

NATIONAL**Climate change and citizen science****What is Citizen science?**

Citizen science is a new approach, in which people support scientists to observe more land, water and species during their research. The data collected is used to build an understanding on how people are impacting the Earth and to inform them of ways to better manage natural resources.

How it help?

Given an appropriate structure, information provided by citizens can provide insights into many of the serious issues we face in today's world, including the gravest of environmental problems: climate change, habitat destruction, pollution and species loss. Numerous 'Citizen Science' Projects across the globe take advantage of our networked world to organise people in collecting a variety of environmental data. And the contributions have been nothing short of impressive. Project BudBurst, Christmas Bird Count, Nature Watch, Firefly Watch, Earthdive, Monarch Larva Monitoring Project, Roadkill, Spider WebWatch, The Great Sunflower Project, BioBlitzes, Edward O. Wilson's Encyclopedia of Life – the list of ecology-related citizen science projects is long and diverse. Volunteers in these projects actively contribute to our understanding of the world by collecting data on the distribution and population status of various species and also on natural phenomena such as bird migration, pollination by bees, effects of man-made disturbances on marine species, etc.

Across the western world, volunteers have made significant contributions to large-scale collaborative surveys, especially in fields such as ornithology. In Britain, there is a birdwatcher for every two square kilometres and in Finland, the first large-scale collaborative ornithological survey was started in 1749! The contribution of amateurs to science has not been limited to information on birds – insects, plants and reptiles all have curious onlookers reporting on them. An initiative in Malaysia recorded palm varieties over four-and-a-half years, resulting in the documentation of 31 new varieties, nearly doubling what botanists had previously recorded. Watchful eyes can also act as an early warning system: the decline of the Ivory Gull was first reported by citizens; and Rachel Carson tells us in Silent Spring that anxiety about widespread poisoning of wildlife by agrochemicals in the U.S. was first raised by local residents on farms and in small towns.

Citizen-Science Repository On Indian Mammals, Called Mammals Of India (MaOI)

- Mammals of India (MaOI) is a new model of repository on Indian mammals by the Scientists and Researchers from the National Centers for Biological Sciences (NCBS), Bangalore. It is a citizen-scientific repository initiated in September 2018. It is a first such repository of Mammals in India.
- The website mammalsofindia.org provides a facility to the citizen to upload photographic observations about mammals. 768 images, of 161 species of mammals, have been uploaded by October 25, 2018.
- The photographs of rare species such as Red Serow from Manipur, Lynx a species of wild cat from Jammu and Kashmir, Asian Golden Cat from West Kameng district of Arunachal Pradesh and Binturong, also known as bear cat, from East Kameng district of Arunachal Pradesh have been uploaded on this portal.
- This is an exclusive portal for mammals in India which will help in having a good distribution map of mammals all around the country.
- MaOI is an initiative under Biodiversity Atlas project. The Biodiversity Atlas is a species-based bioinformatics platform.
- India is a mega-diversity country with only 2.4% of the world's land area but accounts for 7-8% of all global species. There are about 426 species of mammals known from India, which is about 8.86% of the world species.

CONCLUSION

Citizen Science projects are entirely dependent on volunteers. Because the information is contributed by the public, the data and results are accessible to all participants and anyone who wishes to see or use this information. Projects like MigrantWatch, Mammals of India (MaOI) create opportunities for weekend fun and recreation, yet at the same time encourage citizens to contribute valuable information. A major advantage of a national level data collection system like this is that it will be able to unify efforts made by nature clubs and birdwatching groups into a project of global importance. By synchronising their data formats, these groups can now contribute to authentic science at the global level, in addition to serving as a nature activity or a local conservation effort.

*(MigrantWatch: MigrantWatch monitored the arrival and overwintering of nine common migrants to India. The project is supported by volunteer participants from across the country, now numbering over 400. The data collected in the first year highlights the potential of this endeavour. Reported first sightings of the Rosy Starling *Sturnus roseus* in the second half of 2007 captured quite well its north-to-south arrival)*

Fisheries and Aquaculture Infrastructure Development Fund (FAIDF)

- The government approved Rs 7,522 crore fund for creating infrastructure facilities in fisheries and aqua-culture sector to help boost annual fish production to 20 million tonnes by 2022-23 and generate over 9.40 lakh employment opportunities.

