



**ARUL IAS ACADEMY**

**UPSC**  
**ENVIRONMENT PART - I**





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## Agenda 21 (United States-1992)



### Introduction

- Agenda 21 is a non-binding action plan of the United Nations with regard to sustainable development. It is a product of the Earth Summit (UN Conference on Environment and Development) held in Rio de Janeiro, Brazil, in 1992. It is an action agenda for the UN, other multilateral organizations, and individual governments around the world that can be executed at local, national, and global levels. One major objective of the Agenda 21 initiative is that every local government should draw its own local Agenda 21. Its aim initially was to achieve global sustainable development by 2000, with the “21” in Agenda 21 referring to the original target of the 21st century.

### Agenda 21 Is Grouped Into 4 Sections:

- **Section I:** Social and Economic Dimensions is directed toward combating poverty, especially in developing countries, changing consumption patterns, promoting health, achieving a more sustainable population, and sustainable settlement in decision making.
- **Section II:** Conservation and Management of Resources for Development includes atmospheric protection, combating deforestation, protecting fragile environments, conservation of biological diversity (biodiversity), control of pollution and the management of biotechnology, and radioactive wastes.
- **Section III:** Strengthening the Role of Major Groups includes the roles of children and youth, women, NGOs, local authorities, business and industry, and workers; and strengthening the role of indigenous peoples, their communities, and farmers.
- **Section IV:** Means of Implementation includes science, technology transfer, education, international institutions, and financial mechanisms.

### History of AGENDA 21

- The full text of Agenda 21 was made public at the UN Conference on Environment and Development (Earth Summit), held in Rio de Janeiro on 13 June 1992, where 178 governments voted to adopt the program. The final text was the result of drafting, consultation, and negotiation, beginning in 1989 and culminating at the two-week conference.



### Development and Evolution

#### Rio+5 (1997)

- In 1997, the UN General Assembly held a special session to appraise the status of Agenda 21 (Rio +5). The Assembly recognized progress as “uneven” and identified key trends, including increasing globalization, widening inequalities in income, and continued deterioration of the global environment. A new General Assembly Resolution (S-19/2) promised further action.

#### Rio+10 (2002)

- Main article: World Summit on Sustainable Development
- The Johannesburg Plan of Implementation, agreed to at the World Summit on Sustainable Development (Earth Summit 2002), affirmed UN commitment to “full implementation” of Agenda 21, alongside achievement of the Millennium Development Goals and other international agreements.

#### Agenda 21 for culture (2002)

- Main article: Agenda 21 for culture
- The first World Public Meeting on Culture, held in Porto Alegre, Brazil, in 2002, came up with the idea to establish guidelines for local cultural policies, something comparable to what Agenda 21 was for the environment. They are to be included in various subsections of Agenda 21 and will be carried out through a wide range of sub-programs beginning with G8 countries.

#### Rio+20 (2012)

- Main article: United Nations Conference on Sustainable Development
- In 2012, at the United Nations Conference on Sustainable Development the attending members reaffirmed their commitment to Agenda 21 in their outcome document called “The Future We Want”. Leaders from 180 nations participated.

#### Sustainable Development Summit (2015)

- Agenda 2030, also known as the Sustainable Development Goals, was a set of goals decided upon at the UN Sustainable Development Summit in 2015.
- It takes all of the goals set by Agenda 21 and re-asserts them as the basis for sustainable development, saying, “We reaffirm all the principles of the Rio Declaration on Environment and Development...” Adding onto those goals from the original Rio document, a total of 17 goals have been agreed on, revolving around the same concepts of Agenda 21; people, planet, prosperity, peace, and partnership.



### India Part in AGENDA 21

- India realizes the vital need for international cooperation - bilateral, multilateral, and regional initiatives - in implementing Agenda 21.
- This information was provided by the government of India to the 5th and 8th Sessions of the United Nations Commission on Sustainable Development.

### AGENDA 2030

- Countries officially adopted the historic new agenda, entitled “Transforming Our World: The 2030 Agenda for Sustainable Development,” which was agreed upon by the 193 Member States of the United Nations, and includes 17 Sustainable Development Goals (SDGs).

### The 17 Sustainable Development Goals (SDGs) To Transform Our World:

- GOAL 1: No Poverty
- GOAL 2: Zero Hunger
- GOAL 3: Good Health and Well-being
- GOAL 4: Quality Education
- GOAL 5: Gender Equality
- GOAL 6: Clean Water and Sanitation
- GOAL 7: Affordable and Clean Energy
- GOAL 8: Decent Work and Economic Growth
- GOAL 9: Industry, Innovation and Infrastructure
- GOAL 10: Reduced Inequality
- GOAL 11: Sustainable Cities and Communities
- GOAL 12: Responsible Consumption and Production
- GOAL 13: Climate Action
- GOAL 14: Life Below Water
- GOAL 15: Life on Land
- GOAL 16: Peace and Justice Strong Institutions
- GOAL 17: Partnerships to achieve the Goal

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## Basel Convention



### **BASEL CONVENTION**

*the world environmental  
agreement on wastes*

- Nations agreed to add plastic to the Basel Convention, a treaty that regulates movement of hazardous materials from one country to another, in order to combat the dangerous effects of plastic pollution around the world.

### **Amending the Basel Convention**

- The 14th Conference of the Parties to the Basel Convention (COP-14) was held in Geneva, Switzerland.
- Parties to the Basel Convention have reached agreement on a legally-binding, globally-reaching mechanism for managing plastic waste.
- The Geneva meeting amended the 1989 Basel Convention on the control of hazardous wastes to include plastic waste in a legally-binding framework.
- The new amendment would empower developing countries to refuse “dumping plastic waste” by others.
- The resolution means contaminated and most mixes of plastic wastes will require prior consent from receiving countries before they are traded, with the exceptions of mixes of PE, PP and PET.
- For far too long, developed countries like the U.S. and Canada have been exporting their mixed toxic plastic wastes to developing Asian countries claiming it would be recycled in the receiving country.

### **What is Basel Convention?**

- The Basel Convention stands for the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.
- It is an international treaty that was designed to reduce the movements of hazardous waste between nations, and specifically to prevent transfer of hazardous waste from developed to less developed countries (LDCs).
- It aims to assist LDCs in environmentally sound management of the hazardous and other wastes they generate.
- The Convention was opened for signature on 22 March 1989, and entered into force on 5 May 1992.
- As of October 2018, 186 states and the EU are parties to the Convention. Haiti and the United States have signed the Convention but not ratified it.



- It does not, however, address the movement of radioactive waste.
- The Convention is also intended to minimize the amount and toxicity of wastes generated, to ensure their environmentally sound management.

### **Why such move?**

- Instead, much of this contaminated mixed waste cannot be recycled and is instead dumped or burned, or finds its way into the ocean.
- Plastic waste pollution has reached “epidemic proportions” with an estimated 100 million tonnes of plastic now found in the oceans.
- Even though the U.S. and a few others have not signed the accord, they cannot ship plastic waste to countries that are on board with the deal.
- Much of the contaminated mixed waste cannot be recycled and is instead dumped or burned.

### **Ban on two chemicals**

- The meeting also undertook to eliminate two toxic chemical groups – Dicofol and Perfluorooctanoic Acid, plus related compounds.
- The latter has been used in a wide variety of industrial and domestic applications, including non-stick cookware and food processing equipment, as well as carpets, paper and paints.

### **Involvement of India**

- Recently the 4th meeting of the Conference of the Parties (COP) to Basel Convention was held.
- The theme of the 2019 meeting was- “**Clean Planet, Healthy People: Sound Management of Chemicals and Waste**”.
- An Indian delegation of Ministry of Environment, Forest and Climate Change (MoEFCC) and along with other ministers participated in the joint meeting and set a tone at COP.
- In Basel Convention on Control of Transboundary Movement of Hazardous Wastes and their Disposal, two important issues were mainly discussed and decided i.e. technical guidelines on e-waste and inclusion of plastic waste in Prior Informed Consent (PIC) procedure.

**Biosphere Reserves of India**



**World Network of Biosphere Reserves in India (Recognized by UNESCO)**

Name	States/ UT	Year
Nilgiri Biosphere Reserve	Tamil Nadu, Kerala and Karnataka	2000
Gulf of Mannar Biosphere Reserve	Tamil Nadu	2001
Sundarbans Biosphere Reserve	West Bengal	2001
Nanda Devi Biosphere Reserve	Uttarakhand	2004
Nokrek Biosphere Reserve	Meghalaya	2009
Pachmarhi Biosphere Reserve	Madhya Pradesh	2009
Simlipal Biosphere Reserve	Odisha	2009
Great Nicobar Biosphere Reserve	Andaman & Nicobar Islands	2013
Achanakmar-Amarkantak Biosphere Reserve	Chhattisgarh, Madhya Pradesh	2012
Agasthyamalai Biosphere Reserve	Kerala and Tamil Nadu	2016
Khangchendzonga National Park	Sikkim	2018
Panna National Park	Madhya Pradesh	2020



### List of biosphere reserves in India

BIOSPHERE RESERVES OF INDIA					
NO	YEAR	NAME	LOCATION	TYPE	KEY FAUNA
1.	1986	Nilgiri Biosphere Reserve	<b>State:</b> Tamil Nadu, Kerala and Karnataka <b>Area (km<sup>2</sup>):</b> 5520	Western Ghats	Nilgiri tahr, tiger, lion-tailed macaque
2.	1988	Nanda Devi Biosphere Reserve	<b>State:</b> Uttarakhand <b>Area (km<sup>2</sup>):</b> 5860	Western Himalayas	Snow leopard, Himalayan black bear
3.	1989	Gulf of Mannar	<b>State:</b> Tamil Nadu <b>Area (km<sup>2</sup>):</b> 10500	Coasts	Dugong
4.	1988	Nokrek	<b>State:</b> Meghalaya <b>Area (km<sup>2</sup>):</b> 820.00	Eastern hills	Red panda
5.	1989	Sundarbans	<b>State:</b> West Bengal <b>Area (km<sup>2</sup>):</b> 9630	Gangetic Delta	Royal Bengal tiger
6.	1989	Manas	<b>State:</b> Assam <b>Area (km<sup>2</sup>):</b> 2837	Eastern Hills	Asiatic elephant, tiger, Assam roofed turtle, hispid hare, golden langur, pygmy hog
7.	1994	Simlipal	<b>State:</b> Odisha <b>Area (km<sup>2</sup>):</b> 4374	Deccan Peninsula	Gaur, royal Bengal tiger, Asian elephant
8.	1998	Dihang-Dibang	<b>State:</b> Arunachal Pradesh <b>Area (km<sup>2</sup>):</b> 5112	Eastern Himalaya	Mishmi takin, musk deer
9.	1999	Pachmarhi Biosphere Reserve	<b>State:</b> Madhya Pradesh <b>Area (km<sup>2</sup>):</b> 4981.72	Areas of Hoshangabad, Betul, and Chhindwara Districts	Giant squirrel, flying squirrel



BIOSPHERE RESERVES OF INDIA					
NO	YEAR	NAME	LOCATION	TYPE	KEY FAUNA
10.	2005	Achanakmar-Amarkantak Biosphere Reserve	<b>State:</b> Madhya Pradesh, Chhattisgarh <b>Area (km<sup>2</sup>):</b> 3835	Maikala Hills	Four-horned antelope, Indian wild dog, sarus crane, white-rumped vulture, sacred grove bush frog
11.	2008	Great Rann of Kutch	<b>State:</b> Gujarat <b>Area (km<sup>2</sup>):</b> 12454	Desert	Indian wild ass
12.	2009	Cold Desert	<b>State:</b> Himachal Pradesh <b>Area (km<sup>2</sup>):</b> 7770	Western Himalayas	Snow leopard
13.	2000	Khangchendzonga	<b>State:</b> Sikkim <b>Area (km<sup>2</sup>):</b> 2620	East Himalayas	Snow leopard, red panda
14.	2001	Agasthyamalai Biosphere Reserve	<b>State:</b> Kerala, Tamil Nadu <b>Area (km<sup>2</sup>):</b> 3500.08	Western Ghats	Nilgiri tahr, Asian elephant
15.	1989	Great Nicobar	<b>State:</b> Andaman and Nicobar Islands <b>Area (km<sup>2</sup>):</b> 885	Islands	Saltwater crocodile
16.	1997	Dibru-Saikhowa	<b>State:</b> Assam <b>Area (km<sup>2</sup>):</b> 765	Eastern Hills	White-winged wood duck, water buffalo, black-breasted parrotbill, tiger, capped langur
17.	2010	Seshachalam Hills	<b>State:</b> Andhra Pradesh <b>Area (km<sup>2</sup>):</b> 4755.997	Eastern Hills	Slender loris
18.	2011	Panna	<b>State:</b> Madhya Pradesh <b>Area (km<sup>2</sup>):</b> 542.67	Vindhya mountain range in the northern part of Madhya Pradesh.	Tiger, Sambhar and Sloth bear, Chital, Chinkara

## Biosphere Reserves of Tamilnadu

### World Network of Biosphere Reserves in Tamil Nadu (Recognized by UNESCO)

No	Name	States/ UT	Year
1	Nilgiri Biosphere Reserve	Tamil Nadu, Kerala and Karnataka	2000
2	Gulf of Mannar Biosphere Reserve	Tamil Nadu	2001
3	Agasthyamalai Biosphere Reserve	Kerala and Tamil Nadu	2016

### List of biosphere reserves in Tamil Nadu

Biosphere reserves of India				
Year	Name	Location	Type	Key fauna
1986	Nilgiri Biosphere Reserve	<b>State:</b> Tamil Nadu, Kerala and Karnataka <b>Area (km<sup>2</sup>):</b> 5520	Western Ghats	Nilgiri tahr, tiger, lion-tailed macaque
1989	Gulf of Mannar	<b>State:</b> Tamil Nadu <b>Area (km<sup>2</sup>):</b> 10500	Coasts	Dugong
2001	Agasthyamalai Biosphere Reserve	<b>State:</b> Kerala, Tamil Nadu <b>Area (km<sup>2</sup>):</b> 3500.08	Western Ghats	Nilgiri tahr, Asian elephant

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## **World Commission on Environment and Development (Brundtland Commission - 1987)**



Governmental & Military

### **WCED**

means

**World Commission On  
Environment And Development  
(Brundtland)**

#### **WCED Introduction**

- World Commission on Environment and Development, 1987 The World Commission on Environment and Development (WCED), also known as the Brundtland Commission after its chairperson Gro Harlem Brundtland, helped chalk out the strategies for environmental conservation and sustainable development.
- Its final report titled Our Common Future, published in 1987 underscores the interdependence of environmental protection with other factors like economic development and energy production and have become the lynchpin of the international environmental law until now.
- The idea of sustainable development received the first-ever official definition under this initiative.

#### **Brundtland Commission Introduction**

- The Brundtland Commission, also known as the World Commission on Environment and Development (WCED), disbanded in 1987. In the United Nations, it is also called the UN Special Commission on the Environment.
- Gro Harlem Brundtland was the former Prime Minister of Norway and was chosen due to her strong background in the sciences and public health. The Brundtland Commission officially dissolved in December 1987 after releasing Our Common Future, also known as the Brundtland Report, in October 1987.

#### **History**

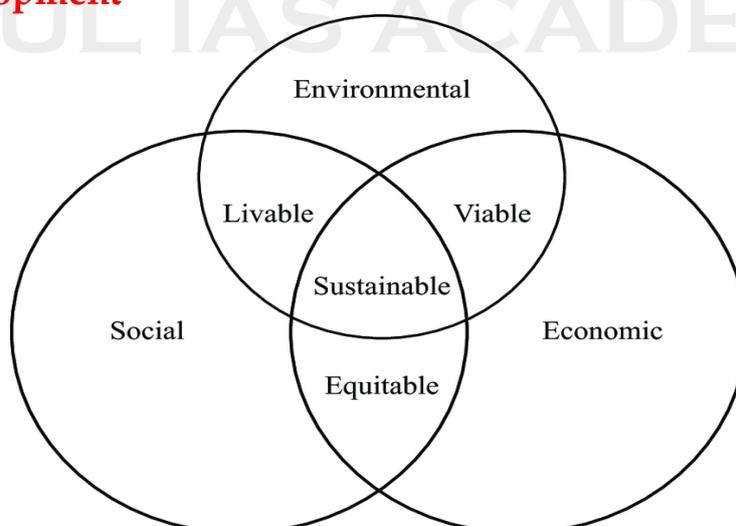
- The aim of the Brundtland Commission was to help direct the nations of the world towards the goal of sustainable development. It operated from 1984 to 1987. (WCED)The commission published its results in the Brundtland report in 1987. Thereafter, sustainable development became an important concept in the vocabulary of politicians, practitioners, and planners (WCED, 1987; Burton, 1987).

- The report by the Brundtland Commission developed the most widely used definition of sustainable development as “development which meets the needs of current generations without compromising the ability of future generations to meet their own needs” (WCED, 1987).

### Resolution Establishing of the Commission

- Suggests that the Special Commission, when established, should focus mainly on the following terms of reference for its work:
- To propose long-term environmental strategies for achieving sustainable development to the year 2000 and beyond;
- To recommend ways in which concern for the environment may be translated into greater co-operation among developing countries and between countries at different stages of economic and social development and lead to the achievement of common and mutually supportive objectives which take account of the interrelationships between people, resources, environment and development;
- To consider ways and means by which the international community can deal more effectively with environmental concerns, in the light of the other recommendations in its report;
- To help to define shared perceptions of long-term environmental issues and of the appropriate efforts needed to deal successfully with the problems of protecting and enhancing the environment, a long-term agenda for action during the coming decades, and aspirational goals for the world community, taking into account the relevant resolutions of the session of a special character of the Governing Council in 1982.

