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WEEKLY CURRENT AFFAIRS

FOURTH WEEK AUGUST 2022

ARTH-GANGA

GS-II Governance

Why in News?

Asok Kumar, the Director General of the National Mission for Clean Ganga, spoke about the Arth Ganga model during his virtual keynote address to the Stockholm World Water Week 2022 on August 24.

Key Points

- It "Strives to contribute at least 3 per cent of the GDP from the Ganga Basin itself.

- Its interventions are by India's commitments to the UN Sustainable development goals.
- The concept can be summarised as a river-people connection through the economic bridge to ensure the sustainability of these activities under "Namami Gange", the flagship programme of the Government to clean Ganga and its tributaries.

What is Arth-Ganga?

- PM Modi first introduced the concept during the first National Ganga Council meeting in Kanpur in 2019,

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- where he urged for a shift from Namami Ganga.
- The Union Government's flagship project to clean the Ganga, to the Model of Arth-Ganga.
 - It focuses on the Sustainable development of the Ganga and its surrounding areas, by focusing on economic activities related to the river.
 - At its core model seeks to use economics to bridge people with the river.

Six vertical features

1. Zero Budget Natural Farming involves chemical-free farming on 10 km on either side of the river and the promotion of cow dung as fertiliser through the GODBARdhan scheme.
2. The Monetization and Reuse of Sludge and Wastewater seek to reuse treated water for irrigation, industries and revenue generation for Urban Local Bodies (ULBs).
3. It will also involve Livelihood Generation Opportunities, by creating haats where people can

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- sell local products, medicinal plants and Ayurveda.
4. To increase Public Participation by increasing synergies between the stakeholders involved with the river.
 5. This model also wants to promote the cultural heritage and tourism of Ganga and its surroundings, through boat tourism, adventure sports and conducting Yoga activities.
 6. The model seeks to promote institutional building by empowering local administration for improved water governance.

Recent initiatives

It includes the Virtual launch of the Jalaj initiative at 26 locations in Ganga Basin, the main stem states, an MoU with Sahakar Bharati to achieve the vision of a sustainable and viable economic development by public participation and a tourism-related portal ImAvatar to Promote livelihood opportunities along the Ganga basin by Promoting Arth Ganga initiative through tourism.

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World Water Week

- World Water Week is observed the last week of August every year.
- It is organised by Stockholm International Water Institute (SIWI) to address the global water issues and related concerns of international development.
- The Theme for 2022 is "Seeing the Unseen: The Value of Water".

World Water Day

- World Water Day is celebrated on March 22 every year to highlight the importance of water.
- The day aims to support the achievements of Sustainable Development Goal 6: water and sanitation for all by 2030.
- It inspires people around the world to learn more about water-related issues and to take action to make a difference.

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- The Theme of 2022 is "Groundwater: Making the invisible visible".
- The Theme was decided by UN-water at its 30th meeting in Rome. It was proposed by the International Groundwater Resources Assessment Centre (IGRAC).
- It inspires people around the world to learn more about water-related issues and to take action to make a difference.

UN World Water Development Report 2022

- The 2022 edition of the United Nations World Water Development Report (UNWWDR 2022) entitled "Groundwater: Making the Invisible Visible" describes the challenges and opportunities associated with the development, management and governance of groundwater across the world.
- Groundwater accounts for 99 per cent of all liquid freshwater. It has the potential to provide societies with tremendous

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social, economic and environmental benefits and opportunities.

- The groundwater already provides almost half of the total water used for domestic purposes including drinking water.
- This natural resource is often poorly understood and consequently undervalued, mismanaged and even abused.
- Groundwater is central to the fight against poverty and achieving food and water security and even the creation of jobs and socio-economic development.
- The Asia-Pacific region is the largest groundwater abstractor in the world, containing seven out of the ten countries that extract most groundwater.
- The present dependence on groundwater will only increase due to increasing water demand by all sectors and increasing disruption in rainfall patterns.
- The report states that it all starts with making the invisible visible and the action would require strong and concerted efforts to manage and use it sustainably.
- Unlocking the full potential of groundwater will require strong and concerted efforts to manage

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and use it sustainably and it all starts by making the invisible, visible.

India's initiatives on water issues

- The Former President of India Shri Ram Nath Kovind presented the third National Water Awards and launched the Jal Shakti Abhiyan: Catch the Rain campaign 2022 in New Delhi on March 29, 2022.
- To make water everyone's business and to make the Jal Andolan a Jan Andolan a mass movement.
- The Government of India launched the "Jal Shakti Abhiyan" and the Jal Jeevan Mission in the year 2019.
- Jal Shakti Abhiyan: Catch the Rain campaign was launched by the Prime Minister on World Water Day last year.
- It was taken up in all districts in rural as well s urban areas of the country during the pre-monsoon and monsoon periods.

Atal Bhujal Yojana (Atal Jal)

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- It is a Central Sector Scheme, with a focus on community participation, demand-side interventions and convergence of ongoing schemes for sustainable groundwater management are being implemented.
- The approach is broadly based on the success stories and verified field initiatives by non-government and civil society organisations in community-led groundwater management in various parts of the country.

National Water Mission

- In a bid to draw attention to critical aspects of water and to promote dialogue and information sharing among participants on a variety of water-related topics have initiated a monthly seminar series " Water Talk" on March 22, 2019, the World Water Day.

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- Department of Water Resources, River Development and Ganga Rejuvenation has instituted National Water Awards and "Water Heroes-share your Stories" contests to incentivise good practices in water conservation and groundwater recharge.

Har Khet Ko Pani (HKKP)

It is a component of PMKSY. Repair, Renovation and Restoration (RRR) of the Water Bodies Scheme was launched which aims to revive irrigation potential by improving and restoration of water bodies by enhancing the tank storage capacity, along with other multiple objectives such as groundwater recharge, increased availability of drinking water, improvement of the catchment of tank commands etc.

Atal Mission for Rejuvenation and Urban Transformation

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Jal Jeevan Mission-Har Ghar Jal

The Government of India, in partnership with States, is implementing Jal Jeevan Mission-Har Ghar Jal, which aims at providing potable water in adequate quantity of prescribed quality on a regular and long-term basis to every rural household including tribal areas of the country through tap water connection by 2024.