- India's fish production is estimated at around 12 million tonnes annually.
- To double farmers' income by 2022 the Cabinet Committee on Economic Affairs (CCEA) has approved creation of FAIDF recently. The proposal for creation of fund was made in budget 2018-19.
- The approval entails an estimated fund size of Rs 7,522 crore, comprising Rs 5,266.40 crore to be raised by the Nodal Loaning Entities (NLEs), Rs 1,316.6 crore beneficiaries contribution and Rs 939.48 crore budgetary support from the Government of India
- National Bank for Agriculture and Rural Development (NABARD), National Cooperatives Development Corporation (NCDC) and all scheduled banks would be the NLEs
- FIDF would provide concessional finance to state governments/UTs and state entities, cooperatives, individuals and entrepreneurs etc, for taking up of the identified investment activities of fisheries development.
- Under FIDF, loan lending will be over a period of five years from 2018-19 to 2022-23 and maximum repayment will be over a period of 12 years inclusive of moratorium of two years on repayment of principal.
- Listing out the benefits, the government said this fund would help in creation of fisheries infrastructure facilities both in marine and inland fisheries sectors, which would boost fish production and help achieve target of 15 million tonne by 2020 set under the blue revolution.
- The government aims to achieve a sustainable growth of 8-9 per cent, so that fish production reaches to the level of about 20 million tonnes by 2022-23.

Background: Highlights of Budget 2018-19 in respect of Food Processing sector

- DAC & FW would reorient its ongoing schemes and promote cluster based development of Agri commodities and regions in partnership with the MoFPI, commerce and other allied Ministries.
- Pradhan Mantri Kisan Sampada Yojna (PMKSY)- Allocation has been increased from Rs. 715 crore in RE 2017-18 to Rs. 1400 crore in RE 2018-19.
- Tomato, Onion and Potato processing- Operation Green has been launched to promote
- FPOs, agro logistics, processing facilities and professional management with a sum of Rs. 500 crore.
- State of the Art Testing facility would be set up at 42 Mega Food Park to promote Agri export from current US \$ 30 billion to US \$ 100 billion.
- Corporate Income Tax has been reduced from 30 percent to 25 percent to companies having annual turnover up to Rs. 250 crores for all sectors.
- 100 percent income tax exemption from profit derived from activities such as post harvest value addition to agriculture would promote operation Green as well as PMKSY. This provision is applicable to FPOs' having annual turnover up to Rs. 100 crores.
- Setting up of a Fisheries and Aquaculture Infrastructure Development Fund (FAIDF) for fisheries sector and an Animal Husbandry Infrastructure Development Fund (AHIDF) for financing infrastructure requirement of animal husbandry sector. Total Corpus of these two new Funds would be Rs. 10,000 crore.

Indian Fish Market

Fisheries in India is an important economic activity and emerging sector. India's fish production is estimated at around 12 million tonnes annually. India has become the second largest fish producing and aquaculture industry in the world. In aquaculture, India is second to china with a share of 6% in global aquaculture. The fisheries sector employed over 14.5 million people directly and many more indirectly. At present, Fish production contributes to around 1% to GDP of country and 5% to agricultural GDP of country. India exports one tenth of its Fish produced. The contribution of fish from the seas has lowered now and the share is rising from inland farming.

The Indian government has taken a lot of other efforts to boost up Indian aquaculture market such as Integrating all the existing schemes under Blue Revolution, Establishing 'Brood bank' for commercially important species to ensure production and supply of certified broods to hatcheries in the country, developing cold water fishery, improving the manpower requirements of the fisheries programs. Overall, fisheries is a sunrise sector having a lot of future growth possibilities. All the 3 sub sectors viz. Inland, Aquaculture and Marine fisheries have a lot of scope for improvement. The recent step of creating FAIDF is a praised step to boost the fisheries sector to the desired level.

