

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS
ENVIRONMENT

1. GLASGOW CLIMATE CONFERENCE – COP26

The recently held COP26 was widely hyped as the last chance to save the planet. The meeting began with a bang, but ended on a more modest note. Notwithstanding, it did make some progress even if much less than was needed.

The summit had to deal with the disturbing prospect that the world was set to reach nearly +3°C by the end of the century, above the 2015 Paris Agreement target of “well below 2°C” and ideally 1.5°C above pre-industrial levels.

In this global problem of climate change, a much larger role is yet to be fulfilled by the world’s three largest emitters, the developed nations and undoubtedly India.

Minutes of the Meeting: Achievements & Setbacks:

1. New Global and Country Targets: The Glasgow Summit has urged countries to consider strengthening their 2030 targets by COP27 to be held in Egypt in 2022.
2. The summit targeted global warming not to exceed +1.5°C and got about 140 countries to announce target dates for bringing emissions down to net zero.
3. The achievement is significant as in the Paris Agreement, the developing countries did not agree to reduce emissions but just the “emissions-intensity” of GDP.
4. India has also joined the consensus and announced its net-zero target of 2070.
5. This is a step ahead from India’s past position where it never accepted the need to reduce emissions.
6. Glasgow Breakthrough Agenda: A potentially important development which emerged out of COP26 (but outside the COP process) is the Glasgow Breakthrough Agenda endorsed by 42 countries (including India).
7. This is a cooperative effort to accelerate the development and deployment of clean technologies and sustainable solutions in areas such as clean power, road transport, steel and hydrogen.
8. Phasing-Down Coal Consumption: Coal is the dirtiest of fossil fuels and an early phasing out of coal is clearly desirable. European countries have pushed hard for its phase out; however, developing countries have resisted this.
9. A middle path, as suggested by India, was referred to at the COP26 calling for a “phase-down” of coal-based power.
10. Best Case Scenario: An early assessment by Climate Action Tracker (CAT), an independent organisation, suggests that the targets declared, if fully achieved, could limit global warming to around +1.8°C.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

11. However, it also warns that the targets for 2030 are insufficiently ambitious. Unless significantly tightened, the world is more likely to end up seeing global temperatures rise by 2.1°C to 2.4°C.

Setbacks of the Meeting:

1. **Voluntary Targets:** The targets set at the meeting are voluntary with no mechanism for enforcement or penalties for non-compliance. Many targets are conditional on availability of adequate financial support.
2. **Lack of Specific Details and Actions:** Many countries have not provided details on specific actions to be taken which would determine the actual trajectory to net zero which creates uncertainty about what will be achieved.
3. **Failure in Securing Climate Finance:** The summit's mild admonition only urges the developed country parties to scale up their provision of climate finance. It failed to firmly secure funding commitments from developed nations.
4. **Unequal Distribution of Carbon Budget:** The world's top three largest emitters (China, USA, and Europe) which account for about 30% of the world's population, would take up 78% of the carbon budget.
5. China intends to hit peak emissions only by 2030, before going down to net zero in 2060; it would take up 54% of the global carbon budget against a global population share of only 18.7%.
6. The US, with 4.2% of the total population, would take up 14.2% of the budget and Europe, with 6.8%, would take up 9.5%.
7. This problem reflects the fact that focusing on net-zero dates does not ensure a fair apportioning of the available carbon space if the initial position in terms of emissions varies so greatly.

Way Forward:

1. **Suggestions for Largest Emitters:** China, instead of increasing emissions up to 2030, as currently declared, may need to keep them at their current level for a few years and then go down to net zero by 2050.
2. The US should achieve a sharper reduction in emissions by 2030, and also advance its net-zero date to 2040.
3. Europe as a whole should follow the German/Swedish example and aim at net-zero by 2045.
4. With this recalibration, the carbon emissions of this group would fall to 32% of the carbon budget, much closer to their population share.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

5. **Suggestions for India:** India's 2070 target would take up 18.1% of the carbon space, which is a little higher than our population share of 17.7%.
6. It should be willing to consider a modification in its trajectory as part of an agreed global package, in which other countries also take appropriate action.
7. **Coal-Based Power and India:** India has made no commitments regarding phasing-down of coal-based power; however, its renewable energy goals 2030 are likely to reduce the share of the same from current 72% to about 50% by 2030.
8. Also, the government shall consider ordering against establishment of any new coal-based plants apart from those currently under construction.
9. What more is needed is a policy of accelerated retirement of older, inefficient and polluting plants, provided suitable financing can be obtained.
10. **Encouraging Electric Vehicles (EVs):** India's net-zero by 2070 also requires phasing out petrol and diesel in transport and shifting to Electric Vehicles (EVs) that use electricity from renewables.
11. In order to make the country's entire fleet emissions-free by 2050, the government may consider announcing against the sale of fossil fuel based vehicles after 2035.
12. This would give the automotive sector about 15 years to restructure its production.
13. **Need of Policy Changes:** Expanding renewable capacity requires policy action aimed at resolving problems such as stabilizing intermittent supply from renewables, building transmission infrastructure, creating efficient electricity markets and fixing the financial weakness of India's discoms.
14. These actions are not specified in the Nationally Determined Contributions but will have to be built into the domestic policy agenda in the years ahead.
15. The COP26 of Glasgow is a promising start on emissions reduction, however, on the part of global largest emitters, much more is expected to be done.
16. In India's context, it needs to work out a detailed plan of action with reference to phasing-down coal-based power generation and encouraging electric vehicles.

2. RAMSAR WETLAND

India has added five more Ramsar sites, or wetlands of international importance, bringing the number of such sites to 54.

MANIDHANA EYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

What are these New Ramsar Sites?

Karikili Bird Sanctuary (Tamil Nadu):

The sanctuary is spread over a five-kilometre-wide belt and is home to cormorants, egrets, grey heron, open-billed stork, darter, spoonbill, white Ibis, night herons, grebes, and grey pelican among others.

Pallikaranai Marsh Reserve Forest (Tamil Nadu):

1. One of the last remaining natural wetlands, the marsh drains in an area of 250 square kilometres encompassing 65 wetlands.
2. The Pallikaranai Marsh is one of the few natural coastal aquatic habitats that qualify as a wetland in India.

Pichavaram Mangrove (Tamil Nadu):

1. One of the last mangrove forests in the country.
2. It has an island of a vast expanse of water covered with mangrove forests.

Sakhya Sagar (Madhya Pradesh):

Created from the Manier River in 1918, Sakhya Sagar is located near Madhav National Park.

Pala Wetland in Mizoram (Mizoram):

1. It is home to a wide range of animals, birds, and reptiles.
2. Its geographical location falls under the Indo-Burma biodiversity hotspot and is therefore rich in animal and plant species.
3. The lake is a major component of the Palak Wildlife Sanctuary and it supports the major biodiversity of the sanctuary.

What is Ramsar Recognition?

1. A Ramsar site is a wetland of international importance under the Ramsar Convention, which is also known as the 'Convention on Wetlands' — an intergovernmental environmental treaty established by UNESCO in 1971, and named after the city of Ramsar in Iran, where the convention was signed that year.
2. Ramsar recognition is the identification of wetlands around the world, which are of international importance, especially if they provide habitat to waterfowl (about 180 species of birds).
3. There is international interest and cooperation in the conservation of such wetlands and a judicious use of their resources.
4. Sundarbans in West Bengal is the largest Ramsar site in India.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

5. India's Ramsar wetlands are spread over 11,000 sq km — around 10% of the total wetland area in the country — across 18 States.
6. No other South Asian country has as many sites though this has much to do with India's geographical breadth and tropical diversity.

Criteria: One of the nine criteria must be fulfilled to be the Ramsar Site.

1. **Criterion 1:** If it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.
2. **Criterion 2:** If it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.
3. **Criterion 3:** If it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.
4. **Criterion 4:** If it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.
5. **Criterion 5:** If it regularly supports 20,000 or more waterbirds.
6. **Criterion 6:** If it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.
7. **Criterion 7:** If it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.
8. **Criterion 8:** If it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.
9. **Criterion 9:** If it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non avian animal species.

Significance:

1. Ramsar Tag helps develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits.
2. Sites are protected under strict guidelines of the convention.

What are the Wetlands?

1. Wetlands are ecosystems saturated with water, either seasonally or permanently.
2. They include mangroves, marshes, rivers, lakes, deltas, floodplains and flooded forests, rice-fields, coral reefs, marine areas no deeper than 6 metres at low tide,

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

as well as human-made wetlands such as waste-water treatment ponds and reservoirs.

3. Though they cover only around 6% of the Earth’s land surface, 40% of all plant and animal species live or breed in wetlands.

Significance:

Assist in Fighting Against Climate Change:

1. Wetlands assist in stabilising CO₂ (Carbon dioxide), CH₄ (Methane), N₂O (Nitrous oxide) and Greenhouse Gas (GHG) concentrations by minimising climate and land-use-mediated GHG releases and by boosting the potential to actively collect CO₂ from the atmosphere and sequester carbon.
2. Wetlands also help reduce the risk of disasters such as floods, by protecting coastlines.