15th Finance Commission report

In its report for 2021-26 has earmarked 60 per cent for national priorities like drinking water supply and rainwater harvesting and sanitation out of the total grants earmarked for Panchayati Raj Institutions (PRI).

It emphasises sustainable and efficient water use and has suggested three ways to reduce and rationalise water use in agriculture.

1. By replacing free or subsidised power supply for agriculture

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It focuses on the development of basic urban infrastructure in the Mission cities in the sectors of water supply, sewerage and septage management, stormwater drainage, green spaces and parks and non-motorised urban transport.

- with direct benefit transfers (DBT).
2. Encouraging the use of new technologies such as drip, sprinkler and sensor-based irrigation to get more crops per drop and
3. By conserving and rainwater harvesting to increase the availability of surface as well as groundwater. The report has recommended incentive-based grants to states that maintain and augment groundwater stock and maintain a check on any fall in the water table.

Namami Gange

- Namami Gange Programme is an Integrated Conservation Mission approved as a Flagship Programme by the Union Government in June 2014.
- It aims to accomplish the twin objectives of effective

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- abatement of pollution and conservation and rejuvenation of the National River Ganga.
- It is being operated under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti.
 - The programme is being implemented by the National Mission for Clean Ganga (NMCG) and its state counterpart organizations i.e State Program Management Groups (SPMGs).
 - The major areas of the Programme are Sewage Treatment Infrastructure, River-Front Development, River-Surface Cleaning, Biodiversity, Afforestation, Public Awareness, Industrial Effluent Monitoring and Ganga Gram.

Lumpy Skin Disease

GS-IV Science & Technology

Why in News

- Twelve states and Union Territories are battling the outbreak of Lumpy Skin

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- Disease(LSD), a serious viral infection in cattle.
- The first case was reported in Gujarat, over a million heads of cattle were infected and 46,943 have died, according the Department of Animal Husbandry & Dairying.

LSD Virus :

- LSD caused by the lumpy skin disease virus(LSDV), which is a virus of the capripox virus genus in the poxviridae family.
- Sheep pox virus, goat pox virus are the other members of the genus capripox virus.
- The LSDV mainly infects the cow & its progeny, Asian water buffalo.
- As per 2021 report of the United Nations Food & Agriculture Organisation(FAO), LSD outbreaks occur as epidemics several years apart.
- There is no known reservoir of the virus, it is also not known where & how the virus survives between epidemics.
- After being restricted for long to sub-Saharan Africa, the virus has spread to the middle East & Turkey.

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- From 2015, it has infected cattle in southeastern & Eastern Europe, Russia.

Virus in India :

- LSD entered India, Bangladesh, China in 2019, since then more than 20 states have reported this disease.
- There were small outbreaks in Gujarat, which the state animal husbandry department controlled by treating the infected cattle & giving goat pox vaccine to healthy animals.
- The largest numbers of LSD infected & dead animals were in Rajasthan-7.33 lakh and more than 31k, were reported.
- The actual numbers of both infected and deaths could be much higher, many dairy farmers & cattle herders may not be reported.

Transmission & Symptoms :

- LSDV spreads through blood-sucking vectors like ticks, mites, mosquitoes, through contaminated water, fodder and feed.
- Mosquito & housefly infestations reach their peak during the monsoon & veterinary scientists &

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- government officers blamed the season in July.
- Scientists have been advising that infected animals be isolated, the large number of stray cattle makes this task difficult making the disease to spread rapidly.
- LSDV attacks the circulatory system of an animal & causes vasculitis or inflammation of blood vessels & lesions in organs like liver, lungs, spleen, lymph nodes.
- The epidermis or outer surface of the skin, gets separated from the inner layer, leading to the formation of lumps or nodules on the animal's body.
- Fever, increased mucus secretion and loss of appetite are among the other symptoms.
- Autopsies carried out on eight carcasses found that the virus had cause necrotising vasculitis or the death of tissues and fibrosis in various organs, leading to death.
- The nodules may burst due to outer pressure or friction as the skin covering them is very thin.
- The open wounds make the animals susceptible to secondary bacterial & protozoan infections.

Risk factors :

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- As per 2019 livestock census, the bovine population of Gujarat is 2.60 crore including 1.49 crore cattle & 1.10 crore buffaloes.
- The indigenous breeds include Kankrej, Gir, Sahiwal etc and exotic breeds are Jersey, HF cows.
- Kankrej, known for being resistant diseases & parasites has been the worst hit.
- The infection has spread among Gir, which is an important breed.

Impact on economy :

In case of aggravated symptoms, cows stop producing milk and pregnant cows suffer miscarriages. The production of cow milk has gone down by 5% in August in Kutch, the worst affected district

HAYABUSA-2

GS-IV Science & Technology

1. About

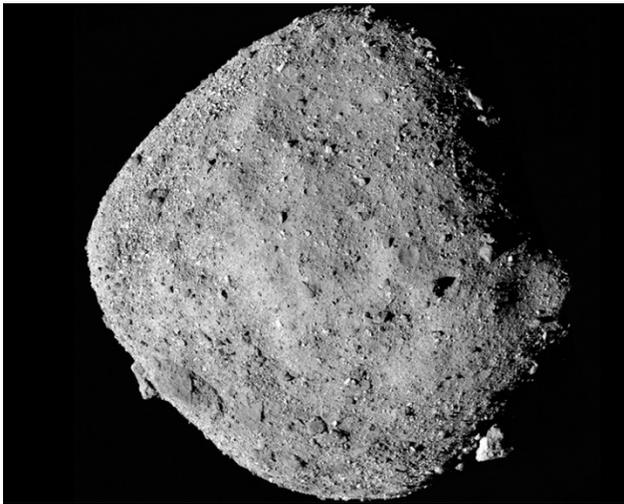
- The Hayabusa-2 mission was launched in December 2014 when the spacecraft was sent on

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- a six-year voyage to study the asteroid Ryugu.
- According to a report by Deutsche Welle from 2020, the spacecraft, which was approximately the size of a refrigerator, travelled more than 5 billion kilometres during its journey.
- The spacecraft arrived at the asteroid in mid-2018 after which it deployed two rovers and a small lander onto the surface.
- In 2019, the spacecraft fired an impactor into the asteroid's surface to create an artificial crater with a diameter of a little more than 10 metres, which allowed it to collect the samples.
- In December 2020, Hayabusa-2 delivered a small capsule that contained the rock and dust samples when it was 220,000 km from the Earth's atmosphere, which safely landed in the South Australian outback.
- Hayabusa2's predecessor, the Hayabusa mission, brought back samples from the asteroid Itokawa in 2010.
- Since the capsule landed on Earth, scientists have been studying the invaluable material — weighing merely a

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few grams, but approximately 4.6 billion years old — to explore the foundations of the solar system. Their analyses of the samples have helped us explore the origins of life on our planet.



