

JUNE

1. Methanol

- Context- NITI making roadmap for 'methanol economy'
- Primary target- **petrol** passenger vehicles (as technology for it is available)
- Methanol will be majorly produced from: **COAL**
- Import- Saudi, Iran
- AS transport Fuel: Requires **minimal alternation** in vehicle than CNG
- Exhaust- No PM, no soot, almost nil SOX and NOX
- Sources:
 1. Natural Gas
 2. Biomass
 3. CO₂
 4. Coal
 5. MSW
- High octane, but ethanol has high energy density
- Both- metha & ethanol >> burn @ lower temp >> **difficult** to start engine in winters
- Methanol fuels- must be kept tight seal as absorbs water vapour
- Methanol 15 in petrol >>> reduce pollution by 33%, diesel replacement by methanol >> 80% pollution reduction

2. Interlinking of rivers

- Implemented by National Water Dev Agency (**NWDA**) under MoWater resource
- Split in 3 parts
 1. N. Himalayan river interlinking component
 2. S. peninsula river IC
 3. **intrastate** river linking component
- India's first: Ken >>> Betwa South India: Pattiseema lift irri project (Goda >> Krishna)

Pattiseema **Lift** Irrigation Project

- S. India's 1st interlinking project- **GODAVARI >>>> KRISHNA**
- Completed- fasted completed irri project
- @ **ANDRA PRADESH**
- Location- Between Godavari river and Polavaram Project

Mohanpura Irri project

- **Madhya Pradesh** on river **NEWAJ** in **Chambal** basin
- Implemented under PMKSY
- Impact on National Chambal Sanctuary (MP, RJ, UP)

3. ATAL BHUJAL YOJANA

- Central **SECTOR** scheme of MoWater
- 5 years: 2018-19 to 2022-23
- World Bank Assistance
- Aim- 1. Recharge GW in priority area thr COMMUNITY PARTI
- Priority areas: GJ, HR, KR, MP, MH, RJ, UP

4. DRIP-

- **CWC (MoWR) + World Bank**
- Initial : onle 4 states- Kerala, MP, TN, OD later added- 3: KR, UK, JH
- For total 225 dams>>>revised to 198
- EXTERNALLY aided project: **80% from WB**, 20% by C and S govt
- International Dam Safety Conference organized under this by: CWC + Concerned **STATE** govt
- DHARMA App- document authentic asset and health info pertaining large dams in India

5. Kaleshwaram project- Telangana- Godavari

6. Centre of Excellence in Maritime and Ship Building (CEMS)

- Under MoSHIPPING's **SAGARMALA**
- @Vishakapattanam and Mumbai (partners: Siemens and Indian Registrar of shipping)

SAGARMALA Project:

- Aim- reduce logistics cost for EXIM and domestic trade with minimal infra dev
- Components
 1. Port Modernisation and New port dev
 2. Port connectivity enhancement
 3. Port linked industrialization
 4. Coastal community dev
- Dev 14 CEZs
- National Sagarmala Apex Committee (**NSAC**)- **Chair- MoShipping** Members- Concerned Union minsters + CMs >>policy dirn and guidance + approve National Perspective Plan
- Sagarmala Development Company Limited (**SDCL**)- to assist implement + support to project , under **Companies act, 2013**
- Indian Port Rail Corporation Limited (**IPRCL**)- to undertake port-rail connectivity projects
- 6 Mega ports planned under sagamala:
 - 1.Sagar island (WB)
 - 2.Paradip Outer Harbour (Odisha)
 - 3.Sirkazhi (TN)
 - 4.Enayam (TN)
 - 5.Belikeri (KR)
 6. Vadhavan (MH)

8. Swajal Yojana

- By MoDrinking water and sanitation
- In **115** Aspirational districts + 35 LWE + 15 J&K districts experiencing Terrorism
- Aim- Sustained Pipe drinking water supply powered by **solar energy**
- 90% cost- Govt **10%- Community**
- Giving training to rural technicians for operations of swajal units

9. NRDWP (Rural Drinking Water Pro)

- 2009: merging ARWSP+ Swajaldhara + NRWQM&S
- CSS- 50:50 C and S
- Under Bharat Nirman

10. Land Degradation Neutrality-

- State where amount and quality of land resource needed to support ecosystem function and services remains stable or increases within specified temporal and spatial scales
- Concept in UNCCD (**2010-2020**: UN **decade for desert and fight against desertification**)
- INDIA- committed to achieve LDN by **2030**
- 2018: UNCCD session- **First global assessment** to achieve LDN by 2030
- Steps to achieve LDN
 1. UNCCD: **Global Land Outlook**
 2. **Land for Life program**: UNCCD 10th COP, 2011
 3. **Desertification and Land Degradation Atlas (2016)- ISRO.**
 4. LDN Fund by UNCCD
 5. India's NAP to combat Desertification launched in 2001 for 20 years

14. Nest Adaption Programme @ **Arunachal Pradesh**

- For HORNBILL
 - 1.state bird- Kerala and Aruna
 2. IUCN- **Near threatned**
 3. Indian Subconti and South Asia
 4. Long LIFE SPAN- 50 yrs
 5. Helps expand of Agriculture

16. Giant Aldabara Tortoise

- Gift from Seychelles president
- GAT
 1. Aldabara Atoll in Seychelles
 2. age- 255 yrs

3. IUCN- **Vulnerable**

17 Green Skill Development Program

- **MoEFCC**

- Aim- youth, particularly school dropouts, would be trained in a range of 'green jobs'
- All courses are **NSQF** complaint

- **5 lakh by 2021**

18. State Bird of Andhra Pradesh

- Changed from Indian Roller (Palapitta)>>> **Ramachilaka (Rose ringed Parakreet)**

19. IMBIE

- Ice sheet **Mass Balance** Inter-comparison Exercise (IMBIE)
- to reconcile satellite measurements of ice sheet mass balance.

- **NASA+ ESA**

20. International Decade for Action: Water for Sustainable Development (2018-28)

21 CleanSeas Campaign

- **UNEP**
- Launched @ *the Economist World Ocean Summit in Bali*
- Aim- eliminate major sources of marine litter: **microplastics** in cosmetics and the excessive, wasteful usage of single-use plastic by the year 2022

Honolulu strategy of UNEP on Marine debris

JULY

1. Koala Bear

- Why? – successful sequencing of whole genome of bear
- Characteristics
 1. Tredwelling, marsupial,
 2. Area- E. Austre
 3. Known for parental care
 4. eats Eucalyptus leaves (which are otherwise toxic)

2. Recovery Program for Critically Endangered Species (RPCES)

Integrated Dev of Wildlife Habitat (IDWH)

- Centrally Sponsered Scheme-IDWH (CSS_IDWH)

- Include: 1. Project Tiger, 2. Dev of Wildlife Habitat, 3. Project Elephant
- Implementation- respective **STATE govt**
- Also gives financial assistance to states for relocation of communities
- One of 3 compo of Integrated Dev of Wildlife Habitat (IDWH)-
 1. provides support to protected areas **Except tiger reserves**
 2. protection of wildlife outside protected areas
 3. RPCES
- The programmes include legal sanction against hunting, financial assistance to states to protect the species, creation of sanctuaries, and even the CBI's assistance in prosecuting the poachers.

- Other species under RPCES

1. Asian Wild buffalo	2. Asiatic lions	3. Sangai	4. Dugong
5. Edible Nest Swiftlet (A&N)	6. Gangetic Dolphin	7. GIB	8. Hangul
9. Great One horned Rhino	10. Jerdon's Courser	11. Malabar civet	12. Marine Turtle
13. Nicobar Megapode	14. Nilgiri Tahr	15. Snow leopard	16. Swamp deer aka Barasingha
17. Vultures			

- Recently added species

1. N. River Terrapin- **Eastern** India. + **critically end**
2. Clouded leopard- Himalayan foothills + '**Vulnerable**'
3. Arabian sea Humpback Whale- all major oceans + 'least concern'
4. Red panda- Sikkim, WB, Aruna + **Endangered**

3. NGT nominations

- NGT act, 2010
- Jurisdiction on all envi laws **EXCEPT** WPA, 1972 Indian forest act, 1927, Forest Rights Act, 2005
- Chairman- s or r of **CJI or CJ of HC OR judge of SC**
Members: 40 (20 admini(atleast 10) + 20 judicial(atleast 10))

4. Harrier Birds aka Circinae

- Migratory raptor species + feed on reptiles, small animals
- **India**- one of largest roosting sites in worlds for **Pallid and Montagu harriers**
- **AP-Rollapadu** Bustard Sanctuary (AP)- for GIB and lesser florican,

Hessarghatta near Bangluru

- Declined- due to loss of grassland + use of pesticides

Lesser Florican

- One of 4 types of Bustard Species: 1.GIB, 2.Bengal Florican 3.Lesser Florican 4.Houbara (Migratory)
- IUCN- **Endangered**
- Habitat restricted to: velavadar and Shokaliya-Bhinai villages of **Rajasthan**

Great Indian Bustard

- aka **Godawan** in RJ
- IUCN- **Critically End.**, Among **Heaviest** Bird with horizontal body>> Ostrich like
- Included in RPCES
- PAs for GIB- 1. Desert NP (RJ) 2. Rollapadu WS (AP) 3.Karera WS (MP)
- **Avoids** irrigated lands, **Indicator species** for Grassland
- **Endemic** to Indian Subcontinent