Sequester Carbon:

1. Wetlands' microbes, plants and wildlife are part of global cycles for water, nitrogen and sulphur.
2. Wetlands store carbon within their plant communities and soil instead of releasing it to the atmosphere as carbon dioxide.

Significance of Peatlands:

1. The term ‘peatland’ refers to the peat soil and the wetland habitats growing on the surface.
2. They account for just 3% of the world’s land surface but store twice as much carbon as forests, thus playing a crucial role in delivering global commitments on the climate crisis, sustainable development, and biodiversity.
3. Peatlands - one of the world’s largest carbon reserves, are sparse in India and require immediate attention.

Paradise for Migratory Birds:

1. Millions of migratory birds flock to India, and wetlands are critical to this annual phenomenon.
2. Ecologically dependent on wetlands, migratory waterbirds connect continents, hemispheres, cultures, and societies through their seasonal movements.
3. A diversity of wetland communities offers essential stopovers for birds.

Cultural and Tourism Importance:

1. Wetlands also have a deep connection with Indian culture and traditions.
2. Loktak Lake in Manipur is revered as “Ima” (Mother) by locals, whereas Sikkim’s Khecheopalri Lake is popular as the “wish fulfilling lake”.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

3. The north Indian festival of Chhath is one of the most unique expressions of the association of people, culture, water and wetlands.
4. The Dal Lake in Kashmir, Khajjiar Lake in Himachal Pradesh, Nainital Lake in Uttarakhand and Kodaikanal in Tamil Nadu are popular tourism destinations.

Threat:

Human Activities:

As per the IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services)'s global assessment, wetlands are the most threatened ecosystem due to human activities and global warming.

Urbanisation:

1. Wetlands near urban centres are under increasing developmental pressure for residential, industrial and commercial facilities.
2. Areas surrounded by urbanised wetlands are expected to lead to a coastal squeeze in the face of sea-level rise ultimately leading to wetland loss.

Climate Changes:

1. Climate change and linked drivers and pressures are highly likely to increase vulnerability of wetlands.
2. Increased air temperature, shifts in precipitation, increased frequency of storms, droughts, and floods, increased atmospheric CO₂ concentration, and sea level rise could also affect wetlands.

Maladaptation:

1. Wetlands are also exposed to the risk of maladaptation — the likelihood of adverse impacts on these ecosystems in response to adaptation actions in other sectors.
2. For example, the construction of hydraulic structures to increase freshwater storage in upstream stretches, may further accentuate the risks of salinisation in downstream coastal wetlands.

Way Forward

1. The ecosystem services of wetlands need to be highlighted in development policies, urban planning and climate change mitigation.
2. In this context, mega urban schemes like Smart Cities Mission and Atal Mission for Rejuvenation and Urban Transformation need to add the aspects of sustainable management of wetlands.
3. The multiple benefits and services provided by wetlands are essential to achieve the ambitious agenda for building resilient cities to achieve sustainable

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

development goals, while accommodating further development and eradicating poverty.

3. DESERT LOCUST ATTACK

1. While India is grappling with several disasters like Covid-19 pandemic, Cyclone Amphan, Vizag Styrene gas leak disaster and others, the Locust Warning Organization has warned of one of the worst desert locust attacks in decades.
2. Swarms of desert locusts entered western India from Pakistan and destroyed crops in many states such as Rajasthan, Uttar Pradesh (UP), Madhya Pradesh.
3. India has not witnessed full-blown locust cycles since 1993. Heavy rains and an increasing number of cyclones, both are a result of the climate crisis, enabled unprecedented breeding and the rapid growth of locust populations on the Arabian Peninsula, last year.
4. The high magnitude of insects attack and their early arrival highlights a critical aspect of global warming i.e. it may link disparate disasters — floods, pandemics and pestilence — amplifying the potency of each.
5. Thus, to deal with natural disasters like locust attacks, there is a need to develop an integrated framework of climate change mitigation, disaster management and sustainable development.

Climate Change and Swarm of Locust:

There are two meteorological drivers behind the current locust attack in India:

1. One, unseasonal heavy rains in the main spring-breeding tracts in Arabian Peninsula in March-April.
2. Two, strong westerly winds from the Arabian peninsula to India.

According to meteorologists, a differential pattern of warming in the Indian Ocean (Indian-ocean dipole) may be a trigger.

1. Last year saw one of the strongest positive dipoles in the Indian neighbourhood which brought on a difference of more than two degrees in temperature of the western and eastern Indian Ocean.
2. Due to climate change, the anomalies in the Indian Ocean dipole are increasing and subsequently, the monsoon pattern, intensity, cyclonic storms, are undergoing change.
3. The locust attack is just a manifestation of this change.
4. Due to this, in 2019, the monsoon started six weeks ahead of time in western India. It also lasted till November, instead of the usual September/October cycle.
5. The extended rains created breeding conditions and also produced natural vegetation on which locusts feed.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

6. Further, cyclonic storms Mekunu and Luban struck Oman and Yemen respectively in the last year. Heavy rains had transformed uninhabited desert tracts into the large lake where the locust swarms breed.
7. Locusts are known to be passive flyers and generally follow the wind. Their movement has been aided by westerly winds, which further strengthened by the low-pressure area created by Cyclone Amphan in the Bay of Bengal.

Impact of Locust Attack:

1. **Affecting Food Security:** If their breeding is coterminous with that of the Kharif crop, then it could well have a detrimental effect on rice, maize and sorghum.
2. The Food and Agriculture Organization has warned that the locust attack could lead to a major threat to food security.
3. **Affecting Farmers:** This means that locusts not only devour valuable standing crops but can also devastate livelihoods of farmers and those associated with the agricultural supply chain.
4. **Affecting Urban Areas:** Due to the recent harvest of Rabi crops, there were no crops in the field, the desert locusts have been invading green spaces in urban areas
5. Though locusts are unlikely to be a major threat in urban centres, still they can disrupt day-to-day life.
6. Moreover, the effects of locust in urban areas may aggravate, as the national lockdown has made the availability and transportation of pesticide and labour difficult.

Way Forward:

1. **Immediate Measure:** A proactive control of locust attack through aerial spraying of the optimum quantity of insecticides in all potential breeding sites, is required, along with continuous monitoring of the crops during the ensuing Kharif season.
2. **Need for Systemic Study on locust:** Indian Council of Agricultural Research (ICAR) admitted that there hasn't been much "systematic research" on desert locusts since the 1990s and the current invasion is a wake-up call to revive the programme.
3. **Strengthening Research Framework for Climate Change:** Due to the emergence of new dimensions of climate change, it is important that India puts in more funds to predict the course of the present global environmental changes to understand the sources, consequences, and formulate national responses.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

4. **Strengthening Decentralisation:** There is a need to strengthen disaster management framework at the local level as highlighted by the Fourteenth Finance Commission report and Disaster Management Act, 2005.
5. **Regional Cooperation:** There is a need for collective regional efforts, as these locusts usually breed in the dry areas of Eastern Africa (especially Horn of Africa) and the Arabian Peninsula and enter finally to India.

4. Meendum Manjappai Scheme

“In order to do something beautiful for the future, you need to go back to the roots,” said a beaming Supriya Sahu, IAS and Additional Chief Secretary of Environment, Climate Change and Forests, Government of Tamil Nadu, as she spoke of the Meendum Manjappai Vizhipunarvu Iyakkam (Back to Yellow Cloth Bags) campaign of the state government. The campaign, which is spearheaded by the IAS officer, aims to motivate people to quit the use of plastic bags and go back to using the eco-friendly traditional yellow cloth bags, which were once widely used and popular in the state, especially during weddings.

Over the last few months, Chennai city has yet again started witnessing attempts to reduce the use of pollution caused by plastic, with the city’s famous Koyambedu market, said to be Asia’s largest wholesale fruits and vegetables market, deciding to stop the use of disposable plastic bags altogether.

The Tamil Nadu government in 2019, had actually imposed a ban on 14 plastic items including single use plastic and polythene. However, the outbreak of COVID-19 in 2020 and the resulting lockdown made it difficult for the ban to be implemented effectively and efficiently, which saw the banned items being widely used in the state. So will the new yellow cloth bag campaign achieve what the earlier ban could not?

Citizen Matters caught up with Supriya Sahu in her office at the State Secretariat for a brief interaction during which she spoke about the implementation of the plastic ban, the need for a change in mindset of the citizens regarding plastic use and of course, Manjappai!

Here are excerpts of the conversation:

Despite a ban in 2019, single-use plastic is making a comeback and is now seen everywhere, especially after the pandemic. What do you think was lacking in terms of implementation?

I would like to go back to the experiences we have had in the past. Experiences across the globe tell us that if you try to impose something only through a government action or order, where people are not involved, then those initiatives do not succeed to a great extent. Because ultimately, in order to make anything successful, especially something like

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

this that relates to the entire social arena, you have to get citizens involved. What had been happening so far is that concerned officials would go and close down the shops violating the ban, seize the materials and leave. But once they left, the shops would again begin to use plastic.

So while implementation of the ban is important, it is equally important to bring a change in the way the citizens look at the entire initiative. If people think that it's only something that the government is driving and that it's only regulatory, it's not going to succeed. If they see a value in what's being mandated and understand that it's also good for them and their future, it's bound to make an impact.

