

All-Inclusive Current Affairs for Prelims 2023

Environment Class-12

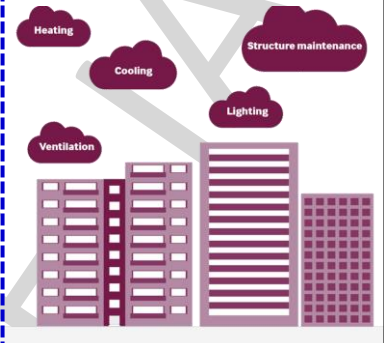
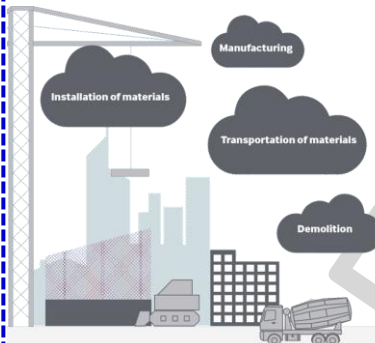
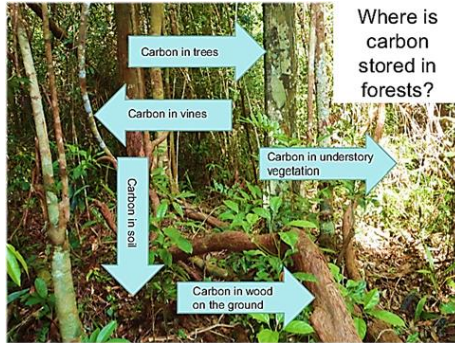
Types of Carbon

Class-8 page-108

Black, Brown, Green, Blue carbon

Class-4 page-37

Grey, Blue, Green hydrogen



Carbon stock

7.2 billion tons in 2021 as per FSU's State of Forest Report (rise since 2019)

- Arunachal > MP > Chhattisgarh
- Max is soil organic carbon (56%)

Embodied Carbon

Carbon footprint of construction materials

Operational Carbon

Energy consumption in the building

Nature Based Solutions

Using nature to increase resilience of infra to climate change

Challenge	Grey infra solution	Green infra solution
Sea level rise	Sea wall	Mangroves
Urban floods	Storm water drains	Lakes, trees, Parks, Green roof
Water purification	Water treatment plant	Wetlands



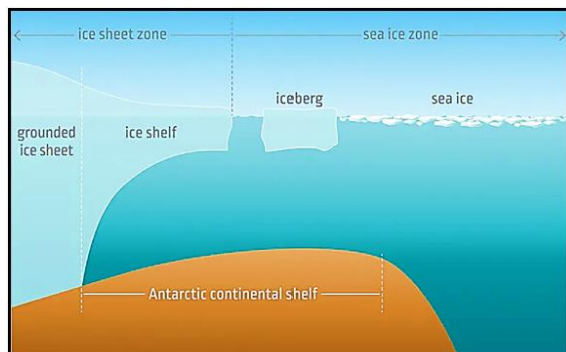
Sponge city

City that has abundant wetlands, parks, trees, lakes to absorb rain and prevent flooding

Thwaites glacier

Thwaites Glacier / Doomsday Glacier

- Big glacier in [Antarctica](#) flowing into Pine Island Bay
- Contains enough water to raise world sea level by more than half a metre.
- It slows ice behind it from freely flowing into ocean.
- Recently, Researchers have detected warm water at Thwaites's grounding zone.



I read I forget, I see I remember

See explanation of this PDF on [YouTube](https://www.youtube.com/c/allinclusiveias) www.youtube.com/c/allinclusiveias

Miscellaneous

Atmospheric rivers

- ❑ They are long narrow regions in sky that transport water vapor outside the tropics
- ❑ Example: 'Pineapple Express' that brings moisture from Hawaii to US west coast
- ❑ They can cause extreme rainfall and floods



Mammatus clouds

- They look like pouch hanging at base of cloud
- This shape is formed by cold air sinking down
- They are often associated with thunderstorms



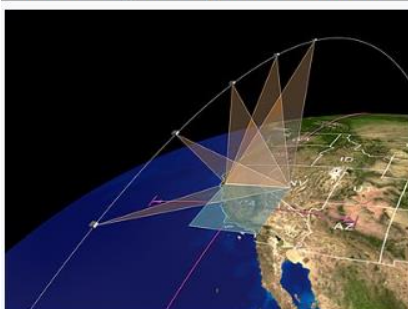
Liquid Tree

- Designed by scientists in Serbia
- It is a tank of water & micro-algae
- It helps control air pollution
- It is a photobioreactor (grows microorganisms using light as energy source)

MAIA mission (by NASA and Italy)

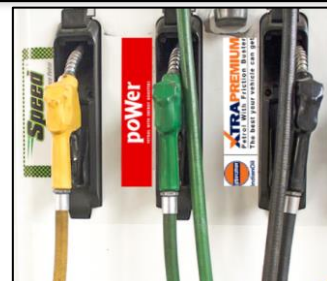
- To estimate particulate matter in 11 cities, including New Delhi
- Data will be compared with health records, to understand relation between pollution and health.
- According to NASA, it is NASA's first mission whose primary goal is to benefit societal health.