2. The prominence of the sample collected by Hayabasu2

- A group of scientists found that the materials contained amino acids, and suggested that these building blocks of life might have formed in space.
- The current study states that **“Volatile and organic-rich C-type asteroids may have been one of the main sources of Earth’s water,”** which is essential for the emergence of life.

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- While the delivery of volatiles (water and organics) to Earth has been a subject of debate amongst scientists, the materials found in the **“Ryugu particles, identified in this study, probably represent one important source of volatiles.”**
- The study claimed that the organic material collected probably originated from the fringes of the Solar System, but was “unlikely to be the only source of volatiles delivered to the early Earth”.
- While the composition of particles collected from Ryugu closely matches water on Earth, the study notes there were slight differences, leading scientists to hypothesise that our planet’s water might have also originated from places other than asteroids, as reported by Kyodo News.
- “In a broad sense, it is possible that small celestial bodies brought things that led to water and life on Earth,

3. About Asteroids

- Asteroids are rocky objects that orbit the Sun, much smaller than planets. They are also called minor planets. According

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to NASA, there are 994,383 known asteroids, remnants from the formation of the solar system over 4.6 billion years ago.

- Asteroids are divided into three classes. First are those found in the main asteroid belt between Mars and Jupiter, which is estimated to contain somewhere between 1.1-1.9 million asteroids.
- The second group is that of trojans, which are asteroids that share an orbit with a larger planet. NASA reports the presence of Jupiter, Neptune and Mars trojans.
- In 2011, they reported an Earth trojan as well.
- The third classification is Near-Earth Asteroids (NEA), which have orbits that pass close to the Earth. Those that cross the Earth's orbit are called Earth-crossers. More than 10,000 such asteroids are known, out of which over 1,400 are classified as potentially hazardous asteroids (PHAs).
- Ryugu is also classified as a PHA and was discovered in 1999 and was given the name by the Minor Planet Center in 2015. It is 300 million kilometres from Earth and it

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took Hayabusa-2 over 42 months to reach it.

4. The prominence of studying asteroids

- Since asteroids are one of the oldest celestial bodies in the Solar System, scientists study them to look for information about the formation and history of planets and the sun.
- Another reason for tracking them is to look for asteroids that could crash into Earth, leading to potentially hazardous consequences.
- NASA's OSIRIS-REX mission collected samples from the asteroid Bennu in October 2020, which will be brought to Earth in 2023. Scientists are interested in studying asteroids such as Bennu because it hasn't undergone drastic changes since their formation over billions of years ago and therefore it contains chemicals and rocks dating back to the birth of the solar system. It is also relatively close to the Earth.

5. Similar missions

- The Hayabusa2 mission is similar to NASA's **OSIRIS-**

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REx mission to asteroid Benu. OSIRIS-REx successfully collected a sample from Benu in October 2020 and will bring it to Earth in 2023.

Paddy dwarfing

GS-III Agriculture

Why in News

Scientists at the Indian Agricultural Research Institute (IARI), who had collected samples of plants from farmers' fields, which showed symptoms of stunting & yellowing have undertaken their electron microscopy analysis & DNA isolation through PCR (polymerase Chain Reaction) technique.

Key Points :

- Agriculture scientists have narrowed down the cause of a mystery disease-causing “dwarfing” of rice plants to either grassy stunt virus or phytoplasma bacteria.
 - The vector responsible for their transmission is the brown plant hopper, an insect pest that
- sucks sap from the stems & leaves of rice plants.
 - Scientists at the Indian Agricultural Research Institute (IARI), who had collected samples of plants from farmers' fields, showed symptoms of stunting & yellowing.
 - Preliminary laboratory analysis indicates the ‘phytoreovirus’ or rice grassy stunt virus as the source of infection.
 - Phytoreovirus which induces stunting & yellowing of rice plants is transmitted by brown plant hopper.
 - The infected plants remained stunted even after the application of the recommended dose of fertilizers.
 - The second possible source is Phyto plasma, a bacterial pathogen that is spread by both brown plant hopper and green leaf hopper sucking insect pests.
 - Many farmers for the past fortnight or more, have been reporting stunting of paddy plants in their fields.
 - Such stunting has taken place typically 30-35 days after transplanting or direct seeding of rice.
 - Initially all plants register uniform growth. But at later

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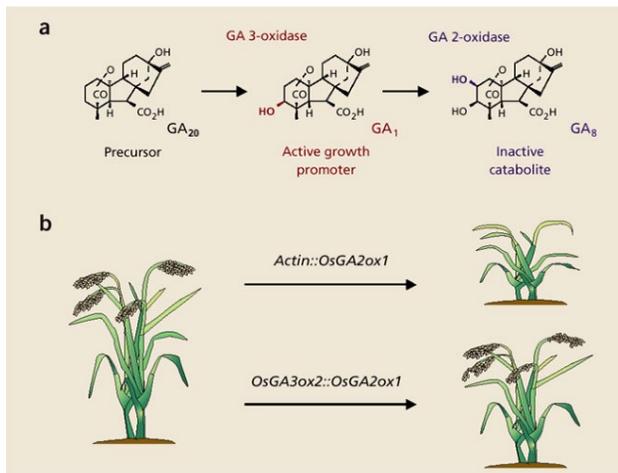
stages, some stop growing while others continue.

- The proportion of dwarfed plants has been generally reported at 10-25% even exceeding 40% in some cases.

Epilogue :

Due to this dwarfing of paddy, farmers fear a 10-12 MT drop in final output where last year it was 111 million tonnes.

This mysterious dwarfing disease comes at a time when the area under paddy in Kharif season was down by almost 13% when compared with the same period last year.