How do you plan to bring about this change in the mindset of the citizens?

We understood that there is a need to come up with something that catches the imagination of the people. And it shouldn't be preachy. Citizens, especially the younger generation, do not like to be lectured. So we decided to come up with something which is connected to our value system. That's how Manjappai happened. Manjappai is like a metaphor that links you to your past and it also has a cute and 'retro-cool' aspect to it. We are also trying to spread awareness about the fact that we are doing this in order to hand over a better planet to our future generations. And I'm hopeful that these ideas will resonate with the younger generation, especially the children, more than the adult population.

Can you tell us a bit more about the Manjappai campaign in particular?

Manjappai was an integral part of Tamil Nadu's culture and tradition. Back in the day, if you attended any weddings, you would get these beautiful yellow cloth bags, which were dyed in turmeric, which actually gave it the yellow colour. They would have the "namaste/vanakkam" sign on the bags and inside there would be a coconut, betel leaf and other auspicious items. So we decided to come up with an initiative that would connect with this beautiful eco-friendly tradition. So, in a way, we are also going back to our roots by stopping the use of plastic.

At the moment, we do not have any control over the manufacturing or hold any copyrights over its design or anything. Anybody who wishes to make these are free to do so. We are coming out with an online merchandise store on the Tamil Nadu Pollution Control Board (TNPCB) website where we will popularise lunchboxes, sling bags, cross body bags. There is also a Manjappai group in the secretariat, which is headed by me, which keeps on ideating about all this.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

When it comes to discussion on banning single use plastic, one concern that is frequently voiced is over the availability of affordable alternatives, especially among small time traders. How would you address these concerns?

What used to happen 20 years back? There was no plastic back then. We lived well and we lived better. This is because people used to carry their own bags. Manjappai is basically a metaphor. It is an idea whose time has come. What we are trying to tell people is, why can't you carry your own bag? Why can't you carry your own bottle? Why do you have to be a slave to a plastic bottle? Today, if you go to the Nilgiris, there are no plastic bottles there. How are people managing there? They carry their own bottles or get water from common sources.

Many of the countries abroad have already banned plastic and many are in the process of banning it. If you look at the United Kingdom, it has very strict enforcement on recyclable plastic. So why is it that we can't do it? Everytime, we try to bring about a positive change, there is a lot of hue and cry.

As far as alternatives are concerned, there are plenty. It's just that the plastic lobby is very strong. In UP, Bihar or MP, drinking tea or water in kulhads was so common at one point of time, but with the advent of plastic cups and bottles, people largely took to those. That is also because the big companies had a stake in it and took over. As a result, many who were earlier associated with making or selling the earthen cups and pots went out of business. If you look for alternatives, you will find them but we're deliberately not looking at that.

Will any changes be made in the way the ban is being implemented?

We have to basically have a multi-pronged strategy. For that, we must first focus on bringing about behavioural changes. We must remind the citizens about their culture, remind them that you cannot choke your own planet, because you would be depriving your children of a good future then. By 2030 or 2050, If there is more plastic in the oceans than the fishes, what kind of a planet are we handing over to our children ? So you appeal to the people at that level. We are working a lot with the eco groups, students and student ambassadors and reaching out to all stakeholders.

As far as enforcement is concerned, we are working with the local bodies. In Chennai, the Greater Chennai Corporation is the implementing body. They have been seizing plastic items from shops and other institutions regularly.

Any fines or penalty if found to be violating the ban?

The first time penalty for storage, supply, transport, sale and distribution of throw away plastic is Rs 25,000. For the second time, it's Rs 50,000 and Rs 1 lakh for the third time.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

On December 1st, there was a raid in Chennai, during which 4,816 trades spread across the 15 zones in the city were inspected. A total fine of Rs 3,73,000 was imposed that day and 1,233 kg of banned plastic items were seized.

What would you want to tell the people of Chennai regarding the use of single use plastic? See, I don't think there is any need for anybody to tell the people of Chennai about the ill effects of plastic. They are seeing it everyday. In the recent floods, they have seen enough – how their drains were clogged with plastic and how the water bodies were choked. Chennai is such a beautiful place. So if we want to avoid any kind of devastation and want to go back to the beautiful past that we had, it is important that we stop using any kind of banned items and switch to alternatives like cloth bags. Switch to Manjappai!

5. GREEN HYDROGEN FUEL

1. According to the International Renewable Energy Agency (IRENA), hydrogen will make up 12% of the energy mix by 2050.
2. The agency also suggested that about 66% of this hydrogen used must come from water instead of natural gas.
3. Recently, IRENA has released the 'World Energy Transitions Outlook' Report.

Current Status Worldwide:

1. Less than 1% of hydrogen produced is green hydrogen.
2. Manufacturing and deployment of electrolyzers will have to increase at an unprecedented rate by 2050 from the current capacity of 0.3 gigawatts to almost 5,000 gigawatts.

Indian Scenario:

1. **Consumption of Hydrogen:** India consumes about six million tonnes of hydrogen every year for the production of ammonia and methanol in industrial sectors, including fertilisers and refineries.
2. This could increase to 28 million tonnes by 2050, principally due to the rising demand from the industry, but also due to the expansion of transport and power sectors.
3. **Cost of Green Hydrogen:** By 2030, the cost of green hydrogen is expected to compete with that of hydrocarbon fuels (coal, Crude Oil, natural gas).
4. The price will decrease further as production and sales increase. It is also projected that India's hydrogen demand will increase five-fold by 2050, with 80% of it being green.
5. **Exporter of Green Hydrogen:** India will become a net exporter of green hydrogen by 2030 due to its cheap renewable energy tariffs.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

Benefits of Using Green Hydrogen for India:

1. Green hydrogen can drive India's transition to clean energy, combat climate change.
2. Under the Paris Climate Agreement, India pledged to reduce the emission intensity of its economy by 33-35% from 2005 levels by 2030.
3. It will reduce import dependency on fossil fuels.
4. The localisation of electrolyser production and the development of green hydrogen projects can create a new green technologies market in India worth \$18-20 billion and thousands of jobs.

Potential:

1. India has a favourable geographic location and abundance of sunlight and wind for the production of green hydrogen.
2. Green hydrogen technologies are being promoted in sectors where direct electrification isn't feasible.
3. Heavy duty, long-range transport, some industrial sectors and long-term storage in the power sector are some of these sectors.
4. The Ministry of New and Renewable Energy (MNRE) has circulated a draft cabinet note to establish a hydrogen ecosystem in the country.
5. The nascent stage of this industry allows for the creation of regional hubs that export high-value green products and engineering, procurement and construction services.

Challenges:

1. **Economic Sustainability:** One of the biggest challenges faced by the industry for using hydrogen commercially is the economic sustainability of extracting green hydrogen.
2. For transportation fuel cells, hydrogen must be cost-competitive with conventional fuels and technologies on a per-mile basis.
3. **High Costs and Lack of Supporting Infrastructure:**
4. Fuel cells which convert hydrogen fuel to usable energy for cars, are still expensive.
5. The hydrogen station infrastructure needed to refuel hydrogen fuel cell cars is still widely underdeveloped.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

Step Taken:

1. The Union Budget for 2021-22 has announced a National Hydrogen Energy Mission (NHM) that will draw up a road map for using hydrogen as an energy source.
2. Indian Initiatives for Renewable Energy:
 - Jawaharlal Nehru National Solar Mission (JNNSM).
 - International Solar Alliance.
 - PM- KUSUM.
 - National Wind-Solar Hybrid Policy.
 - Rooftop Solar Scheme.

Way Forward

1. Set a national target for green hydrogen and electrolyser capacity: A phased manufacturing programme should be used to build a vibrant hydrogen products export industry in India such as green steel (commercial hydrogen steel plant).
2. Implement complementary solutions that create virtuous cycles: For example hydrogen infrastructure can be set up for refueling, heating and generating electricity at airports.
3. Decentralised Production: Decentralised hydrogen production must be promoted through open access of renewable power to an electrolyser (which splits water to form H₂ and O₂ using electricity).
4. Providing Finance: Policymakers must facilitate investments in early-stage piloting and the research and development needed to advance the technology for use in India.

6. GREEN H₂/NH₃ PRINCIPLE

1. Recently, the Ministry of Power has notified Green Hydrogen/Green Ammonia Policy for production of Green Hydrogen or Green Ammonia using renewable sources of energy.
2. National Hydrogen Mission launched in 2021 aims to aid the government in meeting its climate targets and making India a green hydrogen hub.

What are the Provisions of the Green Hydrogen/Green Ammonia Policy?

