Microplastics found in agricultural fields of 2 districts in Bihar

(GS Paper 3, Environment)

Why in news?

- The presence of microplastics in agricultural fields and crops in Bhagalpur and Buxar districts of Bihar has become a cause of concern as it can lead to various diseases in humans.
- Recent studies reveal the presence of MPs in agricultural fields as well as crops in Bhagalpur and Buxar.

What are microplastics?

- The plastic wastes that accumulate in environment are broken down into smaller fragments and particles under physical, chemical or biological action, gradually forming **microplastics (MPs).**
- The MPs, tiny materials less than 5 mm in diametre, are regarded as a major source of plastic pollution in the environment.
- They are called microplastics and it cannot be seen with the naked eye.

Anthropogenic sources:

- Because of the extensive use plastics, the MPs have become a global environmental issue.
- Due to **human activities, such as plastic mulching, sewage, fertiliser coatings and littering**, soil has become the largest reservoir of the MPs.
- The **MPs and nanoplastics (NPs)** have been exposed to humans via various pathways, such as tap and bottled water, beverages, seafood, milk, salt, fruits and vegetables.

Impact on Health:

- There are reports that suggest that the **MPs can enter into blood cells of the human body**, and can cause organ toxicity and dysfunctional metabolic activities, resulting in carcinogenic disease.
- The consumption of MPs was significantly associated with diseases like infertility, obesity, cancer and others.

What's next?

- A study would be conducted soon to quantify the presence of MPs in farmland soils in these two districts.
- There is need to conduct more studies to focus on the damage mechanism at the molecular and cellular level due to consumption of the MPs and the NPs.

Nepal Parliament passes first Citizenship Amendment Bill

(GS Paper 2, International Relation)

Why in news?

- Recently, Nepal's Parliament passed the country's first Citizenship Amendment Bill, which was under discussion for more than two years as political parties failed to forge a consensus on it.

Key Highlights:

- The bill has been under discussion in the House of Representatives since 2020, but it failed to be endorsed due to differences among the political parties over certain provisions, namely the seven-year waiting period for obtaining naturalised citizenship for foreign women married to Nepali men.
- The bill has been tabled in Parliament to amend the Nepal Citizenship Act 2006 and make provisions for providing citizenship as directed by the Constitution.

Background:

- Earlier, the Nepal government had withdrawn the Citizenship Bill from the House of Representatives after the main opposition CPN-UML lawmakers protested against its proposals.
- In 2018, the then KP Sharma Oli government had registered the bill at the Parliament Secretariat.

Chinese scientists develop robot fish that gobble up microplastics

(GS Paper 3, Science and Tech)

Why in news?

- Chinese scientists came up with a new idea to the concept of robot fish.
- There is an inbuilt feature to these robotic fish that helps them eat microplastics from the water body they are kept in.
- This feature of eating away all the microplastics might one day help in cleaning up all the polluted oceans or other water bodies.

What is robot fish?

- A robot fish is a type of **bionic robot** that has the shape and locomotion of a living fish.
- The robot fish are soft to touch similar to that of real fishes and are just 1.3 centimeters (i.e. 0.5 inches) in size.

Key Highlights:

- These fishes is that **they can swim upto 2.76 body lengths per second, faster than most artificial soft robots**.

- These fishes are **able to absorb pollutants** and recover themselves even when it is damaged.
- These black robot fishes left in water can still be controlled by the scientists from outside to avoid crashing into other fishes or ships for that matter with the irradiated light feature.
- It is made keeping in mind the safety of other fishes: If it is accidentally eaten by other fish, **it can be digested without any harm as it is made from polyurethane**, which is also biocompatible.
- The fish is able to absorb pollutants and recover itself even when it is damaged.

Way Forward:

- They have already tested the efficiency of the fishes in getting rid of the microplastics, by keeping them in the shallow water where they sucked up all the microplastics away.
- The main aim of the team is to enable them to collect microplastics in deeper water and provide information to analyse marine pollution in real time.

CAQM formulates comprehensive policy to abate air pollution in Delhi-NCR

(GS Paper 3, Environment)

Why in news?

- The **Commission for Air Quality Management in NCR & Adjoining Areas (CAQM)** has formulated a Comprehensive Policy to abate the menace of air pollution in Delhi-NCR through differentiated geographical approach and timelines of action.

Scope:

- This policy contains s**ector-wise recommendations for Agencies and Departments of Central Government**, NCR State Governments and GNCTD along with Central Pollution Control Board (CPCB) and State Pollution Control Boards (PCBs) of NCR to prevent, control and abate air pollution in the NCR including industries, vehicles/ transport, construction and demolition (C&D), dust from roads and open areas, municipal solid waste burning, crop residue burning etc.

- The policy framed by CAQM also **deals with thermal power plants (TPPs), clean fuels & electric mobility, public transportation**, road traffic management, diesel generators (DGs), bursting of fire crackers and abating air pollution through greening and plantation.
- The scope of this comprehensive plan by CAQM is to abate air pollution primarily in Delhi and NCR. Owing to a deficit in infrastructure and systems across sub-regions of the NCR, wide variations in baseline actions, and varying levels of urbanization, a differentiated approach and timelines have been suggested for various sub-regions.