### Sustainable Development



- The Brundtland Commission draws upon several notions in its definition of sustainable development, which is the most frequently cited definition of the concept to date.



- For sustainable development to be achieved, it is crucial to harmonize three core elements: economic growth, social aspects and environmental protection. These elements are interconnected and are crucial for the wellbeing of individuals and societies. To achieve true sustainability, we need to balance the economic, social and environmental factors of sustainability in equal harmony.

### **Economic Growth**

- Economic Growth is the pillar that most groups focus on when attempting to attain more sustainable efforts and development. In trying to build their economies, many countries focus their efforts on resource extraction, which leads to unsustainable efforts for environmental protection as well as economic growth sustainability. While the Commission was able to help to change the association between economic growth and resource extraction, the total worldwide consumption of resources is projected to increase in the future.
- So much of the natural world has already been converted into human use that the focus cannot simply remain on economic growth and omit the ever-growing problem of environmental sustainability.
- Agenda 21 reinforces the importance of finding ways to generate economic growth without hurting the environment. Through various trade negotiations such as improving access to markets for exports of developing countries, Agenda 21 looks to increase economic growth sustainability in countries that need it most.

### **Environmental Protection**

- Environmental Protection has become more important to government and businesses over the last 20 years, leading to great improvements in the number of people willing to invest in green technologies.
- For the second year in a row in 2010, the United States and Europe added more power capacity from renewable sources such as wind and solar.
- In 2011 the efforts continue with 45 new wind energy projects beginning in 25 different states.
- The focus on environmental protection has transpired globally as well, including a great deal of investment in renewable energy power capacity.
- Eco-city development occurring around the world helps to develop and implement water conservation, smart grids with renewable energy sources, LED street lights and energy efficient building.
- The consumption gap remains, consisting of the fact that “roughly 80 percent of the natural resources used each year are consumed by about 20 percent of the world’s population”.



- This level is striking and still needs to be addressed now and throughout the future.

### Social Equality

- The Social Equality and Equity as pillars of sustainable development focus on the social well-being of people.
- The growing gap between incomes of rich and poor is evident throughout the world with the incomes of the richer households increasing relative to the incomes of middle - or lower-class households.
- This is attributed partly to the land distribution patterns in rural areas where majority live from land. Global inequality has been declining, but the world is still extremely unequal, with the richest 1% of the world's population owning 40% of the world's wealth and the poorest 50% owning around 1%.
- The Brundtland Commission made a significant impact trying to link environment and development and thus, go away from the idea of environmental protection whereby some scholars saw environment as something of its sake.
- The Commission has thus reduced the number of people living on less than a dollar a day to just half of what it used to be, as many can approach the environment and use it.
- These achievements can also be attributed to economic growth in China and India.



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TNPSC PRELIMS (2021-2022)	20+5	3675
TNPSC GROUP I MAINS	27	540
TNPSC GROUP II MAINS	40	-

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## Brunnen Conference (Swiss League)



- In 1947, the **Swiss League for the Protection of Nature** organised an international conference on the **protection of nature** in Brunnen. It resulted in the creation of the **International Union for Conservation of Nature** in 1948.
- **Pro Natura**, founded in 1909 in Basel as **Swiss League for the Protection of Nature**, is the oldest environmental organisation in Switzerland.
- Pro Natura takes care of about 700 nature reserves of various sizes throughout Switzerland (250 square kilometres, of which 60 square kilometres are owned by Pro Natura).

### History

- In 1909, representatives of the Swiss Society of Natural Sciences founded the Swiss League for the Protection of Nature (German: *Schweizerischen Bund für Naturschutz*, French: *Ligue suisse pour la protection de la nature*) to fund and create the **Swiss National Park** (inaugurated in 1914). In 2000, Pro Natura launched a campaign supporting the creation of a second Swiss National Park.
- In 1947, the Swiss League for the Protection of Nature organised an international conference on the protection of nature in Brunnen. It resulted in the creation of the **International Union for Conservation of Nature in 1948**.



- Between 1958 and 1963, the Swiss League for the Protection of Nature, together with the Swiss Heritage Society and the Swiss Alpine Club, established an inventory of landscapes and natural sites of national importance. Based on it, the Swiss Federal Council published the *Federal Inventory of Landscapes and Natural Monuments* in 1977.
- Since 1995, Pro Natura has been a member of the global environmental network **Friends of the Earth**. In 1997, the Swiss League for the Protection of Nature adopted the name Pro Natura.

### Objectives

- The four main objectives of Pro Natura are:
  - Enhance biodiversity
  - Ensure the landscape identities
  - Conserving natural resources
  - Increase the relationship with nature
- They reach their objectives through:
  - Protection of nature at the political level (campaigns, federal popular initiatives, etc.)
  - Nature protection in the field (nature reserves)
  - Environmental education (nature centres, activities for schools, etc.)
  - Communication (*Pro Natura magazine*)

### Controversies

- In 2020, 3 women left the Vaud division of Pro Natura, after having been subjected in 2018 and 2019 to behaviors cited as humiliating and demeaning by the executive secretary Michel Bongard. Although relieved of certain managerial functions, Bongard remains in office.
- According to the president of the Vaud chapter, Serge Fischer, who mentioned the possibility of filing a complaint because a confidentiality agreement had been established with the victims, the problem is limited to managerial errors.
- Despite the introduction of a charter for equality in December 2019, women remain a significant minority at the head of the organization.

### Other

- Pro Natura also draws public attention to grievances.
- The foundation started a media campaign in November 2014 calling for action by the federal authorities regarding excess inventory in the structures for breeding livestock and the eutrophication of fields, which has increased massively since the 1990s, particularly in the case of phosphorus.



## CITES

- **The Convention on International Trade in Endangered Species** of Wild Fauna and Flora (CITES) is an **international agreement** to which States and regional economic integration organizations adhere voluntarily.
- **CITES was drafted as a result of a resolution adopted in 1963** at a meeting of members of the International Union for Conservation of Nature (IUCN).
  - The IUCN is a membership Union uniquely composed of both government and civil society organisations.
  - It provides public, private and non-governmental organisations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together.
- **CITES entered into force in July 1975.** Currently there are 183 Parties (include countries or regional economic integration organizations).
- **Aim:** Ensure that **international trade** in specimens of wild animals and plants does **not threaten their survival**.
- **The CITES Secretariat** is administered by UNEP (The United Nations Environment Programme) and is **located at Geneva, Switzerland**.
  - It plays a coordinating, advisory and servicing role in the **working of the Convention** (CITES).
- The Conference of the Parties to CITES, is the **supreme decision-making body** of the Convention and comprises all its Parties.
- **The last CoP (17<sup>th</sup>)** was held at Johannesburg (South Africa), in 2016. India hosted CoP 3<sup>rd</sup> in 1981.
- Although CITES is **legally binding on the Parties**, it does not take **the place of national laws**.
  - Rather, **it provides a framework to be respected by each Party**, which has to **adopt its own domestic legislation** to ensure that CITES is implemented at the national level.

### Function

- The CITES works by subjecting international trade in specimens of selected species to certain controls.
- **All import, export, re-export and introduction** from the sea of **species** covered by the Convention has to be authorized **through a licensing system**.
- **Each Party** to the Convention must **designate** one or more **Management Authorities** in charge of **administering that licensing system** and one or more **Scientific Authorities** to **advise** them on the effects of trade on the status of the species.
- **Appendices I, II and III to the Convention** are **lists of species** afforded different levels or types of **protection from over-exploitation**.

### Appendix I

- It lists species that are the **most endangered** among CITES-listed animals and plants.
- Examples include **gorillas, sea turtles, most lady slipper orchids, and giant pandas**. Currently **931 species** are listed.
- They are threatened with extinction and CITES **prohibits international trade** in specimens of these species **except when the purpose of the import is not commercial**, for instance for scientific research.
- In these exceptional cases, trade may take place provided it is authorized by the granting of both an import permit and an export permit (or re-export certificate).

### Appendix II

- It lists species that are **not necessarily now threatened with extinction but that may become so unless trade is closely controlled**.
- **Most CITES species are listed in this Appendix**, including American ginseng, paddlefish, lions, American alligators, mahogany and many corals. Currently **34,419 species** are listed.
- It also includes so-called “**look-alike species**”, i.e. species whose specimens in trade look like those of species listed for conservation reasons.
- **International trade** in specimens of Appendix-II species may be **authorized by the granting of an export permit or re-export certificate**.
- **No import permit is necessary** for these species under CITES (although a permit is needed in some countries that have taken stricter measures than CITES requires).
- Permits or certificates should only be granted if the relevant authorities are satisfied that certain conditions are met, above all that trade will not be detrimental to the survival of the species in the wild.

### Appendix III

- It is a **list of species included at the request of a Party that already regulates trade** in the species and that **needs the cooperation of other countries** to prevent unsustainable or illegal exploitation.
- Examples include **map turtles, walruses and Cape stag beetles**. Currently **147 species** are listed.
- **International trade** in specimens of species listed in this Appendix is **allowed only on presentation of the appropriate permits or certificates**.
- Species may be **added to or removed from Appendix I and II**, or moved between them, **only by the Conference of the Parties**.
  - However, species may be **added to or removed from Appendix III at any time and by any Party unilaterally**.



### CITES Contribution

- The CITES regulates international trade in close to 35,000 species of plants and animals –
  - with international commercial trade generally **prohibited for 3%** of these species,
  - and with international commercial trade for the **remaining 97% regulated** to ensure the trade is legal, sustainable and traceable.
- CITES has been at the cutting edge of the debate on the sustainable use of biodiversity for the **past 42 years** and it has records of over **12,000,000 international trade transactions in its data-bases** for that period – trade which on many occasions has **benefitted local communities**, such as with the vicuña in South America.
  - The Appendix II of CITES permits the international trade of wool cloth, and other manufactured products (luxury and knitted handicrafts) from the **shearing of live vicuñas**.
- **Illegal trade** is estimated by it to be worth between **USD 5 billion and USD 20 billion per year**–
  - Illegal activity that is driving many species **towards extinction**, and depriving local people of development choices and governments of potential revenue.
- **The International Consortium on Combating Wildlife Crime (ICCWC)**, a consortium of the **CITES Secretariat**, **INTERPOL** (International Criminal Police Organization), the **UN Office on Drugs and Crime**, the **World Bank** and the **World Customs Organization** has been established to **tackle illegal wildlife trade**.
  - It brings together the entire enforcement chain to assist national enforcement authorities and regional bodies to combat illicit trade in wildlife.

### CITES and India

- India is one of the recognized **mega-diverse countries** of the world, harbouring nearly **7-8% of the recorded species** of the world, and representing **4 of the 34** globally identified biodiversity **hotspots** (Himalaya, Indo-Burma, Western Ghats and Sri Lanka, Sundaland).
  - India is also a vast repository of **traditional knowledge associated with biological resources**. So far, over 91,200 species of animals and 45,500 species of plants have been documented in the ten biogeographic regions of the country.
  - **Inventories of floral and faunal diversities** are being progressively updated with several new discoveries through the conduct of continuous **surveys and exploration**.



- India, being a CITES Party, actively prohibits the international trade of endangered wild species and several measures are in place to control threats from invasive alien species (e.g. certificates for exports, permits for imports, etc.).
- India has proposed to remove rosewood (*Dalbergia sissoo*) from Appendix II of CITES. The species grows at a very fast rate and has the capacity to become naturalised outside its native range, it is invasive in other parts of the world as well.
  - The regulation of trade in the species is not necessary to avoid it becoming eligible for inclusion in Appendix I in the near future.
- India has also proposed to transfer small clawed otters (*Aonyx cinereus*), smooth coated otters (*Lutrogale perspicillata*), Indian Star Tortoise (*Geochelone elegans*) from Appendix II to Appendix I, thereby giving more protection to the species.
- The proposal also includes inclusion of Gekko gekko and Wedgefish (*Rhinidae*) in Appendix II of CITES.
  - The Gekko gekko is traded highly for Chinese traditional medicine.



## ARUL IAS ACADEMY

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### Current Test Batch Details:

BATCH	TOTAL NO.OF TEST	TOTAL NO.OF QUESTIONS
UPSC PRELIMS (2022)	36	4200
TNPSC PRELIMS (2021-2022)	20+5	3675
TNPSC GROUP I MAINS	27	540
TNPSC GROUP II MAINS	40	-

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## COP (Conference of the Parties)



- The COP is the supreme decision-making body of the Convention. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.

### Major themes at meetings of the Conference of the Parties

- First ordinary meeting = Guidance to the financial mechanism;
- Second ordinary meeting = Marine and coastal biological diversity;
- Third ordinary meeting = Agricultural biodiversity;
- Fourth ordinary meeting = Inland water ecosystems;
- Fifth ordinary meeting = Dryland, mediterranean, arid, semi-arid, grassland and savannah ecosystems;
- Sixth ordinary meeting = Forest ecosystems; Alien species;
- Seventh ordinary meeting = Mountain ecosystems;
- Eighth ordinary meeting = Island biodiversity;
- Ninth ordinary meeting = Agricultural biodiversity; Global Strategy for Plant Conservation;



### Conference of the Parties List

Session	Conference	Location	year
COP-1	Berlin Climate Change Conference	Berlin Mandate	1995
COP-2	Geneva Climate Change Conference	Geneva, Switzerland	1996
COP-3	Kyoto Climate Change Conference	Kyoto, Japan	1997
COP-4	Buenos Aires Climate Change Conference	Buenos Aires, Argentina	1998
COP-5	Bonn Climate Change Conference	Bonn, Germany	1999
COP-6-1	The Hague Climate Change Conference	The Hague, Netherlands	2000
COP-6-2	Bonn Climate Change Conference	Bonn, Germany	2001
COP-7	Marrakech Climate Change Conference	Marrakech, Morocco	2001
COP-8	New Delhi Climate Change Conference	New Delhi, India	2002
COP-9	Milan Climate Change Conference	Milan, Italy	2003
COP-10	Buenos Aires Climate Change Conference	Buenos Aires, Argentina	2004
COP-11	Montreal Climate Change Conference	Montreal, Canada	2005
COP-12	Nairobi Climate Change Conference	Nairobi, Kenya	2006
COP-13	Bali Climate Change Conference	Bali, Indonesia	2007
COP-14	Poznan Climate Change Conference	Poznan Poland	2008
COP-15	Copenhagen Climate Change Conference	Copenhagen, Denmark	2009
COP-16	Cancun Climate Change Conference	Cancun, Mexico	2010
COP-17	Durban Climate Change Conference	Durban, South Africa	2011
COP-18	Doha Climate Change Conference	Doha, Qatar	2012
COP-19	Warsaw Climate Change Conference	Warsaw, Poland	2013
COP-20	Lima Climate Change Conference	Lima, Peru	2014
COP-21	Paris Climate Change Conference	Paris, France	2015
COP-22	Marrakech Climate Change Conference	Marrakech, Morocco	2016
COP-23	Bonn Climate Change Conference	Bonn, Germany	2017
COP-24	Katowice Climate Change Conference	Katowice, Poland	2018
COP-25	Madrid Climate Change Conference	Madrid, Spain	2019

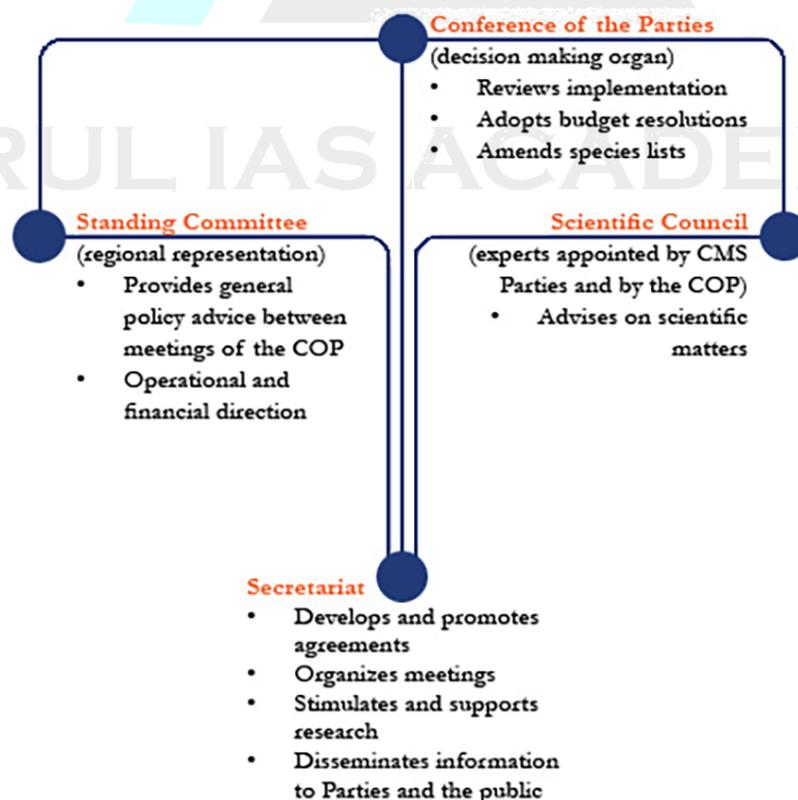
### COP- 26 United Nations Climate Change Conference Glasgow, United Kingdom

- COP-26 was originally scheduled to take place from 9 to 19 November 2020, in Glasgow, United Kingdom, but was postponed to 1 to 12 November 2021 due to the COVID-19 pandemic.