1. Under the policy, the government is offering to set up manufacturing zones for production, connectivity to the ISTS (Inter-State Transmission System) on priority basis, and free transmission for 25 years if the production facility is commissioned before June 2025.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

2. This means that a green hydrogen producer will be able to set up a solar power plant in Rajasthan to supply renewable energy to a green hydrogen plant in Assam and would not be required to pay any inter-state transmission charges.
3. Besides, producers will be allowed to set up bunkers near ports for storage of green ammonia for export by shipping.
4. Production target has also been raised five times from 1 million tonnes (m) to 5 mt by 2030.
5. In October, 2021 it was announced that India is targeting initially around 1 million tonnes annual green hydrogen production by 2030.
6. Manufacturers of Green hydrogen and ammonia are allowed to purchase renewable power from the power exchange or set up Renewable Energy (RE) capacity themselves or through any other developer, anywhere.
7. Further, it provides facility for producers to bank any surplus renewable energy generated with discoms (power distribution companies) for upto 30 days and use it as required.
8. Discoms may also procure renewable energy to supply green hydrogen producers but will be required to do so at a concessional rate which will only include the cost of procurement, wheeling charges and a small margin as determined by the state commission, under the new policy.
9. Such procurement would also count towards a state's Renewable Purchase Obligation (RPO) under which it is required to procure a certain proportion of its requirements from renewable energy sources.
10. To ensure ease of doing business a single portal for carrying out all the activities including statutory clearances in a time bound manner will be set up by MNRE (Ministry of New and Renewable Energy).

What is Green Hydrogen?

1. It is produced by splitting water into hydrogen and oxygen using an electrolyzer powered by renewable energy sources such as wind and solar.
2. The fuel can be a game-changer for the energy security of India, which imports 85% of its oil and 53% of gas requirements.
3. To promote clean fuels, India is considering making it mandatory for fertilizer plants and oil refineries to purchase green hydrogen.

Significance:

1. Green hydrogen energy is vital for India to meet its Nationally Determined Contribution (INDC) Targets and ensure regional and national energy security, access and availability.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

2. Green Hydrogen can act as an energy storage option, which would be essential to meet intermittencies (of renewable energy) in the future.
3. In terms of mobility, for long distance mobilisations for either urban freight movement within cities and states or for passengers, Green Hydrogen can be used in railways, large ships, buses or trucks, etc.
4. Hydrogen has the potential to be the key renewable target in supporting infrastructure as well.

What is Green Ammonia?

1. Ammonia is a chemical which is used mainly in the manufacture of nitrogenous fertilizers, like urea and ammonium nitrate, but can be put to other uses too, such as to run engines.
2. Green ammonia production is where the process of making ammonia is 100% renewable and carbon-free.
3. One way of making green ammonia is by using hydrogen from water electrolysis and nitrogen separated from the air. These are then fed into the Haber process (also known as Haber-Bosch), all powered by sustainable electricity.
4. In the Haber process, hydrogen and nitrogen are reacted together at high temperatures and pressures to produce ammonia, NH₃.

Significance:

1. Green ammonia is intended to be used in the production of carbon-neutral fertiliser products, decarbonising the food value chain, and also has potential as a future climate-neutral shipping fuel.
2. Green ammonia production makes use of renewable energy sources such as hydro-electric, solar power or wind turbines.
3. Green ammonia is crucial to tackle the existential challenges of producing enough food to feed a growing global population and generating CO₂-free energy.

Way Forward

1. India has the potential to bring down the cost of green hydrogen by using low-cost renewable generating plants and cost-curtailment experience gained through solar and wind reverse auctions.
2. Huge market potential, owing to the young demography and thriving economy, will be a long-term benefit for the government while pushing the application of hydrogen-based technologies.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

3. Hydrogen needs to be considered as complementary to its alternatives rather than contemplating it as an ultimate and stand-alone solution as it comes with its own constraints.
4. The present storage and transportation technologies are expected to be mature and cost-effective by 2030.
5. Hence, the production and near-real-time utilization of hydrogen at the same location can be promoted to safeguard investments against undesirable sunk costs.

7. INDIAN ARCTIC POLICY

1. Recently, the Ministry of Earth Science has unveiled India's Arctic Policy, titled 'India and the Arctic: building a partnership for sustainable development'.
2. India holds one of the 13 positions as the Observer in the Arctic Council.
3. The Arctic Council is an intergovernmental body that promotes research and facilitates cooperation among Arctic countries on issues related to the environmental protection and sustainable development of the Arctic region.
4. India's engagement with the Arctic began when it signed the Svalbard Treaty in 1920 in Paris between Norway, the US, Denmark, France, Italy, Japan, the Netherlands, Great Britain, and Ireland, and the British overseas Dominions and Sweden concerning Spitsbergen.
5. Spitsbergen is the largest island of the Svalbard archipelago, part of Norway, in the Arctic Ocean.
6. Spitsbergen is the only permanently inhabited part of Svalbard. More than 50% of the land is covered in ice year-round. Together with the glaciers, it is mountains and fjords that define the landscape.
7. Ever since then, India has been closely monitoring all the developments in the Arctic region.
8. India initiated its Arctic research program in 2007 with a focus on climate change in the region.
9. The objectives included studying teleconnections between Arctic climate and Indian monsoon, to characterise sea ice in the Arctic using satellite data, to estimate the effect on global warming.
10. India also focuses on conducting research on the dynamics and mass budget of Arctic glaciers and sea-level changes, carrying out an assessment of the flora and fauna of the Arctic.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

What are the Major Provisions of India's Arctic Policy?

Six Central Pillars:

1. Science and research.
2. Environmental protection.
3. Economic and human development.
4. Transportation and connectivity.
5. Governance and international cooperation.
6. National capacity building.

Objectives:

1. It aims to strengthen national capabilities and competencies in science and exploration, climate and environmental protection, maritime and economic cooperation with the Arctic region.
2. It seeks to strengthen institutional and human resource capacities within the government and academic, research and business institutions through inter-ministerial coordination in pursuit of India's interests in the Arctic.
3. It seeks to enhance understanding of the impact of climate change in the Arctic region on India's climate, economic and energy security.
4. It aims to promote better analysis, prediction and coordinated policymaking on the implications of ice melting in the Arctic on India's economic, military and strategic interests related to global shipping routes, energy security and exploitation of mineral wealth.
5. It seeks to study the linkages between polar regions and the Himalayas and deepen the cooperation between India and the countries of the Arctic region under various Arctic forums, drawing expertise from scientific and traditional knowledge.
6. The policy also seeks to increase India's participation in the Arctic Council and improve understanding of the complex governance structures in the Arctic, relevant international laws and geopolitics of the region.

Relevance of Arctic for India?

1. The Arctic region is significant due to the shipping routes that run through it.
2. According to an analysis published by the Manohar Parrikar Institute for Defence Studies and Analyses, the adverse effects of the Arctic are not just impacting the availability of mineral and hydrocarbon resources, but also transforming global shipping routes.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

3. According to the Ministry of External Affairs, India can play a constructive role in securing a stable Arctic.
4. The region holds immense geopolitical importance as the Arctic is projected to be ice-free by 2050 and world powers making a beeline to exploit the region rich in natural resources.

Way Forward

1. India's Arctic Policy is timely and is likely to provide a direction to India's policy-makers on contours of India's engagement with the region.
2. It is the first step towards developing a whole-of-government approach on India's engagement with the region.
3. The Policy is also likely to raise awareness about the Arctic within India and vice-versa through conduct of programmes, seminars and events in India and in the Arctic.
4. However, India must also officially appoint an 'Arctic ambassador/representative' who will represent and voice India's perspectives on Arctic affairs.
5. Constituting a dedicated expert committee to plan, monitor, steer, implement and review India's Arctic policy may help streamline the country's approach in a better manner.

8. MEGHAMALAI TIGER RESERVE

The recently declared Srivilliputhur-Megamalai Tiger Reserve in Tamil Nadu will provide protection to Megamalai, the Vaigai's primary catchment, in turn helping water levels to rise in the river.

Origin and Tributaries:

1. It originates in the Western Ghats (Varushanad Hills).
2. It travels through the Pandya Nadu region of Tamil Nadu.
3. Its main tributaries are Suruliyaru, Mullaiyaru, Varaganadhi, Manjalaru, Kottagudi, Kridhumaal and Upparu.
4. The Vaigai is 258 kms long and finally empties into the Palk Strait near the Pamban Bridge in Ramanathapuram district.

Heritage River:

1. The Vaigai was the river that flowed through the noted city of Madurai, the capital (4th-11th century CE) of the ancient and prosperous Pandya kingdom located in southern Tamil Nadu.
2. The river finds a mention in Sangam literature dated to 300 before the Common Era.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

Significance:

1. The river fulfils the drinking water requirement of five districts of Tamil Nadu namely Theni, Madurai, Ramanathapuram, Sivagangai and Dindigul.
2. It also provides irrigation to 2,00,000 hectares of agricultural land.

Rejuvenation of Vaigai:

1. Its deterioration happened at the end of the 18th century when the British started deforesting the Megamalai region which acts as a major catchment for Vaigai. Consequently, the water flow in the river reduced gradually.
2. Some 2,00,000 people died in this region during the Great Famine of 1876-77.
3. Following the famine, the British Crown proposed diverting water from the Periyar river (Kerala) and feeding it to the Vaigai through a tunnel.
4. The Vaigai presently gets about 80% of its water from the Periyar dam. The balance 20% is obtained from the major watershed of the Megamalai region during the northeast monsoon season.
5. The Srivilliputhur-Megamalai Tiger Reserve will protect wild animals and the natural forests, their habitats which act as watersheds.