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Tomato flu

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Why in News

- As cases of tomato flu were reported from Kerala, Tamil Nadu, Haryana, and Odisha, the Health Ministry on Tuesday issued guidelines on prevention, testing, and treatment.
- According to some reports, tomato flu could be an aftereffect of chikungunya or dengue fever in children.
- It could also be a new variant of the viral hand, foot and mouth disease, a common infectious disease targeting mostly children aged 1-5 years, which is immunocompromised adults.
- India recorded around 100 cases of tomato flu which is a highly contagious yet non-life threatening virus.

HFMD:

- Tomato flu is characterized by fever, joint pain, and red tomato-like rashes which are usually seen in children 10 years of age and less.
- Researches believe that these symptoms could be of a hand,

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foot and mouth disease caused by enteroviruses-virus that are transmitted through the intestine.

- The current HFMD cases are mainly caused by the enterovirus Coxsackievirus A-6, A-16.
- Another pathogen, Enterovirus 71, which causes a disease that is not prevalent now.
- Specific origin, type or cause of the infection is not mentioned.

Tomato Flu :

- As far its etymology is concerned, the tomato flu is so named because of the eruption of red & painful blisters throughout the body that gradually enlarge to the size of a tomato.
- Medical experts took strong exception to this, saying that the usage of such terms is unscientific & misleading.
- It was also clarified that infection is not related to the consumption of tomatoes in any way.

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Spreading :

- As the disease is self-limiting, doctors do not usually test for it.
- There are so many viral infections in children and there is no need to test for each & every one.
- More viral infections were reported because testing for viral infections has increased over the last five years.
- The pandemic gave a further push to such surveillance.
- Another explanation could be that schools have re-opened fully after the pandemic.

Clinical Presentation :

- The Ministry clarified that the virus causing tomato flu is not related to SARS-CoV-2, monkeypox, dengue or chikungunya despite symptoms similar to those in viral infections.

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- In a small number of cases, tomato flu can lead to CNS(Central Nervous System) complications.
- The disease in this outbreak has some atypical presentations: the red tomato rashes, traditionally restricted to the mouth, palms, and soles are now being reported on the buttocks and shedding of nails is also observed.
- The rashes can be distinguished from that of Monkeypox by a visual inspection monkeypox rashes are more deep-rooted and distribution is also different.
- HFMD can be diagnosed by observing the symptoms, especially the red rashes.
- Infants and young children are also prone to this infection through the use of Napier's, touching unclean surfaces as well as putting things directly into the mouth.
- The illness usually begins with a mild fever, poor appetite, malaise, and sore throat.
- Small red blisters appear one or two days after the fever and these sores are usually located on the tongue, gums, inside of cheeks, palms, and soles.
- In some cases, fatigue, nausea, vomiting, diarrhoea,

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dehydration, swelling of joints, body aches & common influenza-like symptoms were noted.

Treatment & Prevention :

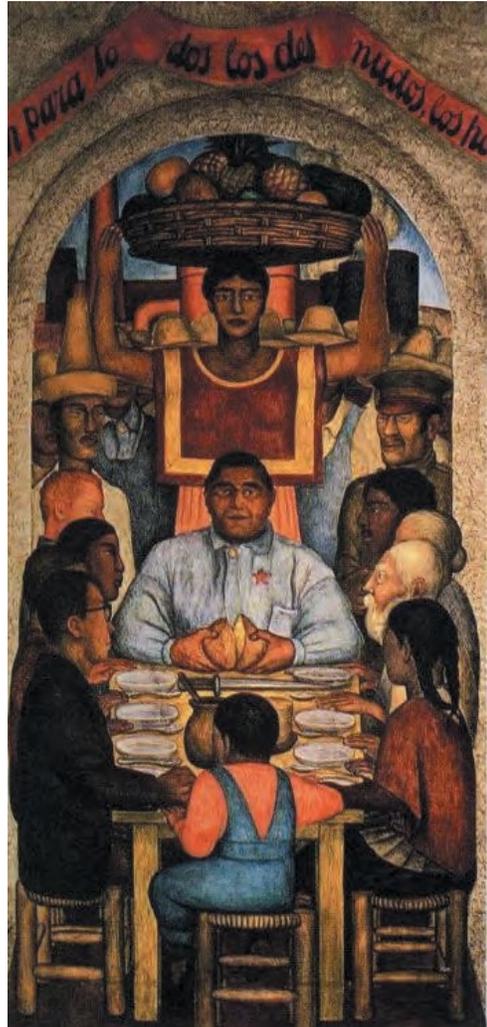
- No specific treatment or vaccine is available for the disease.
- Those with the infection are treated symptomatically, like a prescription of paracetamol for fever.
- As per the advisory, anyone suspected to have the infection should remain in isolation for 5-7 days after the onset of symptoms.
- Children must be educated about the infection and asked not to hug or touch the children with fever or rashes.
- They should be encouraged to maintain hygiene, not suck their thumb, and fingers & use a handkerchief for running nose.
- Infected children should be isolated, and their utensils, clothing and bedding must be regularly sanitized.
- They must be kept hydrated, and blisters must be cleaned using warm water.

PANDURANG KHANKHOJE

GS-I Art & Culture

Why in News

Lok Sabha Speaker Om Birla will travel to Mexico where he will unveil statues of Swami Vivekananda and Maharashtra-born freedom and agricultural scientist Pandurang Khankhoje.



REFORMER AND REVOLUTIONARY

- Born in Wardha.
- He was an ardent admirer of the French Revolution and the American war of Independence
- Hindu reformer Swami Dayanand and his Arya samaj movement, which called for a spirit of reform and social change, became the hero of a

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- young student group led by Khankhoje.
- Khankhoje decided to go abroad for further training in revolutionary methods and military strategy. Before leaving, he visited Bal Gangadhar Tilak, who advised him to go to Japan, which was a strong, anti-west Asian power then.
 - Khankhoje eventually moved to the US where he enrolled in college as a student of agriculture. He later joined the Mount Tamalpais Military Academy in California to fulfill his original purpose of leaving India.
 - Khankhoje was a founder member of Ghadar in the US.

PASSAGE TO MEXICO

- At the military academy, Khankhoje met many people from Mexico. The Mexican Revolution of 1910 had led to the overthrow of the dictatorial regime, and this inspired Khankhoje
- He was appointed a professor at the National School of Agriculture in Chapingo, near Mexico City.
- He researched corn, wheat, pulses, and rubber, developing

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- frost and drought-resistant varieties, and was part of efforts to bring in the Green Revolution in Mexico.
- Khankhoje was revered as an agricultural scientist in Mexico. The renowned Mexican artist Diego Rivera painted murals that featured Khankhoje, including one titled “our Daily Bread” that prominently depicted him breaking bread with people seated around a table.