5. Dhole

- aka Indian Wild dog, Mountain Wolf
- **highly social** animal>>live in clans
- IUCN- **Endangered** WPA: Schedule II
- Kanha NP- research going on for reason of extinction

6. Ethanol Bio refineries

- 1st 2G refineries- Bathinda (input- Rice straw)

7. Taj Trapezium Zone Authority (TTZA)

- Estd under **Envi Protection Act, 1986** By MoEFCC in 1983
- TTZ- trapezium of area 10,400 sq.km around Taj Mahal delineated to protect it from pollution (by CPCB)>>> **Agra Mathura Region**
- Spread in **TWO states>> Uttar Pradesh and rajastahn**
- 3 World heritage sites: 1. Taj Mahal 2. Agra Fort 3. Fatehpur Sikri

Taj Mahal Declaration- to phase out single use plastics around 500m of taj in next 5 years

- Signed betn **Archeological Survey of India (ASI)** + **TTA** + **UNEP** + state govt

AUGUST

1. Chromium Pollution

- Largest contributor- Leather tanning operations, metal processing, stainless steel welding, chromate production

2. Coal Bed Methane (CBM)-

- Unconventional form of natural gas found in coal deposits (unconventional= advanced methods)
- Cleanest
- **Sweet gas**- Very less qty of **Hydrogen Sulphide**

Shale gas

- Lighter than air, colourless, odourless
- 50% less CO₂

6. UP>>Man-animal conflict in SDRFund

7. Portuguese Man-of-wars:

- Jelly like marine organism aka 'Bluebottle' or 'floating terror'
- Long tentacles
- NOT a true Jellyfish- not a single cellular>>>but colonial organism made up of specialized individual animals

8. PARIVESH-

- Single window approval for 1. Envi 2. forest 3. Wildlife 4. CRZ clearance
- All levels- Centre, state, district level approvals
- By **MoEFCC**
- Technical support- National Informatics Centre **NIC**

9. DNA Barcoding

- **Delhi University + Wildlife Insti of India** >>> barcoding of frogs
- Result: Ornate narrow mouth frog- only in TN, KR, MH, AP, Kerala
- DNA barcoding- to identify species of organism

10. 1st Genetic bank- National Wildlife Genetic Resource Bank (**NWGRB**)

- @ Lab for Conservation of Endangered Species (LaCONES), Hybrabad (research wing of CSIR-Centre for Cellular and Molecular Biology **CCMB**)
- Aim- to store genetic material>>>conserve endangered and protected animals

11. India's 1st penguin- 15 August- 'The Freedom baby' @ Mumbai

- Humbolt Penguin
- IUCN- **Vulnerable**

12. Biodiversity Heritage site

- Unique areas with fragile ecosystem
- Under Biodiversity Act, 2002 By **STATE** in consult with **Local Bodies**
- Rules of mana- By **state** after consulting **centre**
- **National Biodiversity Authority(NBA)**- Guidelines for selection and management of BHS
- 1st site- **Ameenpur** lake @ Hyderabad in 2016

13. Biofuel aircraft-

- India- 3rd in world (US and Austrelia)
- 1st flight- Delhi to Dehradun – Blend of Oil from Jatropha seeds(25%) + ATF(75%)
- Aavaition Biofuel derived from jatropha seed: **indigenously** developed by **CSIR lab**, Dehradun + **IIP** (Indian Insti of Petroleum)
- International permissible blending: 50%, Biofuel flights operational in- CANADA
- Effects: reduce GHG by 15% + **Sox by 99%** (NO Sulphur)
- **Jatropha**:
 1. Drought-resistant **perennial** plant>>grow in marginal and poor soil (native- **America**)
 2. **Long life**- produce seed for **50** years
 3. Oil content- 37% >>>burns with **smoke-less flame**
 4. other uses- insecticide, press cake (a organic fertilizer), medicinal use
- **Pongamia Pinnata**
 1. Contains **oil**>> thus industrial uses>. Potential for **Biodiesel**
 2. Legume>>>thus **Nitrogen fixation**
 3. Drought resistant>> prevents desertification
 4. Medicinal uses: Skin disorders
 5. Common name: **Pongam tree**, Indian Beach tree, **Karanj**
 6. Govt declared **MSP**

Biodiesel

- **Vegetable or Animal Fat based diesel** fuel
- Made by chemical reaction of **Lipids** (vege oil, animal fat) + **alcohol** (methanol or ethanol)>>> to form fatty acid esters
- Can be used **ALONE** or in blend
- Calorific value: **9% lower** than petrodiesel
- Miscible with water, High BP, Low vapor pr
- Emissions: 83% less CO, 33% less PMs, BUT **increase in NOx**
- Biodiesel policy, 2008: **20% blend** of fuel derived from plants with diesel
- Potential sources: Jatropha curcas, neem, mahua, karanj, Simarouba

15 Wheat Genome Sequencing

- FULLY annotated after 13 years
- By International Wheat Genome Sequencing Consortium (IWGSC)

17. Varadero reef

- Cartagena Bay, Colombia
- Famous for: Survival in **Highly polluted Environment**

SEPTEMBER

1. Hubballi Ankola Railway line

- Through: 1. Anshni-Dandeli Hornbill Reserve (KR)- Home of **GIH** and **Malabar pied hornbill** + sighting of Black Panther + sloth bear
2. Buffer of Kali Tiger Reserve(KR) – Home for Bengal tigers, Black Panther, Elephants + 3 elephant corridors
- Rejected twice by NTCA, +MoEFCC

2. Turtle species in news

Name	IUCN	Habitat	Features
Indian Roofed turtle	Least Concern	Ganges, Brahmaputra, Indus, Mahanadi	1. Name due to peculiar shape of shell>>roof type 2. Aka Kori Kaitta 3. Males smaller than females
Black spotted turtle	Vulnerable	WB, Assam, Bihar, HR, UP, UK and parts of MP, PN, RJ and Megha	1. Only in Fresh Water 2. Endemic- South Asia
Olive Ridley Turtle	Vulnerable	1. Warm Pacific waters + Indian ocean (both east and west coast of IO)- Also nest in Maharashtra, Goa and Andhra Pradesh 2. On mouth of Bahuda river>> Rishikulya Roorkey coast	1. Smallest and MOST abundant of all sea turtles 2. Arribada - mass nesting 3. Turtle Excluder Device- For odisha coast where ORD where damaged by fishing nets of fisher
Black Soft Shell Turtle	Extinct in Wild	Breeding in India : Mainly Assam : 1. Ponds of Assam Shrines 2. Haduk beel of Pobitora WS	Pobitora WS: Highest Density of Rhinos + 2 nd largest popu after Kaziranga
Indian Star Tortoise	Vulnerable	AP, KR, OD, TN, Pakistan, sri	1. Schedule IV of WPA 2. Prohibited for trade in Foreign trade rules

4. New Ganga clean up law

- National River Ganga (Reju, protection and Mana) Bill, 2017
1. Constitution of Armed Ganga Protection Corps- power to arrest polluters, follow **CrPC**, Personnel provided by **MoHA** and deployed by **NGRA**

Ganga task Force

- Unit of **Territorial Army** deployed in services of Ganga
- Approved by Defence Min
- Training- DefenceMin + CPCB

Territorial Army- second line of defence after regular army, only for civilian popu who have other gainful occupations, called only when needed, Part of regular Indian Army, Assist civilian admini in maintance of essential services

Ganga Gram Projects:

- Under **CLEAN GANGA MISSION**-Namami gange program: for holistic sanitation development in ganga bank villages
- Aim- ODF, **organic and medicinal plant agri**, Solid and Liquid WM, Modern crematorium, GW recharge
- Nodal Agency- **MoDrinking water** (NOT MoWR)

Ganga Action Plan (GAP)

- 1985- to fund establishment of **sewage treatment plants** and other pollution mitigation technologies
- Extended to other rivers thr **National River Conservation Program (NRCP)**

National River Conservation Plan (NRCP)

- 1995
- Under **MoEFCC** (NOT MoWater resource)
- Objective : To reduce the pollution load in rivers through implementation of various pollution abatement works (Low cost sanitary toilets, sewage treatment plants, River front development works)

Minimum River Flow

- Minimum Environmental Flow or E-flow is a regime of flow in a river that mimics the **natural pattern**.
- **Central Water Commission (CWC)**: Nodal agency to submit relevant data to NMCG
- Guidelines on E-flow by NMCG: applicable to all existing and future project, **except** mini and micro projects

Ganga Praharis

- Grassroot level force launched by **MoWR**
- **WII + NMCG**>> roped local self motivated and trained volunteer in 5 ganga states to promote awareness with objective of **nirmal and aviral ganga**
- Interconnected by Bhuvan Ganga app, mygov app, swachhta app

Asita project for river Yamuna

- Aka Yamuna River Front Development (RFD) project
- Aim: revive biodiversity in **NCR**
- **NMCG**: monitoring development of project

5. Sharks in News

Name	IUCN	Distribution	Features
Bonnethead shark	Least Concern	Abundant in American Littoral <ul style="list-style-type: none"> • West atlantic and Gulf of Mexico 	1. ONLY known omnivorous shark - largely feed on SEA-GRASS 2. Only known shark to display sexual dimorphism in head 3. Highly acidic stomachs>> helps in digestion
Great White Shark	Vulnerable	Highly productive Temperate region	1. Aka White Pointer