Srivilliputhur-Megamalai Tiger Reserve:

Establishment:

1. It was established in February 2021. It was jointly declared by the Centre and Tamil Nadu governments.
2. For this, the Megamalai WLS and the adjoining Srivilliputhur WLS were clubbed together.
3. Srivilliputhur-Megamalai Tiger Reserve is the fifth Tiger Reserve of Tamil Nadu, and 51th tiger reserve of India.

Ecological Diversity:

1. Animals seen here are Bengal tiger, elephants, gaur, Indian giant squirrel, leopard, Nilgiri Tahrs, etc.
2. It has a mix of tropical evergreen forests and semi-evergreen forests, dry deciduous forests and moist mixed deciduous forests, grassland.

Other four Tiger reserves of Tamil Nadu:

1. Anamalai tiger reserve
2. Kalakkad - Mundanthurai tiger reserve
3. Mudumalai tiger reserve
4. Sathyamangalam tiger reserve

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

9. BLUE FLAG BEACH CERTIFICATE

1. Recently, Foundation for Environment Education (FEE), Denmark has awarded the Blue Flag Certification to Kovalam (Tamil Nadu) and Eden (Puducherry), taking the total number of such beaches in the country to 10.
2. A waving “Blue Flag” is an indication of 100% compliance to the 33 stringent criteria and sound health of the beach.
3. It is an internationally recognised eco-label that is accorded based on 33 criterias. These criterias are divided into 4 major heads namely,
 - Environmental education and information
 - Bathing water quality
 - Environmental management
 - Conservation and safety services in the beaches
4. Blue Flag beaches are considered the cleanest beaches of the world. It is an eco-tourism model endeavouring to provide the tourists/beachgoers clean and hygienic bathing water, facilities, a safe and healthy environment and sustainable development of the area.
5. It is accorded by the international jury composed of eminent members - United Nations Environment Programme (UNEP), United Nations World Tourism Organisation (UNWTO), Denmark-based NGO Foundation for Environmental Education (FEE) and International Union for Conservation of Nature (IUCN).
6. On the lines of Blue Flag certification, India has also launched its own eco-label BEAMS (Beach Environment & Aesthetics Management Services).

Other Eight Beaches which have received the Certification:

1. Shivrajpur in Gujarat,
2. Ghoghla in Daman & Diu,
3. Kasarkod in Karnataka and,
4. Padubidri beach in Karnataka,
5. Kappad in Kerala,
6. Rushikonda in Andhra Pradesh,
7. Golden beach of Odisha,
8. Radhanagar beach in Andaman and Nicobar.

10. IPCC REPORT

1. Recently, the United Nations’ climate science body, the Intergovernmental Panel on Climate Change (IPCC) published the third part of its Sixth Assessment Report (AR6).

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

2. This second part of the report was published in March 2022 which was about climate change impacts, risks and vulnerabilities, and adaptation options.
3. The first part of this report, on the physical science of climate change was published in 2021. It had warned that 1.5 degree Celsius warming was likely to be achieved before 2040 itself.

What are the Key Findings of the Report?

GreenHouse Gas Emissions:

1. In 2019, global net anthropogenic Greenhouse gas (GHG) emissions were at 59 Gigatonnes of carbon dioxide equivalent (GtCO₂e), 54% higher than in 1990.
2. Net emissions refer to emissions accounted for after deducting emissions soaked up by the world's forests and oceans.
3. Anthropogenic emissions refer to emissions that originate from human-driven activities like the burning of coal for energy or cutting of forests.
4. This emissions growth has been driven mainly by CO₂ emissions from the burning of fossil fuels and the industrial sector, as well as methane emissions.
5. But the average annual rate of growth slowed to 1.3% per year in the period 2010-19, compared to 2.1% per year in the period 2000-09.
6. At least 18 countries have reduced GHG emissions for longer than 10 years on a continuous basis due to decarbonisation of their energy system, energy efficiency measures and reduced energy demand.

Emission by the Least Developed Countries:

1. Carbon inequality remains pervasive as ever with Least Developed Countries (LDCs) emitting only 3.3% of global emissions in 2019.
2. Their average per capita emissions in the period 1990-2019 were only 1.7 tonnes CO₂e, compared to the global average of 6.9 tCO₂e.
3. LDCs contributed less than 0.4% of total historical CO₂ emissions from fossil fuels and industry in the period 1850-2019.
4. Globally, 41% of the world's population lived in countries emitting less than 3 tCO₂e per capita in 2019.

Pledges to the Paris Agreement:

1. Upon adding up the NDCs announced by countries till October 2021, the IPCC finds that it is likely that warming will exceed 1.5 degrees Celsius (°C) in this century, thereby failing the Paris Agreement's mandate.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

2. Current pledges made by countries who have signed the Paris Agreement are known as Nationally Determined Contributions (NDCs).
3. The CO₂ emissions from existing and planned fossil fuel infrastructure — coal, oil, and gas — contribute greatly to this projected failure.
4. In its best-case scenario, known as the C1 pathway, the IPCC outlines what the world needs to do to limit temperatures to 1.5°C, with limited or no ‘overshoot’.
5. Overshoot refers to global temperatures crossing the 1.5°C threshold temporarily, but then being brought back down using technologies that suck CO₂ out of the atmosphere.
6. To achieve the C1 pathway, global GHG emissions must fall by 43% by 2030.

Low Emissions Technologies:

1. Widespread ‘system transformations’ are required across the energy, buildings, transport, land and other sectors, to achieve the 1.5°C target and this will involve adopting low-emission or zero carbon pathways of development in each sector. And solutions are available at affordable costs.
2. The costs of low emissions technologies have fallen continuously since 2010. On a unit costs basis, solar energy has dropped 85%, wind by 55 %, and lithium-ion batteries by 85%.
3. Their deployment, or usage, has increased multiple fold since 2010 — 10 times for solar and 100 times for electric vehicles.
4. Reducing fossil fuel use in the energy sector, demand management and energy efficiency in the industrial sector and adopting the principles of ‘sufficiency’ and efficiency in the construction of buildings are among the plethora of solutions.

Demand-side Mitigation:

1. It also adds that demand-side mitigation, ie, behavioural changes such as adopting plant-based diets, or shifting to walking and cycling “can reduce global GHG emissions in end use sectors by 40-70% by 2050 compared to baseline scenarios” and improve wellbeing.
2. Most of the potential for demand-side mitigation currently lies in developed countries.

Impact on GDP:

1. The IPCC states that low-cost climate mitigation options could halve global GHG emissions by 2030. In fact, the long-term benefits of limiting warming far outweigh the costs.
2. Investing in decarbonisation would have a minimal impact on global Gross Domestic Product (GDP).

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

Short Fall of Finances:

1. Financial flows fall short of the levels needed to achieve the ambitious mitigation goals, however.
2. The gaps are the widest for the agriculture, forestry, and other land uses (AFOLU) sector and for developing countries.
3. But the global financial system is large enough and “sufficient global capital and liquidity” exist to close these gaps.
4. For developing countries, it recommends scaled up public grants, as well as “increased levels of public finance and publicly mobilised private finance flows from developed to developing countries in the context of the USD 100 billion-a-year goal; increase the use of public guarantees to reduce risks and leverage private flows at lower cost; local capital markets development and building greater trust in international cooperation processes”.

What is the Intergovernmental Panel on Climate Change?

1. It is the international body for assessing the science related to climate change.
2. It was set up in 1988 by the World Meteorological Organisation (WMO) and United Nations Environment Programme (UNEP) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.
3. IPCC assessments provide a scientific basis for governments at all levels to develop climate related policies, and they underlie negotiations at the UN Climate Conference – the United Nations Framework Convention on Climate Change (UNFCCC).

What is the Assessment Report of IPCC?

1. The Assessment Reports, the first of which had come out in 1990, are the most comprehensive evaluations of the state of the earth’s climate.
2. Every few years (about 7 years), the IPCC produces assessment reports.
3. Hundreds of experts go through every available piece of relevant, published scientific information to prepare a common understanding of the changing climate.
4. The four subsequent assessment reports, each thousands of pages long, came out in 1995, 2001, 2007 and 2015.
5. These have formed the basis of the global response to climate change.
6. Over the years, each assessment report has built on the work of the previous ones, adding more evidence, information and data.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

7. So that most of the conclusions about climate change and its impacts have far greater clarity, certainty and wealth of new evidence now, than earlier.
8. It is these negotiations that have produced the Paris Agreement, and previously the Kyoto Protocol.
9. The Paris Agreement, negotiated on the basis of the Fifth Assessment Report.
10. The Assessment Reports - by three working groups of scientists.
 - Working Group-I - Deals with the scientific basis for climate change.
 - Working Group-II - Looks at the likely impacts, vulnerabilities and adaptation issues.
 - Working Group-III - Deals with actions that can be taken to combat climate change.

11. INDIA'S ENVIRONMENT REPORT 2022

1. Recently, the Centre for Science and Environment (CSE), released the State of India's Environment Report 2022.
2. The report is the annual publication of the Centre for Science and Environment, and Down To Earth (magazine).
3. The report focuses on climate change, migration, health and food systems. It also covers biodiversity, forest and wildlife, energy, industry, habitat, pollution, waste, agriculture and rural development.
4. CSE is a public interest research and advocacy organisation based in New Delhi.