KERALA SAVARI

GS-II Governance

Why in News

Kerala has soft-launched "**Kerala Savari**", the country's first online taxi service owned by a State government, to ensure fair and decent service to passengers along with fair remuneration to auto-taxi workers.

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Key Points

- Operated by the Motor Workers Welfare Board under the aegis of the Labour Department.
- The Kerala Savari ensures safe travel for the public at government-approved fares without any surge pricing.
- The Kerala Savari app would be made available to the public on online platforms shortly as it is under the scrutiny of Google now.

Reasons to launch this initiative

- The alleged unfair trade practices and violation of consumer rights by private app-based cab aggregators have come as a major concern for governments.
- Recently, the Central Consumer Protection Authority (CCPA) issued notices to cab aggregators Ola and Uber for unfair trade practices and violation of Consumer Rights.

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Passengers often complain about the deficiency in services including charging exorbitant fares during peak hours, unprofessional behaviour from the part of drivers, lack of proper response from customer support and undue levy of cancellation charges despite the cab driver refusing to accept the ride booked by the passenger etc.

- It is against this backdrop that the Kerala Government has decided to come up with an app-based platform to offer auto-taxi services to the public.
- As private companies are purely focusing on profit making, the government-controlled online taxi service is a service-oriented scheme a win-win situation for both passengers and taxi-auto drivers and owners.

Attractions

- Private cab aggregators used to make a killing with surge pricing during peak hours or in the event of rains.

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- The passengers were often forced to pay through their nose during these critical times.
- But there will be no fluctuation in fares on Kerala Savari irrespective of day or night or rain.
- When private app-based taxi companies increase the charges for services up to two to three times during emergencies, neither passengers nor workers benefit from it.
- But Kerala Savari only charges an 8 per cent service charge in addition to the rate set by the government, whereas the private cab aggregators charge up to 20 to 30 per cent service charge.

Fare Charges

- The taxi owner will get the approved fare on "**Kerala Savari**," while cab owners working for private online companies would often get a fare which is below the government-approved rate.
- Furthermore, of the 8 per cent service charge collected from passengers 6 per cent will go to

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the technical partner and the remaining 2 per cent will go to the implementation of this scheme and for providing promotional incentives to passengers and drivers.

The government will not be benefiting from this scheme. For instance, if the passenger travelled a distance fixed for ₹100, the total fare would be ₹108 including the service charge. The car owner will get ₹100 and the remaining ₹8 would be used for running the facility and for providing promotional incentives to passengers and drivers.

- In the case of online private cab aggregators, the car owner used to get below the rate of ₹100 although he covered a distance fixed for the same fare band.
- In addition, they would charge more than 20 per cent service charge.

Security related features

- One of the major issues that arise with app-based taxi

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- services is the security of passengers.
- Kerala Savari is claimed as a safe and reliable online service for women, children and senior citizens.
 - This consideration has been given importance in app designing and driver registration.
 - A police clearance certificate is mandatory for drivers joining the scheme apart from the required proper training.

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- If you are in such a dangerous situation that you cannot select any option, press the button for a few seconds and you will be directly connected to the police control room.
- It has also been decided to install GPS in Vehicles at a subsidised rate. This will be implemented in a phased manner.

Panic Button System

- A panic button system has been introduced in the app.
- This button can be pressed in the event of a car accident or cases of any other danger.
- One can do it completely privately.
- If the driver presses the panic button the passenger will not be alarmed and the same goes for when the passenger presses the panic button.
- When one presses the button, there is an option to select the Police, Fire Force and Motor Vehicle Department numbers.

24- hour Call Centre

- A **24-hour call centre** has been prepared for this purpose.
- A state-of-the-art call centre is functioning at the district office of the Motor Workers Welfare Board.
- The call centre works in such a way that all service-related issues can be resolved immediately.

Will it end the monopoly of private cab aggregators?

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- Kerala has over five lakh autorickshaws and one lakh cabs.
- The State government plans to bring all auto-taxi workers engaged in the sector under the new platform.
- Since smartphone literacy is high in Kerala, the State is hopeful of bringing them under the scheme in a short period.

In addition, the Kerala government has also decided to provide fuel, insurance and tyre subsidies for vehicle owners in the future and has already initiated talks with major companies in this regard.

- After the evaluation of the first phase of the project in Thiruvananthapuram, it will be extended to the entire State in a Phased manner.
- Kerala Savari is expected to reach Kollam, Ernakulam, Thrissur, Kozhikode and Kannur municipal limits within a month.

FACIAL RECOGNITION TECHNOLOGY

GS-IV Science & Technology

Why in News

Right to Information (RTI) responses received by the Internet Freedom Foundation, a New-Delhi based digital rights organisation, reveal that the Delhi Police treats matches of above 80 per cent similarity generated by its facial recognition technology (FRT) system as positive results.

Why is the Delhi Police using facial recognition technology?

- The Delhi Police first obtained FRT to trace and identify missing children.
- According to RTI responses received from the Delhi Police, the Procurement was authorised as per a 2018 direction of a

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Delhi High Court in **Sadhan Haldar Vs NCT of Delhi.**

- The Delhi Police submitted in the Delhi High Court that the accuracy of the technology procured by them was only 2 per cent and not good.
- Things took a turn after multiple reports came out that the Delhi Police was using FRT to surveil the **Anti-CAA protests in 2019.**

RTI Response in 2020

- In 2020, the Delhi Police stated in an RTI response that they obtained FRT as per the Sadhan Haldar direction which related specifically to finding missing children, they were using FRT for people investigations.
- The widening of the purpose for FRT use demonstrates an instance of function creep wherein a technology or system gradually widens its scope from its original purpose to encompass and fulfil wider functions.
- As per available information, the Delhi Police has consequently used FRT for investigation purposes and also specifically during the **2020**

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northeast Delhi riots, the 2021 Red Fort violence and the 2022 Jahangirpuri riots.

Facial recognition

Facial recognition is an algorithm-based technology which creates a digital map of the face by identifying and mapping an individual's facial features, which it then matches against the database to which it has access.