7. INTERNATIONAL WHALING COMMISSION

- Estd due to **International Convention on regulation of Whaling,1946**
- Membership NOT limited to whaling nations only- 89 members (India- yes)
- USA- depository nation (i.e.- any nation want membership>>will require to notify States dept of USA)
- Annual meetings- **Even no. years**
- 1982- moratorium on commercial Whaling
- But allows: 1.Non zero whaling quotas for **ABORIGINAL Subsistence**
2.'Scientific permits' by whaling nations
- Also, Estd 2 Whaling Sanctuaries:
 - 1.Southern Ocean Whale sanctuary (surrounding Antarctica) -Estd 1994
 - 2.Indian Ocean Whale Sanctuary (55°S) (Review every 10 yrs) -Estd in 1979 on request of Seychelles
- New proposal of S.Atlantic WS- Blocked in 2018 by pro whaling nations
- Commercial whaling countries: Japan, Norway, Iceland, South Korea
- Whales hunted for: Meat>> **Blubber**>> source of protein in temperate (*Muktuk*)

9. India Cooling Action Plan (ICAP)

- By **MoEFCC** (on eve of **world ozone day**)
- INDIA- 1st in World to release cooling plan
- Intersection of **3 Int Multilateral agreements** **1.Kigali 2.Paris 3.SDG**
- Points
 1. Reduce refrigeration demand by 25%-30% by 2037-38
 2. Recognition of “cooling areas” as thrust areas of research under National S&T program
 3. Train **1,00,000 technicians** by 2022-23 in synergy with **SKILL INDIA MISSION**

10. Hornbill watch initiative

- Total 9 species in India: 4 in W ghats
- Narcondam Hornbill- Endemic to Narcondam, Non-Migratory, IUCN- **Endangered**
- HWI- launched by **Nature Conservation Foundation** and **Conservation India**

11. Neelakurinji

- A shrub that grows in Shola Forest 12 yrs
- Some kurinji flowers- blossom once in 7 yrs >>die
- Paliyan tribe calculates their age according to this
- Habitat- Nilgiri shola, Shevroy hill, Anamalai, Sanduru, Palani
- **Kurinjimala Sanctuary @ Idukki district, Kerala**

12. T * 2 programme

- By **WWF** @ 2010 St.Petersburg tiger summit (Under **GTI**)
- Its commitment made by 13 tiger countries (7 asean + BBIN + China + Russia)
- Double tiger popu by 2022- next Chinese year of Tiger
- Role of CA|TS (Conservation Assured Tiger Stds)- these are stds, not a org
- **Nepal**- First country to achieve target of doubling popu of tiger
- CA|TS
 - 1.Set of criterias which allows tiger sites to review their management
 - 2.Partnership between govts, NGOs, Tiger conservation areas to implement conservation stds
 3. Currently- 2 CA|TS approved sites: A. Chitwan NP (Nepal) B. Sikhote Alin (Russia)

13. Champions of earth

- UN's highest Envi award
- From 2005 by **UNEP**, NO financial prize
- In 5 categories:
 1. Lifetime achievement

2. Policy leadership
 3. Action and Inspiration
 4. Entrepreneurial vision
 5. Sci and Innovation
- Context- Given to 1. Modi + Macron 2. Kochi Airport
 - **Global Pact for the Environment**- By Macron- Aims to address Fragmented nature of international environment law- will be the first international **legally binding** document, gathering and harmonizing all environmental laws in one single document.

15. The Ocean Cleanup

- **Non-profit organization**, developing advanced technologies to rid the world's oceans of plastic.
- Project started in pacific ocean>> to clean **Great Pacific Garbage Patch**

16. C40 initiative

- network of the world's megacities committed to addressing climate change
- Indian Cities involved: 6- Mumbai, Delhi, Chennai, Kolkatta, Jaipur, Bangluru

OCTOBER

2. SATAT (Sustainable Alternative Towards Affordable Transportation)

- **MoPetroleum and NG** (NOT MoRTH)
- Promote use of Compressed BioGas (**CBG**)
- In association with PSU Oil Marketing Companies (OMCs)>>> **invite potential entrepreneurs to set CBG plants**

CBG- 1. **Anaerobic** decomposition from waste/bio-mass sources= Biogas
2. when compressed >>CBG (**95% Methane**) 3. Properties identical to CNG
3. **30% better mileage** than petrol and diesel

3. Climate Finance Leadership Initiative

- Paris conference>>>\$100billion>>both from public and pvt developement finance
- To mobilize Pvt capital for CC>>>CFLI
- Members- from top int financial arms and corpo
- Work for **One year** till UN climate summit in sept 2019
- Work with GOVT OF **FRANCE**, **submit report to G7**

4. Global Geoparks

- **UNESCO** gives this designation
- Bottom-up approach
- Total 140 GGP in 38 countries
- Context- Geological survey of India>>identified 2 sites>> 1. Lonar lake (only known **basalt lake** of world) 2. St Mary's Island (aka Coconut island)-only **columnar Basaltic lava** and Malpe beach in KR >>to request for GGP designation
- NOTE- Unlike Heritage site status, it is NOT permanent>>>review after 4 years

6. Methanol Cooking Fuel Programme

- By NorthEast and Assam Petro chemicals
- Asia's first canister based MCFP

8. Eurasian Otter

- IUCN- **Near threatened**
- **Carnivores**
- Habitat- **Lakes, rivers, swamps, marshes, coastal area, highlands**
- 3/7 subspecies in India- 1. Eurasian O. (sch II) 2. Smooth Coated O. (Sch II)- **Vulnerab** 3. Clawless O (sch I of WPA)- **Vulnerable**
- Eurasian otter- rear in India than other two W ghats>> **KR**- coorg **TN**- Nilgiri and Palani hills

Otter Census

- First of its kind in **Pilibhit TR**
- Pilibhit TR: Surrounded by **Sharda** and **Ghaghara** rivers

10. National Envi Survey (NES)

- India's **first** in January,2019 to map **envi data of 55 districts** in **24 states** and 3 UTs (thus **not all** states)
- By MoEFCC thr **ENVIS** (Envi Information System)
- Rank districts on envi performance and document their best practices+ Asses Carbon sequestration potential of ALL districts
- Significance: First time will provide data on all green heads >> will measure **green GDP** of states

11. Singphan WS

- Declared as 30 Elephant reserve, NAGALAND
- Located near Abhaypur Reserve Forest of Assam
- Other PAs of Nagaland: Intanki, Puliebadze, Fakim, Rangapahar

12. Sendai Framework- 7 global Targets

REDUCE	INCREASE
1. Mortality	1. Countries with national and local DRR strategies
2. Affected people	2. International Coop to developing countries
3. Damage to critical infra and disruption of basic services	3. Availability and accessibility to multi-hazard EWS and Disaster risk info and assessment
4. Economic Loss	

13 Graded Action Plan

- By Environmental Pollution Control Authority (**EPCA**) to SC
- GAP- requires some steps by govt for diff categories
- EPCA-
 1. Objective- protect and improve envi & pollu in NCR region
 2. Assist SC on envi matters
 3. SC mandated body, **notified** in 1998 by **MoEFCC** under EPA, 1986

14. Cheetah Reintroduction Project

- 2009- from Namibia>> **Nauradehi** Sanctuary (MP)- largest sanctuary in MP extending across basin of Narmada and Ganga
- **NTCA**- Nodal agency
- Project Cheetah- 2009- Kuno WS (MP) and Shahgarh area (RJ)
- IUCN status: 1. African Cheetah: **Vulnerable** 2. Asiatic Cheetah: **Critically End**
- Asiatic Cheetah: **Only mammal** to become **Extinct** in India in last 1000 yrs
- If translocated>> India will be **only country in world** with 6/8 large cat species

15. Prakriti Program

- By **ICFRE** (Indian Council for Forestry Research and Edu) + Navodaya Vidyalaya samti + Kendriya VS
- To promote awareness about forest and envi among students

16. National Monitoring Framework on SDG

- Committee to periodic reviewing and refining review National Indicator Framework (NIF)>> chaired by **Chief Statistician of India** (i.e. Secretary of MoSPI)

17. Amur Falcons

- **Longest** travelling raptors (bird hunting)>> breed in S.E. Siberia and N. China >> then migrate to S. Africa across India
- Eats Dragon flies
- Stop in India- 1. **Doyand lake**, Pangati Village, Nagaland 2. Umru village, Assam- Megha border (since 2012)

CAF Action Plan

- Broadly agreed in 2nd meeting of **central Asian flyway range states** arranged by Convention of migratory species @ **New Delhi (2005)**
- Finally adopted in 2008>> technical support: **Wetlands International**

National Action Plan for Conservation of Migratory Birds

- By MoEFCC>>along **CAF** for 5 yr (2018-23) (drawn from CAF Action Plan)
- For coordinated action among states for enhancing popu of migratory birds in India within their range across Central Asian Flyway (CAF)
- Birds of **3** flyways visit parts of India (CAF, Asian-East African flyway, East Asia Australian Flyway)

NOTE- 9 flyways: 5 in America (Atlantic, Central, Mississippi, Pacific and Allegheny) + 4 (African-Eurasian, CAF, East Asian-Australian, West Pacific)