Where does India Stand on Achieving its National Targets?

1. **Economy:** The target for the economy is to raise the Gross Domestic Product (GDP) to nearly USD 4 trillion by 2022-23. But by 2020, the economy has grown only to USD 2.48 trillion.
2. The economy has largely shrunk during the Covid-19 pandemic, making it even more difficult to meet the deadline.
3. **Employment:** The target is to increase the female labour force participation rate to at least 30% by 2022-23.
4. It stood at 17.3% in January-March 2020.
5. **Housing:** The targets are to construct 29.5 million housing units under Pradhan Mantri Awas Yojana (PMAY)-Rural and 12 million units under PMAY-Urban.
6. Only about 46.8% and 38% respectively of the targets under 'Housing for All' have been achieved.
7. **Drinking Water:** The target is to provide safe piped drinking water to all by 2022-23.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

8. Only 45% of the target has been achieved.
9. **Agriculture:** The target is to double farmers' income by 2022. While the average monthly income of an agricultural household has increased to Rs 10,218 from Rs 6,426, this increase is largely due to increase in wages and income from farming animals.
10. The share of income from crop production in the average monthly income of an agricultural household has, in fact, dropped — to 37.2% in 2018-19, from 48% in 2012-13.
11. **Digitisation of Land Records:** Another target is to digitise all land records by 2022. While states like Madhya Pradesh, West Bengal and Odisha have made good progress, states like Jammu and Kashmir, Ladakh and Sikkim languish at 5%, 2% and 8.8% digitisation of land records, respectively.
12. Overall, the target is unlikely to be met, particularly because 14 states have witnessed deterioration in the quality of land records since 2019-20.
13. **Air Pollution:** The target is to bring down Particulate Matter (PM) 2.5 levels in Indian cities to less than 50 micrograms per cubic metre ($\mu\text{g}/\text{m}^3$). In 2020, when vehicular movement was restricted due to the pandemic, 23 of the 121 cities monitored for PM2.5 exceeded $50 \mu\text{g}/\text{m}^3$.
14. **Solid Waste Management:** The target is to achieve 100% source segregation in all households.
15. The overall progress is 78%, and while states like Kerala and Union territories like Puducherry have achieved the target, others like West Bengal and Delhi are woefully behind.
16. Manual scavenging is targeted for eradication, but India still has 66,692 manual scavengers.
17. **Forest Cover:** The target is to increase it to 33.3% of the geographical area, as envisaged in the National Forest Policy, 1988.
18. By 2019, 21.6% of India was under forest cover.
19. **Energy:** The target is to achieve 175 GW of renewable energy generation capacity by 2022.
20. Only 56% of this target has been achieved thus far.

What was India's Performance on Sustainable Development Goals?

1. India has slipped three spots to rank 120 on the 17 Sustainable Development Goals (SDG) adopted as a part of the 2030 agenda by 192 United Nations member states in 2015.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

2. In 2021 India ranked 117 among 192 nations.
3. India's overall SDG score was 66 out of 100.
4. India's rank dropped primarily because of major challenges in 11 SDGs including zero hunger, good health and wellbeing, gender equality and sustainable cities and communities.
5. India also performed poorly in dealing with quality education and life on land aspects.
6. In 2021, India had suffered on the fronts of ending hunger and achieving food security, achieving gender equality and building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation.

How did the Indian States Perform?

1. Jharkhand and Bihar are the least prepared to meet the SDGs by the target year 2030.
2. Kerala ranked first, followed by Tamil Nadu and Himachal Pradesh in the second position.
3. The third position was shared by Goa, Karnataka, Andhra Pradesh and Uttarakhand.
4. Among the Union Territories, Chandigarh was ranked first, followed by Delhi, Lakshadweep and Puducherry in the second place and the Andaman and Nicobar Islands on the third

12. e - VECHILES

1. India is the fifth largest car market in the world and has the potential to become one of the top three in the near future — with about 40 crore customers in need of mobility solutions by the year 2030.
2. However, keeping in mind the goals set under the Paris agreement, the increasing number of automobile customers shall not imply an increase in the consumption of conventional fuels.
3. To ensure a positive growth rate towards achieving India's Net Zero Emissions by 2070, a transportation revolution is required in India which will lead to better "walkability", public transportation; railways, roads and better cars. Many of these "better cars" are likely to be electric.
4. Lately, there is a growing consensus among automotive professionals and the public alike that the future of vehicles is electric. However, in this regard, India still has a lot to cover in terms of battery manufacturing, establishing charging infrastructure etc.

MANIDHANA EYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

Electric Vehicles and India

1. Origin and Increasing Scope: The push for Electric Vehicles (EVs) is driven by the global climate agenda established under the Paris Agreement to reduce carbon emissions in order to limit global warming.
2. The global electric mobility revolution is today defined by the rapid growth in electric vehicle (EV) uptake.
3. About two in every hundred cars sold today are powered by electricity with EV sales for the year 2020 reaching 2.1 million.
4. The global EV fleet totalled 8.0 million in 2020 with EVs accounting for 1% of the global vehicle stock and 2.6% of global car sales.
5. Falling battery costs and rising performance efficiencies are also fueling the demand for EVs globally.
6. Need for Electric Vehicles: India is in need of a transportation revolution.
7. The current trajectory of adding ever more cars running on expensive imported fuel and cluttering up already overcrowded cities suffering from infrastructure bottlenecks and intense air pollution is unfeasible.
8. The transition to electric mobility is a promising global strategy for decarbonising the transport sector.
9. India's Support to EVs: India is among a handful of countries that support the global EV30@30 campaign, which aims for at least 30% new vehicle sales to be electric by 2030.
10. India's advocacy of five elements for climate change — “Panchamrit” — at the COP26 in Glasgow is a commitment to the same.
11. Various ideas were espoused by India at the Glasgow summit, such as, renewable energy catering to 50% of India's energy needs, reducing carbon emission by 1 billion tonnes by 2030 and achieving net zero by 2070.
12. The government of India has taken various measures to develop and promote the EV ecosystem in the country such as:
13. The remodeled Faster Adoption and Manufacturing of Electric Vehicles (FAME II) scheme
14. Production-Linked Incentive (PLI) scheme for Advanced Chemistry Cell (ACC) for the supplier side
15. The recently launched PLI scheme for Auto and Automotive Components for manufacturers of electric vehicles.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

Associated Challenges

1. **Battery Manufacturing:** It is estimated that by 2020-30 India's cumulative demand for batteries would be approximately 900-1100 GWh.
2. However, there is concern over the absence of a manufacturing base for batteries in India, leading to sole reliance on imports to meet rising demand.
3. As per government data, India imported more than \$1 billion worth of lithium-ion cells in 2021, even though there is negligible penetration of electric vehicles and battery storage in the power sector.
4. **Consumer Related Issues:** In 2018, India was reported to have only 650 charging stations, which is quite less than the neighboring counterparts who already had over 5 million charging stations.
5. Lack of charging stations makes it unsuitable for the consumers in covering long range.
6. Moreover, it takes up to 12 hours for a full charge of a vehicle at the owner's home using a private light-duty slow charger.
7. Also, the cost of a basic electric car is much higher than the average price of a car running on conventional fuel.
8. **Policy Challenges:** EV production is a capital intensive sector requiring long term planning to break even and profit realization, uncertainty in government policies related to EV production discourages investment in the industry.
9. **Lack of Technology and Skilled Labour:** India is technologically deficient in the production of electronics that form the backbone of the EV industry, such as batteries, semiconductors, controllers, etc.
10. EVs have higher servicing costs which require higher levels of skills. India lacks dedicated training courses for such skill development.
11. **Unavailability of Materials for Domestic Production:** Battery is the single most important component of EVs.
12. India does not have any known reserves of lithium and cobalt which are required for battery production.
13. Dependence on other countries for the import of lithium-ion batteries is an obstacle in becoming completely self-reliant in the battery manufacturing sector.

Way Forward

1. **Electric Vehicle as Way Forward:** EVs will contribute to improving the overall energy security situation as the country imports over 80% of its overall crude oil requirements, amounting to approximately \$100 billion.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

2. The push for EVs is also expected to play an important role in the local EV manufacturing industry for job creation.
3. Additionally, through several grid support services, EVs are expected to strengthen the grid and help accommodate higher renewable energy penetration while maintaining secure and stable grid operation.
4. Opportunities for Battery Manufacturing and Storage: With recent technology disruptions, battery storage has great opportunity in promoting sustainable development in the country, considering government initiatives to promote e-mobility and renewable power (450 GW energy capacity target by 2030).
5. With rising levels of per capita income, there has been a tremendous demand for consumer electronics in the areas of mobile phones, UPS, laptops, power banks etc. that require advanced chemistry batteries.
6. This makes manufacturing of advanced batteries one of the largest economic opportunities of the 21st century.
7. EV Charging Infrastructure: An EV charging infrastructure that draws power from local electricity supply can be set up at private residences, public utilities such as petrol and CNG pumps, and in the parking facilities of commercial establishments like malls, railway stations, and bus depots.
8. The Ministry of Power has prescribed at least one charging station to be present in a grid of 3 km and at every 25 kms on both sides of the highways.
9. The Ministry of Housing and Urban Affairs under the Model Building Bye-laws, 2016 (MBBL) has mandated setting aside 20% of the parking space for EV charging facilities in residential and commercial buildings.
10. Giving effect to the MBBL will also require the state governments to introduce necessary amendments to their respective building bye-laws.
11. Increasing R&D in EVs: The Indian market needs encouragement for indigenous technologies that are suited for India from both strategic and economic standpoint.
12. Since investment in local research and development is necessary to bring prices down, it makes sense to leverage local universities and existing industrial hubs.
13. India should work with countries like the UK and synergise EV development.