## Convention of Migratory Species

- CMS is also known as the **Bonn Convention**. It is the **only convention** that deals with **taking or harvesting of species** from the wild. It currently protects 173 migratory species from across the globe.
- **Enforcement Year:** The Convention came into force on **November 1, 1983**. The Secretariat that administers the Convention was established in 1984.
- **Parties:** As of 1<sup>st</sup> November 2019, there were **130 Parties** to the Convention—**129 countries plus the European Union**. **Maldives** is the latest country to join it (November 2019).
- **Species Covered:** Convention has two Appendices:
  - **Appendix I** lists migratory species that are **endangered or threatened with extinction**.
  - **Appendix II** lists migratory species which have an unfavourable conservation status and which **require international agreements** for their conservation and management.
- **Migratory Species:** A migratory species is one that cyclically and predictably crosses one or more national jurisdictional boundaries due to factors like food, temperature, shelter, etc.
- **Purpose:** It specifies the duty of States to protect the species living within or passing through their national boundaries/ jurisdiction.

**Structure:**





### **CMS- COP 13**

- The **Logo** of COP 13 was inspired by '**Kolam**'- a traditional art form Southern India used to depict **key migratory species** in India like Amur Falcon, and Marine Turtles.
- It highlighted the **importance of ecological connectivity** (unimpeded movement of species and flow of natural processes) to better protect migratory wildlife and their habitats.
  - CMS has focused on the connectivity concept to be integrated into the new **Global Biodiversity Framework** (which will be adopted in 2021 in China).
  - Also, countries can integrate biodiversity and migratory species considerations with their national energy and climate policy actions.
- COP 13, proposes to **include ten new species for protection under CMS** viz.:
  - Three **Indian** Species: *Asian Elephant*, *Bengal Florican*, *Great Indian Bustard*.
  - Other 7 from around the world: *Jaguar* (proposed by Costa Rica, Argentina, Bolivia, Paraguay), *Whitetip shark* (Brazil), *Little Bustard* (EU Nations), *Urial* (Tajikistan, Iran, Uzbekistan), *Antipodean Albatross* (New Zealand, Australia, Chile), *Smooth Hammerhead Shark* (Brazil), and *Tope Shark* (EU Nations).
- COP 13 highlighted the **threats to biodiversity**:
  - Loss and fragmentation of habitats, and habitat destruction & degradation.
  - Climate change.

### **Agenda of the Meet:**

- The Convention for the first time looked upon the impact of **light pollution** (increasing artificial light affecting migratory species and insects) on birds, bats & marine turtles,
- Address declining population of **insects**,
- Impact of **plastic pollution** on freshwater and terrestrial species, etc.
- Given the focus on moving away from fossil fuels energy to renewable sources of energy, the potential of **renewable energy and related powerline infrastructure** adversely impacting the migratory birds and bats was also discussed.
- Work of the **CMS energy task force** (set up in 2015) to reconcile renewable energy developments with the conservation of migratory species was taken under consideration.
- Also, discussed the adoption of dedicated actions to protect 12 species including Gangetic River Dolphin, Gabon, and Giraffe. (India has prepared a concerted action proposal to protect **Gangetic River Dolphin**).



### India and the CMS

- India has been a party to the Convention **since 1983**.
- India has signed a **non-legally binding** Memorandum of Understanding (MoU) with CMS on conservation and management of **Siberian Cranes (1998), Marine Turtles (2007), Dugongs (2008), and Raptors (2016)**.
- With 2.4% of the world's land area, India contributes to around 8% of the known global biodiversity.
  - Indian subcontinent is a part of a significant bird flyway network, i.e, **Central Asian Flyway** that covers areas between the **Arctic and Indian Oceans** with at least 279 populations of 182 migratory waterbird species (including 29 globally threatened species).
- India also provides **temporary shelter** to several migratory species including Amur Falcons, Bar-headed Geese, Black-necked Cranes, Marine Turtles, Dugongs, Humpback Whales, etc.

### Annihilation of Wildlife by Human Activities

- According to a report by the **World Wildlife Fund**, growing consumption of food and other resources by humans, **natural habitat loss**, developmental activities like dam, etc. have caused a serious decline in animal population.
  - This has also begun the **Sixth Mass Extinction** (biological annihilation of wildlife due to humans).
- According to the **Living Planet Index**, nature will take around 5-7 million years to recover, even if the destruction stops now. Since 1970-2014, 60% of animal populations have been wiped out due to human activities.

### India's Commitment & Initiatives

#### International Level

- **International Solar Alliance.**
- **Coalition for Disaster Resilient Infrastructure.**
- Industries transition leadership with **Sweden.**
- India's actions compliant with the **Paris Agreement goal** of containing the rise in temperature to below 2°C.
- Strengthened association with the **ASEAN** and **East Asia Summit** countries in sync with the **Indo-Pacific Ocean Initiative (IPOI)**.

#### National Level

- India has launched the **National Action Plan** for the conservation of migratory species along the **Central Asian Flyway**.
- India also announced:
  - Establishment of an **institutional facility** for undertaking research, assessments and capacity development through a common platform,



- Conservation of marine turtles- by launching its **Marine Turtle Policy and Marine Stranding Management Policy**, by 2020,
- **Reduction of pollution** from micro-plastic and single-use plastic,
- **Transboundary protected areas** for conservation of species like Tigers, Asian elephants, Snow Leopard, the Asiatic Lion, the one-horned rhinoceros, and the Great Indian Bustard, and
- Sustainable **infrastructure** development like **Linear Infrastructure Policy Guidelines** to tailor development in ecologically fragile areas.
- India has set an ambitious target of 450 GW of renewable energy by 2030. To achieve this, India is pushing towards enhanced use of electric vehicles, smart cities, and conservation of water, etc.
- India has taken the leadership role in promoting **Green Economy** including conservation of mountain ecology with people's participation.
- Under **Project Tiger**, with an increase in the number of tiger reserves, the tiger population has been doubled in India 2 years before the set target of 2022.
- India supports 60% of the global Asian Elephants population and there are approx. **30 elephant reserves** for it. Also, '**Project Elephant**' aims to protect their habitats & corridors.
- Further '**Project Snow Leopard**' to protect their population in the Himalayan range. India recently hosted steering committee meeting of the **Global Snow Leopard & Ecosystem Protection (GSLEP) Programme** that resulted in the **New Delhi Declaration**.
- **India's National Wildlife Action Plan (2017-2031):**
  - It consists of **17 chapters with new action themes** like Climate Change and Wildlife, Wildlife health, Inland Aquatic and Coastal and Marine conservation, and Human-wildlife conflict mitigation.
  - It has chapters on **people's participation** in wildlife conservation to elicit the involvement of people in wildlife conservation.
  - It provides for **priority projects** like setting up of '**Electronic-eye (e-eye) surveillance**' in highly sensitive Tiger Reserves and Protected Areas, beside the use of Drone/ UAV technology for **airborne monitoring and better protection** of wildlife.
  - It also focuses on '**Management of Tourism in Wildlife Areas**' and '**Control of poaching and illegal trade in wildlife**'.
- **Wildlife Protection Act, 1972:** To protect and conserve wildlife from illegal poaching and hunting. There are **Six Schedules** in the Act:
- Schedule I and part II of Schedule II provide **absolute protection** with the **highest penalties**.
  - Schedule III and Schedule IV provide **protection with lesser penalties**.
  - Schedule V includes **animals that can be hunted**.
  - Schedule VI **bans cultivation and planting** of protected plants.



### Offences Punishable under Wildlife Protection Act, 1972

- The Act was amended in 2003 and provided for stringent punishment for **hunting** or harvesting the wild animals.
- Schedule I and Schedule II provides for offences related to wild animals' body part or products.
- Penalty enhanced for hunting or altering boundaries of a Sanctuary or National Park.
- Vehicles or weapons used for committing crimes can be seized.
- Minimum imprisonment is three years that can be extended to seven years with a minimum fine of ₹10,000.

### Other Wildlife Protection Acts passed by States:

- Madras Wild Elephants Preservation Act, 1873
- All India Elephant Preservation Act, 1879
- The Wild Bird and Animals prohibition Act, 1912
- Bengal Rhinoceros Preservation Act, 1932
- Assam Rhinoceros Preservation Act, 1954
- Indian Board for Wildlife, 1952



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## Convention to Combat Desertification (Bonn Agreement)



# United Nations

## Convention to Combat Desertification

### UN Bonn meets to Discuss Human Development in the Anthropocene:

- The COVID-19 pandemic is the most recent crisis facing the humankind, but unless we ease the pressure on nature, it might not be the last, warns the new report by the **United Nations Development Programme (UNDP)** that includes a new experimental index on human progress that takes into account countries' carbon emissions and material footprint.
- This **30th anniversary edition of the Human Development Report, *The Next Frontier: Human Development and the Anthropocene***, introduces an experimental new lens to its annual Human Development Index (HDI) that measures nations' health, education and standards of living, to show how the global development landscape would change if both the wellbeing of people as well as the planet were the focus of measuring humanity's progress.
- Following the launch of the report, the **UN organizations in Bonn joined their host city and the new Mayor Katja Dörner** for a virtual dialog to discuss the report's key findings and what they mean for the future of each agency's work. Making a business case for putting land restoration at the center of human development efforts in the Anthropocene, UNCCD Executive Secretary Tina Birmlili emphasized that nature-based solutions such as land restoration have the power to transform economies, so that planet and people can thrive together.
- Public and private investment in land restoration is the most cost-effective way to create nature-positive food production, a cooler planet, healthy biodiversity and economic growth post-COVID, with potential financial returns of up to 30 times the original investment. Over 120 countries have already committed to the restoration of one billion hectares of land over the next decade - an area approximately the size of China.



### UNCCD:

- The international community has long recognized that land degradation/desertification is a major economic, social and environmental problem of concern to many countries in all regions of the world.
- **In 1977 the United Nations Conference on Desertification (UNCOD) adopted a Plan of Action to Combat Desertification (PACD).** Despite this and other efforts, the **United Nations Environment Programme (UNEP) concluded in 1991 that** the problem of land degradation in arid, semi-arid and dry sub-humid areas had intensified, although there were “local examples of success”.
- As a result, the question of how to tackle desertification was still a major concern for the **United Nations Conference on Environment and Development (UNCED), which was held in Rio de Janeiro in 1992.**
- The Conference supported a new, integrated approach to the problem, emphasizing action to promote sustainable development at the community level.
- The Rio Conference called on the United Nations General Assembly to establish an Intergovernmental Negotiating Committee (INCED) to prepare, by June 1994, a Convention to Combat Desertification, particularly in Africa.
- In December 1992, the General Assembly agreed and adopted resolution 47/188 on this matter.
- Working to a tight schedule, the Committee completed its negotiations in five sessions. **The Convention was adopted in Paris on 17 June 1994 and entered into force on 26 December 1996,** 90 days after the 50th ratification was received. 196 countries and the European Union are Parties as at August 2018.
- The Conference of the Parties (COP), which is the Convention’s supreme governing body, held its first session in October 1997 in Rome, Italy.
- The 10-year strategic plan and framework to enhance the implementation of the Convention for 2008-2018 outlined a clear vision to forge global partnerships to reverse and prevent desertification and land degradation, coupled with a mission to provide a worldwide framework to support the development and implementation of national and regional policies that contribute to the reduction of poverty.
- At UNCCD COP13 that took place in September 2017 in Ordos, China, the countries have agreed on a new global roadmap to address land degradation.
- The new UNCCD 2018-2030 Strategic Framework is the most comprehensive global commitment to achieve Land Degradation Neutrality (LDN) in order to restore the productivity of vast swathes of degraded land, improve the livelihoods of more than 1.3 billion people, and to reduce the impacts of drought on vulnerable populations.



### UNCCD and India

- India ratified the Convention to Combat Desertification in December 1996.
- The nodal ministry for the convention in India is the Ministry of Environment, Forest and Climate Change.
- India faces a huge desertification problem.
- **A 2016 ISRO report stated that 29% of the land in India was degraded.**
- The 14th Conference of Parties (COP) to the UNCCD was held in India in 2019.
- The conference which was held in Greater Noida had the theme, "Restore Land, Sustain Future".
- **India is the COP president for 2019 - 2021.**
- India is also a part of the **Bonn Challenge**, which is an international effort to bring 150 million hectares of the world's degraded and deforested land into restoration by 2020, and 350 million hectares by 2030.

“

THE UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION HAS WELCOMED THE SAUDI AND MIDDLE EAST GREEN INITIATIVES THAT WERE MADE PUBLIC THIS WEEK. THE INITIATIVES AIM, AMONG OTHER THINGS, TO RESTORE ROUGHLY 240 MILLION HECTARES OF DEGRADED LAND IN SAUDI ARABIA AND ACROSS THE MIDDLE EAST.

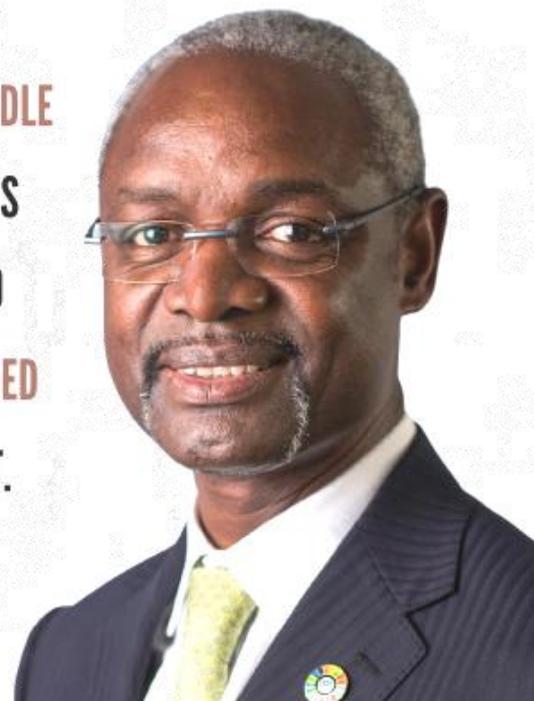
MR. IBRAHIM THIAW

EXECUTIVE SECRETARY OF THE UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION (UNCCD)



United Nations  
Convention to Combat  
Desertification

<https://www.unccd.int> @IBRAHIMTHIAW



## Earth Summit (Rio de Janeiro- 1992)



### Introduction

- The United Nations Conference on Environment and Development (UNCED), also known as the Rio de Janeiro Earth Summit, Rio Summit, Rio Conference, and Earth Summit (Portuguese: ECO92), was a major United Nations conference held in Rio de Janeiro (Brazil) from 3 to 14 June 1992.

### History

- The Earth Summit was not the first international conference to address environmental issues. In 1972 the United Nations convened the United Nations Conference on the Human Environment in Stockholm, Sweden. This conference, often called the Stockholm Conference, was the first international conference to address environmental problems directly.

### Impacts and Issues

- Some 2,400 representatives of non-governmental organizations (NGOs) attended, with 17,000 people at the parallel NGO "Global Forum" (also called Forum Global), who had Consultative Status. A significant accomplishment of the summit was an agreement on the Climate Change Convention which in turn led to the Kyoto Protocol and the Paris Agreement. Another agreement was "not to carry out any activities on the lands of indigenous peoples that would cause environmental degradation or that would be culturally inappropriate".

### Important Of Earth Summit

- The Rio Summit 1992 is also called the Earth Summit. This summit led to the development of the following documents:
  - Rio Declaration on Environment and Development
  - Agenda 21
  - Forest Principles



### Principles of Earth Summit

- The first document called the Rio Declaration, in short, contained 27 principles that were supposed to guide countries in future sustainable development. Agenda 21 is an action plan concerning sustainable development, but it is non-binding. The Forest Principles is formally called 'Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests'. It makes many recommendations for conservation and sustainable development forestry and is non-binding.

### List of Earth Summits

- **1972** - The United Nations Conference on the Human Environment (UNCHS) in Stockholm
- **1982** - The 1982 Earth Summit in Nairobi (Kenya). An Earth Summit was held in Nairobi, Kenya, from 10 to 18 May 1982. The events of the time (Cold War) and the disinterest of US President Ronald Reagan (who appointed his delegated daughter Of the United States) made this summit a failure. It is not even mentioned as an official Earth Summit.
- **1992** - The United Nations Conference on Environment and Development (UNCED) or Earth Summit in Rio de Janeiro (Brazil)
- **2002** - The World Summit on Sustainable Development, Earth Summit 2002 or Rio+10, Johannesburg (South Africa)
- **2009** - 2009 United Nations Climate Change Conference or Copenhagen Summit, Copenhagen (Denmark)
- **2012** - The United Nations Conference on Sustainable Development (UNCSD) or Rio+20, Rio de Janeiro (Brazil)
- **2018** - The 7th Digital Earth Summit 2018, DES-2018, on Digital Earth for Sustainable Development in Africa was to be held in El Jadida, Morocco, at the Faculty of Science, Chouaib Douakkali University from April 17-19, 2018
- **2019** - The Santiago Climate Change Conference, featuring the 25th session of the Conference of the Parties (COP 25) to the United Nations Framework Convention for Climate Change (UNFCCC) and meetings of the UNFCCC subsidiary bodies, will convene from 2nd to 13th of December 2019.

## Environment Day



**WORLD ENVIRONMENT DAY | 05 JUNE**  
**Green Economy: Does it include you?**

### Introduction

- World Environment Day is observed on 5th June annually. It is the United Nation's idea for encouraging worldwide awareness and action for the protection of our environment.