- Species prioritized under plan: **Eurasian Curlew, Crab Plover, Black-tailed Godwit, Bar-tailed Godwit, Red knot**

Species	IUCN	Habitat	Features
Eurasian Curlew	Near threatned	Europe (winter migration to Africa and asia)	1. migrate: Europe to Asia
Crab Plover	Least Concern	Indian Ocean region	
Black tailed Godwit	Near Threatned	Breed: Europe + Russia Wintering: Middle Africa + North and west India + Indo + Austrelia	

15 WAYU (Wind Augmentation purifying Unit)

- Device to purify air in **500m** square area
- Project of **MoEarthSci** Dev by **CSIR-NEERI** (National Envi Engineering Research)
- Funding of project- DoS&T
- 2 principles: 1.Wind generation for dilution of air pollution 2. Active pollutant removal

19. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (**IPBES**)

- 2012- **intergovt** body
- IPBES does for biodiversity what the IPCC does for climate change i.e. advice to policymakers
- Under 4 UN agencies: **UNEP, UNDP, FAO, UNESCO** (administered by **UNEP**)
- All UN members CAN join
- Secretariat: **Bonn, Germany (UNEP)**

NOVEMBER

4. Elephant Hospital

- First dedicated Jumbo hospital in **Uttar Pradesh**

5. CVF Virtual Climate Summit

CVF- Climate Vulnerable Forum

- **Intergovernmental** org of countries highly **vulnerable** to global warming>> 49 members
- 1st meeting- **Maldives, 2009**>> before Copenhagen summit of UNFCCC in 2009
- **India- Observer state** (not member)
- **V20 group** : ‘ Vulnerable 20’- in 2015 summit (summit chaired by Philippines)
- COP 21 Paris- ‘**Manila-Paris declaration**’: common concerns by these countries

CVF-VCS

- As a part of **Talanoa Dialogue**
- 1st ever political global meeting held ONLINE>> in **Marshall island**
- Organized by **Climate Action Network (CAN)** and **Climate Vulnerable Forum (CVF)**
- Outcome- **Jumemmej Declaration**

Talanoa dialogue

Q 52.C

- **Statement 2 is correct:** The Paris Agreement provides for progress assessments (“stocktakes”) every five years in order to ensure that Parties turn commitment into action and continue to regularly increase their ambition. The first full global stocktake will occur in 2023 in order to prepare for a new round of climate commitments, known as **Nationally Determined Contributions (NDCs), by 2025**. However, Parties felt it was important to initiate this cycle prior to the agreement’s anticipated entry into force in 2020, and so a process called the **Talanoa Dialogue** (initially called a **facilitative dialogue**) has been established for 2018 to serve as an **initial stocktaking exercise**.
- **Statement 1 is correct:** The Dialogue is a mandated process requested by Parties to take stock of collective efforts to reduce emissions and build greater resilience, in line with the long-term goals of the Paris Agreement and to prepare, updated or new NDCs by 2020. Ultimately, the goal is to help Parties achieve maximum ambition in implementing and improving their NDCs. The Talanoa Dialogue was launched at **COP23 in Bonn**, Germany in 2017.

7. Country’s first Owl Festival

- In Purandar by Ela foundation

8. Thorium VS Uranium

- Thorium- More abundant than uranium
- ALL thorium can be used n reactor, Only 1 % uranium

- More Half-life for Thorium (14 billion yrs)
- NOT possible to build reactor using thorium (as it is **not fissile** unlike U233, U235, Pu239)
- Kalpakkam Mini Reactor (**KAMINI**)- **World's Only Thorium based experimental reactor** + **ONLY** reactor specifically designed for **Uranium-233** + **First commercial Fast Breeder Reactor in India**
- Largest Thorium deposits: on **EASTERN** coast

9. Gas Hydrates (aka Flammable ice)

- Frozen Mixture of water and gas (methane molecules are caged in by the **water** molecule)- **Highly energy intensive fuel**
- Officially known as **methane clathrates** or hydrates - formed at **very low temperatures** and under high pressure
- Location: Under Ocean floor or under permafrost under land
- Oil deficit countries like Japan, S. Korea, India>> Doing research

10. Global temperature rise

- 0.98°C Rise from **industrialization**
- 20 warmest years on record- in past 22 yrs with 2015-2018 being top 4

DECEMBER

1. Asiatic Lions Conservation Project

- Context- MoEFCC launched ALCP
- Conceived by: **MoEFCC** + **NTCA** + **WII**
- Aim- 1. Habitation improvement, disease control, veterinary care
2. Reintroduction: From Gir>> **KUNO** WS (MP)
- Funding- from Centrally sponsored scheme- Development of Wildlife Habitat (**CSS-DWH**)- 60:40

Asiatic lions (**Panthera Leo Persica**)

- Only in GIR park, nowhere else
- Smaller than African counterparts. Distinguishing feature: **longitudinal fold of skin along belly**
- IUCN- **Endangered**
- PAs habituated by Asiatic Lions: 1. Gir NP 2. Gir sanctuary 3. Pania Sanctuary 4. Mitiyala Sanctuary
- Recent deaths- Canine Distemper Virus (CDV) + tick borne **Babesiosis**

- CDV- 1990s-Tanzania- air borne & **contagious** disease attacking cat family's respiratory and gestrointestinal and nervous system- Mainly in **dogs**
- Babesiosis: infect RBCs- spread thr ticks

Nahargarh Biological Park + WS

- Foothills of Aravalli, Jaipur, **Rajasthan**
- Famous for- **White Naped Tit**
- Well known breeding center of LIONS

2. SDG India Index

- By **NITI + MoSPI + Global Green Growth Insti + UN in India**
- On **13** goals and 62 indicators (NOT all goals and indicators are included)
- Achiever: **No State** Front Runner- **Kerala, HP**, TN, Chandigarh and Puducherry
Performaer: All remaining Aspirant: Assam, Bihar, **UP** (last)

Global Green Growth Institute (**GGGI**)

- **treaty-based international, inter-governmental organization @ RIO +20, 2012**
- **HQ- S. Korea**
- Observer status @ UNGA and GEF
- to supporting and promoting strong, inclusive and sustainable economic growth in developing countries and emerging economies
- **India- NOT a member**, but status of partner

Green Growth Knowledge Platform (GGKP)

- By **GGGI + UNEP + OECD + UNIDO + World Bank**
- Global network of international org and experts which support transition to green economy
- Estd in 2012

3. Indian Pavillion @ COP 24

- Theme of India Pavillion- 'One World One Sun One Grid' @Katowice, Poland
- MoEFCC launched>>>**Green Good Deeds** Movement- inspire, encourage and involve each and every individual to realize people's participation

4. India Water Impact Summit 2018

- By **NMCG + cGanga** (Centre for Ganga River Basin Mana and Studies)
- Annual event- water related problems in country
- In 2018 summit- Ganga Financing Forum

5. **Global Carbon Project**

- Formed in **2001**>>> integrates knowledge of greenhouse gases for human activities and the Earth system.
- Includes global budget of **3 GHGs: 1.CO2 2.Methane 3.NO2**
- Global Research Project of **Future Earth** and research partner of World Climate Research Program
Future Earth- launched under umbrella of four global environmental change programmes:
1. *DIVERSITAS* 2.IGBP 3.IHDP 4. WCRP

6. 1st International Conference on Sustainable Water Management

- Under National Hydrology Project (**NHP**), MoWater, organized by Bhakra-Beas Mana Board
- @ Mohalli

7. Bioplastics

- Plastics- derived from petroleum resources Bioplastics- **Renewable** resources
- Climate Neutral
- **First known bioplastic- Polyhydroxybutyrate (PHB)**-1926>>>from Bacterium *Bacillus megaterium*

8. Eco Sensitive zones

- Context- SC ordered MoEFCC to declare **10 km area** around 21 NPs and WSs as ESZ
- ESZ- notified by MoEFCC around NPs, WSs, PAs>>>>as ‘shock absorbers’ to PAs ,
Also act as ‘transition zone’ betn high and low PAs
- Not mentioned in **EPA 1986**>>>**but declared using its provisions**
- Some criterias: 1.Species base 2.Ecosystem based 3.Geo-morphologic feature
- If some patches, zones beyond 10 km>> will be included in ESZs
- As per SC order>> No new project within 10 km **w/o** approval of **NBWL**
- Nature of **activities**: declared by **Chief Wildlife Warden** of state
Prohibited: commercial mining, polluting industries, major hydro project
Regulated: Deforestation, Widening roads, drastic changes in agri, exotic species
Permitted: Rainwater harvesting, ongoing farming

GADGIL COMMITTEE	KASTURIRANJAN COMMITTEE
1. 64% W.Ghat= ESZ	1. ban on mining, quarrying and sand mining.
2. Within this- ESZ I, II or III based on degree of threat and existing condition	2. No new thermal power projects, but hydro power projects allowed with restrictions
3. Divide area into 2200 grids	3. No new polluting industry
4. Western Ghat Ecology Authority	4. Forest diversion with safeguards
	5. construction projects up to 20,000 sq m allowed but townships- banned

10. Task force to protect wildlife

- India- Nepal- Bhutan considering forming this
- Why- Kanchenjunga BR>>>in 3 countries>>to curb illegal smuggling of animals