13. LI-FE BATTERY

India, through a newly-floated state-owned company Khanij Bidesh India Ltd, has inked a pact with an Argentine firm to jointly prospect lithium in Argentina, a country that has the one of the largest reserves of Lithium in the world.

Key Points:

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

1. Khanij Bidesh India Ltd was incorporated in August 2019 by three state-owned companies, NALCO, Hindustan Copper and Mineral Exploration Ltd, with a specific mandate to acquire strategic mineral assets such as lithium and cobalt abroad.
2. It is also learnt to be exploring options in Chile and Bolivia, two other top lithium-producing countries.
3. Lithium is a crucial building block of the lithium-ion rechargeable batteries that power electric vehicles (EVs), laptops and mobile phones.
4. Currently, India is heavily dependent on import of these cells and the move to ink sourcing pacts for lithium is also seen as a move to reduce its dependency on China which is a key source of both the raw material and cells.
5. India is seen as a late mover as it attempts to enter the lithium value chain, coming at a time when Electric Vehicles are predicted to be a sector ripe for disruption.
6. 2021 is likely to be a turning point for battery technology, with several potential improvements to the Li-ion technology, and alternatives to this tried-and-tested formulation, under advanced stages of commercialisation.

About Li-ion Batteries:

1. A lithium-ion battery or Li-ion battery is a type of rechargeable battery.
2. Li-ion batteries use an intercalated (Intercalation is the reversible inclusion or insertion of a molecule into materials with layered structures) lithium compound as one electrode material, compared to the metallic lithium used in a non-rechargeable lithium battery.
3. The battery consists of electrolyte, which allows for ionic movement, and the two electrodes are the constituent components of a lithium-ion battery cell.
4. Lithium ions move from the negative electrode to the positive electrode during discharge and back when charging.

Lithium-ion Battery Applications:

1. Electronic gadgets, Tele-communication, Aerospace, Industrial applications.
2. Lithium-ion battery technology has made it the favourite power source for electric and hybrid electric vehicles.

Disadvantages of Li-ion Batteries:

1. Long charging times.
2. Safety issues as instances of batteries catching fires have been there.
3. Expensive to manufacture.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

4. While the Li-ion batteries are seen as sufficiently efficient for applications such as phones and laptops, in case of EVs, these cells still lack the range that would make them a viable alternative to internal combustion engines.

Potential Alternatives to Li-ion technology:

Graphene Batteries:

Graphene batteries may be an important alternative to lithium-ion batteries, with the latter having limitations due to the frequency with which lithium requires charging. Graphene is a newly stabilized and isolated material.

Fluoride Batteries:

Fluoride Batteries have the potential to last eight times longer than lithium batteries.

Sand Battery:

This alternative type of lithium-ion battery uses silicon to achieve three times better performance than current graphite Li-ion batteries. The battery is still lithium-ion like the one found in a smartphone, but it uses silicon instead of graphite in the anodes.

Ammonia-powered Batteries:

1. Ammonia-powered batteries may not be coming any time soon, but the chemical commonly known as a household cleaner is still an alternative to lithium in the way it can power fuel cells in vehicles and other equipment.
2. If scientists can figure out a way to produce ammonia without creating the greenhouse gas emissions that result right now, they can ship it anywhere in the world to be converted into hydrogen to power those fuel cells.

Lithium-Sulfur Batteries:

Researchers in Australia say they have developed the world's most powerful rechargeable battery using lithium-sulfur, said to perform four times better than the strongest batteries currently available.

Vertically Aligned Carbon Nanotube Electrode:

These are good candidates for lithium-ion battery electrodes which require high rate capability and capacity.

Solid-state Batteries:

1. It uses alternatives to aqueous electrolyte solutions, an innovation that could lower the risk of fires, sharply increase energy density and potentially take only 10 minutes to charge an EV, cutting the recharging time by two-thirds.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

2. These cells can extend the driving distance of a compact electric vehicle while maintaining legroom - a quantum leap in battery tech.

14. A SUN IS A WORLD STRUCTURE

1. The Sun, like all stars, is an enormous ball of extremely hot, largely ionized gas, shining under its own power.
2. The Sun could fit 109 Earths side-by-side across its diameter, and it has enough volume (takes up enough space) to hold about 1.3 million Earths.
3. The Sun does not have a solid surface or continents like Earth, nor does it have a solid core. Most of the elements found in the Sun are in the form of atoms, with a small number of molecules, all in the form of gases: the Sun is so hot that no matter can survive as a liquid or a solid.
4. In fact, the Sun is so hot that many of the atoms in it are *ionized*, that is, stripped of one or more of their electrons. This removal of electrons from their atoms means that there is a large quantity of free electrons and positively charged ions in the Sun, making it an electrically charged environment. (Scientists call such a hot ionized gas a plasma.)
5. About 73% of the Sun's mass is hydrogen, and another 25% is helium (i.e. Sun is composed of roughly 98% hydrogen and helium). All the other chemical elements (including those we know and love in our own bodies, such as carbon, oxygen, and nitrogen) make up only 2% of our star.
6. Sun is rotating in counter-clockwise direction (when viewed from a long way above Earth's north pole).
7. Those objects closer to the Sun, which are more affected by heat and light pressure, are composed of elements with high melting points & Objects farther from the Sun are composed largely of materials with lower melting points.
8. Stars like Sun are rare in Milky Way galaxy, whereas substantially dimmer and cooler stars, known as red dwarfs, are common.

Characteristics of the Sun:

1. **Age:** 4.6 billion years.
2. **Diameter:** 1.39 million km.
3. **Temperature:** 6000 °C on surface and 16 million °C in core.
4. **Density:** 1.41 times that of water.
5. Our gaseous sun is divided into different zones and layers, with each of our host star's regions moving at varying speeds. On average, the sun rotates on its axis once every 27 days. However, its equator spins the fastest and takes about 24 days

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

to rotate, while the poles take more than 30 days. The inner parts of the sun also spin faster than the outer layers, according to NASA.

6. Gasses spin at different rates, therefore, while the sun does indeed rotate on its axis, different parts of the sun rotate at different speeds. It does not rotate at a constant rate like solid Earth. The differential rotation of the sun helps contribute to sunspots, magnetic fields, and radiation.

The Sun's Internal Structure and Atmosphere:

1. The Sun's layers are different from each other, and each plays a part in producing the energy that the Sun ultimately emits.
2. The solar interior, from the inside out, is made up of the core, radiative zone and the convective zone.
3. Inside the core, nuclear energy is being released. The core is approximately 20% of the size of the solar interior and is thought to have a temperature of approximately 15 million K, making it the hottest part of the Sun.
4. Above the core is a region known as the radiative zone—named for the primary mode of transporting energy across it. This region starts at about 25% of the distance to the solar surface and extends up to about 70% of the way to the surface.
5. The light generated in the core is transported through the radiative zone very slowly, since the high density of matter in this region means a photon cannot travel too far without encountering a particle, causing it to change direction and lose some energy.
6. The convective zone is the outermost layer of the solar interior. It is a thick layer approximately 200,000 kilometers deep that transports energy from the edge of the radiative zone to the surface through giant convection cells, similar to a pot of boiling oatmeal. The plasma at the bottom of the convective zone is extremely hot, and it bubbles to the surface where it loses its heat to space. Once the plasma cools, it sinks back to the bottom of the convective zone.

Solar Photosphere:

1. The photosphere is the lowest layer of the solar atmosphere and visible “surface” of the Sun.
2. The photosphere is the bright outer layer of the Sun that emits most of the radiation.
3. The photosphere is an extremely uneven surface.
4. The effective temperature on the outer side of the photosphere is 6000°C.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

Chromosphere:

1. The chromosphere is the second of the three main layers in the Sun's atmosphere and is roughly 3,000 to 5,000 kilometers deep.
2. Its rosy red color is only apparent during eclipses.
3. The chromosphere sits just above the photosphere and below the solar transition region.
4. It is relatively a thin layer of burning gases.
5. The temperature of the chromosphere is about 10,000 K.

Transition Region:

1. The increase in temperature does not stop with the chromosphere. Above it is a region in the solar atmosphere where the temperature changes from 10,000 K (typical of the chromosphere) to nearly a million degrees.
2. The hottest part of the solar atmosphere, which has a temperature of a million degrees or more, is called the corona.
3. Appropriately, the part of the Sun where the rapid temperature rise occurs is called the transition region. It is probably only a few tens of kilometers thick.