The Sunrise Sector

India will be among the top three aviation market by 2024 according to International Air Transport Association (IATA) in its 20- year air passenger forecast report. India is currently at seventh position in Global Aviation market.

Key Highlights Of Report

- The number of air passengers around the world will double to 8.2 billion in 2037.
- China will displace the US as the world's largest aviation market in the mid- 2020. India will take the third place after US around 2024 surpassing UK.
- By 2037, India is expected to add 414 million passengers to its existing 572 million passengers.
- Home passenger traffic in India is growing at around 18.28 per cent to reach 243 million in 2018-19 and will grow to 293 million in 2020.

- When it comes to International traffic, it grew by 10.43 per cent to reach 65 million in 2018 and will grow to 76 million in 2020.
- The biggest growth in terms of air traffic will come from Asia- Pacific region with more than half the number of total new passengers in next 20 years.
- The Asia-Pacific region is expected to see the fastest growth at the rate of 4.8%, followed by Africa (4.6%) and West Asia (4.4%).

Indian Aviation Industry: Government Initiatives

Some major initiatives undertaken by the government are:

- Allocation to Civil Aviation Ministry has been tripled to Rs 6,602.86 crore (US\$ 1,019.9 million) under Union Budget 2018-19.
- In February 2018, the Prime Minister of India launched the construction of Navi Mumbai airport which is expected to be built at a cost of US\$ 2.58 billion. The first phase of the airport will be completed by end of 2019.
- The Government of Andhra Pradesh is to develop Greenfield airports in six cities-Nizamabad, Nellore, Kurnool, Ramagundam, Tadepalligudem and Kothagudem under the PPP model.
- Regional Connectivity Scheme (RCS) has been launched under the policy of UDAN.
- In September 2018, Jharsuguda Airport in Odisha and Pakyong Airport in Sikkim were inaugurated. Pakyong airport is Sikkim's first ever airport and AAI's first greenfield airport construction.

Investment

- According to data released by the Department of Industrial Policy and Promotion (DIPP), FDI inflows in India's air transport sector (including air freight) reached US\$ 1,658.23 million between April 2000 and June 2018. The government has 100 per cent FDI under automatic route in scheduled air transport service, regional air transport service and domestic scheduled passenger airline. However, FDI over 49 per cent would require government approval.
- India's aviation industry is expected to witness Rs 1 lakh crore (US\$ 15.52 billion) worth of investments in the next five years.
- The Indian government is planning to invest US\$ 1.83 billion for development of airport infrastructure along with aviation navigation services by 2026.
- AAI is going to invest Rs 15,000 crore (US\$ 2.32 billion) in 2018-19 for expanding existing terminals and constructing 15 new ones.
- In June 2018, India has signed an open sky agreement with Australia allowing airlines on either side to offer unlimited seats to six Indian metro cities and various Australian cities.
- The AAI plans to develop Guwahati as an inter-regional hub and Agartala, Imphal and Dibrugarh as intra-regional hubs.

Challenges To India Aviation Sector

Growth Policy: The growth policy of 6.1% annually is expected to result in a total market of 520 million Indian passengers in 2037. The protectionist and other negative policy will hold India's growth back to 4.9% and the total market will be 400 million in 2037.

Ease of Doing Business: India is now at 100th position among 132 countries on World Bank's Ease of Doing Report. The improvement in this area will impact sustainable growth of aviation sector.

Travel and Tourism Competitiveness: India has also risen from 52nd place to 40th place in 2017 World Economic Forum's Travel and Tourism Competitiveness Index. The improvements in this area as well as in airport infrastructure will further enhance India's aviation market.

Road Ahead

India's aviation industry is largely untapped with huge growth opportunities, considering that air transport is still expensive for majority of the country's population, of which nearly 40 per cent is the upwardly mobile middle class. The industry stakeholders should engage and collaborate with policy makers to implement efficient and rational decisions that would boost India's civil aviation industry. With the right policies and relentless focus on quality, cost and passenger interest, India would be well placed to achieve its vision of becoming the third-largest aviation market by 2024.