Multi-Angle Imager for Aerosols



Agenzia Spaziale Italiana

- It is the Italian space agency
- It will build the satellite PLATINO-2
- NASA will build the instrument
- Launch is scheduled for 2024



Speed, Power, XtraPremium, XP95, XP100

- High Octane petrol by oil marketing companies
- Lower emissions and maintenance cost
- Better mileage and performance
- They are usually costly

Green Shipping

Ministry of Ports, Shipping and Waterways

India aims at becoming 'Global Hub for Green Ship' building by 2030 with launch of Green Tug Transition Programme(GTTP):
Shri Sarbananda Sonowal

Posted On: 22 MAR 2023 5:52PM by PIB Delhi

Example of Greens shipping

- ❑ Use cleaner fuel like LNG instead of diesel
- ❑ Use new technologies like fuel cell or Solar power
- ❑ Install Sulphur Scrubber System on exhaust
- ❑ Develop 'No ballast ships' to prevent ballast water from transferring microbes from one environment to another
- ❑ Garbage disposal system for ships and ports
and much more...



Green Tug Transition Programme

- To make Tug boats use cleaner fuels
- by Ministry of Ports, Shipping & Waterways

National Centre of Excellence in Green Port & Shipping

- by TERI and Ministry of Ports, Shipping & Waterways
- to promote green shipping
- in Gurugram, Haryana

Green Voyage 2050 project

- Launched in 2019 by (International Maritime Organisation) IMO and Norway
- To help developing countries reduce their GHG emissions from shipping sector

Clydebank Declaration

- signed by 22 countries at CoP-26, to develop green shipping corridors
- Green shipping corridor: shipping route on which zero-emission solutions are demonstrated

<https://pib.gov.in/Pressreleaseshare.aspx?PRID=1596730>

Recycling of Ships Act, 2019

- ❑ Ships shall be recycled only in authorized facilities
 - Ship recyclers must ensure safe removal of hazardous wastes from ships
- ❑ It prohibits use of hazardous materials, irrespective of whether a ship is meant for recycling or not
 - It does not apply to warships and non-commercial ships operated by Govt
- ❑ Directorate General of Shipping will be the National Authority for Recycling of Ships
 - It will be based in Gandhinagar, Gujarat.
- ❑ Ships to be recycled in India must have "Ready for Recycling Certificate" as per Hong Kong Convention
 - In 2019, India acceded to IMO's "Hong Kong International Convention for Safe and Environmentally Sound Recycling of Ships, 2009"



Alang in Gujarat

- It is in Gulf of Khambat / Cambay
- It is world's biggest ship breaking yard
- Bangladesh's Chittagong is number 2



Asbestos

- It is a naturally occurring fibrous silicate mineral
- It is an excellent thermal and electrical insulator
- It is a known carcinogen, and banned in many countries.
- It was used in various building materials, especially in ships.
- Disease: Asbestosis, Mesothelioma, cancer, etc
- Despite being banned from ships in 2002, studies indicate that it is still used to build 50% of all new ships

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See explanation of this PDF on  www.youtube.com/c/allinclusiveias

1,073 sqkm in Ladakh's Hanle becomes India's first Dark Sky Reserve

Pune | Updated: December 15, 2022 06:31 IST NewsGuard

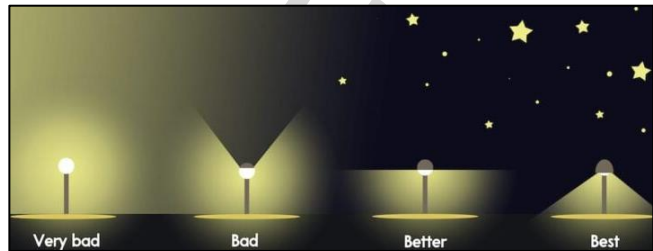
The administration of the Union Territory of Ladakh has officially identified a 1,073 sqkm area in Ladakh's Hanle as India's first dark sky reserve and will be known as the Hanle Dark Sky Reserve (HDSR).

In its gazette notification issued by the UT's Wildlife Department and published on December 5, the UT has earmarked this area covering a cluster of six hamlets of Hanle revenue range. These hamlets include Bhok, Khuldo, Shado, Punguk, Naga and the Tibetan Refugee habitations located within the Changthan Wildlife Sanctuary, situated around the Indian Astronomical Observatory owned by the Indian Institute of Astrophysics (IIA).