### History of Environment Day

- World Environment Day was designated by the UN General Assembly in 1972 on the first day of United Nations Conference on the Human Environment, resultant from negotiations on the integration of human interactions and the environment.
- Then in 1974, the first World Environment Day was held with the theme "Only One Earth".
- Initially, it was started as a flagship campaign for raising awareness on budding environmental issues from marine pollution and global warming, to sustainable consumption and wildlife crime.
- The aim of this day is to encourage people worldwide to take care of the Earth or become an agent of change.
- World Environment Day has grown to become a global platform for public outreach, with participation from over 143 countries annually.

### World Environment Day Anthem

- The Earth Anthem was composed to sing in the event of World Environment Day.
- It was composed by poet Abhay K, an Indian diplomat.
- It was recorded in eight languages containing all official languages of the United Nations- Arabic, Chinese, English, French, Russian and Spanish.
- It is also recorded in Hindi and Nepali.
- It was launched in the event of the World Environment Day 2013.
- It is supported by the global organization Habitat for Humanity



### Annual Themes and Host Countries

Year	Hosts	Theme
1974	United States	'Only one Earth' during Expo '74
1975	Bangladesh	Human Settlements
1976	Canada	Water: Vital Resource for Life
1977	Bangladesh	Ozone Layer Environmental Concern; Lands Loss and Soil Degradation
1978	Bangladesh	Development Without Destruction
1979	Bangladesh	Only One Future for Our Children - Development Without Destruction
1980	Bangladesh	A New Challenge for the New Decade: Development Without Destruction
1981	Bangladesh	Ground Water; Toxic Chemicals in Human Food Chains
1982	Bangladesh	Ten Years After Stockholm (Renewal of Environmental Concerns)
1983	Bangladesh	Managing and Disposing of Hazardous Waste: Acid Rain and Energy
1984	Bangladesh	Desertification
1985	Pakistan	Youth: Population and the Environment
1986	Canada	A Tree for Peace
1987	Kenya	Environment and Shelter: More Than A Roof
1988	Thailand	When People Put the Environment First, Development Will Last
1989	Belgium	Global Warming; Global Warning
1990	Mexico	Children and the Environment



1991	Sweden	Climate Change. Need for Global Partnership
1992	Brazil	Only One Earth, Care, and Share
1993	China	Poverty and the Environment - Breaking the Vicious Circle
1994	United Kingdom	One Earth One Family
1995	South Africa	We the Peoples: United for the Global Environment
1996	Turkey	Our Earth, Our Habitat, Our Home
1997	Republic of Korea	For Life on Earth
1998	Russian	For Life on Earth - Save Our Seas
1999	Japan	Our Earth - Our Future - Just Save It!
2000	Australia	The Environment Millennium - Time to Act
2001	Torino, Italy and Havana, Cuba	Connect with the World Wide Web of Life
2002	China	Give Earth a Chance
2003	Lebanon	Water - Two Billion People are Dying for It!
2004	Spain	Wanted! Seas and Oceans - Dead or Alive?
2005	United States	Green Cities - Plan for the Planet!
2006	Algeria	Deserts and Desertification - Don't Desert Drylands!
2007	England	Melting Ice - a Hot Topic?
2008	New Zealand	Kick The Habit - Towards A Low Carbon Economy
2009	Mexico	Your Planet Needs You - Unite to Combat Climate Change



2010	Bangladesh	Many Species. One Planet. One Future
2011	India	Forests: Nature at your Service
2012	Brazil	Green Economy: Does it include you?
2013	Mongolia	Think. Eat. Save. Reduce Your Foodprint
2014	Barbados	Raise your voice, not the sea level
2015	Italy	Seven Billion Dreams. One Planet. Consume with Care.
2016	Angola	Zero Tolerance for the Illegal Wildlife trade
2017	Canada	Connecting People to Nature - in the city and on the land, from the poles to the equator
2018	India	Beat Plastic Pollution
2019	China	Beat Air Pollution
2020	Colombia in partnership with Germany	Biodiversity - focus on time for nature

### World Environment Day (COVID-19)

- Due to the outbreak of COVID-19 pandemic, World Environment Day 2020 was celebrated digitally.
- Recently there was massive damage on the biodiversity due to bushfires in Australia, USA, and Brazil.
- There was also a massive problem across East Africa due to locusts.
- Hence the theme of World Environment Day 2020 focused on time for nature.



## Environmental Clearance - The Process

- The environmental clearance process is required for 39 types of projects and covers aspects like screening, scoping and evaluation of the upcoming project. The main purpose is to assess impact of the planned project on the environment and people and to try to abate/minimise the same.

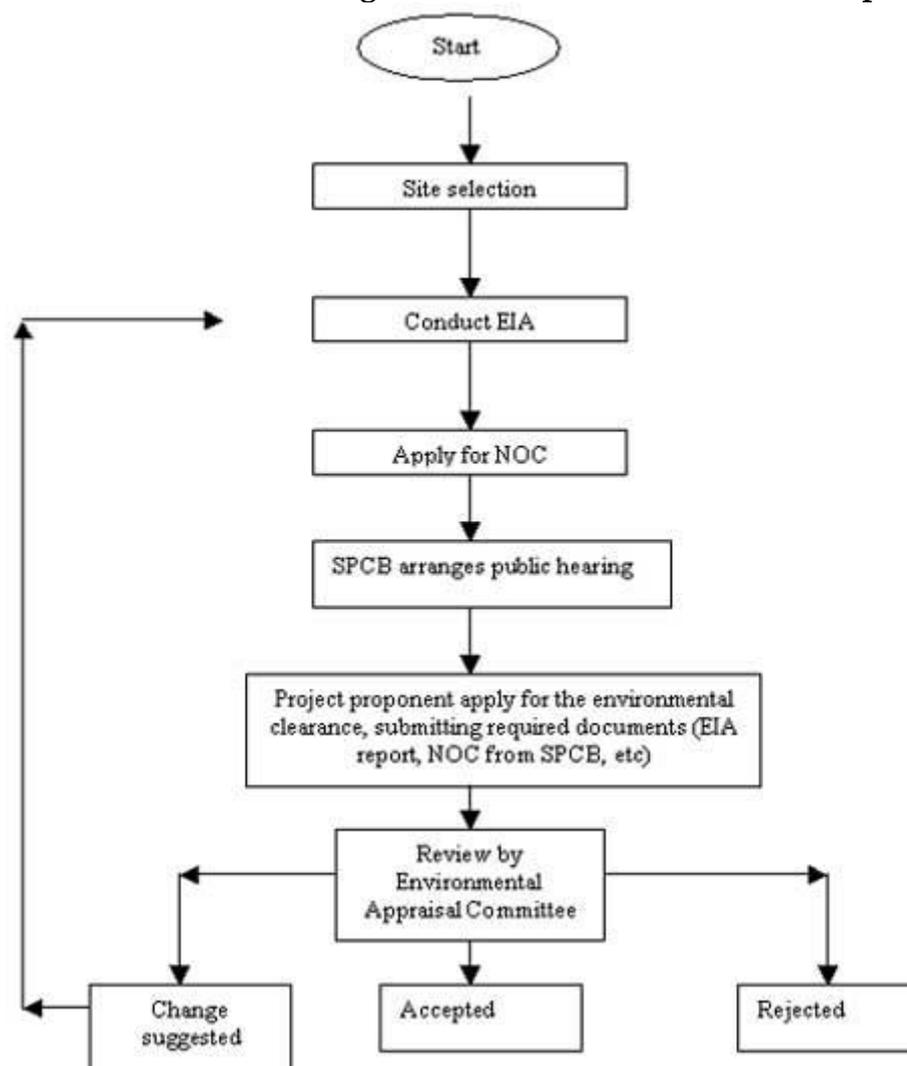
### The process consists of following steps:

- Project proponent identifies the location of proposed plant after ensuring compliance with existing siting guidelines. If project site does not agree with the siting guideline, the proponent has to identify other alternative site for the project
- The project proponent then assesses if the proposed activity/project falls under the purview of environmental clearance. If it is mentioned in schedule of the notification, the proponent conducts an EIA study either directly or through a consultant. If the project falls in B category, the project goes to state government for clearance which further categorise into B1 and B2 projects. B2 projects do not require preparation of EIA reports.
- After the EIA report is ready, the investor approaches the concerned State Pollution Control Board (SPCB) and the State Forest Department (if the location involves use of forestland). The SPCB evaluates and assesses the quantity and quality of effluents likely to be generated by the proposed unit as well as the efficacy of the control measures proposed by the investor to meet the prescribed standards. If the SPCB is satisfied that the proposed unit will meet all the prescribed effluent and emissions standards, it issues consent to establish (popularly known as NOC), which is valid for 15 years.
- The public hearing is a mandatory step in the process of environmental clearance for certain developmental projects. This provides a legal space for people of an area to come face-to-face with the project proponent and the government and express their concerns.
- The process of public hearing is conducted prior to the issue of NOC from SPCB. The District Collector is the chairperson of the public hearing committee. Other members of the committee includes the official from the district development body, SPCB, Department of Environment and Forest, Taluka and Gram Panchayat representative, and senior citizen of the district, etc. The hearing committee hears the objections/suggestions from the public and after inserting certain clauses it is passed on to the next stage of approval (Ministry of Forest and Environment).



- The project proponent submits an application for environmental clearance with the MoEF if it falls under Project A category or the state government if it falls under project B category. The application form is submitted with EIA report, EMP, details of public hearing and NOC granted by the state regulators.
- Environmental appraisal: The documents submitted by an investor are first scrutinised by a multi-disciplinary staff functioning in the Ministry of Environment and Forests who may also undertake site-visits wherever required, interact with the investors and hold consultations with experts on specific issues as and when necessary. After this preliminary scrutiny, the proposals are placed before specially constituted committees of experts whose composition is specified in the EIA Notification. Such committees, known as Environmental Appraisal Committees have been constituted for each sector such as River Valley, Industries, Mining etc. and these committees meet regularly to appraise the proposals received in the Ministry. In case of certain very special/controversial projects, which have aroused considerable public interest, the committee may also decide to arrange for public hearings on those projects to ensure public participation in developmental decisions. Announcements for such public hearing shall be made atleast 30 days before through newspapers. On the basis of the exercise described in the foregoing paragraphs, the Appraisal Committees make their recommendations for approval or rejection of particular projects. The recommendations of the Committees are then processed in the Ministry of Environment and Forests for approval or rejection.
- Issues of clearance or rejection letter: When a project requires both environmental clearance as well as approval under the Forest (Conservation) Act, 1980. Proposals for both are required to be given simultaneously to the concerned divisions of the ministry. The processing is done simultaneously for clearance/rejection, although separate letters may be issued. If the project does not involve diversion of forest land, the case is processed only for environmental clearance.
- Once all the requisite documents and data from the project authorities are received and public hearings (where required) have been held, assessment and evaluation of the project from the environment angle is completed within 90 days and the decision of the ministry shall be conveyed within 30 days thereafter. The clearance granted shall be valid for a period of five years for commencements of the construction or operation of the project.

The process is summarised in Figure 2.1: Environmental clearance process in India.



➤ Industrial projects located in any of the following notified ecologically fragile/sensitive areas would require environmental clearance irrespective of the type of project:

- Religious and historic places
- Archaeological monuments
- Scenic areas
- Hill resorts
- Beach resorts
- Coastal areas rich in mangroves, corals, breeding grounds of specific species
- Estuaries
- Gulf areas
- Biosphere reserves
- National parks and sanctuaries
- National lakes and swamps
- Seismic zones
- Tribal settlements
- Areas of scientific and geological interest



- Defence installations, specially those of security importance and sensitive to pollution
- Border areas (international)
- Airports

## **PUBLIC HEARING**

- Involvement of the public is one of the fundamental principles of a successful EIA process. It not only provides an opportunity to those directly affected by a project to express their views on the environmental and social impacts of the proposal but also brings about transparency in the environmental clearance system. Nearly all EIA systems make some sort of provision for public involvement. This could be in the form of public consultation (or dialogue) or public participation (which is a more interactive and intensive process of stakeholder engagement).
- Most EIA processes are undertaken through public consultation rather than participation. Public consultation refers to the process by which the concerns of the local people regarding the adverse impacts of a project are ascertained and taken into account in the EIA study. This concept was legally introduced in India in the form of 'public hearing' in 1997. Since then the public hearing process has been conducted as a mandatory step of environmental clearance for most projects and activities.
- The public consultation process ensures an equitable and fair decision-making process resulting in better environmental outcomes. The type of consultation, whom to consult during EIA activities, when and how to do so and who should do it all vary significantly from project to project. This depends on the needs of the project. However, it is an important component for all kinds of project. This is because public consultations help allay the concerns of the local community, and reduce inaccurate information in the EIA report.
- Ideally public consultation should start from when the idea of the project is conceived and continue throughout the course of the EIA. The five main stages when public involvement can take place in the EIA process are screening, scoping, impact analysis and mitigation, review of EIA quality, and implementation and follow up.
- In India, the role of the public in the entire environment clearance process is quite limited. Public consultation happens at a very late stage when the EIA report is already prepared and the proponent is about to present it to the review committee for clearance. This means that the EIA study is unable to take into account the concerns and issues important to public. Even if the



members of the community raise certain issues in the public hearing process, they have no means of knowing if it actually gets addressed in the final EIA report as they have no access to it. There are several weaknesses in the public hearing process as it exists now. Instead of becoming a participatory forum it has become a mere procedure.

- There was a chance to address some of these weaknesses in the new notification and give more teeth to the entire public hearing process. However, there is very little improvement in the new notification, instead it has now added a provision which makes it possible to completely forego the public hearing process if the situation is not conducive for conducting hearing as felt by the local administration. This provision can be misused to further limit the role of the public in the entire process.
- There have been several cases in the past that have shown that the public hearing process has failed to meet its objective of effectively involving people in the clearance process. Several means have been devised to keep the public away such as poor circulation of notice, politics, etc.



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TNPSC GROUP II MAINS	40	-

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## Environmental Impact Assessment

- EIA full form is **Environmental Impact Assessment**. In simple terms, the meaning of EIA is that it is a process through which an environmental impact of a proposed development is evaluated. While undertaking Environmental Impact Assessment (EIA), the inter-related socio-economic, cultural, and human-health impacts are considered.

### Environmental Impact Assessments

- It is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural, and human-health impacts, both beneficial and adverse. EIA is a tool used to assess the positive and negative environmental, economic, and social impacts of a project. This is used to predict the environmental impacts of a project in the pre-planning stage itself so that decisions can be taken to reduce the adverse impacts.

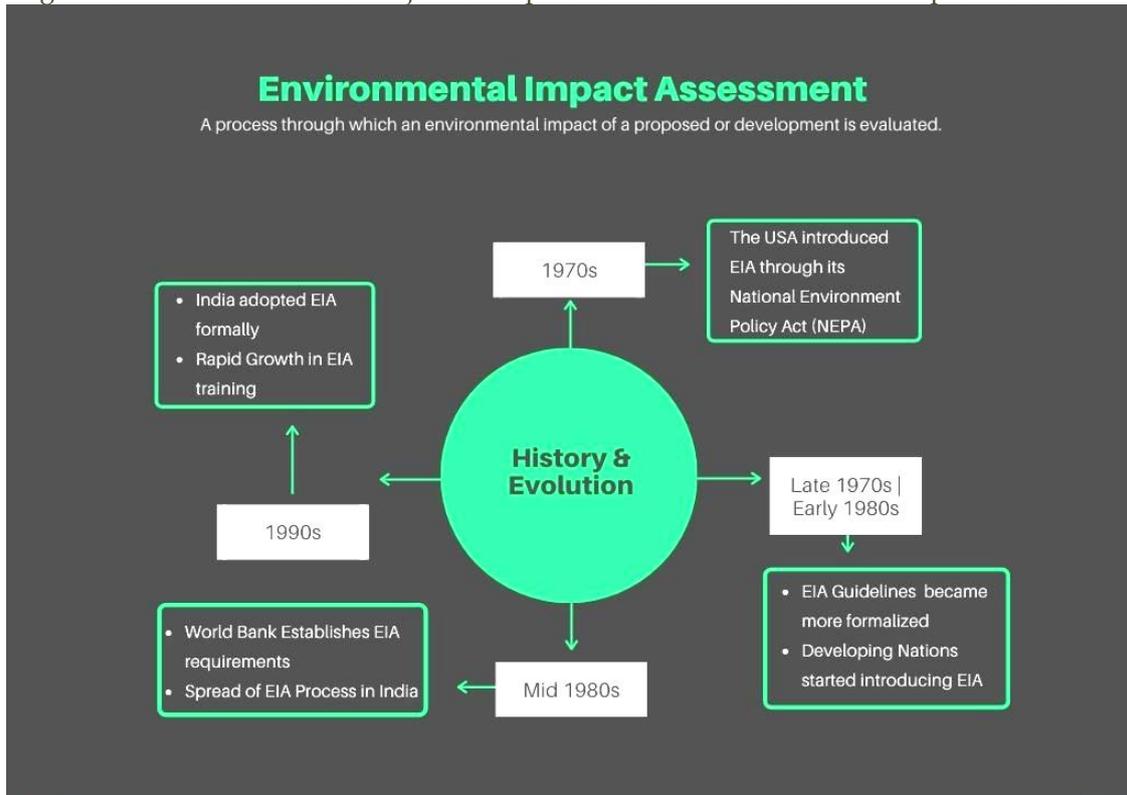
### Evolution & History of EIA

- EIA is termed as one of the best policy innovations in the 1900s. The main aim of EIA is to conserve the environment and bring out the best combination of economic and environmental costs and benefits. Read the below-mentioned points to understand the Environmental Impact Assessment evolution and history:
  1. The birth of EIA is dated back to the 1970s. In 1969, The USA had brought its first **National Environment Policy Act (NEPA) 1969**.
  2. The EIA was initially practised by developed nations but slowly it was also introduced in developing nations including India.
  3. Columbia and the Philippines are the earliest examples of developing nations who introduced EIA in their policies. Columbia brought it in 1974 while the Philippines in 1978.
  4. Worldwide, EIA is now practised in more than 100 countries. By the mid-1990s, some 110 countries applied EIA as a major environmental policy.
  5. In 1989, EIA was adopted as the major development project by **the World Bank**.