Masala Bonds

Kerala Infrastructure Investment Fund Board (KIIFB) is going to issue masala bonds worth Rs. 5,000 crore to mobilise funds for various development works. KIIFB has appointed Standard & Poor's and Fitch Ratings for rating the masala bonds issue. The bonds will be listed in London and Singapore stock exchanges. The funds will be raised in tranches over period of 10 years.

What are Masala Bonds?

Masala Bonds are rupee-denominated borrowings issued by Indian entities in overseas markets. Masala means spices and the term was used by International Finance Corporation (IFC) to popularise the culture and cuisine of India on

foreign platforms. The objective of Masala Bonds is to fund infrastructure projects in India, fuel internal growth via borrowings and internationalise the Indian currency.

RBI norms for Masala Bonds

The Reserve Bank of India (RBI) allowed issuance of these bonds by Indian corporates as part of its fourth bi-monthly policy statement for the year 2015-16 on September 29, 2015. Masala bonds should have a minimum maturity of five years, and there is a \$750 million per year limit for borrowers which can be exceeded with the RBI approval.

Who can invest in Masala Bonds?

- Foreign investors who want to take exposure to Indian assets and are constrained from doing it directly in the Indian market or prefer to do so from their offshore locations can invest in Masala bonds.
- HDFC, NTPC and Indiabulls Housing are among Indian corporates which have raised funds via this option.
- The subscriber of these bonds can sell rupee bonds to a third party (domestic or offshore) but the proceeds from the issue can't be used for real estate activities or capital market investment. However, the proceeds from these bonds can be utilised for development of integrated township/affordable housing project or any other infrastructural development project.

How Masala Bonds came into existence?

- The concept of Masala bonds was introduced nearly five years ago by the government and International Finance Corporation (IFC) to stem the record fall in rupee due to capital flight spurred by a severe current account deficit and the tapering of quantitative easing by the US Federal Reserve.
- On June 27, 2013, RBI said current account deficit stood at a record 4.8 per cent of the GDP or \$87.8 billion for the full 2012-13 fiscal. The trade data spooked markets on the same day with the Sensex falling 590 points, rupee breaching 66 level against the dollar and 10 year government bond yields climbing to 8.5%. Interestingly, the Sensex had gained 600 points in previous three sessions. The rupee closed at a record low of 66.24 to the dollar, down 194 paise from the previous close on account of heavy dollar demand from oil importers in month-end.
- The record crash in rupee brought the UPA government into action. The government in consultation with International Finance Corporation (IFC) decided to launch rupee-denominated bonds in international markets. IFC launched the first offshore bond programme of \$1 billion in October 2013.
- From 2013 to 2014, IFC issued seven tranches of offshore rupee-denominated bonds, settled in US dollars and pegged to the rupee foreign exchange rate, for maturities ranging from three to seven years.

How Masala Bonds help in supporting the rupee?

- The bonds are directly pegged to the Indian currency. So, investors will directly take the currency risk or exchange rate risks. If the value of Indian currency falls, the foreign investor will have to bear the losses, not the issuer which is an Indian entity or a corporate. If foreign investors eagerly invest in Masala Bonds or bring money into India, this would help in supporting the rupee.
- The issuer of these bonds is shielded against the risk of currency fluctuation, typically associated with borrowing in foreign currency. Besides helping in diversifying funding sources, the costs of borrowing via masala bonds could also turn out to be lower than domestic markets.
- It will help in building up foreign investors confidence in Indian economy and currency which will strengthen the foreign investment in the country. It helps companies to tap a large number of investors as these bonds are issued in the offshore market.
- Offshore investor earns better returns by investing in Masala Bonds rather than by investing in his home country. An investor will benefit from his investment in Masala Bond if the rupee appreciates at the time of maturity.
- Currently, these bonds are listed on the London Stock Exchange.

SPARC Scheme and IMPRESS Scheme

SPARC Scheme

Union Ministry of HRD has launched Scheme for Promotion of Academic and Research Collaboration (SPARC) scheme, which aims to improve the research ecosystem of India's higher educational institutions by facilitating academic and research collaborations between Indian Institutions and the best institutions in the world.