Dark Sky reserve

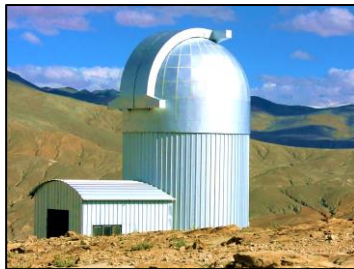


Light pollution unwanted and excessive artificial light



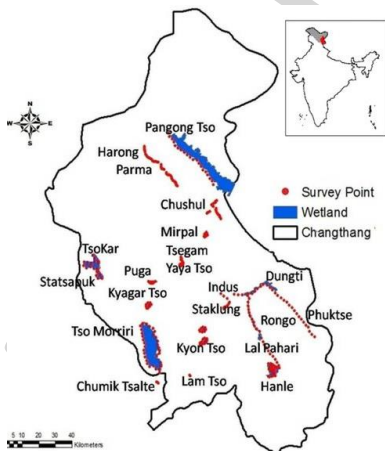
Dark Sky Reserve

- area with minimal light pollution (artificial light)
- formed in partnership with locals, govt, etc.
- helps in scientific research, promotes astro-tourism (astronomy + tourism)
- US based International Dark Sky Association gives certificate (obviously not necessary)



Indian Astronomical Observatory

- ❖ It is on Mt. Saraswati, Digpa-ratsa Ri, Hanle in south-eastern Ladakh
- ❖ Established in 2001. Some telescopes:
 - **HCT** - Himalayan Chandra Telescope
 - **HAGAR** - High Energy Gamma Ray telescope
 - **MACE** - Major Atmospheric Cherenkov Experiment Telescope
 - **GROWTH** - Global Relay of Observatories Watching Transients Happen (Growth is India's first fully robotic telescope)



Changthang wildlife sanctuary

- ❑ Famous places Hanle, Tso Moriri, Pangong Tso
- ❑ Animals: Black-necked Crane, Kiang or Tibetan Wild Ass, Snow leopard, Changthangi/Changpa goats (used for Pashmina shawl)
- ❑ **Benefits of astronomical observations from Hanle**
 - Low air density, so less flickering of light (here stars usually don't twinkle)
 - Difficult terrain, so less human movement

Ripening of fruits

Climacteric fruits

They ripen after harvest.
Apple, mango, banana, tomato, etc.

Non-Climacteric fruits

They don't ripen after harvest.
Orange, grapes, pineapple, etc.

Ethylene

- It is a hormone **naturally produced** within the fruit and helps in ripening
- FSSAI guideline **allows artificial ripening** of fruits by ethylene gas
- Ethylene does not pose any health hazard to consumers



(a) Ripening in air tight rice bin

FSSAI guidelines for NATURAL ripening at room temperature

- Keep unripe fruits inside an **air tight** rice bin/container.
- Keep unripe fruits as layers over paddy husk or wheat **straw**
- Wrap the fruits individually with **paper** or place it in paper bag.
- Harvest the fruits at optimum **maturity**.

Ethylene entrapped around fruit facilitates faster ripening



(b) Ripening using paddy straw

FSSAI guidelines on ARTIFICIAL ripening of fruits

- Ethylene gas is allowed, at concentration up to **100 ppm** (100µl/L).
 - Source of Ethylene gas may be **ethephon, ethanol**, gas cylinder, etc.
 - But source of ethylene should not come in direct contact with fruits.
- Calcium Carbide** / Carbide gas / Acetylene gas are **not allowed**

Calcium Carbide

- It reacts with moisture, to produce **Acetylene** gas
- Acetylene gas helps in **fruit ripening**
- Their use for fruit ripening is **banned** in India

Calcium Carbide



POISON ON A PLATTER

CHEMICALS USED

Calcium carbide | To expedite ripening of mangoes, sapodilla and bananas

Copper sulphate | To ripen fruits and make them look fresh for long

Oxytocin | To increase size of pumpkins, melons, cucumbers

Wax | To shine apples and pears

Metallic lead | To make spinach and bitter gourd look green

HEALTH HAZARDS

- > Can harm digestive system and other organs
- > Cause kidney and heart failure
- > Affect brain and may cause cancer in the long run



WHAT YOU CAN DO

- > Wash fruits and vegetables in warm water before eating
- > Use locally-grown fruits and vegetables
- > Pick seasonal fruits
- > Do not buy fruits with too many black spots
- > Peel the fruit

WHAT RULES SAY

- > Use of carbide/acetylene gas to ripen fruit not permitted
- > Ethylene gas can be used at a concentration up to 100ppm

CHECK IT YOURSELF

Wax in apple | Pour hot water on the fruit. If the shine is lost, wax has melted



Dyes | Wipe fruit with oil-soaked cotton ball

Carbide Lamp



Acetylene

- It is a **colourless** and **flammable** gas
- It is made from methane, petroleum processing, calcium carbide
- It burns in oxygen to produce flame temperature up to **3,300°C**
- Oxyacetylene** flame is used for welding and cutting of metals

Prelims 1998 Consider the following statements about **acetylene**

- It is used in **welding** industry.
- It is a raw material for preparing **plastics**.
- It is easily obtained by mixing **silicon carbide** & water

(a) 1 and 2 (b) 1 and 3 (c) 2 and 3 (d) 1, 2, 3

Ninth Session of Governing Body of the ITPGRFA concludes

Posted On: 24 SEP 2022 3:47PM by PIB Delhi

The Ninth Session of the Governing Body (GB9) of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) concluded in New Delhi today.