It can be used for two purposes:

1:1 verification of identity

- 1:1 verification of identity wherein the facial map is obtained to match it against the person's photograph on a database to authenticate their identity.
- For example, 1:1 verification is used to unlock phones.
- However, increasingly it is being used to provide access to any benefits or government schemes.

1:n identification

- There is the 1:n identification of identity wherein the facial

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map is obtained from a photograph or video and then matched against the entire database to identify the person in the photograph or video.

- Law enforcement agencies such as the Delhi Police usually procure FRT for 1:n identification.
- For 1:n identification, FRT generates a probability or a match score between the suspect who is to be identified and the available database of identified criminals.

Spread of FRT in India

- A list of possible matches is generated based on their likelihood to be the correct match with corresponding match scores.
- Ultimately it is a human analyst who selects the final probable match from the list of matches generated by FRT.
- According to Internet Freedom Foundation's Project Panoptic tracks the spread of FRT in India, there are at least 124 government-authorized FRT projects in the country.

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Issues with the use of FRT

India has seen the rapid deployment of FRT in recent years, both the Union and State governments, without putting in place any law to regulate their use.

The use of FRT presents two issues:

1. Issues related to misidentification due to inaccuracy of the technology and
 2. issues related to mass surveillance due to misuse of the technology.
- Extensive research into the technology has revealed that its accuracy rates fall starkly based on race and gender.
 - This can result in a false positive, where a person is misidentified as someone else or a false negative where a person is not verified as themselves.
 - Cases of a false positive result can lead to bias against the individual who has been misidentified.

Failure of facial recognition

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- In 2018, the American Civil Liberties Union revealed that Amazon's facial recognition technology, Recognition, incorrectly identified 28 members of Congress as People who have been arrested for a crime.
- Of the 28, a disproportionate number were people of colour.
- Also in 2018, researchers Joy Buolamwini and Timnit Gebru found that facial recognition systems had higher error rates while identifying women and people of colour, with the error rate being the highest while identifying women of colour.
- The use of this technology by law enforcement authorities has already led to three people in the U.S. being wrongfully arrested.

Negative Results

- On the other hand, cases of false negative results can lead to exclusion of the individual from accessing essential schemes which may use FRT as means of providing access.
- One example of such exclusion is the failure of the biometric-based authentication under

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Aadhaar which has led to many people being excluded from receiving essential government services which in turn has led to starvation deaths.

Misuse

- Even if accurate, this technology can result in irreversible harm as it can be used as a tool to facilitate state-sponsored mass surveillance.
- At present, India does not have a data protection law or an FRT-specific regulation to protect against misuse.
- In such a legal vacuum, there are no safeguards to ensure that authorities use FRT only for the purposes.
- They have been authorised to enable the constant surveillance of an individual resulting in the violation of their fundamental right to privacy.

2022 RTI responses

- The RTI responses dated July 25, 2022, were shared by the Delhi Police after the Internet Freedom Foundation filed an appeal before the Central

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Information Commission for obtaining the information after being denied multiple times by the Delhi Police.

- In their response, the Delhi Police has revealed that matches above 80 per cent similarity are treated as positive results while matches below 80 per cent similarity are treated as false positive results which require additional **corroborative evidence**.
- It is unclear why 80 per cent has been chosen as the threshold between positive and false positive.
- There is no justification provided to support the Delhi Police's assertion that an above 80 per cent match is sufficient to assume the results are correct.
- Secondly, the categorisation of below 80 per cent results as false positive instead of negative shows that the Delhi Police may still further investigate below 80 per cent results.
- Thus, people who share familiar facial features, such as in extended families or communities could end up being targeted.
- This could result in targeting communities that have been

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historically overpoliced and have faced discrimination at the hands of law enforcement authorities.

Criminal Procedure (Identification) Act, 2022

- The responses also mention that the Delhi Police are matching the Photographs and videos against photographs collected under Sections three and four of the Identification of Prisoners Act, 1920, which has now been replaced by the Criminal Procedure (Identification) Act, 2022.
- This Act allows for wider categories of data to be collected from a wider section of people, i.e., "convicts and other persons for identification and investigation criminal matters."
- It is feared that the Act will lead to an overbroad collection of personal data in violation of internationally recognised best practices for the collection and processing of data.
- This revelation raises multiple concerns as the use of facial recognition can lead to wrongful arrests and mass

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surveillance resulting in privacy violations.

Conclusion

Delhi is not the only city where such surveillance is ongoing. Multiple cities, including Kolkata, Bengaluru, Hyderabad, Ahmedabad and Lucknow are rolling out "Safe City" Programmes which implement surveillance infrastructures to reduce gender-based violence, in the absence of any regulatory legal frameworks which would act as safeguards.

CLOUDBURST

GS-I World Geography

1. Background

- A cloudburst is a localized but intense rainfall activity. **Short spells of very heavy rainfall** over a small geographical area can cause widespread destruction, especially in **hilly regions where this phenomenon is the most common.**
- Not all instances of very heavy rainfall, however, are

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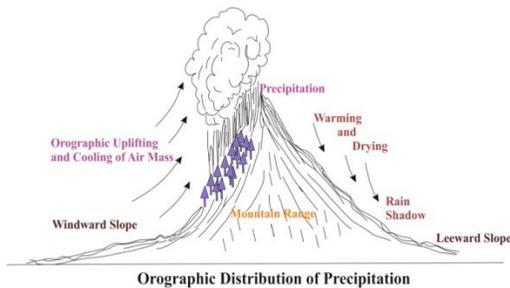
cloudbursts. A cloudburst has a very specific definition:

Rainfall of 10 cm or more in an hour over a roughly **10 km x 10-km area** is classified as a cloudburst event. By this definition, 5 cm of rainfall in a half-hour period over the same area would also be **categorized as a cloudburst.**

- To put this in perspective, in a normal year, India, as a whole, receives about **116 cm of rainfall over the entire year.** This means if the entire rainfall everywhere in India during a year was spread evenly over its area, the total accumulated water would be 116 cm high. There are, of course, huge geographical variations in rainfall within the country, and some areas receive over 10 times more than that amount in a year. But on average, any place in India can be expected to receive about 116 cm of rain in a year.
- During a cloudburst event, a place receives about 10% of this annual rainfall within an hour. It is a worse situation than what Mumbai had experienced on July 26, 2005, which is one of the most extreme instances of rainfall in India in recent years. At that

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time, Mumbai had received 94 cm of rain over 24 hours, resulting in the deaths of over 400 people and more than USD 1 billion in economic losses.