13. Project TSANG-DA

- Leh administration
- Sustainable waste management

15. Gangetic River Dolphin

- Aka *Susu*
- IUCN- '**Endangered**' Non-Human Personhood status by govt in 2017
- 2015- **WB** govt>>India's **First Dolphin Community Reserve** in WB @ Hooghly river betn Malda and Sunderbans
- **Mainly in Fresh Water, Sometimes in Brackish>> never enters Sea**
- Mammal>>Can **NOT** breathe in water
- **Vikramshila Gangetic Dolphin sanctuary- Bihar**
- Conservation:
 1. Conservation Action Plan for the Gangetic Dolphin 2010-2020- MoEFCC
 2. National Mission on Clean ganga
 3. **National Dolphin Research Centre- Patna**

Indus River Dolphin (*Bhulan*)

- Origin: Tethys sea
- Adopted to life in **muddy water**
- Functionally **blind**>> depend on echolocation
- IUCN: **Endangered**
- Context: 1. Punjab: **state aquatic animal** 2. Spotted in **Beas river**

Irrawady Dolphin

- **Habitat: both saltwater and freshwater**
- 3 sites: 1. Irrawady river (Mynmar) 2. Mekong river 3. Mahakam River (Indonesia)
- Small populations in: Chilika lake, Songkhla lake (Thailand)

17. Sustainable Land and Ecosystem Management (**SLEM**) Programme

- **GoI** (MoEFCC) + **Global Envi Facility** + GEF's Country partnership program
- Prevention and/or control of land degradation by restoration of degraded (agricultural and

forested) lands and biomass cover and make sustainable use of natural resources in selected project areas

- Implementation: Desertification cell, **MoEFCC**
- Supported by: **UNDP, WB, FAO**

18. Mekedatu Project

- KR>> confluence of Cauvery and Arkavathi>> to supply drinking water to **Bengaluru**

19. India Energy Efficiency Scale-Up Program

- Implementation- Energy Efficiency Services Limited (**EESL**)
- scale-up the deployment of energy saving measures in **residential** and public sectors, strengthen EESL's institutional capacity, and enhance its access to commercial financing
- includes: LED lights and energy efficient ceiling fans; **investments in public street lighting**; super-efficient air conditioning and agricultural water pumping system
- Recently>>>GoI >>loan agreement with **World Bank** for this.

Energy Efficiency Services Limited (EESL)

- **Joint venture of 4 PSUs** under **MoPower- NTPC + REC+ POWERGRID + PFC**
- Handles market related activities under **NMEEE** + consultancy services for **CDM**
- Other programs: **UJALA, SLNP, Smart meter national program**

21. Bharat VI norms

- Bharat Stage VI is the most advanced emission standard for automobiles and is **equivalent to Euro-VI norms currently in place across countries in Europe.**
- By 2020>>THROUT the country
- Implementation and setting of stds: **CPCB**
- **BS IV** norms: after 2017>> thruout country, SC banned sale and registration from **2020**
- **MoP&NG-** announced BS-VI in Delhi by 2018 itself
- Diff betn BS IV and VI- Presence of **SULPHUR** (50 ppm and 10 ppm)
- **Impact of BS VI-** Reduction: 1.Sulphur>>80% 2.NOx>>70% diesel, 25% petrol
3.PM from diesel by 80%

Technologies associated with BS norms

1. **Diesel Particulate Filter**

- In **BS V standard-** to remove particulates or soot from Diesel exhaust

2. **Selective Catalytic Reduction**

- In **BS VI standard-** Converts NOx into Nitrogen and Water Vapour

22. Geneva Action Agenda on Air pollution

- aims to reduce air pollution deaths by **two-thirds by 2030**
- @ **First** WHO Global Conference on Air Pollution and Health, 2018
- By **World Health Organisation (WHO)**

23. India GHG Program

- **industry-led voluntary** framework to measure and manage greenhouse gas emissions.
- Led by **TERI + CII + WRI India**

25. Kimberley Process

- global initiative to remove conflict diamonds from the global supply chain- **BINDING**
- ‘**Conflict Diamonds**’: rough diamonds used **to finance wars** against governments
- INDIA-**chairman for 2019** (also a founding member) Vice: Botswana and Russia
- KPCS (KP Certification Scheme) planery in 2018: Brussels, Belgium

26. India’s First INDC for 2021-2030:

1. Reduce emission intensity of country’s GDP by 33-35% by 2030 from 2005 levels
2. 40% electric power installed capacity from Non-fossil based energy resource by 2030
3. Additional carbon sink of 2.5-3 billion tonnes of CO₂ equivalent by 2030

29. **Green Energy Project**

- Aims: create **intra**-state and **inter**-state infrastructure for evacuation of renewable energy from generation points to the load centres
- By **MNRE**

31. Friends of the Earth International (FoEI)

- 1971 by **four organizations** from France, Sweden, England and the USA
- Thus NON-GOVT
- **NO Indian representation**
- Aim- to protect the environment and create sustainable societies

33. Enhancing Climate Resilience of India’s Coastal Communities’ (2019-2024)

- By **MoEFCC** + assistance of **UNDP**
- enhance the climate resilience of the most vulnerable populations, particularly women, in the coastal areas of India.
- Aims to ecological infrastructure to buffer against climate-induced hazards, especially storm surge
- Contributes towards achieving India’s INDC

34. Standards and Labelling Programme

- By **BEE**>> to provide consumers informed choice about energy saving
- **Mandatory appliances:** 1. ACs 2. Refrigerators 3. Color TV 4. Electric geyser 5. LED lamps (Recently added: **Washing machine** and **microwave oven**)
- **Voluntary Appliances:** 1. motors, pumps 2. ceiling fans 3. LPG-stoves 4. computers

UNNATEE (Unlocking National Energy Efficiency Potential)

- Document by **BEE** toward developing energy efficient nation

35. **Global Climate and Health Alliance**

- Formed @ **COP 21** (2011)- **Alliance of health NGOs**
- To tackle climate change and to protect and promote public health.
- Members: health and dev organisations all around globe>>countries NOT members

37. International Renewable Energy Agency

- first multinational agency focused solely on spreading clean energy across the globe
- officially founded in Bonn, Germany in 2009
- India- Member (but NOT founding)
- HQ- **Abu Dhabi**

38. **OzonAction Program**

- Initiative of **UNEP**
- Supports developing countries in implementation of Montreal protocol
- Strengthen capacity of govt, especially National Ozone Units (**NOUs**): NOUs are Govt agencies in developing countries which manages country's national programme to align with **montreal protocol**

39. HCFC Phase Out Management Plan (HPMP)- Stage II

- Under Montreal>>phase out HCFC by 2030
- Thus, includes various measures
- Skill training to service technicians in RAC sector

41. The Great Dying

- mass extinction occurred around **252m years ago** and marked the end of the Permian geologic period.
- A way bigger than Dinosaurs's extinction
- Triggered by **extreme global warming** that wiped out majority of marine and terrestrial animals (typically due to **volcanic eruptions**)

42. National Smart Grid Mission

- Under **MoPower** (NOT MNRE or MoEFCC)
- Apex body: **Governing Council headed by MoPower**- to approve policies and implementation
- Grants: upto 30% of project cost , 100% for training and capacity building
- SMART GRID= electrical grid with automation, commu, IT systems that can monitor power flows from point of generation to point of consumption and control power flow to match generation on real-time basis
- **Smart Grid Knowledge Centre (SGKC)** – By **POWERGRID** with funding from MoP

43. Zero Defect, Zero Effect Scheme

- By **MoMSME** for **MSME sector**
- National Monitoring and Implementation: **Quality Council of India** (QCI)
- Provision of Financial assistance

44. Under2 Coalition

- Coalition of **Subnational govt** that aims to achieve GHG mitigation
- Conceived by govt of california Secretariat- **The Climate Group**
- Aim- Bring GHG emissions below **95%** at 1990 levels by **2050**
- Indian states participant: 1. **Chattisgarh,** 2. **Telangana**

JANUARY

1. Cinerous Vulture

- Aka black vulture, Monk Vulture
- Context- Spotted in CH
- IUCN- **Near Threatened**

3. Black Stripped Mussel

- Invasive species
- '**Biofouler**' – accumulate on wet surface
- Endemic: S and C America, Japan
- Spotted in India

5. Rosewood (***Dalbergia Sissoo***)- SHEESHAM

- Context: India asked CITES to remove it from Appendix II
- IUCN: **Least Concern**

- Deciduous tree >> tropical and subtropical climate
- imp commercial **timber** endemic to Indian subcontinent and south iran + state tree of Punjab
- Uses: 1.Timber 2.**Legume**- Nitrogen Fixation 3.Insecticidal and larvicidal properties

7. National Clean Air Program

- By MoEFCC Implementation: **CPCB**
- 5 yr: 2019-2024 **NOT** legally binding
- Aim: **20-30%** reduction in **PM2.5** and **PM10** by **2024** with base 2017
- Focus on 102 **non attainment** cities (Non attainment= over 5 yr period who do **not** meet NAAQS for **PM 10** or **NO2**)- Maximum cities from **Maharashtra(18)**
- **Time bound reduction targets**
- Links Pollution with **HEALTH** (National Envi Health Profile for 20 cities)
- Components:
 1. Mitigation: City specific AQ plans, Regional and Transboundary plan
 2. Knowledge and database augmentation: Air Quality Monitoring Network, National Emission Inventory
 3. Institutional Strengthening: **NPL-Certification scheme**, Air Quality Forecast system