Seed Treaty

- ❖ India is a signatory to the treaty
- ❖ India's PPV&FR Act, 2001 is compliant with the treaty
- ❖ India hosted 9th session in September 2022 at New Delhi

Sessions of Governing Body of Seed Treaty

- ❑ GB8 : 8th session, 2019, Rome
- ❑ GB9 : 9th session, 2022, Delhi Theme "Celebrating the Guardians of Crop Diversity: Towards an Inclusive Post-2020 Global Biodiversity Framework"

International Treaty on Plant Genetic Resources for Food and Agriculture

- aka TPGRFA / International Seed Treaty / Plant Treaty
- It is a legally binding treaty signed in 2001 at FAO session in Madrid, Spain. Entered into force in 2004.
- Members: 150 (India : yes USA : yes China : no)
- It provided the legal framework to establish Svalbard Global Seed Vault in Norway (page-82)

Objectives

- Recognize contribution and rights of farmers
- Fair and equitable access and benefit sharing
- Sustainable use of plant genetic resources as per Convention on Biological Diversity

National Bureau of PLANT Genetic Resources

- 1976, HQ Delhi
- It comes under ICAR
- It is the nodal agency for management of plant genetic resources

National Bureau of ANIMAL Genetic Resources

- 1984, HQ Karnal
- It comes under ICAR
- It is the nodal agency for management of animal genetic resources

Indian Agricultural Research Institute

- It comes under ICAR
- 1905: established in Pusa, Bihar
- 1936: shifted to Delhi (due to 1934 earthquake)

Indian Council of Agricultural Research

- 1929, HQ Delhi
- Under Ministry of Agriculture & Farmer Welfare
- Minister of Agriculture serves as its president

Right to Repair

Right to repair portal (by Ministry of Consumer Affairs, Food & Public Distribution)

- Warranty and post-sales service information
- Customer care contact details of major companies
- Product manual so that so that people find it easier to get the products repaired.



Initial focus is on: mobiles, consumer durables, automobiles and farming equipment.

In future, govt may make it mandatory for manufacturers to share product details with customers, so that they can either repair them by self or by third parties, rather than only depending on original manufacturers.

Challenges

unskilled repair shops may damage the product

Benefits

save consumer's money, reduce waste, boost business for local repair shops, encourage circular economy

Law for Right to Repair

- No such law exists in India.
- USA, UK, etc have laws for this.
- As per EU law, companies must supply spare parts for 10 years.

Planned obsolescence

- Designing products that will quickly break or become outdated
- It is done to encourage sale of new products



Mountain Partnership

Mountain Partnership (India is member? Yes)

- Launched in **2002**. Secretariat in **Rome**, Italy
- It is a **UN** initiative to protect mountain environment

Year of Mountain Development

UNGA declared **2022** as International Year of Sustainable Mountain Development

High Mountain Summit

 by WMO in **2019**

For sustainable development and risk reduction in mountain and downstream regions

UNCCD

UN Convention to Combat Desertification (UNCCD)

- ❑ One of the three conventions adopted at 1992 Rio Earth Summit
- ❑ Established in **1994**. Secretariat in **Bonn**, Germany
- ❑ It publishes **Global Land Outlook**
- ❑ **CoP-14** 2019 was in **Delhi** (page-77)
- ❑ It is the only internationally **legally binding** framework to address desertification.

CoP-15 of UNCCD

- in Abidjan in Ivory Coast
- Theme: Land Life Legacy : From scarcity to prosperity
- **Abidjan Call** : to boost long-term environmental sustainability
- **Abidjan Declaration** : Achieving Gender Equality for Successful Land Restoration

Ivory Coast

 aka Côte d'Ivoire

- Capital Yamoussoukro
- Largest city Abidjan



UNCBD

UNCBD CoP-15

 (in Montreal Canada) (CoP-16 will be in Turkey)

- Chaired by **China**, hosted by **Canada**
- **Kunming-Montreal** Global Biodiversity Framework was adopted.
- It succeeds Strategic Plan for Biodiversity 2011-2020 (including Aichi Targets)
- It has **4 goals** and **23 targets** by 2030: (legally non-binding)
 - Protect **30%** areas
 - Restore **30%** degraded areas
 - Reduce **pesticide** risk by 50%
 - Reduce **nutrient loss** to environment by 50%
 - Reduce rate of introduction of **invasive species** by 50%
 - Mobilize **\$200 billion** per year for biodiversity
 - and much more...

World Restoration Flagships

- ❑ At **CoP-15**, as part of UN Decade on Ecosystem Restoration 2021-30, UN has recognized 10 programs for their role in restoring ecosystem.
- ❑ India's **Namami Gange** program is also in the list.