### Objectives of Environmental Impact Assessment

1. **Identifying**, predicting, and evaluating economic, environmental, and social impacts of development activities.
2. **Providing information** on the environmental consequences for decision making.
3. **Promoting** environmentally sound and suitable development by identifying appropriate alternatives and mitigation measures.

Check the image below to have an idea of major developments around Environmental Impact Assessment in history:



### Steps in the EIA Process

➤ The eight steps of the EIA process:

- Screening:** First Stage of EIA, which determines whether the proposed project, requires an EIA and if it does, then the level of assessment required.
- Scoping:** This stage identifies the key impacts that should be investigated. This stage also defines the time limit of the study.
- Impact analysis:** This stage of EIA identifies and predicts the likely environmental and social impact of the proposed project and evaluates the significance.
- Mitigation:** This step in EIA recommends the actions to reduce and avoid the potential adverse environmental consequences of development activities.
- Reporting:** This stage presents the result of EIA in a form of a report to the decision-making body and other interested parties.
- Review of EIA:** It examines the adequacy and effectiveness of the EIA report and provides the information necessary for decision -making.
- Decision-making:** It decides whether the project is rejected, approved or needs further change.
- Post monitoring:** This stage comes into play once the project is commissioned. It checks to ensure that the impacts of the project do not exceed the legal standards and implementation of the mitigation measures are in the manner as described in the EIA report.



### Importance of Environmental Impact Assessment

1. EIA is a good tool for prudent environment management.
2. It is government-policy that any industrial project in India has to secure EIA clearance from the Environment Ministry before approval for the project itself.

### Current EIA Reports - India

- EIA Notification 2020 draft has been made public. Once the EIA Notification 2020 will be published in the Official Gazette, it will replace EIA notification 2006. EIA has been in the news following EIA notification 2020 was drafted as one of the amendments will be the removal of public consultation from several activities (Put under Category B2).
- Here are a few important terms/agencies concerning EIA notification 2020 which aspirants should further read about:
  1. Accredited Environment Impact Assessment Consultant Organization (ACO)
  2. Central Pollution Control Board
  3. Certificate of Green Building
  4. Corporate Environment Responsibility
  5. Eco-Sensitive Area/ Eco-Sensitive Zone

### Environmental Impact Assessment In India

- EIA started in India in 1976-77 when the Planning Commission directed the Department of Science & Technology to assess the river valley projects from the point of view of the environment. This was extended for all those projects that required approval from the Public Investment Board.
- Then, in 1986, the government enacted the Environment (Protection) Act which made EIA statutory.
- The other main laws in this regard are the **Indian Wildlife (Protection) Act** (1972), the **Water Act** (1974), the **Air (Prevention and Control of Pollution) Act** (1981), and the **Biological Diversity Act** (2002).
- In 1982, the Ministry of Environment, Forest and Climate Change set up the **Environmental Information System (ENVIS) to collect, collate, storing, retrieving and disseminating information related to the environment sector.** This serves as a web-based distributed network of subject-specific databases. The chief purpose of the ENVIS is to integrate all countrywide efforts to collect, store, disseminate, and use environment-information for better managing environmental assessment activities.



**Importance of EIA**

- EIA links environment with development for environmentally safe and sustainable development.
- EIA provides a cost effective method to eliminate or minimize the adverse impact of developmental projects.
- EIA enables the decision makers to analyse the effect of developmental activities on the environment well before the developmental project is implemented.
- EIA encourages the adaptation of mitigation strategies in the developmental plan.
- EIA makes sure that the developmental plan is environmentally sound and within the limits of the capacity of assimilation and regeneration of the ecosystem.

**Measures for Promotion of Sustainable Development**



- As discussed earlier, the United Nations 17 **Sustainable Development Goals** and 169 targets are part of the 2030 Agenda for Sustainable. Development adopted by 193 Member States at the UN General Assembly Summit in September 2015, and which came into effect on 1 January 2016. These goals are the result of international consultations that brought national governments and millions of citizens from across the globe together to negotiate and adopt the global path to sustainable development for the next 15 year.



- The SDGs and targets will stimulate action in the following critically important areas: **poverty, hunger, education, health and wellbeing, education, gender equality, water and sanitation, energy, economic growth and decent work, infrastructure, industry and innovation, reducing inequalities, sustainable cities, consumption and production, climate action, ecosystems, peace and justice, and partnership.**
- This agenda recognises that it is not enough to focus on economic growth alone but in creating more equal societies, and a safer and more prosperous planet.

### **Sustainable Development Goals Report 2020**

- On July 7, 2020, the Sustainable Development Goals Report 2020 was released. As per the report, the COVID-19 pandemic unleashed an unprecedented crisis which has led to further disruption to SDG progress. Given below are the key points based on the SDG report:
  - Improvements have been noticed in areas such as improving maternal and child health, expanding access to electricity and increasing women's representation in government
  - An estimated 71 million people are expected to be pushed back into extreme poverty in 2020, the first rise in global poverty since 1998. The main cause of this is said to be loss of employment and people who were earlier secure also could find themselves at risk of poverty
  - Approximately 1.6 million vulnerable workers across the world were either left unemployed or underemployed, with incomes estimated to have fallen by 60 per cent during the crisis
  - Women and children, and people living in slums were the worst affected sections during the pandemic
  - School closures have kept 90 per cent of students worldwide (1.57 billion) out of school and caused over 370 million children to miss out on school meals they depend on
  - The cases of poverty, unemployment and risk of lives has increased the risk of child labour and trafficking
- Apart from the above-mentioned points, the report suggests that climate change is still occurring much faster than anticipated.
- The year 2019 was the second warmest on record and the end of the warmest decade of 2010 to 2019.



- Top 10 Countries are ranked by their overall score. The overall score measures a country's total progress towards achieving all 17 SDGs. The score can be interpreted as the percentage of SDG achievement.

Rank	Country	Score
1	Sweden	84.7
2	Denmark	84.6
3	Finland	83.8
4	France	81.1
5	Germany	80.8
6	Norway	80.8
7	Austria	80.7
8	Czech Republic	80.6
9	Netherlands	80.4
10	Estonia	80.1

- India ranks 117 out of 166 countries on a global index that assesses the performance of countries towards achieving the ambitious sustainable development goals (SDGs).



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## Guru Ghasidas National Park

- **Sanjay National Park (Guru Ghasidas National Park)** is a national park in Koriya district of Chhattisgarh and Sidhi, Singrauli districts of Madhya Pradesh state, India.
- *It covers an area of 466.657 km<sup>2</sup> (180.177 sq mi) and is a part of the Sanjay-Dubri Tiger Reserve. It is located in the Narmada Valley dry deciduous forests ecoregion.*



- This Park is the result of the carving of Chhattisgarh from Madhya Pradesh in the year of 2000. After Madhya Pradesh was divided in 2000, a large part of the then Sanjay National Park went to Chhattisgarh. Chhattisgarh government renamed this forest area, with an area of 1440.71 km<sup>2</sup> falling under its jurisdiction, as Guru Ghasidas National Park.
- Guru Ghasidas (Sanjay) National park is a beautiful place, located in the Koriya district of the state of Chhattisgarh. Total area of the park is about 1440.71 Km<sup>2</sup>. It was declared as a National park in the year of 1981. The park has been renamed after the Satnami reformist hero of the place, Guru Ghasidas.
- In June 2011, the proposal to declare Guru Ghasidas National Park as a tiger reserve was proposed by the then Minister of State (Independent Charge) for Environment and Forests Jairam Ramesh to Chhattisgarh Chief Minister Raman Singh.
- National park is an area which is strictly reserved for the betterment of the wildlife & biodiversity, and where activities like developmental, forestry, poaching, hunting and grazing on cultivation are not permitted. Their boundaries are well marked and circumscribed.



### Guru Ghasidas (Sanjay) National Park

- Guru Ghasidas (Sanjay) National park is a beautiful place, located in the Koriya district of the state of Chhattisgarh. Guru Ghasidas National Park is marked as one of the most important and unique of all the protected areas in Chhattisgarh.
- Guru Ghasidas National Park is actually a part of the former Sanjay National Park. Guru Ghasidas National Park was formed when Chhattisgarh was bifurcated from Madhya Pradesh and formed a state in itself. About 60% of the park is located in the Koriya district of Chhattisgarh.
- It was declared as a National park in the year of 1981. Total area of the park is about 1440.71 Km<sup>2</sup>. This Park is the result of the carving of Chhattisgarh from Madhya Pradesh in the year of 2000. The park has been renamed after the Satnami reformist hero of the place, Guru Ghasidas.
- The area in the Koriya district of Chhattisgarh state is the catchment area for several small rivers and streams that support the lush forest cover of the reserve, which in turn becomes a perfect habitat for some of the more diverse collection of wildlife on the Deccan Plateau in India.

### History

- In past, (Before the formation of Chhattisgarh) the Ghasidas Reserve was a part of the Sanjay National Park in Madhya Pradesh, which during the creation of Chhattisgarh was divided by the new state boundaries and most of it went to the new state.



- This larger part of Sanjay Park (about 60%) was renamed to Guru Ghasidas National Park by the Chhattisgarh government.
- After Madhya Pradesh was divided in 2000, a large part of the then Sanjay National Park went to Chhattisgarh. Chhattisgarh government renamed this forest area, with an area of 1440.71 km<sup>2</sup> falling under its jurisdiction, as Guru Ghasidas National Park.
- In June 2011, the proposal to declare Guru Ghasidas National Park as a tiger reserve was proposed by the then Minister of State (Independent Charge) for Environment and Forests Jairam Ramesh to Chhattisgarh Chief Minister Raman Singh.

### Geography

- Guru Ghasidas National Park is located in the Koriya district of the state of Chhattisgarh. The park has undulating topography. It is covered by different forests and water bodies. Total area of the park is about 1440.71 km<sup>2</sup>.
- The park area falls under Tropical climate zone. The vegetation of Guru Ghasidas National Park consist mainly of mixed deciduous forest with teak, sal and bamboo trees.
- The Guru Ghasidas Tiger Reserve has a dense forest cover with a mixture of sub-tropical vegetation and wooded deciduous trees.



- There are some small hills interspersed with plain areas. Soils are sandy in nature. There are a number of streams passing through the park. These two rivers are the main source of water to wild animals. Banas river flowing in the western side of the park is an important water source. Bijaur nala flowing in northern side of the sanctuary retains water in some pools even during the summer.
- The guru Ghasidas national park lies between two important tiger reserves- Bandhavgarh (Madhya Pradesh) and Palamau (Jharkhand).
- The altitude of the park varies from 327 to 736 metres above Mean Sea Level.
- Maximum Temperature - 40<sup>o</sup> C
- Minimum Temperature - 11<sup>o</sup> C
- Average rainfall - 1400.00 mm

### Dominant flora

- Sal (*Shorea robusta*), Saja (*Terminalia alata*), Salai (*Boswellia serrata*), Mahua (*Madhuca indica*), Bija (*Pterocarpus marsupium*), Semal (*Bombox ceiba*), Gurjan (*Lannea coromandelica*), Sisham (*Dalbergia sissoo*), Bamboo (*Dendrocalamus strictus*), Achar (*Buchanania lanzan*), Kari (*Cliostanthus collinus*), Khair (*Acacia catechu*), Palas (*Butea monosperma*), Tendu (*Diospyros melanoxylon*) etc.



### Dominant fauna

- **Mammals** - Tiger, Leopard, Chital, Nilgai, Chinkara, Jackal, Sambar, Four-horned Antelope, Jungle Cat, Barking Deer, Porcupine, Monkey, Bison, Striped Hyena, Sloth Bear, Wild Dog, Spotted Deer, Civet, Wild Boar etc.
- **Birds** - Parakeets, Bulbuls, Wagtail, Munia, kingfishers, Barbet, Red-Headed Vulture Golden Hooded Oriole, Lesser Adjutant, Indian Pitta, Rufus-Treepie and Racket-Tailed Drongo etc.
- **Reptiles** - Cobra, Monitor lizard, Python, Snakes etc.

### Best time to visit

- The best time of the year to visit the Ghasidas National Park is between the months of November to May.

### How to Reach

- **By Air** - Nearest airports are Jabalpur (Madhya Pradesh) or Ranchi (Jharkhand) airports, about 200 Km and 250 Km from the Ghasidas National Park. These airports are well connected by road and rail network to Ghasidas National Park.
- **By Rail** - Nearest railway station is Jaora railway station, about 20 Km from the Ghasidas National Park. Jaora railway station is well connected by road to Ghasidas National Park.
- **By Road** - Ghasidas National Park is well connected to Major Cities and Places by road network. There are a number of government and privately operated vehicles that go to Ghasidas National Park at frequent intervals.



## Hilsa - National Fish of Bangladesh

- **Hilsa is the national fish of Bangladesh.** It is a marine fish that flies to the river in Bangladesh and eastern India to lay eggs. Hilsa is very popular for Bengalis. Apart from this, the fish are also very popular in Orissa, Tripura and Assam as food for the hilsa. In Bangladesh, about 75 percent of the world's hilsa is extracted.
- In 2017, hilsa fish are recognized as geographical indicators or GI products in Bangladesh.



## ARUL IAS ACADEMY

- **Hilsa** (ilish) any of the members of the genus *Tenualosa* of the family Clupeidae, order Clupeiformes. Locally known as Ilish, the fish has been designated as the national fish of Bangladesh. The body is strongly compressed and moderately deep with dorsal and ventral profile equally convex. The upper jaw has a distinct median notch. Regularly arranged medium-sized scales cover the metallic silver-coloured body. Body length may reach up to 60 cm, but commonly found specimens measure 35 to 40 cm. A large-sized hilsa weighs about 2.5 kg. Females grow faster, and are usually larger than males. The hilsa is known to be a fast swimmer, and attains maturity in one to two years.
- Hilsa has a wide range of distribution and occurs in marine, estuarine and riverine environments. The fish is found in the Persian Gulf, Red Sea, Arabian Sea, Bay of Bengal, Vietnam Sea and China Sea. The riverine habitat covers the Satil Arab, and the Tigris and Euphrates of Iran and Iraq, the Indus of

Pakistan, the rivers of Eastern and Western India, the Irrawaddy of Myanmar, and the Padma, Jamuna, Meghna, Karnafully and other coastal rivers of Bangladesh.



Hilsa, *Tenualosa ilisha*

- The fish is anadromous, with a life cycle that follows the general pattern of breeding upstream in fresh water and the larvae hatching from the free-floating eggs. The immature young stages grow in river channels and then descend to the sea for a period of feeding and growth before returning to the rivers as mature breeding adults to complete the cycle. The hilsa is a highly fecund fish. A large-sized female may produce up to 2 million eggs. Although hilsas spawn more or less throughout the year, they have a minor spawning season during February-March and a major season in September-October. Immature hilsa fish (6-10 cm), known as jatka, are extensively caught during their seaward migration in some of the major rivers of the country.
- Hilsa is primarily a plankton feeder and its food includes blue-green algae, diatoms, desmids, copepods, cladocera, rotifers, etc. The feeding habit may vary according to the season and age of the fish.

### Hilsa fishery

- The fish is exploited by intensive fishery for the mature migrating adults in the estuaries and river channels, and to a lesser extent by the capture of the jatka in the river. Nearly 16.4% of the country's total fish production is contributed by this fishery. In terms of production and quantity exported, hilsa has played a significant role in the economy of Bangladesh in recent years. An amount of Tk 1,34,79 million was earned by the fish and fisheries commodities in 1996-97, with hilsa alone contributing about Tk 4,88 million. It is estimated that about 2 million fishermen and traders are engaged in hilsa fishing in the country.
- Scientific interest in the fish and its exploitation became evident in the late 1940s when attempts were made to define the major biological parameters of the species. Little attention, however, was paid to the fisheries. The shortage of information necessary for fisheries evaluation and management and lack of any programme of fisheries investigation led to the establishment of the Hilsa



Fisheries Investigation and Management Unit to provide necessary information for optimum utilization of this important national resource.

### **Present status**

- Until about 1972 the hilsa fishery was restricted to the upstream rivers, mainly in the rivers Padma, Meghna, Karatoya, Rupsa, Shibsra and Payra. At present, the fishery has severely declined in the upstream areas and is mainly concentrated in the downstream rivers, estuaries, coastal areas and the sea.
- Since the construction of the FARAKKA BARRAGE in India to divert water from the Ganges, the fish are being caught in the coastal and estuarine waters before they can migrate upstream for spawning. Local fishermen catch migrating adults from May to October, and the juveniles from February to May. During the dry winter months from October to February hilsa are also caught by the coastal fishermen. The adult hilsa are caught using fixed or drifting gillnets (chandi jal) and lesser quantities are caught in berjal and lift nets (shangla jal). In the river these fishing units usually consist of non-mechanized single or two-boat teams, whilst at sea the fishing is done with mechanized 10-13m boats or trawlers. A system of collector boats, wholesale markets and transporter-traders supplies the inland markets with this prized fish.
- During 1980s hilsa production was fairly stable. In recent years, however, the production has shown a downward trend, particularly in the inland fishery. In 1999 the production was significantly low and in 2000 the fishery continued to decline steeply.

