conferred by the Transgender Persons (Protection of Rights) Act, 2019.

- ◆ According to the Act, the functions of the council include advising the Centre on the formulation of policies, programmes, legislation and projects with respect to

transgender persons; monitoring and evaluating the impact of policies and programmes designed for achieving equality and full participation of transgender persons.

- ◆ The other functions of the council are to review and coordinate the activities of all the departments of government and other governmental and non-governmental organisations dealing with matters relating to transgender persons, to redress the grievances of transgender persons, and to perform such other functions as may be prescribed by the Centre.



About NCTP

- ◆ National Council for Transgender Persons (NCTP) council was established in August by the Centre

05

Disengagement of Five Premier Green Institutions

- ◆ Recently, Finance Ministry has recommended that the Ministry of Environment Forests (MoEF) and Climate Change “disengage” from five autonomous institutions (Wildlife Institute of India (WII), Dehradun, and Indian Institute of Forest Management (IIFM), Bhopal, Indian Council of Forest Research and Education, Indian Plywood Industries Research and Training Institute, CPR Environmental Education Centre, and the Centre of Environment Education) working under it and merge two others, thus reducing the 16 autonomous organisations under the ministry to nine.

Key Recommendations

- ◆ The recommendation is a part of an exercise carried out by the

Finance Ministry for rationalisation of autonomous institutions that function under different ministries, and was sent to the Cabinet Secretary on September 30. It recommended that the Society of Integrated Coastal Management be merged with the National Centre for Sustainable Coastal Management, as both “perform similar roles of promoting coastal management to avoid duplication of activities and attain economies of scale”.

- ◆ It also recommended that the Indian Council for Forest and Research Education, GB Pant National Institute of Himalayan Environment and Sustainable Development and statutory bodies such as Central Pollution Control Board, Central Zoo Authority

(CZA), National Tiger Conservation Authority (NTCA), National Biodiversity Authority continue to function under and with the financial support of MoEF.

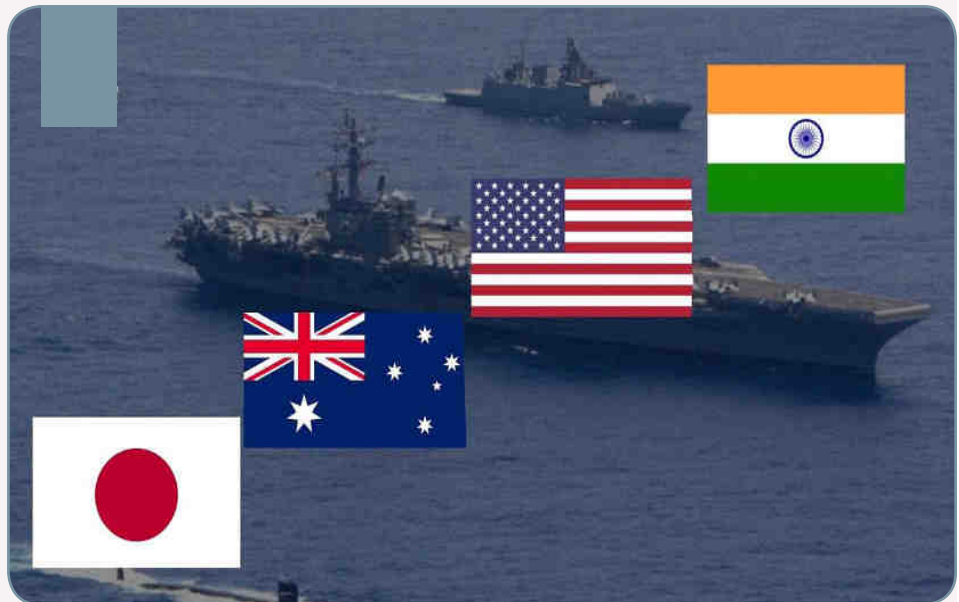
- ◆ IIFM receives money from fees, besides ministry grants, as is the case with WII, the Finance Ministry has recommended that MoEF disengage from these two organisations within three years. In the interim, it recommended, it should reduce its grant to both organisations by 25 per cent annually.
- ◆ The IIFM received Rs 37 crore in grants in 2019-20 and 2020-21, while WII received Rs 34 crore in grants from MoEF in both years. The Finance Ministry recommended that they both be converted to deemed universities.



06

Malabar 2020 Naval Exercise

- ◆ Amid the ongoing stand-off with China in eastern Ladakh, the Ministry of Defence has announced that Australia would join the Malabar 2020 naval exercise, consisting of India, Japan and the US, to be held next month, more than three years after Australia first requested to join. The exercise is scheduled to be held end November.
- ◆ The Royal Australian Navy last participated in Malabar 07-02 in September 2007. The expansion of Malabar is likely to further the integration of the Quad and reflects positive trends in India-Australia security cooperation.



Blue Dot Network

- ◆ A bipartisan group of Senators has written to India's Ambassador to the United States Taranjit Singh Sandhu backing India's decision to invite Australia to the annual Malabar naval exercise. The letter also asks India to join the Blue Dot Network — a U.S.-led collaboration with Australia and Japan that supports private-sector led infrastructure financing opportunities in response to China's Belt and Road Initiative (BRI).