Restoration Barometer

- It is a tool used by govts to track the progress of restoration targets across all terrestrial ecosystems
- It was launched in **2016 as Bonn Challenge Barometer**.
- **IUCN** released Restoration Barometer Report at CBD CoP-15

I read I forget, I see I remember | See explanation of this PDF on **YouTube** www.youtube.com/c/allinclusiveias

Basel Convention

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

- ❑ Signed in 1989, came into force in 1992
- ❑ To reduce generation of hazardous waste and regulate its movement between nations
- ❑ It does not address movement of radioactive waste

190 Parties: USA & Haiti signed but not ratified



Basel Action Network (BAN)

International NGO that monitors implementation of Basel Convention

Basel Ban Amendment

- ❑ Adopted in 1995, came into force in 2019
- ❑ Not yet ratified by: USA, India, Russia, China, etc.
- ❑ It bans all export of hazardous wastes, including electronic wastes and obsolete ships, from 29 wealthiest countries of OECD to non-OECD countries.

Plastic waste amendment 2019

- ❑ Plastic was included as hazardous waste.
- ❑ Hence, Basel Convention has become the only global legally binding treaty to specifically address plastic waste.

DownToEarth

Rotterdam Convention: International trade of 2 hazardous pesticides recommended for 'prior informed consent'

Rotterdam Convention

Rotterdam Convention's Chemical Review Committee has recommended four pesticides (Iprodione, Terbufos, paraquat, methyl bromide) for Annex-III.

165 Parties: USA, Egypt, Bangladesh, Bhutan, etc are not its members



Rotterdam convention

- It is a legally binding UN treaty signed in 1998. India ratified it in 2005
- To control international trade of certain hazardous chemicals (those in its Annex-III)
- It created 'Prior Informed Consent' procedure: formally obtain consent of importing country to receive hazardous chemicals

Iprodione & Terbufos

- They are dangerous for human & animal health
- Many countries have already banned their use
- India is among largest exporters of Terbufos
- Anupam Verma comm recommended their continued use

Anupam Verma Committee 2015

It reviewed 66 pesticides which are restricted in other countries but are used in India.

CITES

Monitoring Illegal Killing of Elephants (MIKE)

- It is a CITES program.
- There are 10 MIKE sites in India

CITES 1973 aka Washington Convention

- ❑ Convention on International Trade in Endangered Species of Wild Fauna and Flora
- ❑ To ensure that international trade in animals and plants does not threaten their survival
- ❑ It was drafted as a result of a 1963 IUCN resolution. Signed in 1973. Came into force in 1975
- ❑ Its Secretariat in Geneva is administered by UNEP (although UNEP Secretariat is in Nairobi Kenya)
- ❑ It is legally binding. Countries frame their own laws to implement it.
- ❑ It protects over 38,000 species

Appendix-1 Species threatened with extinction

Prohibits international commercial trade. Allows trade for scientific research.

Appendix-2 Species may become threatened with extinction. Also covers 'look-alike' species to avoid potential threat

Needs permit for international commercial trade

Appendix-3 Species that a country has requested to be protected

Needs permit for international commercial trade

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Wildlife (Protection) Amendment Act, 2022

See page-118 for WPA 1972

To fulfil obligations under CITES, Central govt will designate

- **Management Authority**, which give export or import permits
- **Scientific Authority**, which gives advice to Management Authority

Schedules (earlier 6, now 4)

Schedule-1 : Animals with **highest** level of protection
Schedule-2 : Animals with **lesser** level of protection
Schedule-3 : Protected **plant** species
Schedule-4 : Specimen listed in Appendices under **CITES**

Increase in penalty

- For **general** violation, from (up to Rs 25,000) to (up to **Rs 1,00,000**)
- For **specifically** protected animals, from (at least Rs 10,000) to (at least **Rs 25,000**)

Vermin

- Schedule-5 has been removed.
- **Centre** has retained powers to declare species as vermin

Invasive alien species

- Plant/animal that is **not native** to India may adversely impact wild life
- **Central govt** will regulate import, trade, possession of invasive alien species

Control of sanctuary

- **Chief Wildlife Warden** (appointed by state govt) will manage sanctuaries, as per management plan, prepared under guidelines issued by Centre.
- For sanctuaries in Scheduled areas or FRA 2006 areas, management plan will be prepared after consulting **Gram Sabha**

Conservation reserve

- Earlier state govt notified Conservation reserves
- Now **Centre can also** notify conservation reserve

Arms license

No renewal of any licence under Arms Act 1959, to anyone residing within **10 km of a sanctuary**, except under intimation to Chief Wild Life Warden

Elephants

It allows transport of captive elephant for **religious** or any other purpose, by a person having **ownership certificate**

Surrender

- Any person owning a captive animal or animals product, can **voluntarily surrender** it to Chief Wildlife Warden.
- It will become **property of state govt.**
- **No compensation** will be paid to that person.

Indian Peafowl, Sarus, Nilgai

Two exemptions under WPA 1972

- Snake venom (and its derivatives)
- Tail feather of peacock (and any article or trophy made from it)

As per 2022 amended WPA

- Schedule-1 : Pavo cristatus : IUCN LC
- Schedule-1 : Sarus : IUCN VU
- Schedule-2 : Nilagi : IUCN LC

Practice question

Which of the following is illegal under WPA 1972?