### **Causes of depletion**

- A number of factors are thought to be responsible for the decline of the hilsa fishery in Bangladesh. Low water discharge from the Ganges due to construction of the Farakka Barrage and consequent heavy siltation, indiscriminate exploitation of juveniles (jatka), disruption of migration routes, loss of spawning, feeding and nursing grounds, and increased river pollution are considered to be some causes of this decline. Moreover, uncontrolled use of mechanized hilsa fishing boats in coastal areas is preventing upward spawning migration of the fish.
- Water resources development activities such as the Flood Control Drainage (FCD), and Flood Control Drainage and Irrigation (FCDI) projects have also adversely affected the aquatic ecosystem and hilsa fishery. The closure of the Kumar has cut off hilsa migration from the sea via Nabaganga to the Padma. The Chandpur Irrigation and Flood Control Project and the Meghna-Dhanagoda Irrigation and Flood Control Project have also exerted similar negative effects on the hilsa fishery through destruction of nursery grounds of the juvenile hilsa.



**Jatka**

- The local name for the young or juvenile stage of hilsa. Migrating adult females release eggs upstream in major rivers, including the Padma, Jamuna and Meghna. After hatching from free-floating eggs, the larvae remain in their nursery grounds for some time where they feed and grow. In about six to ten weeks they grow to about 12-20 cm and become known as jatka. At this stage they start descending to the sea for further growth and maturity. A survey conducted by the Bangladesh Fisheries Research Institute in 1992-94 estimated that every year in the fishing season from January to April, about 3,500-4,000 m tons of jatka are caught by using different types of gears such as jagat berjal, current jal and behundi jal. More than 50% of the total jatka are caught in the Meghna. Although fishing regulations do not permit catching jatka, since it is very damaging to the hilsa fishery, the practice continues unabated. [SM Humayun Kabir]

<b>On the wane</b> <b>Sharp decrease in inland hilsa landing</b>	
<b>Period</b>	<b>Average catch (in tonnes)</b>
1956-1957 to 1959-1960	135,972
1960-1961 to 1961-1962	96,070
1983-1984 to 1989-1990	88,862
1990-1991 to 1999-2000	76,430
2000-2001 to 2001-2002	71,655

**Source:** Department of fisheries, ministry of fisheries and livestock, Bangladesh

- **Two varieties of hilsa** -- *Tenualosa ilisha* and *Tenualosa toli ilisha* -- are found in the marine and fresh waters of Bangladesh. But sources in the department of fisheries (dof) of the country's ministry of fisheries and livestock (mofl) reveal that hilsa has either become extinct or its numbers have fallen steeply in 20 rivers. For instance, the fish has virtually vanished from the 170-km-long Karnaphuli river. There has been a 20 per cent decline in hilsa catch from rivers over the past 17 years (see table: On the wane). This despite the increase in Bangladesh's total haul of the fish due to heavy fishing in the sea.



- Hilsa's peculiar habitat makes it impossible to breed it artificially through aquaculture, unlike other fish. The adult hilsa swims several kilometres upstream to freshwater from the sea for spawning and returns to saline water after that. The eggs hatch in freshwater and the sub-adult hilsa, called jatka, flows back downstream into the sea, a process that takes a few months. This has been pointed out in a study, Marine Resource and Hilsa Spawning Impact Assessment Between Nijhum Dwip and Hatia South, conducted by the Center for Natural Resource Studies (cnrs), a non-governmental environment organisation.
- According to the **Bangladesh Fisheries Research Institute (BFRI)**, an autonomous organisation under the mofl, pollution is largely responsible for the decrease in the brood capacity of adult hilsa from over 1 million during the 1980s to about 0.7 million between 1992 and 1998. It points out that almost all industrial units, hospitals and civic bodies of the country release untreated effluents into the rivers. Oil spilled from ships and boats also causes pollution. Besides, nearly 2,750 tonnes of pesticides used for agriculture are washed into the rivers annually. BFRI's research also establishes that chemical pollution has drastically decreased the amount of plankton, hilsa's staple food, in rivers.
- Apart from pollution, excessive and indiscriminate fishing presents a frightful scenario. About 32 per cent fisherfolk catch fish the entire year; the others do it seasonally. Adult hilsa entering Bangladesh's rivers from the Bay of Bengal is netted during its upstream migration. This problem is especially acute in the case of southern rivers. The jatka is also caught while it is in the freshwater and during its downstream movement in the Meghna river system. All the fisherfolk interviewed in the cnrs study were unanimous in their opinion that jatka harvest had a major role in the decrease in hilsa population. Even as they denied catching jatka themselves, they claimed to have seen them in "other fishermen's nets". Some held the steep rise in the number of fisherfolk as another reason for the decline. Besides, they said natural factors like siltation and accretion of islands, which reduces the spawning ground, had hastened the downtrend.
- A change in the fishing pattern is also believed to have contributed to the crisis. Earlier, only members of a particular community comprised fisherfolk. As per their traditional belief, they didn't fish during a particular period that coincided with the fish's breeding season. But now even other communities are catching the hilsa, and they don't follow this practice.
- Meanwhile, the Bangladesh government has finally started taking some measures to save the hilsa. The coastguard has been deployed at 15 river points -- including some islands in the estuary of Bay of Bengal such as Monpura, Dhalarchar, Kallarchar and Moulabarirchar -- to prevent the netting



of the jatka. G C Haldar, an expert in hilsa management, has been quoted as saying: "We still have a chance to save the fish, but it is essential to keep our rivers healthy. Further, an effective moratorium on netting small fish is a must." But many others are of the view that the crisis cannot be resolved unless a special 'hilsa area' is developed. This should include Chandpur, Shariatpur, Barisal, Laxmipur, Bhola, Chittagong, Pirojpur, Barguna, Noakhali, Patuakhai and Khulna districts. They also recommend special measures for managing and developing hilsa resources.



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UPSC PRELIMS (2022)	36	4200
TNPSC PRELIMS (2021-2022)	20+5	3675
TNPSC GROUP I MAINS	27	540
TNPSC GROUP II MAINS	40	-

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### Indian Rhino Vision



#### IRV 2020

- The **Indian Rhino Vision 2020 (IRV2020)** program is drawing to a close with the **translocation of two rhinos earlier in 2020 to Manas National Park** in Assam, India. A **final translocation of two additional rhinos** was to take place during the spring, but has been postponed as India has restricted travel in response to mitigating the global **COVID-19 pandemic** in the country.
- Over the course of 15 years, there have been both successes and failures. Perhaps the biggest success is the perseverance and dedication to making improvements over the course of the program.

#### Vision

- A world where rhinos thrive in the wild.

#### Mission

- To ensure the survival of rhinos through strategic partnerships, targeted protection, and scientifically sound interventions.

#### Indian Rhino Vision 2020:

- Wild-to-wild translocations were an essential part of IRV2020 – moving rhinos from **densely populated parks like Kaziranga NP**, to ones in need of more rhinos, like Manas NP.
- The goal of **IRV2020** was to increase the **rhino population in Assam to 3,000** by establishing populations in new areas. Rhinos are now found in four Protected Areas in Assam: **Pabitora Wildlife Reserve, Rajiv Gandhi Orang National Park, Kaziranga National Park, and Manas National Park.**
- **IRV2020 was established in 2005** when IRF Program Director Dr. Tom Foose and Randy Rieches (San Diego Zoo Global) met with leaders from the World Wildlife Fund (WWF), including Drs. Tariq Aziz, Christy Williams, and Chandra Prasad Gurung, the Bodo Territorial Council, and representatives of the Government of Assam to develop a long-term strategy for greater one-horned rhino management in India's State of Assam.



### Important Facts

- An **initial population of 18** was established in Manas. Challenges have included instability due to socio-political unrest in the vicinity of the park. Translocations were paused many times to ensure the safety of both the rhinos and people. **2012 saw the first loss of a rhino to poaching**. Births in subsequent years were offset by poaching. The IRV2020 partners perform regular monitoring and security assessments and make improvements based on recommendations by both local and worldwide experts.
- IRV2020 partners have witnessed continuous improvement in protection and enforcement over the course of the program. 2018 and 2019 saw significant decreases in poaching, the results of forestry, local and national government officials coordinating efforts to combat wildlife crime across Assam.



- In 2017, the program marked a significant success – a third generation in Manas. The **female offspring of Ganga, a female rhino that arrived in Manas in 2007**, gave birth to her own calf, a male. With the latest translocation and several births, the **Manas population has grown to 42 rhinos**.



- It takes a lot of planning and preparation and a large team to ensure a translocation goes as smoothly as possible. Great job and congratulations to all the translocation teams!
- The work of IRV2020 has often been difficult and not all of the original goals have been met. There have been several starts and stops along the way. What has been most important is there was and remains a long term commitment dedicated to the not just the survival of this species which once numbered around 100 and **now is more than 3,600**, but that greater one-horned rhinos will thrive for many generations to come.
- Many lessons have been learned in the 15 years of IRV2020, and many more will be learned. The IRV2020 partners will meet when possible again to discuss strategy and goals for the future. They will review each success and failure as well as each failure that led to a new success. After all, continuous improvement, perseverance, and long term commitment to **increasing the population of greater one-horned rhinos** is what brought diverse partners to come together to create and implement IRV2020.
- IRF takes this opportunity to offer its sincere gratitude to **Assam Forest Department, Bodoland Territorial Council, WWF-India, USFWS and other local agencies involved in IRV 2020** since the beginning of 2005 and IRF is committed to continued collaborations and partnership.
- Those traits and collaboration will be at the core of what the next Indian Rhino Vision program will become. The photo below from the most recent translocation demonstrates those values. Security, veterinary, park officials, forestry officials, local and world partners are all working together to accomplish the mission of IRV2020.

### Rhino Operations in India

#### Our annual operations include:

- Providing logistical support and training for wildlife crime enforcement;
- Tracking and monitoring rhinos on a continual basis to ensure their safety;
- Continuing intensive monitoring of these populations;
- Growing population by translocating animals to new, sustainable habitats;
- Working with local communities to build support for rhino conservation through education and employment;
- Habitat management, including invasive species removal.

### Latest News from India

- The **sixth highest recorded flood in Assam's Pobitora Wildlife Sanctuary** has begun to recede. The flood is an annual occurrence and ranges in intensity based on the monsoon rainfall received by the Brahmaputra floodplain. The floods typically last for 7 to 10 days; however, in 2020 flood levels remained for nearly 2 months causing issues for humans and rhinos alike.



- Though flooding can cause fatalities for both humans and wildlife, it is a necessary and beneficial yearly event for the ecosystem, providing renewed nutrients to the soil to promote the better growth of grassland each year. **The flood also recharges the natural wetlands throughout Kaziranga National Park (KNP).**
- Wildlife living in this floodplain ecosystem over hundreds of years has learned to adapt to the landscape and natural calamities such as the annual floods. When flood water increases in KNP, many wild animals instinctively move to higher ground in the park or to the adjoining Karbi-Anglong Hills to the south. This movement has become more complex with the construction of dams in the floodplain. Monsoon rain increases gradually, but the dams also release water, bringing sudden increases in water volume to KNP, giving less time for animals to anticipate and move to safety.
- Forestry officials were able to provide relief to villagers via a boat donated by IRF. Officials are also providing flood relief to rhinos, leaving bundles of grass to replace food sources. Bibhab Talukdar, IRF's Asian Rhino Program Coordinator, will visit the area and make an assessment of needs and threats including potential food shortages before winter come to the area.
- In Pabitora Wildlife Sanctuary, bundles of grass are harvested and transported by boat to provide supplemental food for rhinos that are stuck on temporary "islands" created by the flood waters.



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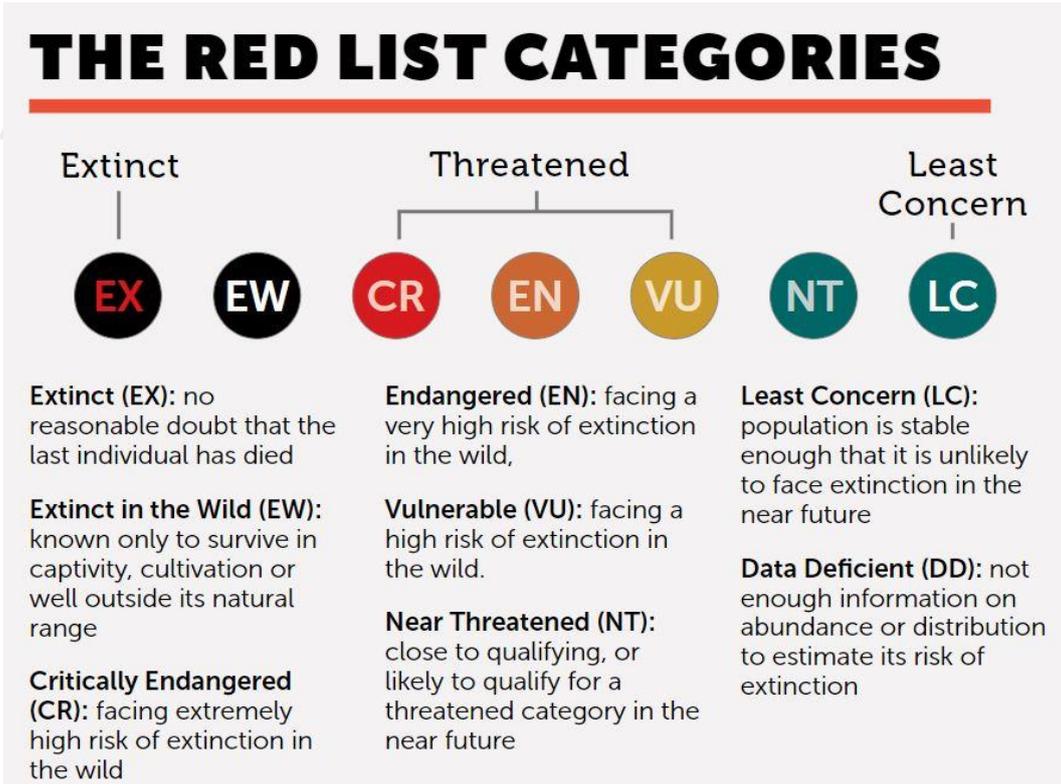
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**IUCN**  
**(International Union for Conservation of Nature)**



**IUCN**

- (IUCN) is an international organization (NGO) working in the field of **nature conservation and sustainable use of natural resources**.
- **Headquarters** → Gland, Switzerland, Founded in 1964.
- Best known for compiling and publishing Red Data list, Which assess the conservation status of species around the world.
- Red list adopted by united nations as one of the indicators for the **2015 Millennium Development Goal 7 on environment sustainability**.
- Currently, the IUCN is the biggest and most diverse environmental network.





### IUCN - Red Data Book

- In official term 'threatened' was classified in three categories
- Critically Endangered - **PINK pages for CE**
- Endangered
- Vulnerable
- **Green Pages for those species** formerly endangered now recover to the point it was no longer threatened.

### Categories Under IUCN

#### Extinct (EX)

- No known individuals remaining.

#### Extinction of species

- **Natural Extinction** – With the change in environmental conditions, the species disappear and others, which are more adapted to changed conditions, take their place. The loss of species which occurred in the geological part in the past at a very slow rate is called natural or background extinction.
- **Mass Extinction** – Happens because of catastrophes. Mass extinctions occur in millions of years
- **Anthropogenic Extinction** – An increasing number of species disappearing from the face of the earth due to human activities. The man made extinction represents a very severe depletion of biodiversity, particularly because it is occurring within a short period of time.

#### Extinct in the wild (EW)

- Known only to survive in captivity, or as a naturalized population outside its historic range.

#### Critically endangered (CR)

- Extremely high risk of extinction in the wild.
  - Reduction in population (greater than 90% over the last 10 years),
  - Population size (number less than 50 mature individuals),
  - Quantitative analysis showing the probability of extinction in wild in at least 50% in their 10 years
  - It is therefore considered to be facing an extremely high risk of extinction in the wild.

#### Endangered (EN)

- High risk of extinction in the wild.
- Reduction in population 70% over last 10 years
- Population size - 250 mature individuals
- Quantitative analysis showing the probability of extinction in wild at least 20% in their 20 years



### **Vulnerable (VU)**

- High risk of endangerment in the wild.
  - Reduction in population size >50% over last 10 years
  - 10,000 mature individuals
  - Probability of extinction in wild is at least 10% in their 100 years

### **Near threatened (NT)**

- Likely to become endangered in the near future.

### **Least concern (LC)**

- Lowest risk. Does not qualify for a more at-risk category. Widespread and abundant taxa are included in this category.

### **Data deficient (DD)**

- Not enough data to assess its risk of extinction.

### **Not evaluated (NE)**

- Has not yet been evaluated against the criteria.

### **Latest Updates about IUCN Red List**



- A Recent assessment published by the IUCN on March 28, 2021 has shown that the population of the African Forest Elephant has continued to decline due to illegal poaching.
- African Elephants species has African Forest Elephant and African Savannah Elephant. IUCN has recently updated the status of both the elephants in the IUCN Red List.
  - **African Forest Elephant - Critically Endangered**
  - **African Savannah Elephant - Endangered**
  - Note - Earlier, these two elephants were treated as a single species and were listed as Vulnerable in the IUCN Red List.
- The IUCN Red List now includes 134,425 species of which 37,480 are threatened with extinction.