These sub-regions include:

- The National Capital Territory (NCT) of Delhi
- The NCR districts near Delhi — Gurugram, Faridabad, Sonipat, Jhajjar, Rohtak, Ghaziabad, Gautam Buddha Nagar and Baghpat
- Other NCR districts
- The entire state of Punjab and the non-NCR districts of Haryana, primarily for addressing episodic events of stubble burning.

Timeframe:

- The Expert Group, considering the issues and complexities involved, has suggested short-term (up to one year), medium term (one-three years), and long term (three-five years, preferably) actions.
- This timeframe is further differentiated for different sub-regions/areas/districts/cities to provide the space for all to transform to meet the common air quality goal.

Broadly, the critical areas of transformation aimed for meeting the national ambient air quality standards include:

- Widespread access to affordable clean fuels and technology in industry, transport and households
- Mobility transition including through mass transit, electrification of vehicles, building walking and cycling infrastructure and reducing personal vehicle usage etc
- Circular economy for material recovery from waste to prevent its dumping and burning
- Dust management from C&D activities, roads/Right of Ways (RoW) and open areas with appropriate technology, infrastructure and greening measures
- Strict time-bound implementation, improved monitoring and compliance.

Background:

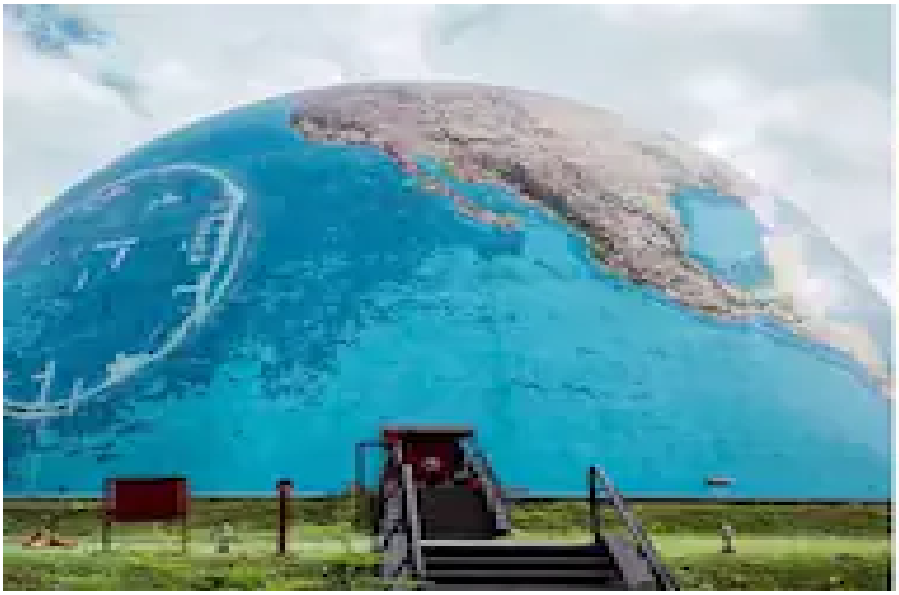
- The Supreme Court of India in WP (Civil) No 1135 of 2020 in the matter of ***Aditya Dubey (minor) and Anr v/s UOI & Ors***. had directed CAQM that with a view to "find permanent solution to the air pollution menace occurring every year in Delhi and NCR, suggestions may be invited from the general public as well as the experts in the field".
- Further, pursuant to the directions of Supreme Court, the Commission constituted an Expert Group.

Indian cities in TIME list of extraordinary destinations

(Miscellaneous)

Why in news?

- The "God's own country" Kerala and Ahmedabad city have been listed by TIME magazine as two of the **"50 extraordinary destinations to explore"** in its list of the world's greatest places of 2022.
- The list also includes Ras Al Khaimah, UAE; Park City, Utah; Seoul; Great Barrier Reef, Australia; The Arctic; Valencia, Spain; Trans Bhutan Trail, Bhutan; International Space Station; Bogota; Lower Zambezi National Park, Zambia; Istanbul and Kigali, Rwanda.



What did it say about Ahmedabad?

- It said that as **India's first UNESCO World Heritage City, Ahmedabad** "boasts both ancient landmarks and contemporary innovations that make it a mecca for cultural tourism, from the serene **Gandhi Ashram** that sits on 36 acres on the banks of the Sabarmati River to **Navratri,** a vibrant nine-day celebration billed as the longest dance festival in the world."
- It also made it to the list of "50 extraordinary destinations to explore" for its **Science City, "**a sprawling entertainment center and theme park", which unveiled three major attractions in 2021.
- A 20-acre nature park to educate the public on local flora as well as provide new spaces for playing chess and practicing yoga. There is also a new interactive **robot gallery** that celebrates innovation in robotics and features a towering replica of a Transformer.
- Science City's new aquarium, which showcases aquatic species from around the globe, is now India's largest.

How did Kerala make it to the list?

- For the **"ecotourism hot spot" in south India**, Kerala is "one of India's most beautiful states. With spectacular beaches and lush backwaters, temples, and palaces, it's known as 'God's own country'.
- In 2002, Kerala is boosting **motor-home tourism in India** to inspire a new pas de deux of exploration and accommodation.
- The **state's first caravan park, Karavan Meadows**, opened in Vagamon, a scenic hill station.