Under the scheme 600 joint research proposals will be awarded for 2 years. The scheme will facilitate strong research collaboration between Indian research groups with the best in class faculty and renowned research groups in the leading universities of the world, in areas that are at the cutting edge of science or with direct social relevance to the mankind, specifically India.

IMPRESS scheme

Central Government has announced formal launch Impactful Policy Research in Social Sciences (IMPRESS) scheme to promote research in Social Sciences. The objective of this scheme is to identify and fund research proposals in social sciences with maximum impact on the governance and society. The government support would include a total funding of Rs.414 crore on 1500 projects for policy themes in the social sciences at the cost of Rs. 20-25 Lakh per project.

The Indian Council of Social Science and Research (ICSSR) will be the project implementing agency.

There will be calls for proposals and the process of evaluation of the proposals and selection will be completed within 90 days from the date of call for proposals. The experts for evaluation of proposals will be persons of eminence and selected using objective criteria. There will be a regular monitoring of the progress of projects using the online portal, in which the progress can be directly updated by the Project Coordinator. Also, there will be a third party evaluation of the project.

Government announces winners of Tagore Award for Cultural Harmony

Union Government (Ministry of Culture) has announced winners of Tagore Award for Cultural Harmony for year 2014, 2015 and 2016. The awardees were selected by award jury headed by Prime Minister Narendra Modi and included Chief Justice of India Justice (CJI) Ranjan Gogoi, former chief election commissioner N Gopalaswami and national vice president of BJP Vinay Sahasrabudde.

Tagore Award for Cultural Harmony

It is annual award instituted by Government of India in 2011 as part of commemoration of 150th Birth Anniversary of Gurudev Rabindranath Tagore. The award is given for cultural harmony and carries monetary amount of Rs. 1 crore, citation in scroll, plaque as well as exquisite traditional handicraft or handloom item. The award is open to all persons regardless of nationality, race, language, caste, creed or sex.

India Building World's Highest Railway Line

- India railways announced its plan to link New Delhi and Ladakh by means of a railway line that will run along the India-China Border. The proposed Bilaspur-Manali-Leh Line would be the world's highest railway line once launched.
- The projected cost to construct the 465 km line will be Rs 83,360 crore.
- The railway line will be the world's highest at 5,360 metres above mean sea level which is comparable to China's Quinghai-Tibet Railway Line at 2,000 metres.
- The project comprise of 74 tunnels, 124 major bridges, 396 minor bridges and 30 stations on the line.
- Keylong station on the route will be constructed inside a tunnel at the height of 3000 metres which is a first in India.
- Notably, more than half the train route would be covered through tunnels, the longest of which is 27 km. Whole length of the tunnels would be 244 km.
- The route will link crucial locations between Bilaspur and Leh such as Sundernagar, Mandi, Manali, Keylong, Koksar, Darcha, Upshi and Karu as well as several other towns of Himachal Pradesh and Jammu & Kashmir.

Indian Railways' first engine-less train

Made-in-India, estimated cost of the engine-less train is Rs 100 crore. The trial run of Train 18 will begin on October 29. Train 18 can run at 160 kmph speed and has swanky interiors

- Developed by Chennai-based Integral Coach Factory
- The self-propelled train
- Train 18 has diffused lighting, automatic doors and footsteps beside GPS-based Passenger Information System.
- The train will be equipped with modular toilets with a bio-vacuum system and there will be accessible toilets for persons with disability.

Ban of BS-IV vehicles

The Supreme Court said that no Bharat Stage-IV (BS-IV) vehicle shall be sold across the country with effect from April 1, 2020.

Key Facts:

- The BS-VI emission norm would come into force from April 1, 2020 across the country.
- BS-IV norms have been enforced across the country since April 2017.

About BS-IV

- Introduced in 2000, the Bharat norms are emission control standards that are based on the European regulations (Euro norms).
- They set limits for release of air pollutants from equipment using internal combustion engines, including vehicles.
- The BS IV norms were introduced in 13 cities apart from the National Capital Region from April 2010 onwards. The entire nation was to be covered under BS IV by April 1, 2017.
- BS IV norms stipulate only 50 parts per million sulphur compared with up to 350 parts per million under BS III. Also, hydrocarbon, nitrogen oxide and particulate matter emissions are lower under BS IV.