## Kaziranga National Park (Kazironga Rastrio Uiddan)

- **In the heart of Assam**, this park is one of the last areas in eastern India undisturbed by a human presence. It is **inhabited by the world’s largest population of one-horned rhinoceroses**, as well as many mammals, including **tigers, elephants, panthers and bears, and thousands of birds**.



<b>Location</b>	Golaghat and Nagaon
<b>Nearest city</b>	Golaghat, Nagaon, Furkating
<b>Coordinates</b>	26°40'N 93°21'ECoordinates: 26°40'N 93°21'E
<b>Area</b>	430 km <sup>2</sup> (170 sq. mi)
<b>Established</b>	1908
<b>Governing body</b>	Government of Assam Government of India
<b>World Heritage site</b>	World Heritage Place by UNESCO since 1985

**Kaziranga Tourism** has been declared a **world heritage site by UNESCO**. Being one of the biggest natural landscapes of North East India, **Kaziranga represents the Brahmaputra Valley Floodplains**. The uniqueness of this region’s diversity prompted UNESCO to work towards its conservation and make necessary arrangements to stop hunting and poaching



### **Kaziranga National Park**

- **Kaziranga National Park** is a national park in the Golaghat, Karbi Anglong and Nagaon districts of the state of Assam, India. The sanctuary, which **hosts two-thirds of the world's great one-horned rhinoceroses**, is a World Heritage Site. According to the census held in March 2018 which was jointly conducted by the Forest Department of the Government of Assam and some recognized wildlife NGOs, the **rhino population in Kaziranga National Park is 2,413. It comprises 1,641 adult rhinos (642 males, 793 females, 206 unsexed); 387 sub-adults (116 males, 149 females, 122 unsexed); and 385 calves.**
- In 2015, the rhino population stood at 2401. Kaziranga is home to the highest density of tigers among protected areas in the world, and was declared a Tiger Reserve in 2006 (now the highest tiger density is in Orang National Park, Assam). The park is home to large breeding populations of elephants, wild water buffalo, and swamp deer. Kaziranga is recognized as an Important Bird Area by Birdlife for conservation of avifaunal species. When compared with other protected areas in India, Kaziranga has achieved notable success in wildlife conservation. Located on the edge of the Eastern Himalaya biodiversity hotspot, the park combines high species diversity and visibility.
- Kaziranga is a vast expanse of tall elephant grass, marshland, and dense tropical moist broadleaf forests, criss-crossed by four major rivers, including the Brahmaputra, and the park includes numerous small bodies of water. Kaziranga has been the theme of several books, songs, and documentaries. The park celebrated its centennial in 2005 after its establishment in 1905 as a reserve forest.

### **History**

- The history of Kaziranga as a protected area can be traced back to 1904, when Mary Curzon, Baroness Curzon of Kedleston, the wife of the Viceroy of India, Lord Curzon of Kedleston, visited the area. After failing to see a single rhinoceros, for which the area was renowned, she persuaded her husband to take urgent measures to protect the dwindling species which he did by initiating planning for their protection. On 1 June 1905, the Kaziranga Proposed Reserve Forest was created with an area of 232 km<sup>2</sup> (90 sq. mi).
- Over the next three years, the park area was extended by 152 km<sup>2</sup> (59 sq. mi), to the banks of the Brahmaputra River. In 1908, Kaziranga was designated a **“Reserve Forest”**.
- In 1916, it was redesignated the **“Kaziranga Game Sanctuary”** and remained so till 1938, when hunting was prohibited and visitors were permitted to enter the park.



- The Kaziranga Game Sanctuary was renamed the “Kaziranga Wildlife Sanctuary” in 1950 by P. D. Stracey, the forest conservationist, in order to rid the name of hunting connotations.
- In 1954, the government of Assam passed the Assam (Rhinoceros) Bill, which imposed heavy penalties for rhinoceros poaching. Fourteen years later, in 1968, the state government passed the Assam National Park Act of 1968, declaring Kaziranga a designated national park. The 430 km<sup>2</sup> (166 sq. mi) park was given official status by the central government on 11 February 1974. **In 1985, Kaziranga was declared a World Heritage Site by UNESCO for its unique natural environment.**
- Kaziranga has been the target of several natural and man-made calamities in recent decades. Floods caused by the overflow of the river Brahmaputra, leading to significant losses of animal life.<sup>[10]</sup> Encroachment by people along the periphery has also led to a diminished forest cover and a loss of habitat. An ongoing separatist movement in Assam led by the United Liberation Front of Assam (ULFA) has crippled the economy of the region, but Kaziranga has remained unaffected by the movement; indeed, instances of rebels from the United Liberation Front of Assam protecting the animals and, in extreme cases, killing poachers, have been reported since the 1980s.

### **Conservation Management of Kaziranga National Park**

- Kaziranga National Park has been granted maximum protection under the Indian law for wildlife conservation. Various laws, which range in dates from the *Assam Forest Regulation of 1891* and the *Biodiversity Conservation Act of 2002*, have been enacted for protection of wildlife in the park.
- Poaching activities, particularly of the rhinoceroses for its horn, has been a major concern for the authorities. Between 1980 and 2005, 567 rhinoceroses were hunted by poachers. Following a decreasing trend for the past few years, 18 one-horned rhinoceroses were killed by poachers in 2007.
- Reports have suggested that there are links between these poaching activities and funding of terrorist organizations. But these could not be substantiated in later years.
- Preventive measures such as construction of anti-poaching camps and maintenance of existing ones, patrolling, intelligence gathering, and control over the use of firearms around the park have reduced the number of casualties. Since 2013, the park used cameras on drones which are monitored by security guards to protect the rhino from armed poachers.

GREATER ONE-HORNED RHINOCEROS *or*  
**INDIAN RHINOCEROS**  
*(Rhinoceros unicornis)*

Named after the Greek mythological horse-like animal with a single horn - unicorn

Second-largest land mammal in Asia, after the Asiatic elephant

Second-largest rhinoceros, after the African white rhinoceros

Weighs between  
**1700 - 2800 kg**  
with males being larger

- > Single-largest threat to survival is poaching for the horn
- > The horn is used in traditional Chinese medicine and this is what has driven the rhinos to near extinction
- > The horn is composed of keratin, same as our fingernails



Once widely distributed all the way from the Indus to the Brahmaputra valley



Chitwan National Park in Nepal, and Manas and Pobitora National Parks in Assam are the other rhino strongholds

  
There were just 12 rhinos in Kaziranga in 1908! Most had been killed by hunters

Current population is 3,500+ animals of which around 2,400 are in Kaziranga National Park alone

  
A small population was translocated to Dudhwa Tiger Reserve in the 1980s

  
They can poop as much as 25 kg in one defecation!

They have the habit of pooping in the same spot. These sites are called latrines or middens and serve as natural signalling posts

Elrhino in Assam makes paper out of rhino poop, and the money generated helps compensate villagers for damage to crops by rhinos

**Wildlife Trust of India, Aaranyak, and World Wildlife Fund are working to conserve the rhino in India**

## Kyoto Protocol



### **Kyoto Protocol:**

- **The Kyoto Protocol was adopted on 11 December 1997.** Owing to a complex ratification process, it entered into force on 16 February 2005. **Currently, there are 192 Parties to the Kyoto Protocol.**
- In short, the Kyoto Protocol operationalizes the United Nations Framework Convention on Climate Change by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets. The Convention itself only asks those countries to adopt policies and measures on mitigation and to report periodically.
- The Kyoto Protocol is based on the principles and provisions of the Convention and follows its annex-based structure. It only binds developed countries, and places a heavier burden on them under the principle of “common but differentiated responsibility and respective capabilities”, because it recognizes that they are largely responsible for the current high levels of GHG emissions in the atmosphere.
- In its Annex B, the Kyoto Protocol sets binding emission reduction targets for 37 industrialized countries and economies in transition and the European Union. Overall, these targets add up to an average 5 per cent emission reduction compared to 1990 levels **over the five year period 2008–2012 (the first commitment period).**

### Doha Amendment



- In Doha, Qatar, on 8 December 2012, the Doha Amendment to the Kyoto Protocol was adopted for a second commitment period, starting in 2013 and lasting until 2020. However, the Doha Amendment has not yet entered into force; a **total of 144 instruments** of acceptance are required for entry into force of the amendment.

#### The amendment includes:

- New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a **second commitment period from 1 January 2013 to 31 December 2020**;
- A revised list of GHG to be reported on by Parties in the second commitment period; and
- Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.
- On 21 December 2012, the amendment was circulated by the Secretary-General of the United Nations, acting in his capacity as Depositary, to all Parties to **the Kyoto Protocol in accordance with Articles 20 and 21 of the Protocol**.
- During the first commitment period, 37 industrialized countries and economies in transition and the European Community committed to reduce GHG emissions to an average of five percent against 1990 levels. During the second commitment period, Parties committed to reduce GHG emissions by at least 18 percent below 1990 levels in the eight-year period from 2013 to 2020;

however, the composition of Parties in the second commitment period is different from the first.

### The Kyoto mechanisms



- One important element of the **Kyoto Protocol** was the **establishment of flexible market mechanisms**, which are based on the trade of emissions permits. Under the Protocol, countries must meet their targets primarily through national measures. However, the Protocol also offers them an additional means to meet their targets by way of three market-based mechanisms:
  - International Emissions Trading
  - Clean Development Mechanism (CDM)
  - Joint implementation (JI)
  - These mechanisms ideally encourage GHG abatement to start where it is most cost-effective, for example, in the developing world. It does not matter where emissions are reduced, as long as they are removed from the atmosphere. This has the parallel benefits of stimulating green investment in developing countries and including the private sector in this endeavour to cut and hold steady GHG emissions at a safe level. It also makes leap-frogging – that is, the possibility of skipping the use of older, dirtier technology for newer, cleaner infrastructure and systems, with obvious longer-term benefits – more economical.

### Monitoring emission targets

- The Kyoto Protocol also established a rigorous monitoring, review and verification system, as well as a compliance system to ensure transparency and hold Parties to account. Under the Protocol, countries' actual emissions have to be monitored and precise records have to be kept of the trades carried out.



- Registry systems track and record transactions by Parties under the mechanisms. The UN Climate Change Secretariat, based in Bonn, Germany, keeps an international transaction log to verify that transactions are consistent with the rules of the Protocol.
- Reporting is done by Parties by submitting annual emission inventories and national reports under the Protocol at regular intervals.
- A compliance system ensures that Parties are meeting their commitments and helps them to meet their commitments if they have problems doing so.

### **Adaptation**

- The Kyoto Protocol, like the Convention, is also designed to assist countries in adapting to the adverse effects of climate change. It facilitates the development and deployment of technologies that can help increase resilience to the impacts of climate change.
- The Adaptation Fund was established to finance adaptation projects and programmes in developing countries that are Parties to the Kyoto Protocol. In the first commitment period, the Fund was financed mainly with a share of proceeds from CDM project activities. In Doha, in 2012, it was decided that for the second commitment period, international emissions trading and joint implementation would also provide the Adaptation Fund with a 2 percent share of proceeds.

### **Kyoto Protocol - Targets for the first commitment period**

#### **Targets for the first commitment period**

- The targets for the first commitment period of the Kyoto Protocol cover emissions of the six main greenhouse gases, namely:
  - Carbon dioxide (CO<sub>2</sub>);
  - Methane (CH<sub>4</sub>);
  - Nitrous oxide (N<sub>2</sub>O);
  - Hydrofluorocarbons (HFCs);
  - Perfluorocarbons (PFCs); and
  - Sulphur hexafluoride (SF<sub>6</sub>)
- The maximum amount of emissions (measured as the equivalent in carbon dioxide) that a Party may emit over a commitment period in order to comply with its emissions target is known as a Party's assigned amount. The individual targets for Annex I Parties are listed in the Kyoto Protocol's Annex B.
- Kyoto Protocol Reference Manual on Accounting of Emissions and Assigned Amounts



**Countries included in Annex B to the Kyoto Protocol for the first commitment period and their emissions targets**

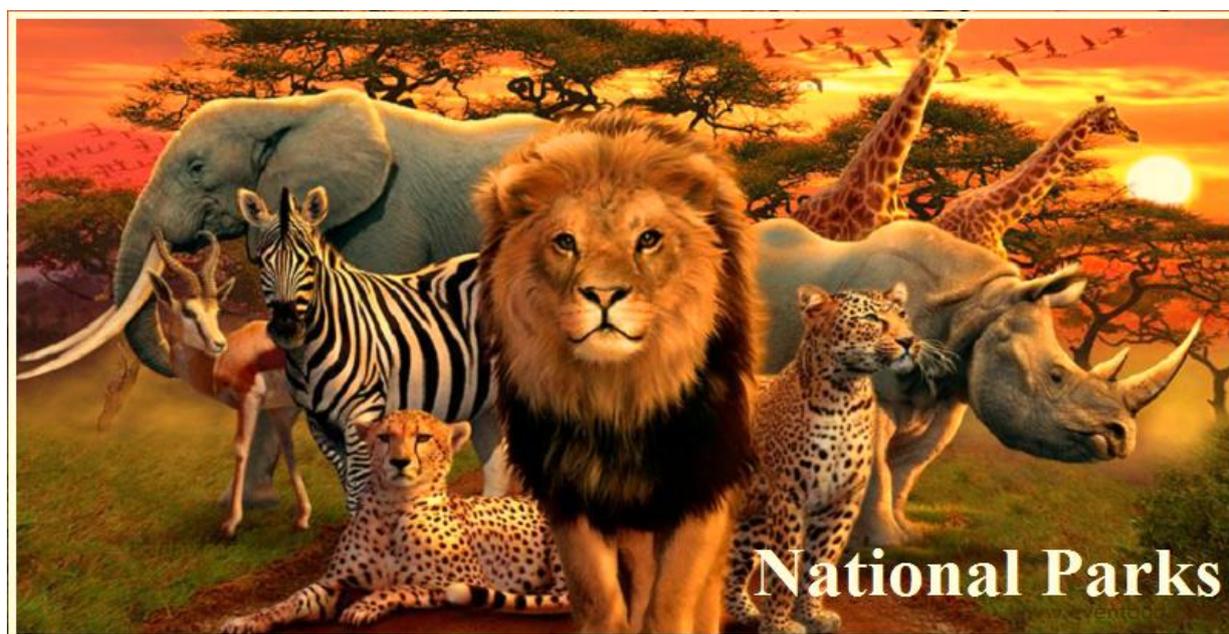
Country	Target (1990** - 2008/2012)
EU-15*, Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	-8%
US	-7%
Canada, Hungary, Japan, Poland	-6%
Croatia	-5%
New Zealand, Russian Federation, Ukraine	0
Norway	+1%
Australia	+8%
Iceland	+10%

- The **15 States who were EU members in 1997** when the Kyoto Protocol was adopted, took on that 8% target that will be redistributed among themselves, taking advantage of a scheme under the **Protocol known as a “bubble”**, whereby countries have different individual targets, but which combined make an overall target for that group of countries. The EU has already reached agreement on how its targets will be redistributed.
- Some **EITs have a baseline other than 1990**.
- The US has indicated its intention not to ratify the Kyoto Protocol.
- **On 15 December 2011, the Depository received written notification of Canada’s withdrawal from the Kyoto Protocol**. This action became effective for Canada on 15 December 2012.

**Amendment to Annex B of the Kyoto Protocol**

- The Protocol mirrors the Convention in recognizing the specific needs and concerns of developing countries, especially the most vulnerable among them. Annex I Parties must thus provide information on how they are striving to meet their emissions targets while minimizing adverse impacts on developing countries.
- An Adaptation Fund was established to finance concrete adaptation projects and programmes in developing countries that are Parties to the Kyoto Protocol. The Fund is financed with the share of proceeds from clean development mechanism (CDM) project activities and other sources.