8. Asian Waterbird Census

- International Programme that focus on monitoring status of waterbird and wetlands
- AWC annually coordinated in India by **BNHS** and **Wetlands International**
- BNHS- Also took '**Flamingo Count**' in 2019 **for first time**

9. Porcine Reproductive and Respiratory Syndrome (**PRRS**)- Disease of **Swines**

- Aka Blue ear pig disease
- Panzootic disease (Non-human disease)

10. Vulture and Raptor survey

- 1st ever in Wayanad WS (Kerala)

11. State festival of Arunachal Pradesh

- **Pakke Hornbill festival**- declared recently

12. Sarus Crane (*Antigone Antigone*)

- World's **tallest flying bird** + India's **only resident**
- Omnivorous + inhabits Wetlands + **Non Migratory**
- IUCN: **Vulnerable** CITES: Schedule IV
- Distri: Short popu in S.E. Asia + N. Austrelia

- Sarus Crane Conservation Project- **WTI** in UP

13. Mobilise Your City (MYC)

- Launched @ **COP 21 Paris** (By French and German govt)
- India and France>>implementation agreement (**MoH&UA**)
- Aim- reduce (GHG) emissions of **urban transport** + help **India** improve sustainable transport policy
- Pilot Cities: **Nagpur, Kochi, Ahmadabad**

15. Cyclone alert by IMD (code- WAWO)

1. **PRE CYCLONE WATCH- 72 hours** in advance contains early warning about the development of a cyclonic disturbance
2. **CYCLONE ALERT- 48 hours** in advance of expected commencement of adverse weather over the coastal areas
3. **CYCLONE WARNING- 24 hours** in advance of the expected commencement of adverse weather over the coastal areas
4. **POST LANDFALL OUTLOOK- 12 hours** in advance of expected time of landfall.

16. RIMES

- Regional Integrated Multi-Hazard Early Warning System for Africa and Asia
- **Intergovernmental** institution registered with UN (**BUT not by UN**)
- Evolved after 2004 tsunami, to establish a regional early warning system + response to **trans-boundary** hazards
- HQ- **Thailand**
- Chairman- **INDIA**

17. Effects of Magnetic ‘Flip’

- Magnetic Flip= Switch in Earth’s North and South Pole
- Effect:
 1. Electric grid collapse from severe solar storms
 2. Highly charged particles>> satellites and astronauts
 3. Higher amount of **solar radiation**

18. Mission Innovation (MI)

- global initiative of 23 countries(INDIA member) and the **European Commission @ COP21, Paris**
- to reinvigorate and accelerate **global clean energy innovation**
- Indian Coordinator: Dept of S&T(**MoEarth Science**)

25. Global Cooling Prize

- **International Competition** to incentivize development of **residential cooling technology** that will have atleast 5 times less climate impact than std RAC
- **Announced @ Global Cooling Innovation Summit @ Delhi**
- Supported by: Mission Innovation, **Dept of Science**, MoPower, BEE, MoEFCC,
- Administered by: Rocky Mountain Institute, Conservation X labs, AEEE

Alliance for Energy Efficient Economy (**AEEE**)-

- **Industry led** Non profit org with aim to drive energy efficiency market and policies in India (estd in 2008)
- Released **SEEPI** (**State Energy Efficiency Preparedness Index**) under guidance of **NITI + BEE**
 - SEEPI front-runners: AP>>Kerala>>MH>> **PN>>RJ**

19. 'crying' Keelback snake

- **Arunachal Pradesh**

20. Traditional Knowledge Digital Library (TKDL)

- Set up in 2001 by **CSIR** and **MoAYUSH**
- Aim- Protect ancient and traditional knowledge from exploitation from **Biopiracy**
- Translates into **5 international languages: English, Japanese, German, French, Spanish**

21. Chinnar WS

- Idukki district>>Under jurisdiction of and Contiguous to Eravikulam NP, Kerala
- Rivers: Chinnar and **Pamba**
- Context- spotted '**Silver Forget-me-not**' Butterfly + **srilankan Frogmouth**
- Inhabitants: **Muthuvas and Pulayars**

22. Blue Bonds

- Debt instrument to finance marine and ocean based projects that have positive impact
- Seychelles**- first Country to issue Blue bond- Issued with ceiling value \$15 million for maturity 10 years
- part of **SWIOFish3** Programme of **World Bank** and assistance from **WB and GEF**

Green bonds- **SEBI** issued guidelines (India- 2nd country after China to issue national guidelines on green bonds)

23. **SAFAR** (System of Air Quality and Weather Forecasting And Research)

- Developed by **IITM, Pune + IMD + NCMRWF** (centre for medium range weather forecast)
- Integrating air quality with **Health advisories and Food security**
- Under **MoEarth Science** (NOT MoEFCC)
- Provide location specific info in real time + **72 hr advance forecast**
- Parameters it monitor: PM2.5, PM10, SO2, O3, NO2, CO, + **Benzene + Toluene + Xylene + PM1 + Mercury + Black carbon**
- Weather parameters like temp, wind speed, humidity, rain + **UV Index**

SAMAR (System of Aerosol Monitoring and Research)- by **IMD** to study **Black Carbon** in atm

24. National Productivity Council (NPC)

- Autonomous society registered under **DIPP, MoCommerce**
- **Tripartite** NGO with representation from: 1.Govt 2.Employer 3. Worker's Org
- Waste Minimisation Circles: **WB+ MoEFCC + NPC** (started in 1995)
- to address problem of industrial pollution in small scale industries

Asian Productivity Council

- Estd in 1961: regional, non profit, non political, **intergovernmental** org
- Members: **20** (all Asian including **India**)- China: not a member

FEBRUARY

2. Amawi Rabbit

- Primitive rabbit end emic to **Ryukyu** archipelago of Japan (thus aka Ryukyu rabbit)
- IUCN: **Endangered**

4. World Sustainable Development Summit

- Every year by **TERI**

5. Country's First District Cooling System of India

- **Amravati, AP**
- Using **chilled water** from centralized cooling tower>> avoids need of separate chillers

7. Multilayered Plastics (MLP)

- made up of a layered composition of various types of plastics + sometimes also combined with **Non plastics** (such as Aluminium foil, paper)
- Used as **packaging** most of the fast moving consumer goods (**FMCG**)>> to increase the **shelf-life** of food

- Govt target- To phase out MLP which is non-recyclable or nonenergy recoverable or with no alternate use>>> thus No Complete phaseouts

8. Initiatives of IUCN

- Global **Drylands** Initiative (GDI)
- Global **Island** Partnership (GLISPA)
- **Mangroves** for the Future (MFF)
- Global **Mountain** Initiative
- Save Our Species (**SOS**) Program

9. NABARD's Centre for Climate Change

- First of its kind in South East Asia @ **Lukhnow**
- Support for capacity building + also in **S.E. Asia and Africa**

10. SECURE Himalayas

- By **GoI + UNDP + support of GEF**
- Aim- conservation of High range Himalayan countries

Climate Vulnerability Index for Indian Himalayan Region

- By: **IISc + IIT Guwahati and Mandi** Support: DST + Swiss Dev Corpo
- Vulnerability study of **12 Himalayan states**>>> Assessment of Climate vulnerability at **district level**
- Highest Vulnerable: **Assam** and **Mizoram**
- Least Vulnerable: **Sikkim**

Indian Himalayas Climate Adaption Programme

- Under GPCCE (Global Program on CC and Envi) of **Swiss Dev Corporation (SDC)**
- Implemented by SDC + DoS&T

National Mission on Himalayan Studies

- Implemented by **MoEFCC** in **12 hima states**

11. Bannerghatta National park

- Karnataka
- Wildlife corridors for elephants connecting **Bilgiri Rangnatha Hills** with **Sathyamangalam forest**
- Suvarnamukhi river
- First NP to be fenced forested elephant sanctuary
- **First Butterfly park** in India in 2006

12. Corporate Environment Responsibility (CER)

- Prescribed under ToR and Environmental Clearance to be granted by MoEFCC under EIA notification, 2006
- Applicable to **both greenfield and Brownfield**
- Fund allocation:
 1. for Greenfield- 0.25 to 2% of capital investment in project
 2. for Brownfield- 0.125 to 1% of capital investment in project

13. Transformative Carbon Asset Facility (TCAF)

- By **World Bank**
- **Rewards** developing countries for reducing emissions by paying fee for each ton of CO₂>> thus helps to implement INDC
- helps shape international carbon markets for the post-Kyoto era.
- Set up @ **Paris COP 21, 2015**>>> \$500 million fund

15. National Wind-Solar Hybrid policy

- By **MNRE**
- Integration of Wind and solar at **AC** and **DC** level
- Flexibility in share of wind and solar components in hybrid project provided that rated power capacity of one resource be atleast **25%** of rated power of another
- New projects as well as **hybridization of existing projects**
- Procurement of power: tariff based transparent bidding process

International Solar Alliance

- 5 key Programs
 - Scaling up Solar applications for **agricultural** use
 - **Affordable finance at scale**
 - Scaling up solar **mini-grids**
 - Scaling up solar **rooftop**
 - Scaling up solar **e-mobility** and storage
- Funding under **ISA**>> **Exempted** from treating as Foreign funding under FCRA for Indian NGOs and other entities
- Projects/Initiatives:
 - Solar Technology Application and Resource- **Centre (iSTAR-C)**: support capacity building
 - ISA Solar Awards (**Kalpna Chawla Awards**)- Recognise works of solar scientist in ISA member countries
- **Common Risk Mitigation Mechanism**- Pooled insurance facility to reduce financial cost of solar projects in member countries of ISA