Corona:

1. The outermost part of the Sun's atmosphere is called the corona. Like the chromosphere, the corona was first observed during total eclipses.
2. Unlike the chromosphere, the corona has been known for many centuries: it was referred to by the Roman historian Plutarch and was discussed in some detail by Kepler.
3. The Sun's corona extends millions of kilometres into space and is most easily seen during a total solar eclipse.

Solar Wind:

1. The solar wind is a stream of energised, charged particles, primarily electrons and protons, flowing outward from the Sun at speeds as high as 900 km/s and at a temperature of 1 million degrees (Celsius).
2. It is made of plasma (ionised atoms).

Effects of solar wind (Aurora):

1. An aurora is a natural light display in the sky, predominantly seen in the high latitude (Arctic and Antarctic) regions. (This is due to magnetic field lines of earth and solar wind)

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

2. Auroras are caused by charged particles, mainly electrons and protons, entering the atmosphere from above causing ionisation and excitation of atmospheric constituents, and consequent optical emissions.

Solar flares:

1. Solar flares are produced on the sun's surface due to magnetic anomalies.
2. They are magnetic storms which appear to be very bright spots with a gaseous surface eruption.
3. As solar flares are pushed through the corona, they heat its gas to anywhere from 10 to 20 million °C.

Solar prominence:

1. An arc of gas that erupts from the surface of the Sun is called solar prominence.
2. Prominences can loop hundreds of thousands of miles into space.
3. Prominences are held above the Sun's surface by strong magnetic fields and can last for many months.
4. At some time in their existence, most prominences will erupt, spewing enormous amounts of solar material into space.

15. VINISHA UMASHANKAR

1. Ms. Vinisha Umashankar, a student innovator turned environmentalist from Tiruvannamalai district of Tamil Nadu, has been selected as a “changemaker” and Batonbearer for the ongoing 16th official Queen's Baton Relay (12-15 January 2022) in India.
2. The 16th official Queen's Baton Relay started at the Buckingham Palace in London on 7th October 2021 and is scheduled to conclude on 28th July 2022 at the Opening Ceremony of the Birmingham 2022 Commonwealth Games after travelling 72 nations and territories of the Commonwealth for 294 days.
3. With the arrival of baton in India, the 27th nation in the route, the Queen's Baton Relay will continue in India from 12th to 15th January 2022.

Mobile ironing cart:

1. Vinisha Umashankar received the Dr. APJ Abdul Kalam IGNITE Awards instituted by National Innovation Foundation (NIF) – India, an autonomous body of the Department of Science and Technology for her mobile ironing cart.
2. The cart uses solar panels to power a steam iron box and turned out to be an inspiration for the world after her speech at the 26th Conference of the Parties to the UN Framework Convention on Climate Change in 2021 at Glasgow, Scotland.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

3. A key benefit of Vinisha’s solar ironing cart is that it eliminates the need for coal for ironing bringing about a welcome shift towards clean energy. End-users can move around and offer services at doorstep for increasing their daily earning.
4. The ironing cart can also be fitted with a coin-operated GSM PCO, USB charging points, and mobile recharging, which can fetch extra income.
5. India is committed towards solving the global climate change problem through Science, Technology, and Innovation based solutions.
6. It’s the next generation of innovators like Vinisha who provide the nation a strong hope that “Tomorrow can be better than today” by virtue of their scientific thinking, societal focus, and institutional support mechanism like the one offered by NIF in India, which could be replicated in other parts of the world.

16. MIYAWAKI METHOD

1. Telangana government has introduced the Japanese “Miyawaki” method of afforestation to grow urban forests and expand the green cover as well as to meet the stipulated plantation target under the Telanganaku Haritha Haaram (TKHH).
2. Miyawaki is a technique pioneered by Japanese botanist Akira Miyawaki that helps build dense, native forests in a short time.
3. It has revolutionised the concept of urban afforestation by turning backyards into mini-forests.
4. This method includes planting trees (only native species) as close as possible in the same area which not only saves space, but the planted saplings also support each other in growth and block sunlight reaching the ground, thereby preventing the growth of weed.
5. The saplings become maintenance-free (self sustainable) after the first three years.
6. The approach is supposed to ensure that plant growth is 10 times faster and the resulting plantation is 30 times denser than usual.
7. Miyawaki method helps to create a forest in just 20 to 30 years, while through conventional methods it takes anywhere between 200 to 300 years.

Miyawaki Process:

1. The native trees of the region are identified and divided into four layers — shrub, sub-tree, tree, and canopy.
2. The quality of soil is analysed and biomass which would help enhance the perforation capacity, water retention capacity, and nutrients in it, is mixed with it.
3. A mound is built with the soil and the seeds are planted at a very high density — three to five sapling per square meter.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA
UNIT – IV – CURRENT AFFAIRS

4. The ground is covered with a thick layer of mulch.

Concerns:

1. Such forests lack some qualities of natural forests, such as medicinal properties and the ability to bring rain.
2. Such fast-growing plantations are actually wood lots (a parcel of a woodland or forest capable of small-scale production of forest products (such as wood fuel, sap for maple syrup, sawlogs, and pulpwood) as well as recreational uses like bird watching, bushwalking, and wildflower appreciation) and cannot be termed as forests.
3. Several environmentalists have questioned the efficacy of the method that accelerates the growth of trees and claims to match a forest's complex ecosystem (as it is not a good idea to force plants to photosynthesize fast).

17. BLUE FLAG CERTIFICATION

1. Recently, two more beaches from India were awarded the 'Blue Flag Certification' tag by Foundation for Environment Education (FEE), Denmark.
2. Kovalam beach in Tamil Nadu and Eden beach in Puducherry are the two new beaches to receive the Blue Flag International
3. Now a total of 10 beaches from India have received the 'Blue Flag Certification' tag.
4. 2018: Chandrabhaga beach on the Konark coast of Odisha became the 1st Indian as well as 1st Asian beach to get Blue Flag Certification.

Other Eight Blue Flag Certified Beaches in India:

1. Shivarajpur in Gujarat,
2. Ghoghla in Diu,
3. Kasaragod in Kerala
4. Kappad in Kerala,
5. Padubidri in Karnataka,
6. Rushikonda in Andhra Pradesh,
7. Golden in Odisha, and
8. Radhanagar in Andaman and Nicobar

Background:

1. **1985:** Blue flag program started in France.
2. **1987:** It was presented to FEE and became the European Blue Flag.
3. **2001:** South Africa became the first country outside of Europe to join the program and this led to its changed name- International Blue Flag.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

4. Blue Flag Certification is an internationally recognized eco-label awarded by a non-profit organization called the Foundation for Environment Education (FEE), Denmark.
5. The Blue Flag recognition is awarded by a jury comprising members from the IUCN, UNWTO, UNEP, and UNESCO after considering 33 parameters.
6. **Parameters used:** The certification is based on 33 parameters which are then divided into 4 major categories. They are-
 - Environmental education and information
 - Bathing water quality
 - Environmental management
 - Conservation and safety services on the beaches
7. **Global scenario:** There are more than 4000 blue flag beaches worldwide with Spain leading the number of beaches per country with this certification.

Significance:

1. Promote clean and sustainable tourism: blue flag beaches should provide clean and hygienic bathing water, along with basic infrastructure for tourists.
2. It also advocates against inequality, disparity, unemployment, depletion of natural resources, health and environmental threats, pollution as well as general environmental degradation.

18. SWACHH VIDYALAYA PURASKAR (SVP)

1. Shri Subhas Sarkar, Minister of State for Education virtually launched Swachh Vidyalaya Puraskar (SVP) 2021 – 2022. The schools have been given sufficient time till March 2022 to apply for the awards so that they can do so at an appropriate and safe time.
2. The Swachh Vidyalaya Puraskar recognise, inspire and award the schools who have undertaken exemplary work in the field of water, sanitation and hygiene and also provides a benchmark and roadmap for schools to make further improvements in future.
3. In order to create self-motivation and awareness about sanitation the Swachh Vidyalaya Puraskar (SVP) was first instituted by the Department of School Education and Literacy, in 2016-17.
4. The SVP 2021-22 is open to all categories of schools. i.e. Government, Government aided and Private schools in both rural and urban areas.

MANIDHANAHEYAM FREE IAS ACADEMY – TNPSC GROUP II & IIA

UNIT – IV – CURRENT AFFAIRS

5. The schools will be assessed through an online portal & mobile app in 6 sub-categories.
6. These are: Water, Sanitation, Hand Washing with soap, Operation and Maintenance, Behaviour Change and Capacity Building and the newly added category on COVID-19 Preparedness and Response and the system will generate the overall score and rating automatically.
7. Schools shall be awarded at the District, State and National level based on an internationally recognized five star rating system.
8. Also, every school will get a certificate of participation showing the category-wise scores and overall rating of the school.
9. At the National level, 40 schools will be selected for awards this year under the overall category.
10. The award money for the schools has been enhanced this year from Rs. 50,000/- to Rs. 60,000/- per school, under Samagra Shiksha scheme. Also, 6 sub-category wise awards have been introduced for the first time, with award money of Rs. 20,000/- per school.