- ◆ Led by the US's International Development Finance Corporation (DFC), the Blue Dot network was jointly launched by the US, Japan (Japanese Bank for International Cooperation) and Australia (Department of Foreign Affairs and Trade) in November 2019 on the sidelines of the 35th ASEAN Summit in Thailand.
- ◆ It is meant to be a multi-stakeholder initiative that aims to bring governments, the private sector and civil society together to promote "high quality, trusted standards for global infrastructure development".



07

Mitigation of Air Pollution

- ◆ Recently, Union minister of environment, forest, and climate change has urged to use SAMEER app to tackle the air pollution. SAMEER app, which not only shows user real-time information on air quality from 100 cities across India but also lets you register a complaint on a wide range of pollution-related activities.

Government Initiatives

- ◆ Action Plans for Improvement of Air Quality
 - The Central Government has launched National Clean Air Programme (NCAP) under the Central Sector "Control of Pollution" Scheme as a long-term, time-bound, national level strategy to tackle the air pollution

problem across the country in a comprehensive manner with targets to achieve 20 % to 30 % reduction in PM10 and PM2.5 concentrations by 2024 keeping 2017 as the base year for the comparison of concentration. 102 non-attainment cities mostly in Indo-Gangetic Plains have been identified based on ambient air

quality data for the period 2011 – 2015 and WHO report 2014/2018. The city specific Action Plans have been approved for all 102 non-attainment cities for implementation on ground.

- The Central Government has notified a Comprehensive Action Plan (CAP) in 2018 identifying timelines and implementing agencies for actions identified for prevention, control and mitigation of air pollution in Delhi and NCR.
- Graded Response Action Plan (GRAP) was notified on January 12, 2017, for prevention, control and abatement of air pollution in Delhi and NCR. It identifies graded measures and implementing agencies for response to four AQI categories, namely, Moderate to Poor, Very Poor, Severe and Severe + or Emergency.

SAMEER
INDIA'S AIR QUALITY INDEX

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- SAMEER is a government app, designed by Central Pollution Control Board to provide Air Quality updates.
- The public can also lodge Air Pollution complaints on this app by following some simple steps.

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♦ The Ministry of Environment, Forest and Climate Change is implementing Environment Education, Awareness and Training Scheme with the objective to promote environmental awareness among all sections of the society and to mobilize people's participation for conservation of environment.

♦ Under the National Green Corps (NGC) programme of the Ministry, about one lakh schools have been identified as Eco-clubs, wherein, nearly thirty lakh students are actively participating in various environment protection and conservation activities, including the issues related to the air pollution.



7

IMPORTANT PRACTICE QUESTIONS (For Mains)



01

03

05

01

Discuss the India's foreign policy engagements with its neighbourhood, especially in the context of territorial disputes with China and Nepal.

02

What is water stress? How and why does it differ regionally in India?

03

How is efficient and affordable urban mass transport key to the rapid economic development in India?

04

Examine the linkages between the nineteenth century's 'Indian Renaissance' and the emergence of national identity.

05

"The Attorney-General is the chief legal adviser and lawyer of the Government of India." Discuss.

06

'In the context of neo-liberal paradigm of development planning, multi-level planning is expected to make operations cost effective and remove many implementation blockages.' Discuss.

07

"The long-sustained image of India as a leader of the oppressed and marginalised Nations has disappeared on account of its new found role in the emerging global order" Elaborate.

7

IMPORTANT FACTS (For Prelims)



01



03



05

01

Which Indian irrigation project is considered to be one of the world's largest multi-purpose projects?

Kaleshwaram Lift Irrigation
System, Telangana

02

Which state will get India's first multi-modal logistics park?

Assam

03

What is the IUCN status of Chinese pink dolphin?

Vulnerable

04

Which processor cum 'system on chip' has been developed by IIT Madras?

'MOUSHIK'

05

Which state has topped the 'Anemia Mukta Bharat (AMB) Index'?

Haryana

06

Which state has launched 'Mission Shakti' campaign for the safety of women and girls?

Uttar Pradesh

07

Who has been re-elected as new Prime Minister of New Zealand?

Jacinda Kate Laurell Ardern

7

IMPORTANT QUOTES (For Essay and Answer Writing)



01



03



05

01

"Life is like a game of cards. The hand you are dealt is determinism; the way you play it is free will."

Jawaharlal Nehru

02

"Remember, no one is stopping you from lighting a lamp in a dark night."

Harivansh Rai Bacchan

03

"To keep your mind and nature cleansed of impurities, make a hut for your critics in your backyard and keep them close."

Kabir

04

"Devotion is that which generates knowledge; knowledge is that which fashions freedom."

Tulsidas

05

"Comfort is no test of truth. Truth is often far from being comfortable."

Swami Vivekananda

06

"The more you see the good in them, the more you will establish good in yourself."

Paramahansa Yogananda

07

"When you work, work as if everything depends on you. When you pray, pray as if everything depends on God."

J.R.D. Tata

AN INTRODUCTION

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Quite a large number of students dream of building a career for themselves are absolutely less equipped for the fairly tough competitive exam they have to appear in. Several others, who have a brilliant academic career, do not know that competitive exams are vastly different from academic examinations and call for a systematic and scientifically planned guidance by a team of experts. Here you might have got a head start but are ahead of many others who lag behind. Dhyeya IAS is enriched with qualified & experienced faculties besides specially designed study material that helps the students in achieving the desired goal.

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