16. International Coral Reef Initiative (ICRI)

- **Informal partnership** launched @ **CBD, 1994** by 8 countries: Australia, France, Japan, Jamaica, Philippines, Sweden, UK and USA
- 60 Members
- **India- member**

MARCH

2. Wood Snake

- *Xylophis Indicus*
- Seen after 140 years in **Meghamalai** WS (TN)
- Endemic to: 1. Meghamalai WS 2. Periyar TR

6. Hump Backed Mahseer

- IUCN: **Critically Endangered** (recently)
- Scientific name- *Tor Ramadevii*
- **Only** found in **Kaveri River Basin**>> Pambar, bhavani and Kabini river
- Aka '**Tiger of the water**'

7. Alligator Gar

- Invasive, Predatory North American Fish, recently spotted in some water bodies in India

8. Hope Spots

- Ecologically unique areas of **ocean** designated for protection under global conservation campaign overseen by **Mission Blue** (non profit org)
- Context: **Andaman & Nicobar** and **Lakshadweep**- Designated as hope Spots by **IUCN**

9. Recent initiatives for **Forest Survey of India**

- **E-green Watch:** GIS to monitor regeneration of vegetation cover and promoting afforestation as compensation for forest diverted under **CAMPA** + provide **real time** data on appropriate use of CAMPA fund + enables general public to view work done by CAMPA on google map itself

10. STAR (**System for Transparent Allocation of Resources**)

- Mechanism to determine amt of **GEF** resources that a given country can access in replenishment period

APRIL

1. Jerzego Sunillimaye

- New species of jumping Spider discovered in **Mumbai**

2. Phayeng Village, Manipur

- **India's first Carbon Positive village**

3. National Adaption Fund for Climate Change (NAFCC)

- Central **Sector** scheme estd in 2015
- Aim- support concrete adaption projects having min impact on CC
- Implementing Entity: **NABARD**

4. Global Cooling Coalition

- Launched @ **1st Global Conference on Synergies betn 2030 agenda and paris Agreement, Copenhagen(Denmark)**
- Synergy betn Kigali, Paris and SDG
- Support: UN, CCAC, etc
- Includes govt officials from chile, Rwanda, Denmark + members of CSO

5. Global Deal for Nature

- Campaign of **One Earth institute**
- Aim- to mitigate impact of **6th mass extinction** on biodiversity
- Imp points of deal:
 - **30%** of planet to be fully protected under UN CBD by 2030
 - Another 20% as Climate Stabilization Areas (CSAs)

6. National Mission on Transformative Mobility and Battery Storage

- Aim- promote Clean, Connected, shared and sustainable mobility initiative
- **Inter-ministrial steering comm**: Chair- **CEO, NITI**
- Will support and implement **Phased Manufacturing Programme** for batteries and **Cell manf Giga plants** in india

PT

1. Climate Engineering/ Geo engineering methods:

- Carbon Capture and Storage
- CCS and Utilisation

- Biochar
 1. Charcoal used for soil amendment>> especially acidic soil: reduces leaching, acidity, irrigation & fertilizer requirement + reduce N₂O and CH₄ emission from soil
 2. made from biomass by **pyrolysis**
 3. Rich in carbon>> potential for **carbon sequestration**
 4. **Hygroscopic**>> ability to retain water
- Sunlight reflection methods
 1. SAI- Sulphur Dioxide injection
 2. Cirrus cloud manipulation- **Thinned or removed** to reduce ability to trap long wave radiation
 3. Marine cloud brightening
 4. Space sunshade- obstructing sunlight by placing mirrors
 5. Growing albedo crops

2. Short Lived Climate Pollutants

- From Few days upto 10 yrs
- Black carbon, **O₃**, CO, VOC, **NO_x**, **CH₄**, HCFC
- Climate and Clean Air Initiative (CCAI)>> for SLCP

3. Petcoke ban

- Petcoke: 90% **Carbon**, 3-6% **Sulphur**>> derived from petrochemical refining
- 'bottom of barrel fuel'
- 11% more GHG and 17% more Sulphur emission than Coal
- **Zero ash content**
- Context: banned as **fuel**, allowed only for **cement, lime kiln, calcium carbide and gasification industries**, when used as the feedstock or in the manufacturing process on actual user condition.

4. Clean Air India initiative

- collaborative project between **Get in the Ring** (a platform for start-ups by the govt of the Netherlands), **Start-up India** and **INDUS Forum**
- Aim: to curb pollution in Indian cities by promoting partnership betn Indian startups and Dutch companies
- Critical component of '**#startup Link**'>> launched by **Invest India** and Dutch govt

5. Status of trace and toxic metals in Indian rivers 2018

- By **Central Water Commission**

Metal	Source
Arsenic	Pesticides, fungicides, metal smelters
Cadmium	Welding, electroplating, pesticides, fertilizers, batteries, nuclear plants
Chromium	Mining, electroplating, textile, tanneries
Copper	Mining, electroplating, pesticides
Lead	Paint, batteries, pesticides, automobile emissions, mining, burning of coal
Manganese	Welding, fuel addition, ferro manganese production
Mercury	Pesticides, batteries, paper industries
Nickel	Electroplating, zinc base coating, battery industries
Zinc	Refineries, brass manufacturing, metal plating, immersion of painted idols

7. Composite Water Management Index

- By **NITI**
- Indicators: GW and Surface water restoration, major and medium irrigation, watershed development, participatory irrigation, on farm water use, rural and urban supply, policy and governance
- Findings:
 1. 21 cities>>> out of water by 2020
 2. 75% households>>> no water in their premises
 3. 84% rural households>>> no piped drinking water access
 4. 14/24 states>>> underperformers (many water scarce states performed well: GJ, AP, MH, MP, KR)

8. Uranium Contamination in GW

- In states like RJ, PN, HR, GJ
- Reasons: 1. Granite rock in Himalayan region>>> leaching 2. Over GW exploit
- Nitrogenous fertilisers
- WHO limit: **30g/ul**
- BIS- **NOT** prescribed limit
- Effects: **Chemical toxicity**, chronic kidney problems

9. National Water Informatics Centre

- Set up under **National hydrology Project**
- Under **MoWater**
- Provide reliable data on water resources through **India- WRIS**
- India-WRIS: Joint venture between **CWC + MoWater + ISRO + Dept of Space**
- National Hydrology project: Central **Sector** scheme>>> to store hydrological data and analyzed in real time basis

10. rainwater harvesting

Some Traditional Methods of Rainwater Harvesting in states- In India, rainwater harvesting has been in practice for more than 4000 years.

- Himachal Pradesh- **Kul, Kuhl**
- Rajasthan- **Baoris, Jhalaras, Johad, Nadis, khadins, kunds**
- Maharashtra- **Bhandaras**
- Bihar- **Ahar-Pynes**
- Karnataka- **Kere**
- Madhya Pradesh- **Bundela Tank, Chandela Tank, Katas, Pat**
- Tamil Nadu- **Eri, Ooranis**
- Nagaland- **Cheo-ozih**
- Andhra Pradesh- **Cheruvu**
- West Bengal- **Dungs**

11. Alliance to End Plastic Waste

- Non profit org >> consisting of 30 global companies
- committed over \$1.0 billion with the goal of investing \$1.5 billion over the next five years to help end plastic waste in the environment.
- Indian company: **Reliance**

12. Blue Flag Certification

- By Copenhagen based **Foundation for Envi Education (FEE)**
- Who can apply>> **only local authorities and private operators**
- 4 main areas: 1.water quality 2. Envi mana 3. Envi mana 4. Safety
- Chandrabhaga beach of Odisha's Konark coast>> **1st in Asia**
- MoEFCC>> Unified Coastal Area Mana Program>> to develop beaches acc to BF std
- Developed under **SICOM**
- Not only for beaches, but also for Marinas or ship docks
- Some criterias: 1.No sewage or industrial waste outlet, if there>>notify it (thus no ban)
2. Toilet facility for tourist is must

13. Sharm-El-Sheikh declaration

- COP 14 of UNCCD
- Sharm-El-Sheikh>> on **southern tip** of Sinai peninsula
- Declaration: 'Investing in Biodiversity for for People and Planet'
- **New Deal for Nature**- to develop post-2020 global biodiversity framework to further achieve the **2050 Vision for Biodiversity**
- **International Alliance for Nature and Culture**- with UNESCO, Indigenous people

14. Inter-state translocation of tigers

- Country's **first**: **Bandhavgarh(MP)>>>Satkosia(OD)**
- Project: conceived by **MoEFCC, NTCA, WII**

NOTE- Report by WII and NTCA on **density** of tigers in NP: **Orang NP>>Kaziranga>>Jim Corbett>>Bandipur**

16. **Kinshah Resolution** of IUCN, 1975

- Gave international recognition to **cultural mode of conservation**

Tribes famous for conservation:

Bishnoi	Chenchu	Maldhari	Bugun	Nyishi
Rajasthan	Andhra Pradesh (Nagarjunsagar Srisailem)	Gujrat	Arunachal Pradesh (bird <i>Bugun Liocichla</i>)	Arunachal Pradesh (hornbill in Pakhui)