2. What drives cloudburst

- It is difficult to predict when exactly a cloudburst will occur. However, they are more likely to occur in mountainous zones mainly because of terrain and elevation.
- **Cloudbursts** are mostly caused by an excessive amount of **condensation** in the clouds during a thunderstorm. During a thunderstorm, the warm air currents pull the falling drops of water upwards creating an excess **accumulation of water** in the clouds. If it reaches a point where the upward air current is weakened, it results in sudden **precipitation** and downpour of all the accumulated water, in a short time causing floods in the surrounding areas.

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3. Challenges in Forecasting the CloudBurst

- The difficulty arises out of the **fact that they take place over a very small area.**
- What can be forecasted is the spell of heavy rainfall due to **the convergence of many meteorological conditions.**
- Forecasts for a very small area can be done through the use of **Doppler radars.** Through them, it is possible to forecast the possibility of cloudbursts about **six hours in advance, sometimes even 12-14 hours in advance.**

4. Impact of cloud Burst

- Flash **floods**
- Road closures
- Major energy outage
- Quick sand formations
- Lightning strikes
- Crops wipeout
- City-wide Full Blackout
- Landslides
- Accidents
- Drownings
- Damage to the **property**
- Death of the Livestock

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- Immense pressure on the nearby dam
- **Soil erosion** due to abundant water
- Loss of **flora** due to unwanted water supply
- Water logging and inundation

5. Need of the Hour

- Based on scientific data, there should be the delineation of **eco-sensitive zones**.
- The maximum and minimum discharge of water of all the rivers and their tributaries should be ascertained and the people should be **made aware of the possible discharge of the rivers**.
- Better and effective system of weather forecasting and dissemination of weather-related information is imperative to **mitigate the disasters like a cloudburst**
- There should be **proper site selection and planning of the rural and urban settlements**.
- There is an urgent need for a **comprehensive renewal and relook at construction techniques of roads, houses, factories and other structures**.

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- Blasting of rocks for the **construction of roads should be stopped or minimized**.
- There should be strict regulation of tourism.
- Uncontrolled traffic jams and increased **environmental pollution** play havoc in the fragile ecosystems of the Himalayas. They should be checked and mitigated.
- Human resources required to tackle **natural disasters should be strengthened**.
- The post-cloudburst operations include quick action to rescue stranded people buried under a **thick cover of debris to evacuate them to safer places. Immediate medical help is provided to survivors**.
- The Sant Samaj, the religious community, should work as a pressure group to check the construction of multi-story buildings, hotels, Dharamsala and sarais.
- The State government should take strict and effective action against the encroachment around the shrines in the form of **makeshift shops, Dhabas and temporary shelters**.

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Euthanasia

GS-II Governance

1. About

- Euthanasia is the act of deliberately ending a person's life to relieve suffering.
- Euthanasia, which comes from the Greek words meaning “a good death”, refers to
- the practice under which an individual intentionally ends their life. Euthanasia
- falls under the category of assisted dying, which also includes assisted suicide.

2. Assisted suicide

- Assisted suicide is illegal under the terms of the Suicide Act (1961) and is punishable by up to 14 years imprisonment. Trying to kill yourself is not a criminal act.

3. Euthanasia

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- Depending on the circumstances, euthanasia is regarded as either manslaughter or murder. The maximum penalty is life imprisonment.

4. Types of euthanasia

Euthanasia can be classified as:

- voluntary euthanasia – where a person makes a conscious decision to die and asks for help to do so
- non-voluntary euthanasia – where a person is unable to give their consent (for example, because they're in a coma) and another person takes the decision on their behalf, perhaps because the ill person previously expressed a wish for their life to be ended in such circumstances

5. Historical context of Euthanasia

, although the practice wasn't legally condoned, it was employed frequently by physicians of the time.

- Euthanasia was practised in both ancient Greece and Rome, wherein hemlock was

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- employed as a means of hastening death.
- The term itself was used for the first time by philosopher Francis Bacon and expanded upon later by Karl Marx.
 - Suicide and euthanasia become acceptable practices during the Age of Enlightenment in Europe and countries like Japan where suicide was used as a means to preserve a person's honour and therefore not considered to be a sin.
 - In *Dying with Dignity* (2015), Giza Lopes writes that in the mid-19th century, doctors regularly used morphine or chloroform to induce the death of patients who were terminally ill with no hope for recovery.
 - The first attempt to legalise euthanasia took place in the United States in 1906, but the campaign was ultimately unsuccessful.
 - In 1935, the movement regained steam in England with the formation of the Voluntary Euthanasia Legalisation Society.
 - In 1936, King George V of England was given a fatal dose of morphine and cocaine to hasten his death, although this event was kept secret for another 50 years.

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- In one of the more controversial examples of historic euthanasia, in 1939, Nazi Germany conducted the mass killing of mentally and physically impaired people and more than 300,000 died in the process.
- Later, during World War Two, British and American soldiers kept lethal pills on themselves to be used if they were captured or compromised.
- In a landmark announcement in 1957, the Vatican proclaimed that passive euthanasia was permissible under the church's doctrine.
- This led to an increasing number of countries legalising either passive or active euthanasia over some time.

6. Legality of Euthanasia

- Active euthanasia is legal in only a handful of countries and necessitates
- deliberately using substances or forces to end the life of another person.
- Today, a handful of countries have legalised assisted dying in its various forms.
- In Switzerland, where assisted suicide is legal, around 1.5 per

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cent of Swiss deaths are the result of the practice.

- People also travel to Switzerland for assisted suicide, with statistics from 2018 indicating that around 221 people visited the country for it.
- Both euthanasia and assisted suicide are legal in the Netherlands, Luxembourg, and Belgium in cases where someone is experiencing unbearable suffering with no chance of improvement.
- There is no requirement to be terminally ill and the law even allows for people with mental illness to undergo the practice. In March 2021,
- Spain made it legal for people to end their lives in some circumstances and the same year, Canada expanded its law on assisted dying.
- Colombia is the first, and so far, only, Latin American country to decriminalize euthanasia.
- Several states in Australia also allow euthanasia with similar legislation
- enacted in New Zealand. Several states in America allow assisted dying with Oregon and Washington being the two most prominent. In India, passive euthanasia was legalised by the

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Supreme Court in 2018, as long as a person has a “living will” that specifies what actions should be taken if they are unable to make their own medical decisions in the future.