1. Keeping peacock as pet and feeding it
 2. Feeding a Nilgai in a protected area
- (a) Only 1 (b) Only 2 (c) Both 1 and 2 (d) Neither 1 nor 2

Did you know?

Nilgai, wild boar, rhesus macaque are some animals that were declared vermin, in last few years, for limited time.



Sarus Crane

Grus antigone (formerly *Antigone antigone*)

- IUCN : Vulnerable
- It has grey body and red head
- It is the **tallest flying bird** in the world
- It is a social creature, often seen in groups, in paddy fields
- There are about **15-20,000 in India**, with majority in Uttar Pradesh
- It is the **state bird of Uttar Pradesh**



Nilgai

 (*Boselaphus tragocamelus*)

- Population: 1 lakh
- IUCN: Least concern
- Only males have horns
- It is the **largest antelope in Asia**

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Chemicals

Insecticides Act 1968

- It regulates import, manufacture, sale, use of insecticides to prevent risks to humans and animals
- It established **Central Insecticides Board** (under **Ministry of Agriculture**) to enforce the Act
- Licence** for their manufacture, formulation and sale are dealt with at **State level**
- There is compulsory **registration** of pesticides at **Central level**

Some pesticides completely banned in 2020 https://ppgs.gov.in/sites/default/files/banned_restricted_phased_out_31.10.2019.pdf

Alachlor, Dichlorovos, Phorate, Phosphamidon, Triazophos, Trichlorfon

DownToEarth

Unauthorised use of 4 highly hazardous pesticides, claims report

Unapproved use of chlorpyrifos, fipronil, atrazine and paraquat in crops point to non-compliance with national regulation

Chlorpyrifos, Fipronil, Atrazine, Paraquat

- These are highly hazardous pesticides
- Central Insecticides Board has imposed limits on their use
- But they are being used in excess of the approved limits
- China and India are among the largest producers of chlorpyrifos



Endosulfan (aka Thiodan)

- used as **pesticide** in agriculture. Also used as **wood preservative**.
- Toxic** to humans, various negative health effects
- 2001**: banned in **Kerala** due to negative impact in Kasargod district
- 2011**: banned throughout **India** by Supreme Court
- It is listed under both
 - Rotterdam Convention** on Prior Informed Consent and
 - Stockholm Convention** on Persistent Organic Pollutants

Nonylphenol

- Application: various Health impact: various
- UNEP : It is a chemical of global concern
- India :
 - No standards for Nonylphenol in water.**
 - No regulation to stop its use.**
- BIS standards for phenolic compounds
 - in drinking water (1 ppb)
 - in surface water (5 ppm)

Some chemicals that may soon be declared as POP under Stockholm convention

- UV-328
- Chlorpyrifos
- Dechlorane plus
- Chlorinated paraffin beyond limit
- Long-chain perfluoro carboxylic acids

Per- and polyfluoroalkyl substances

- PFOS / PFOA / PFAS are synthetic chemicals
- They are persistent organic pollutants **POPs** or "forever chemicals"
- They are used in cookware, food packing, cleaning agents, etc.



Bisphenol A

- It's used to make polyvinyl chloride (**PVC**) plastic products (present everywhere)
- Many companies have introduced BPA free plastic bottle and food containers

Vinyl chloride

- It is a colorless and flammable gas with a sweet odor.
- It's used to make polyvinyl chloride (**PVC**) plastic products (present everywhere)
- It is a known **carcinogen**
- When heated, it releases harmful gases like **phosgene**, **hydrogen chloride**, CO₂ etc.

Note: It does not occur naturally. But it can be formed in environment when other manufactured substances are broken down by certain microorganisms.

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Air

NCAP National Clean Air Programme *Class-2 page-16*

- ❑ launched by MoEFCC in 2019
- ❑ Currently covers 131 non-attainment cities
- ❑ Old target : Reduce PM 20-30% by 2024 (2017 base)
- ❑ **New target : Reduce PM 40% by 2026 (2017 base)**
- ❑ PRANA : portal to monitor NCAP implementation

NAAQS

notified by CPCB under Air (Prevention & Control of Pollution) Act, 1981

NAAQS limit for

PM 2.5 40 micrograms/m³

PM 10 60 micrograms/m³

Non-attainment cities

those who failed on NAAQS standards for over 5 years

PRAN vs PRANA

PRAN : **P**ermanent **R**etirement **A**ccount **N**umber (12 digit number under NPS)

PRANA : **P**ortal for **R**egulation of **A**ir-pollution in **N**on-**A**ttainment cities (under NCAP)

SAFAR System of Air quality & weather Forecasting & Research

- Central govt run air monitoring agency
- under Ministry of Earth Science

IndAIR Indian Air-quality Interactive Repository

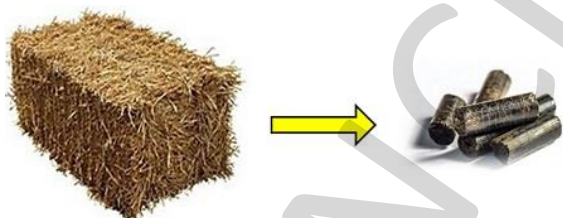
- It is India's first web repository documenting air quality studies done in last 60 years.
- It was launched by CSIR-NEERI in 2019

CSIR-NEERI National Environmental Engineering Research Institute.