BS-VI emission norms

- BS VI is in lines with Euro VI norm already adopted in European countries.
- The new emission norm will also address one major drawback in the Euro VI norm that allows emission of higher PM (particulate matter) in diesel engines.
- Major benefits of Bharat Stage VI norms
- NOx emission will come down by approximately 25% for the petrol engine and 68% for the diesel engines.

- The PM emission will see a substantial decrease of 80% in diesel engines.
- On board Diagnostics (OBD) will become mandatory for every vehicle and it will help monitor the pollution caused by the vehicle in real time.
- RDE (Real Driving Emission) will be introduced for the first time that will measure the emission in real-world conditions and not just under test conditions.
- Bharat Stage VI norms will also change the way particulate matter is measured. It will now be measured by number standard instead of mass standard thereby, regulating the fine particulate matter as well.

MoU amongst BRICS nations regarding cooperation in the social and labour sphere

The Union Cabinet has given its ex-post facto approval for the Memorandum of Understanding (MoU) among Brazil, Russian Federation, India, China, South Africa, regarding Cooperation in the Social and Labour Sphere. The MoU was signed on 3rd August, 2018 during BRICS Labour and Employment Ministers (LEM) Meeting.

As per the MoU:

The parties including India have agreed to cooperate and hold mutual events in the prominent areas viz. labour legislation and enforcement, protection of workers' rights with focus on vulnerable groups, Employment and labour market policies, Professional education, skills and training and Social protection.

The member countries may utilize the BRICS Network of Labour Research Institutes and BRICS Social Security Cooperation Framework for cooperation on Social Security and other labour issues.

However, the Memorandum is not an International Treaty and does not create rights and obligations for the parties governed by international law.

Significance and major Impacts:

The MoU provides a mechanism for cooperation, collaboration and maximum synergy amongst BRICS member countries with the common objective of inclusive growth and shared prosperity in the new industrial revolution.

This would facilitate member countries to share knowledge and also implement joint programmes on matter of Labour and Employment, Social Security and Social dialogue.

This would also ensure networking of international Training Centre of International Labour Organisation (ILO) with the BRICS Network of Labour Institutes which includes V.V. Giri National Labour Institute of India. This network would specifically focus on the theme of youth employment and research on new forms of employment. This network will also explore new learning technologies, including virtual network to deepen cooperation, exchange of information and capacity building.

The BRICS Social Security cooperation framework will deepen social security cooperation among BRICS nations and would facilitate cooperation for improvement of social security systems and social security agreements among member countries.

INTERNATIONAL

STAPCOR – 2018: Coral Reefs

International Conference on Status and Protection of Coral Reefs (STAPCOR – 2018) was held at Bangaram Island, Union Territory of Lakshadweep from 22nd to 24th October, 2018. The theme of the conference was "Reef for Life". It was inaugurated by Union Minister of Environment, Forest and Climate Change Dr. Harsh Vardhan.

It was jointly organized by Department of Environment and Forest, Union Territory of Lakshadweep Administration with the technical support of Zoological Survey of India (ZSI) and in association with Ministry of Environment, Forest and Climate Change (MoEFCC), International Union for Conservation of Nature (IUCN), Environmental Information System (ENVIS) in consonance with declaration of year 2018 as 3rd decadal International year of Reefs.

International Coral Reef Initiative (ICRI) has declared year 2018 as International Year of the Reef (IYOR 2018). It is designed to raise awareness about the threats to coral reefs and the associated ecosystem.