- If the person does not have a living will, their relatives are allowed to petition the high courts for permission to allow passive euthanasia.

7. Ethical Dimension of Euthanasia

- The moral debate surrounding assisted dying falls under the realm of bioethics.

8. Legality around Euthanasia

- Article 21 includes the right to die or not first came into consideration in the case State of Maharashtra v. Maruti Shripati Dubai.
 - It was held in this case by the Bombay High Court that ‘right to life also includes ‘right to die’ and Section 309 was struck down.
 - The court clearly said in this case that the right to

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die is not unnatural; it is just uncommon and abnormal. Also, the court mentioned many instances in which a person may want to end his life.

- This was upheld by the Supreme Court in the case *P. Rathinam v. Union of India*. However, in the case *Gian Kaur v. the State of Punjab* it was held by the five-judge bench of the Supreme Court that the “right to life” guaranteed by Article 21 of the Constitution does not include the “right to die”.
 - The court mentioned in this case that Article 21 only guarantees the right to life and personal liberty and in no case can the right to die be included in it. In India, like almost in other countries, euthanasia has no legal aspect.
- Every act of aiding and abetting the commission of suicide is punished under section 306 of the I.P.C.
- Distinguishing euthanasia from suicide, Justice Lodha in *Naresh Maratra Sakhee vs Union of India*, observed that “suicide by its nature is an act

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- of self-killing or self-destruction, an act of terminating one’s act and without the aid or assistance of any other human agency.
- “Mercy killing is nothing but homicide, whatever the circumstances in which it is affected. Unless it is specifically accepted it cannot be an offence. Indian Penal Code further punishes not only abetment of homicide but also abetment of suicide”.

9. The reasons encouraging Euthanasia

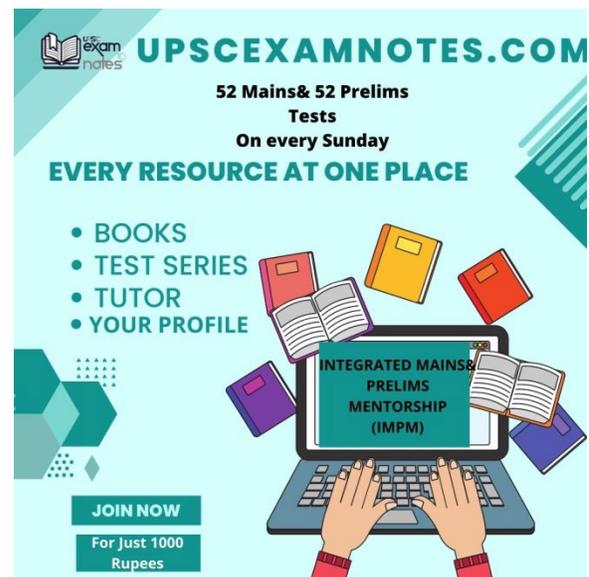
- End of Pain: Euthanasia provides a way to relieve the intolerably extreme pain and suffering of an individual. It relieves terminally ill people from a lingering death.
- Respecting Person's Choice: The essence of human life is to live a dignified life and to force the person to live in an undignified way is against the person’s choice. Thus, it expresses the choice of a person which is a fundamental principle.
- Treatment for others: In many developing and underdeveloped

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countries like India, there is a lack of funds. There is a shortage of hospital space. So, the energy of doctors and hospital beds can be used for those people whose lives can be saved instead of continuing the life of those who want to die.

- **Dignified Death: Article 21 of the Indian Constitution** provides for living with dignity. A person has a right to live a life with at least minimum dignity and if that standard is falling below that minimum level then a person should be given a right to end his life.
- **Addressing Mental Agony:** The motive behind this is to help rather than harm. It not only relieves the unbearable pain of a patient but also relieves the relatives of a patient from mental agony.

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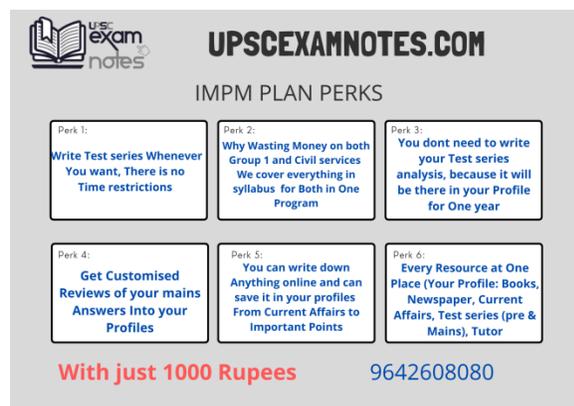


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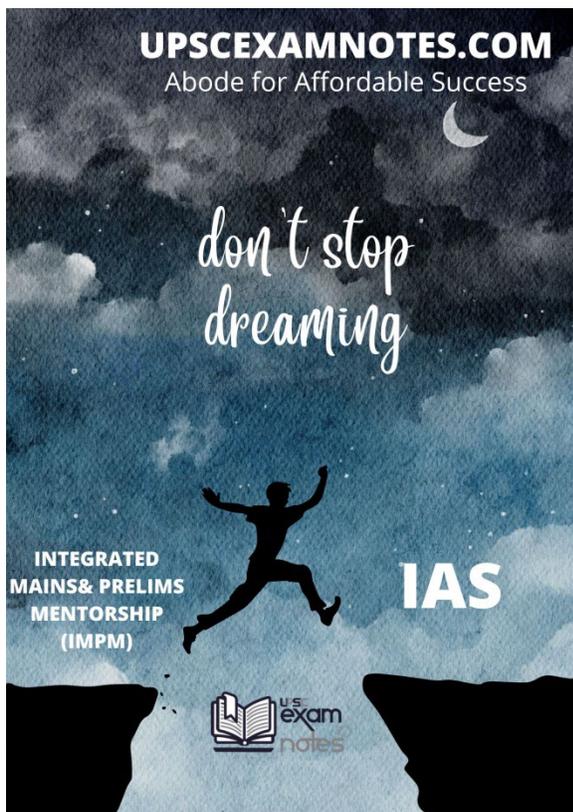
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