- It was established in 1958 as Central Public Health Engineering Research Institute
- HQ Nagpur. It is a CSIR lab. It comes under Ministry of Science and Technology

NARFI National Air-quality Resource Framework of India

- It has been developed by National Institute of Advanced Studies (NIAS), Bengaluru
- It is a guide to collect air quality data, study its impact and implement solutions
- It is open for public as well as private sector.



Pelletization

To make energy-dense fuel, biomass can be converted into pellets or briquettes

Note

Rice stubble has high silica content
Hence it is unsuitable as a cattle feed

Torrefaction

- It is thermal degradation of biomass
- It is a mild form of pyrolysis (page-21)
- Biomass is heated between 200-350°C in absence of oxygen
- It removes moisture and volatiles from biomass, leaving bio-coal.
- It can be used as feedstock, fuel, biomass co-firing, input for bio-fuel, gasification, etc.



	Pyrolysis	Gasification	Combustion
Air (Oxygen)	No air	Little air	Ample air
Temperature	350-600 °C	800-1200 °C	1500-2000 °C
Result	Large molecules break down into smaller molecules	Matter converted into producer gas (syngas)	Ash and harmful gases
	Chemical process, irreversible	Chemical process, irreversible	Chemical process, irreversible

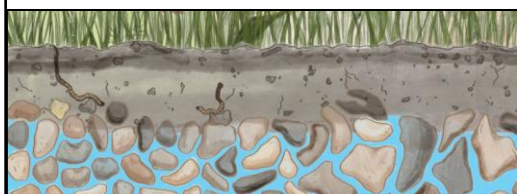
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Water

UN Water Action Decade	2018-2028
SDG-6	Clean Water and Sanitation
UN-Water	Interagency mechanism formed in 2003 for coordination on water related issues
World Water Development Report	published by UNESCO , on behalf of UN-Water
First UN Water Summit on Groundwater	Organised by UNESCO , at its HQ in Paris, in 2022
Groundwater: Making the invisible visible	campaign by UNESCO , on behalf of UN-Water

World Water Forum

- 9th : 2022 : Dakar, **Senegal**
- 10th : 2024 : Bali, **Indonesia**
- Organised by World Water Council (1996, Marseille in France)



Central Ground Water Board

- Established in **1970**, HQ **Faridabad**
- It comes under Ministry of **Jal Shakti**
- In 1997 it was constituted as **CGW Authority**
- It is a statutory body formed under **EPA 1986**

Dynamic Ground Water Resource Assessment Report 2022 <https://www.pib.gov.in/PressRelease/framePage.aspx?PRID=1874808>

- Published by Central Ground Water Board (Ministry of Jal Shakti)
- Assessment done by CGWB & States/UTs (earlier in 1980, 1995, 2004, 2009, 2011, 2013, 2017, 2020)
- Key findings:
 - Ground water recharge has **increased**
 - Ground water condition has **improved** in 909 assessment units

Summary	2022 report	Extraction	Category	2022 report
Total Annual Ground Water RECHARGE	437.60 bcm	< 70%	Safe	4780 – 67%
Annual EXTRACTABLE Ground Water Resources	398.08 bcm	70-90%	Semi-critical	885 – 12%
Annual Ground Water EXTRACTION	239.16 bcm	90-100%	Critical	260 – 04%
Stage of Ground Water Extraction	60%	> 100%	Over exploited	1006 – 14%
			Saline	158 – 02%

NAQUIM Started in 2012

- National Aquifer Mapping and Management program
- Implemented by Central Ground Water Board
- To map aquifers & develop Aquifer Management Plans

Andaman and Nicobar Islands

- It is India's first **Swachh Sujal Pradesh**
- All villages of A&N have been certified as Har Ghar Jal and verified as Open Defecation Free Plus.

Did you know?

- Goa** - First 'Har Ghar Jal' Certified State
- Dadra & Nagar Haveli and Daman & Diu** - First 'Har Ghar Jal' Certified UT
- All of their rural households have access to potable water through tap connection

For Jal Jeevan Mission, see page-75

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Prayag platform

- Platform for Real-time Analysis of Yamuna, Ganga and their Tributaries
- It will monitor water quality through data available on various online dashboards
- By ministry of Jal Shakti under Namami Gange

Jaldoot App

- It is by Ministry of Rural Development, not by Ministry of Jal Shakti
- Water level of 2-3 wells from village will be measured
- Gram Rojgar Shayak will take measurement twice a year: before and after monsoon

Ministry of Housing & Urban Affairs

BHARAT TAP initiative is to provide low-flow, sanitary-ware at scale, and thereby reduce water consumption at source considerably

Posted On: 12 MAY 2022 2:51PM by PIB Delhi

NAREDCO National Real Estate Development Council

- est in 1998, under MoHUA
- Bharat tap: promote water efficient taps
- Nirmal Jal Prayas: create awareness to save water

Prelims 2012

If National Water Mission is properly and completely implemented, how will it impact the country?