Coral Reefs

- In tropical seas, many types of coral animals and marine organisms such as coral polyps, calcareous algae, shell-forming creatures and lime-secreting plants live in large colonies. Though they are very tiny creatures, their ability to secrete calcium carbonate within their tiny cells has given rise to a particular type of marine landform. The landforms are popularly known as coral reefs. Coral reefs have numerous species of many forms, colours, and shapes.
- Under favourable conditions, the colony of corals grows in profusion just below the water level. Among the numerous organism that forms the part of the coral habitat, the polyps are the abundant species. Each polyp resides in a tiny cup of coral made of calcium carbonate and when a polyp dies the cup cement together to form the reef structure.
- There are also non-reef building species such as the 'precious corals' of the Pacific Ocean and the 'red coral' of the Mediterranean Sea which may survive in the colder and even the deeper waters. As a rule, they thrive well only in the warmer tropical seas.

- Coral belongs to class Anthozoa in animal phylum Cnidaria, which includes sea anemones and jellyfish. Corals are often called “rainforests of the sea” as they form some of Earth’s most diverse ecosystems. They occupy less than 0.1% of world’s ocean area, but provide a home for at least 25% of all marine species.
- There are two major types of corals: hard corals and soft corals, such as sea fans and gorgonians. Only hard corals build reefs. While the majority of coral reefs are found in tropical and sub-tropical waters, there are also deep water corals in colder regions. According to the United Nations Environment Programme, there are more cold-water coral reefs worldwide than tropical reefs. The largest cold-water coral reef is the Rost Reef off Norway.

Conditions for Growth of Coral Reefs

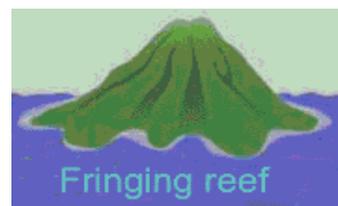
- The coral and the associated organisms and algae, which are the most common reef builders are confined to the tropical belt. The water temperature must not fall below 20°C and not exceed 35°C; the most favourable is 23°C to 25°C.
- Corals can live only in saline water, and for their proper growth the average salinity should be between 27 to 40‰.
- For the growth of coral the depth of the water should not exceed 200m. Most vigorous growth is confined to shallow water less than 50 m. deep.
- Corals also require sediment-free, clean water, which is disturbed by ocean waves and currents is beneficial for the corals.
- In the open seas it is necessary to have platforms which may act as foundations for the corals. These platforms should not be deeper than 90 m.

Classification of Coral Reefs

The coral reefs are classified on the basis of nature shape and mode of occurrence into three categories which are discussed below:

(I) Fringing Reef

Coral reefs that develop along the continental margins or along the islands are called fringing reefs. The seaward slope is steep and vertical while the landward slope is gentle. Such reefs are found near Rameshwaram in the Gulf of Mannar. Occasionally the fringing reef is separated from the shore by a shallow lagoon known as “**Boat Channel**” as found in Madagascar and Red Sea. For Example: **South Florida reef, Mehetia Island, Sakau Island in New Hebrides.**



(II) Barrier Reef

It is the largest, most extensive, highest and widest reef among all types of coral reefs. It is formed off the coastal platforms and parallel to them. There is an extensive but shallow lagoon between the coastal land and the barrier reef. Generally barrier reefs encircle islands in an irregular and broken ring. The Great Barrier Reef of Australia is the largest barrier reef in the world.



(III) Atoll

A ring of narrow growing chorus of horse shoe shape and crowned with palm trees is called an atoll. It is generally found around an island or in an elliptical form on a submarine platform. There is a lagoon in the middle of a coral ring. They are more common in the Pacific Ocean. The circular ring is broken in a few places to allow the free flow of water. The depth of the lagoon is only a few metres with sand and limestone debris at the bottom. Example of Atolls: Fiji Atoll, Trent Atoll of W-Carolinas, Suvadivo in Maldives, Funafootis Atoll of Ellice.



Importance of Coral Reefs

1. It is a source of food for millions of marine species.
2. It protects coastlines from storms and erosion.
3. It is a source of new medicines.
4. It assists in carbon and nitrogen fixing as well as helping with nutrient recycling.

Coral Reefs are the most diverse ecosystems on the planet and also considered the medicine cabinets of the 21st century because several medicines are developed to treat cancer, arthritis, human bacterial infections, Alzheimer’s disease, heart disease, viruses, and other diseases. Hence, it is very necessary to protect the coral bleaching which is happening due to environmental degradation.