17. Indian Biodiversity Awards, 2018

- Singchung Bugun Village community reserve Mana Committee- Bugun Liocichla bird
- Kutch Maldhari Sangathan: conservation of **kharai camel**

18. PM-JIVAN (Jaiv Indhan- Vatavaran Anukulan Fasal Avashesh Nivarana)

- MoP&NG>>** provide **financial support** to Integrated Bioethanol projects using Lignocellulose biomass (plant dry material= most abundantly available raw material)
- 12 commercial base and 10 demonstration scale peojetscs= **Viability Gap Funding** for 6 yrs
- Ethanol produced by beneficiaries>>>**mandatorily** supply to **OMCs**
- Nodal agency: **Centre for High Technology**

19. Scheme for Biomass Based Cogeneration Projects

- MNRE**
- in sugar mills and other industries
- Central Financial assistance to projects using raw material like bagasse, crop residue, etc (note- **MSW: not** covered)

New National Biogas Organic Manure Programme (NNBOMP)

- Implementation: **state** rural development dept, state **KVIC**

20. Electric Vehicles

- Context: **Y.S. Malik** panel submitted 15 point plan
- NEMM 2020: 6-7 million EVs by 2020
- Automotive Mission Plan 2026: make Indian automotive industry top 3 in world

- FAME Phase II: **30%** EVs by 2030
- New Charging Infra guidelines:
 1. No license required for Public charging infra
 2. Tariff: as determined by Central or State Electricity Regulatory Commissions
 3. Open access: charging station can procure electricity from ANY generation comp

21. CRZ notification, 2018

- Defrozen **Floor Area Ratio** for **CRZ II**
- NDZ:

CRZ III A	Popu density>2161	NDZ= 50m
CRZ III B	Popu density<2161	NDZ= 200m
Islands		NDZ= 20m

- **Temperory Tourism facility**: **permissible in NDZ** of CRZ III + 10m from HTL
- CRZ clearances: only for CRZ I and IV (from MoEFCC)
for CRZ II and II: **states**
- Treatment facility: permitted in CRZ I B

22. ACROSS scheme ("Atmosphere & Climate Research-Modelling Observing Systems & Services)

- Program of **MoEarth Science**
- Aim- Address different aspects of climate and weather services + provide reliable forecast
- Implementation: 4 agencies- 1.**IMD** 2.**IITM** 3.**NCMRWF** 4. **INCOIS**

23. National Facility for Airborne Research

- Under **IITM, Pune**
- Use of **Research Aircraft** (not satellite) for atmospheric research

24. SAWEN

- Official launch: **2011, Bhutan**
- Secreatariat: **Kathmandu, Nepal**
- Members: South Asian Countries (I, P, B, B, N, S, M, A)

25. Environmental Fund

- Set up by **Madras High Court**
- where amounts received from various courts, in the form of costs ordered to parties, would be used for planting and nurturing trees as well as cleaning water bodies

26. Reports

AGENCY	REPORT
UNEP	1. Emission gap Report
	2. Global Environment Outlook
	3. Actions on Air Quality
	4. Rise of Environmental Crime (UNEP + Interpol)
	5. Environmental Rule of Law
	6. Inclusive Wealth report
WMO	1. Greenhouse gas Bulletin
	2. WMO Statement on the state of the Global Climate

REPORTS

UNEP

1. Scientific Assessment of ozone Layer report, 2018 (Montreal Protocol assessment)

- Report by **WMO + UNEP**
- Healing of ozone:
 1. Northern hemisphere and mid latitudinal ozone- by 2030
 2. Southern hemisphere- by 2050
 3. Polar regions- by 2060

2. Global Atmospheric Watch program: **WMO**

- Worldwide system of WMO to monitor trends in earth's atmosphere >> **GHGs**
- keeps watch on Ozone depletion, UV radiation, air pollution

3. Global Environment Outlook

- By **UNEP**
- Flagship report of UNEP
- 6th assessment report: 25% of all premature deaths and diseases are due to **manmade pollution and environmental damage**

4. **Global Resources Outlook** Report

- By **UNEP**
- Prepared by International Resource Panel

5. **Annual Frontiers Report**, 2019

- By **UN Environmental Assembly**
- Latest report: added chapter on Nitrogen

IPCC

1. Special Report on global warming 1.5 C

- All coral reefs will be gone if 2 C + 70-80% if 1.5 C
- Even if Full implementation of NDCs>> Warming by **3 C** by 2100
- Since 2000>> Human induced warming= Warming from Sun + volcano observed from historical period
- Global sea level rise: 1. 0.77m for 1.5 C 2. 0.1m for 2 C
- Five steps to **1.5** –
 1. Global emissions of **CO2** need to decline by **45%** from 2010 levels by **2030** + Global **net zero emissions** by 2050
 2. **Renewables** are estimated to provide up to **85%** of global electricity by 2050 (+ increase in share of **Nuclear energy**)
 3. Coal is expected to reduce to close to zero
 4. Up to **7 million sq km** of land will be needed for **energy crops** (a bit less than the size of Australia)
- For warming below **2 C**- decline CO2 by **25%** by 2030 and **100% by 2075**
- This report>> Links **lifestyle choices with Global Warming** (Unlike previous reports)

RAMSAR

1. Global Wetland Outlook Report

- By RAMSAR convention
- Key finding: 35% wetland of world lost betn 1970 to 2015

OTHER CLIMATE REPORTS

1. Annual **Greenhouse Gas Bulletins**

- By- **World Meteorological Organization (WMO)**
- report the latest trends and atmospheric burdens of the most influential, **longlived** greenhouse gases: carbon dioxide, methane, and nitrous oxide, as well as a summary of the contributions of the lesser gases

2. CC Performance Index (CCPI)

- By **GermanWatch, CAN International, New Climate Institute**
- Asses **57 countries** + EU
- India: 11>>>**9 (2020)**
- First 3 positions: **VACANT** (Sweden And Morocco- 4th and 5th)

3. **Global Climate Risk Index**- By **GermanWatch**

- Worst affected: **Puerto Rico, Sri Lanka, Dominica**
- India: 6th (2017)>>>14th (2018)>>> **5th (2019)**
- India- **Highest no of fatalities** and **2nd highest monetary loss** from Cc in 2018

4. People's Forest Report

- By **Centre for Science and Environment (CSE)** on Community Forest Reserve (CFR) management which is recognized under FRA, 2006)
- NOTE- Diff betn JFM and CFR: 1.JFM=Forest policy, 1988 (thus no statue) CFR=FRA 2.JFM= JFMC consist of forest officials + locals CFR= Exclusively gram sabha members

5. State and Trends of Carbon Pricing report

- **World Bank**

6. State of **Worlds Forest Report**

- **Food and Agriculture Organisation (FAO)**

7. State of Global Climate report

- **WMO**

ENERGY REPORTS

1. Global Energy & CO2 Status Report

- By **International Energy Agency (IEA)**
- International Energy Agency:
 1. Autonomous Intergovernmental organization in framework in **OECD**
 2. estd in 1974 due to oil crisis 1973
 3. Secretariat: Paris
 4. Membership criteria: A. must be **member of OECD** B. demonstrate that its crude oil reserves are equivalent to **90 days** of previous yr imports
 5. 30 members
 6. India: Associate member
 7. report: **World Energy Outlook Report**
 8. Recently: India Joined IEA Technology Collaboration Program on **Bioenergy**
 9. Advanced Motor Fuel Technology Collab Program (**AMF-TCP**)

2. Renewables Global Status Report, 2018

- By **REN21** (Renewable Energy Network for 21st Century)
- REN 21
 1. Global think tank
 2. Secretariat @ **UN Environment** in Paris
 3. Launched 2004 as outcome of International Conference on Renewable Energy, Bonn

- 4. Also Releases **Global Futures Report** (GFR)>> does NOT include any forecast
- 5. holds International Renewable Energy Conference (**IREC**)- **Biennial**- hosted by national govt, convened by REN21
 - India: 2010 2017: Mexico 2019: Korea

3. Global Energy Transition Index

- By **World Economic Forum**
- India- **76/115** (+2)

HEALTH

1. Global Nutrition Report

- Started after **first Nutrition for Growth Initiative Summit (N4G)** in 2013
- assesses progress in meeting Global Nutrition Targets established by the **World Health Assembly**
- **World Health Organization** is a Global Nutrition Report Partner
- Report made by: Independent Expert group

2. Status of Ambient Noise Level report

- CPCB
- Note- National Envi Policy (NEP), 2006>>>>Designates Ambient noise in envi quality parameter + has to be monitored in specified urban areas

3. Composite Water Mana Index:

- Both STATES and UTs
- Parameters 1. GW restore 2. Irri mana 3. On farm water use 4. Drinking water supply 5. Water policy frameworks

4. . National Air Quality Index

- **CPCB**
- Part of **Swachh Bharat Mission**
- Recommended by **IIT Kanpur**
- **Short term Index** (upto 24 Hour averaging period)
- Principle- One number, One color, One description (i.e. Color coding)
- SAMEER App- to display NAQI
- Pollutants
 - 1. O₃
 - 2. PM 2.5
 - 3. PM 10
 - 4. CO

5. SO₂
6. NO₂
7. Lead or Pb
8. Ammonia or NH₃