- Part of the water needs of urban areas will be met through recycling of waste-water.
- The water requirements of coastal cities with inadequate alternative sources of water will be met by adopting appropriate technologies that allow for the use of ocean water.
- All the rivers of Himalayan origin will be linked to the rivers of peninsular India.
- The expenses incurred by farmers for digging bore-wells and for installing motors and pumpsets to draw ground-water will be completely reimbursed by the Government.

Select the correct answer using the codes given below:

- (a) 1 only **(b) 1 and 2 only** (c) 3 and 4 only (d) 1, 2, 3 and 4

Puneet Sagar

Ministry of Defence

'Puneet Sagar Abhiyan' gets global partner: NCC & UNEP sign MoU in the presence of Raksha Mantri Shri Rajnath Singh to synergise efforts to achieve the universal goal of clean water bodies

Posted On: 22 SEP 2022 1:13PM by PIB Delhi



Puneet Sagar Abhiyan

Initiative of NCC (National Cadet Corps) to clean sea shores

Tide Turner Challenge Programme

Initiative of UNEP to engage youth in promoting clean water bodies

Who released the report "Global Plastics Outlook: Policy Scenarios to 2060"? OECD

AMRUT

Atal Mission for Rejuvenation and Urban Transformation

- It was launched in 2015, under MoHUA
- It is new name of Jawaharlal Nehru National Urban Renewal Mission
- Tap water, sewer connection, green spaces, non-motorized urban transport to reduce pollution, etc.
- It is currently working in 500 cities

AMRUT 2.0 was launched in 2021 for 5 years

- to provide universal coverage of tap water to all households in all statutory towns
- to provide universal coverage of sewerage/septage management in 500 cities of AMRUT 1.0
- It will promote water conservation, circular economy, etc.

Swachh Vayu Sarvekshan

- To assess air quality in 131 NCAP cities
- by MoEFCC

Pey Jal Sarvekshan

- To assess water quality in 500 AMRUT cities
- by MoHUA

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Unconventional Water

UN University has released a book "Unconventional water resources"



Some Unconventional water resources

1. Desalinated seawater and highly brackish groundwater
2. Groundwater confined in deep geological formations or in off-shore aquifers and Groundwater in regions with no culture or experience in its large-scale use
3. Physical transportation of water through tankers and icebergs
4. Micro-scale capture of rainwater where it otherwise evaporates
5. Atmospheric moisture harvesting such as cloud seeding, fog water collection
6. Collection and treatment of wastewater, grey water, and storm water
7. Collection and use of agricultural drainage water.

In the above, first 5 are 'new water' and last 2 are 'used water'.

United Nations University

- Academic arm of UN. Established in 1972. HQ in Tokyo, Japan
- In 2009, UNGA allowed it to give master's degrees, doctorates, etc.
- It has several campuses spread over five continents (not in India, Australia, Antarctica)

UN (P&I) Act 1947

- ❑ India has signed HQ agreement with CDRI
- ❑ India has recognised CDRI as 'International Organization'
- ❑ CDRI will now get immunity and privileges under UN (P&I) Act 1947
- ❑ 31 countries, 6 international Organizations and 2 private sector organizations are members of CDRI
- ❑ For CDRI, see page-10

Ministry of Home Affairs

Cabinet approves Categorization of the Coalition for Disaster Resilient Infrastructure (CDRI) as an 'International Organization' and signing of the Headquarters Agreement (HQA) with CDRI for granting it the exemptions, immunities and privileges as contemplated under the United Nations (Privileges & Immunities) Act, 1947

Posted On: 29 JUN 2022 3:47PM by PIB Delhi

Headquarters agreement

- It is signed between an international organisation and its host country
- It gives the organisation and its officials certain privileges and immunities

Example:

- Immunity from all legal process (except when UN itself waives immunity)
- Freely transfer funds. No Direct taxes. No arrest
- No search on property/assets/documents.
- and much more...

1946

- UNGA adopted Convention on Privileges and Immunities of United Nations
- Articles 104 & 105 gives UN and its officers certain privileges and immunities, to exercise their functions

1947

- To give effect to the convention, India enacted UN (Privileges & Immunities) Act, 1947
- Central govt gives certain privileges and immunities to international organisations and their officers.



Judiciary

Executive

Legislature

Courts, please help...
State is encroaching upon my rights.



In 2019, Delhi HC ruled that:

- UN is not a State under Article 12
- UN does not come in its jurisdiction u/a 226

- ❑ To complain against Executive and Legislature, you can go to courts.
- ❑ To complain against foreign state, you can go to courts, but you need permission from Central government (Section 86 of CrPC 1908)
- ❑ To complain against UN? You can't because:
 - UN is not a state under article 12 (so can't apply article 13)
 - UN is not a foreign state under CrPC 1908
 - UN has immunity under UN (Privileges and Immunities) Act, 1947

I read I forget, I see I remember

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