Threats: They are under threat from excess nutrients (nitrogen and phosphorus), rising temperatures due to global warming, oceanic acidification, sunscreen use overuse, overfishing (eg. from blast fishing, cyanide fishing, spearfishing on scuba), and harmful land-use practices, including runoff and seeps (e.g., from injection wells and cesspools).

2nd International Conference on Primary Health Care, Kazakhstan

- The second conference on PHC inaugurated on 25 October 2018 in Astana, Kazakhstan. The conference is a collective initiative of Government of Kazakhstan, WHO and UNICEF.
- The conference took place in the memory of 40 years of Alma Ata Declaration on Primary health care. (Alma Ata Declaration was adopted at international conference on primary health care held in Kazakhstan in 1978).
- The conference will be held in the palace of Independence in Astana.
- The main aim is to achieve Universal Health Coverage and Sustainable Development Goals by 2030.
- Astana declaration: Not just the health but affordable health for all.
- The theme of the conference is : “The future of Primary Health Care”
- In India, the recent initiative of AAYUSHMAN BHARAT is a step in improving primary health care with establishing health and wellness centers all around the country and providing health insurance. Community health workers and ASHA workers are also involved in the task of improving primary health care of the country.

India wins Commonwealth Association for Public Administration and Management Award, 2018

India has won Commonwealth Association for Public Administration and Management (CAPAM) Award, 2018. The award was announced at Annual General Members Meet held at Georgetown, Guyana. Department of Administrative Reforms and Public Grievances (DARPG) under Union Ministry of Personnel, Public Grievances and Pensions is institutional member of Commonwealth Association for Public Administration and Management (CAPAM).

CAPAM is non-profit association representing international network of over 1100 senior public servants, heads of government, leading academics and researchers located in over 50 different countries across the Commonwealth. It is guided by international leaders who believe in value of networking, knowledge exchange and promotion of good governance for betterment of citizens in Commonwealth countries.

Mahinda Rajapaksha sworn in as Prime Minister of Sri Lanka

Sri Lankan President Maithripala Sirisena has sacked Ranil Wickremesinghe, incumbent prime minister of Sri Lanka and appointed former President Mahinda Rajapaksha as new Prime Minister.

In recent times, the politics of Sri Lanka is in turmoil because of the tension between President Sirisena and PM Vikramasinghe. In a sudden move, the United People’s Freedom Alliance (UPFA), the Political Front of President Mittipala Sirisena, withdrew support from the coalition government with Ranil Wickremesinghe’s Party United National Party (UNP). This coalition government was formed in 2015, when Sirisena became President by the support of Ranil Wickremesinghe.

Winners of United Nations Human Rights Prize – 2018

The United Nations Prize in the Field of Human Rights (UN Human Rights Prize) was announced recently by María Fernanda Espinosa Garcés, President of the 73rd Session of United Nations General Assembly. The winners of 2018 award are:

1. Asma Jahangir – Pakistan’s late human rights activist. She was an advocate from Pakistan, known for her persistent advocating for women’s rights and discrimination against minorities. She was first woman to serve as president of the Supreme Court Bar Association of Pakistan. She was critical of Pakistan’s military, intelligence and armed groups.
2. Rebeca Gyumi – Rebecca Gyumi is a Tanzanian advocate and founder of the Msichana Initiative in Tanzania. This is an NGO which advocates for girls’ right to education. In 2016, Gyumi had won a landmark case on child marriages after petitioning against the 1971 Tanzania Marriage Act which allowed girls as young as 14 to get married.
3. Joenia Wapichana – Joenia Wapichana is an indigenous lawyer from northern Brazil, and she became first indigenous woman to be elected to the Congress.
4. Front Line Defenders – Front Line Defenders is an Ireland based charity that provides support to human rights defenders having lives and health at risk through advocacy, grants, security and training. It was founded in 2001 in Ireland’s capital, Dublin.

So far, only one Indian personality – Baba Amte has been awarded United Nations Human Rights Prize. Baba Amte was given this prize in 1988.