## List of National Parks in India



### List of National Parks in India:

Name	State	Year formed	Area (in km <sup>2</sup> )
Jim Corbett National Park	Uttarakhand	1936	1318.5
Mudumalai National Park	Tamil Nadu	1940	321.55
Hazaribagh Wildlife Sanctuary	Jharkhand	1954	183.89
Govind Pashu Vihar National Park	Uttarakhand	1955	472.08
Kanha National Park	Madhya Pradesh	1955	940
Sariska Tiger Reserve	Rajasthan	1955	866
Tadoba National Park	Maharashtra	1955	625
Madhav National Park	Madhya Pradesh	1959	375.22
Mount Abu Wildlife Sanctuary	Rajasthan	1960	288.84
Nandankanan Zoological Park	Odisha	1960	4.006
Gir National Park	Gujarat	1965	258.71
Bandhavgarh National Park	Madhya Pradesh	1968	446
Sanjay Gandhi National Park	Maharashtra	1969	104
Bandipur National Park	Karnataka	1974	874.20
Bannerghatta Biological Park	Karnataka	1974	106.27
Kaziranga National Park	Assam	1974	858.98
Namdapha National Park	Arunachal Pradesh	1974	1985.24



Name	State	Year formed	Area (in km <sup>2</sup> )
Navegaon National Park	Maharashtra	1975	133.88
Blackbuck National Park, Velavadar	Gujarat	1976	34.08
Guindy National Park	Tamil Nadu	1976	2.82
Valmiki National Park	Bihar	1976	898.45
Dudhwa National Park	Uttar Pradesh	1977	490.29
Keibul Lamjao National Park	Manipur	1977	40
Khangchendzonga National Park	Sikkim	1977	1784
Pench National Park	Madhya Pradesh	1977	758
Eravikulam National Park	Kerala	1978	97
Mollem National Park	Goa	1978	107
Nameri National Park	Assam	1978	137.07
North Button Island National Park	Andaman and Nicobar Islands	1979	144
Saddle Peak National Park	Andaman and Nicobar Islands	1979	32.54
Vansda National Park	Gujarat	1979	23.99
Desert National Park	Rajasthan	1980	3162
Gulf of Mannar Marine National Park	Tamil Nadu	1980	6.23
Marine National Park, Gulf of Kutch	Gujarat	1980	162.89
Silent Valley National Park	Kerala	1980	237
Simlipal National Park	Odisha	1980	2750
Dachigam National Park	Jammu and Kashmir	1981	141
Hemis National Park	Jammu and Kashmir	1981	4400
Guru Ghasidas National Park	Chhattisgarh	1981	1440.71
Indravati National Park	Chhattisgarh	1981	1258.37
Keoladeo National Park	Rajasthan	1981	28.73
Kishtwar National Park	Jammu and Kashmir	1981	400
Panna National Park	Madhya Pradesh	1981	542.67
Ranthambore National Park	Rajasthan	1981	392
Sanjay National Park	Madhya Pradesh	1981	466.7
Satpura National Park	Madhya Pradesh	1981	524
Bandhavgarh National Park	Madhya Pradesh	1982	446
Kanger Ghati National Park	Chhattisgarh	1982	200
Nanda Devi National Park	Uttarakhand	1982	630.33



Name	State	Year formed	Area (in km <sup>2</sup> )
Periyar National Park	Kerala	1982	305
Sirohi National Park	Manipur	1982	41.30
Valley of Flowers National Park	Uttarakhand	1982	87.50
Mahatma Gandhi Marine National Park	Andaman and Nicobar Islands	1983	281.50
Mandla Plant Fossils National Park	Madhya Pradesh	1983	0.27
Rajaji National Park	Uttarakhand	1983	820
Sanjay Gandhi National Park	Maharashtra	1983	86.96
Van Vihar National Park	Madhya Pradesh	1983	4.48
Great Himalayan National Park	Himachal Pradesh	1984	754.40
Sundarbans National Park	West Bengal	1984	1330.12
Mouling National Park	Arunachal Pradesh	1986	483
Neora Valley National Park	West Bengal	1986	88
Singalila National Park	West Bengal	1986	78.60
Gugamal National Park	Maharashtra	1987	361.28
Kudremukh National Park	Karnataka	1987	600.32
Middle Button Island National Park	Andaman and Nicobar Islands	1987	0.44
Pin Valley National Park	Himachal Pradesh	1987	807.36
Bhitarkanika National Park	Odisha	1988	145
Nagarhole National Park	Karnataka	1988	643.39
Gangotri National Park	Uttarakhand	1989	2390
Indira Gandhi Wildlife Sanctuary and National Park	Tamil Nadu	1989	957
Sri Venkateswara National Park	Andhra Pradesh	1989	353
Sultanpur National Park	Haryana	1989	1.43
Manas National Park	Assam	1990	950
Buxa Tiger Reserve	West Bengal	1992	760
Campbell Bay National Park	Andaman and Nicobar Islands	1992	426.23
Galathea National Park	Andaman and Nicobar Islands	1992	110
Phawngpui Blue Mountain National Park	Mizoram	1992	50
Ntangki National Park	Nagaland	1993	202.02
Gorumara National Park	West Bengal	1994	79.45
Kasu Brahmananda Reddy National	Telangana	1994	1.42



Name	State	Year formed	Area (in km <sup>2</sup> )
Park			
Mahavir Harina Vanasthali National Park	Telangana	1994	14.59
Rani Jhansi Marine National Park	Andaman and Nicobar Islands	1996	256.14
Dibru-Saikhowa National Park	Assam	1999	340
Orang National Park	Assam	1999	78.81
Mukurthi National Park	Tamil Nadu	2001	78.46
Anamudi Shola National Park	Kerala	2003	7.5
Kalesar National Park	Haryana	2003	100.88
Mathikettan Shola National Park	Kerala	2003	12.82
Chandoli National Park	Maharashtra	2004	317.67
Rajiv Gandhi National Park (Rameswaram)	Andhra Pradesh	2005	2.4
Mukundra Hills National Park	Rajasthan	2004	759.99
Papikonda National Park	Andhra Pradesh	2008	1012.85
Inderkilla National Park	Himachal Pradesh	2010	104
Khirganga National Park	Himachal Pradesh	2010	710
Simbalbara National Park	Himachal Pradesh	2010	27.88
Jaldapara National Park	West Bengal	2012	216
Balpakram National Park	Meghalaya	2013	220
Kuno National Park	Madhya Pradesh	2018	748.76
Dehing Patkai National Park	Assam	2020	231.65

### List of National Parks in Tamil Nadu

Name	State	Year formed	Area (in km <sup>2</sup> )
Mudumalai National Park	Tamil Nadu	1940	321.55
Guindy National Park	Tamil Nadu	1976	2.82
Gulf of Mannar Marine National Park	Tamil Nadu	1980	6.23
Indira Gandhi Wildlife Sanctuary and National Park (Aanaimalai Tiger Reserve)	Tamil Nadu	1989	958
Mukurthi National Park	Tamil Nadu	2001	78.46



## Montreal Protocol

- The Montreal Protocol on Substances that Deplete the Ozone Layer is an important Multilateral Agreement regulating the production, consumption, and emissions of ozone-depleting substances (ODSs).
- It is an important part of international environmental conventions and protocols.
- Montreal Protocol is related to the regulation of ozone-depleting substances.
- **Montreal Protocol Signed in 1987**
- **Montreal Protocol Came into force in 1989**
- By the late 1970s, scientists were able to prove that chemical substances that were used in air conditioners, refrigerators, and aerosol cans were causing damage to the ozone layer. In 1985, a huge hole was discovered in the ozone layer over Antarctica. This hole allowed hazardous levels of ultraviolet (UV) radiation to reach the earth's surface.
- The Vienna Convention for the Protection of the Ozone Layer was signed in 1985 under which UN member countries recognized the importance of curbing damage to the ozone layer. As per the Convention's provisions, countries agreed to adopt the Montreal Protocol to further the goals of the Vienna Convention.

### Ozone Layer

- It is a layer in the earth's stratosphere that contains high levels of ozone.
- This layer protects the earth from the Sun's harmful UV radiation. It absorbs 97 - 99% of the UV radiation from the Sun.
- In the absence of the ozone layer, millions of people would be affected by skin diseases including cancer and weakened immune systems.
- UV radiation would also affect the environment adversely leading to decreased productivity.
- Fauna on earth is also adversely affected by ozone layer depletion.

### Ozone Layer Depletion

- This refers to the thinning of the protective ozone layer in the atmosphere.
- This happens when certain chemicals come into contact with ozone and destroy it.
- Chemical compounds that cause ozone layer depletion are called **Ozone Depleting Substances (ODSs)**.
- Examples of ODSs are chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), carbon tetrachloride, methyl chloroform, hydrobromofluorocarbons, halons, etc.
- Chlorofluorocarbons are the most abundant ODSs.



- The indiscriminate use of these chemicals causes ozone layer depletion.
- These ODSs are also powerful greenhouse gases (GHGs) and have a long life as well.
- There are a few natural causes also which cause ozone depletion such as volcanic eruptions, sunspots, and stratospheric winds. However, these do not cause more than 1 - 2% of the ozone depletion.

### Important Points

- The Protocol was signed in 1987 and entered into force in January 1989. The protocol gives provisions to reduce the production and consumption of ODSs to protect the ozone layer.
- It phases down the use of ODSs in a stepwise, time-bound manner.
- It gives different timetables for developing and developed countries.
- All member parties have specific responsibilities related to the phasing out of various groups of ozone-depleting substances, controlling ODS trade, reporting of data annually, controlling export and import of ODS, etc.
- Developing and developed countries have **equal but differentiated responsibilities**.
- However, both groups of nations have time-bound, binding, and measurable commitments under the protocol, making it effective.
- Under the protocol, there is a provision for it to be amended and adjusted according to the new scientific, economic, and technological advancements made.
- The Protocol has undergone nine amendments or revisions.
- The governance body for the protocol is the Meeting of the Parties. Technical support is given by the Open-ended Working Group. Both meet once every year.
- The Parties are aided by the Ozone Secretariat, which is based at the headquarters of the UN Environment Programme (UNEP) at Nairobi.
- It has been ratified by 197 Parties (196 member states of the UN plus the EU) making it the first United Nations treaty to be ratified by every country in the world.
- The Montreal Protocol's provisions relate to the following:
  - Article 2: Control measures
  - Article 3: Calculation of control levels
  - Article 4: Control of trade with non-Parties
  - Article 5: Special situation of developing countries
  - Article 7: Reporting of data
  - Article 8: Non-compliance
  - Article 10: Technical assistance
  - And, other topics



- The ODSs regulated by the Protocol are listed in:
  - Annex A: CFCs, halons
  - Annex B: other fully halogenated CFCs, carbon tetrachloride, methyl chloroform
  - Annex C: HCFCs
  - Annex E: Methyl bromide
  - Annex F: HFCs
- **Multilateral Fund:** The Multilateral Fund for the Implementation of the Montreal Protocol was set up in 1991 to help developing countries to comply with the provision of the Protocol. This is under Article 10 mentioned above.
  - It provides financial and technical assistance to developing member countries whose yearly per capita consumption and production of ODSs is less than 0.3 kg.
  - The activities of the Fund are implemented by four bodies:
    - UNEP
    - UN Development Programme (UNDP)
    - UN Industrial Development Organisation (UNIDO)
    - World Bank

### Montreal Protocol – Successes

- With universal ratification and a time-bound binding framework, the Montreal Protocol has been largely successful in setting out to achieving its mission of reversing the damage done to the ozone layer.
- It has been considered the most successful international environmental action taken by countries.
- The Protocol has been successful in levelling off or decreasing the atmospheric concentrations of the most important chlorofluorocarbons and related chlorinated hydrocarbons.
- Although halon concentrations have gone up, their rate of increase has come down, and their concentration is expected to decline by 2020.
- The Protocol has successfully sent clear signals to the global market.
- The full implementation of the Montreal Protocol is expected to help in the avoidance of over 280 million skin cancer incidents, almost 1.6 million deaths due to skin cancer, and millions of cases of cataracts.
- With the Protocol, the ozone layer is expected to recover by the year 2050.
- Parties to the Protocol have been able to phase out 98% of ODSs compared to levels in 1990.
- The Protocol is also helping fight climate change because most of the ODSs are also greenhouse gases.
- It is estimated that from 1990 to 2010, the protocol has helped reduce greenhouse gas emissions by the equivalent of 135 gigatons of carbon dioxide, the equivalent of 11 gigatons a year.



- The Kigali Amendment, an amendment to the Protocol, has helped reduce HFC emission and decrease global temperature rise.



**World Ozone Day** - September 16th is observed as World Ozone Day. It is the day that marks the signing of the Montreal Protocol.

### **India and the Montreal Protocol**

- India became a signatory to the Montreal Protocol in 1992.
  - India is an **Article 5 country** and is entitled to assistance from the Multilateral Fund in its efforts to phase out ODSs and switch over to non-ODS technologies.
  - India mainly manufactured and utilized 7 of the 20 substances controlled under the Protocol. These are CFC-11, CFC113, CFC-12, Halon-1301, Halon-1211, Carbon tetrachloride, Methyl Bromide and Methyl Chloroform.
  - In India, the implementation of the Montreal Protocol comes within the ambit of the Ministry of Environment, Forests, and Climate Change.
  - The Ministry has established an Ozone Cell to implement the Protocol.
  - As per the National Strategy for ODS Phaseout, the Ministry has notified the Ozone Depleting Substances (Regulation and Control) Rules 2000.
    - Rules prohibit the use of CFCs in manufacturing various products.
    - They provide for the mandatory registration of ODS producers, sellers, importers, and stockists.

## Montreux Record



- Montreux Record under the Ramsar Convention is a **register of wetland sites on the List of Wetlands of International Importance** where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.
- It is maintained as part of the Ramsar List.
- Currently, **two wetlands of India are in Montreux record: Keoladeo National Park (Rajasthan) and Loktak Lake (Manipur).**
- **Chilika lake (Odisha)** was placed in the record but was **later removed** from it.
- It is a voluntary mechanism to highlight specific wetlands of international importance that are facing immediate challenges. It is maintained as part of the List of Ramsar wetlands of international importance.

### List of sites under Montreux Record

- At present, **48 sites are listed in Montreux Record.** The Montreux Record was established by Recommendation 4.8 at the 1990 cop.

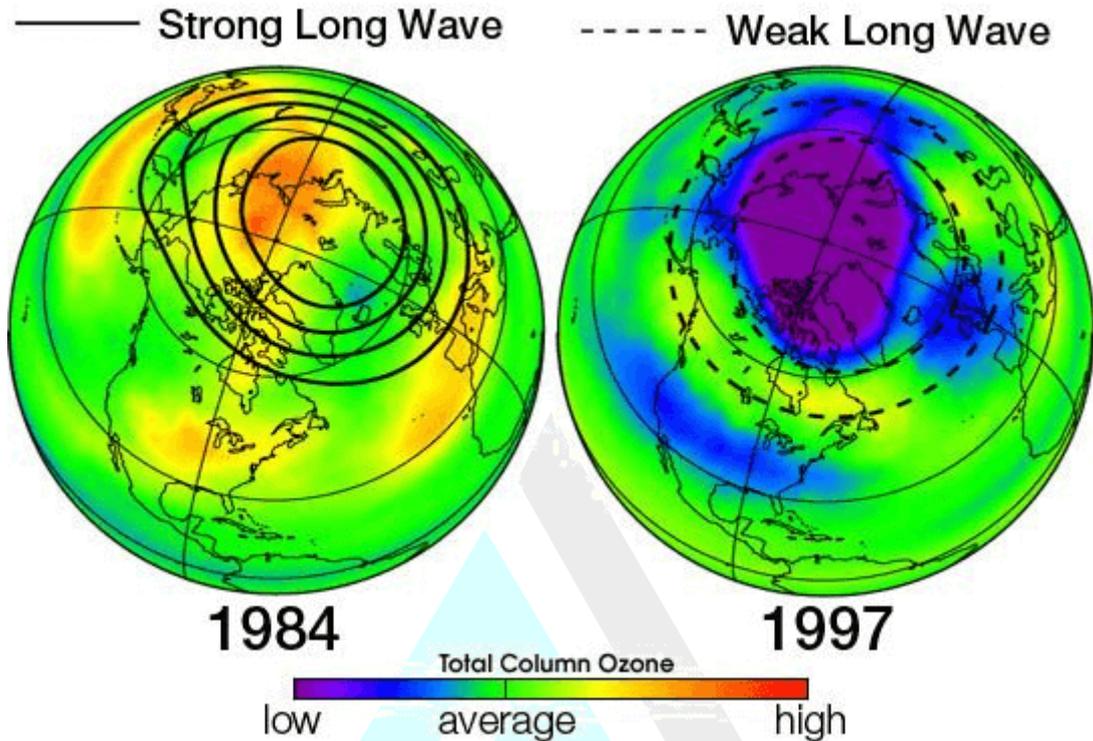
No	Ramsar Sites in the Montreux Record	Country
1.	Laguna de Llanquanelo	Argentina
2.	Donau-March-Auen	Austria
3.	De Ijzerbroeken te Diksmuide en Lo-Reninge	Belgium
4.	Schorren van de Beneden Schelde	Belgium
5.	Durankulak Lake	Bulgaria
6.	Srebarna	Bulgaria
7.	Carlos Anwandter Sanctuary	Chile



8.	Palo Verde	Costa Rica
9.	Kopacki Rit	Croatia
10.	Litovelské Pomoraví	Czech Republic
11.	Mokradý dolního Podyjí	Czech Republic
12.	Poodri	Czech Republic
13.	Trebonská rybníky	Czech Republic
14.	Parc national des Mangroves	Democratic Republic of Congo
15.	Ringkøbing Fjord	Denmark
16.	Lake Bardawil	Egypt
17.	Lake Burullus	Egypt
18.	Wattenmeer, Ostfriesisches Wattenmeer & Dollart	Denmark
19.	Amvrakikos gulf	Greece
20.	Axios, Loudias, Aliakmon delta	Greece
21.	Kotychi lagoons	Greece
22.	Lake Vistonis	Greece
23.	Lakes Volvi & Koronia	Greece
24.	Messolonghi lagoons	Greece
25.	Nestos delta & adjoining lagoons	Greece
26.	Laguna del Tigre	Guatemala
27.	<b>Keoladeo National Park</b>	<b>India</b>
28.	<b>Loktak Lake</b>	<b>India</b>
29.	Anzali Mordab (Talab) complex	Iran
30.	Hamun-e-Puzak, south end	Iran
31.	Hamun-e-Saberi & Hamun-e-Helmand	Iran
32.	Neyriz Lakes & Kamjan Marshes	Iran
33.	Shadegan Marshes & mudflats of Khor-al Amaya & Khor Musa	Iran
34.	Shurgol, Yadegarlu & Dorgeh Sangi Lakes	Iran
35.	Hawizeh Marsh	Iraq
36.	Azraq Oasis	Jordan
37.	Sistema de Humedales de la Bahía de Bluefields	Nicaragua
38.	Bassin du Ndiel	Senegal
39.	Blesbokspruit	South Africa
40.	Orange River Mouth	South Africa
41.	Doñana	Spain
42.	Las Tablas de Daimiel	Spain
43.	Ichkeul	Tunisia
44.	Lake George	Uganda
45.	The Dee Estuary	United Kingdom
46.	Ouse Washes	United Kingdom
47.	Everglades	United States of America

**ODS**  
**(Ozone Depleting Substance)**

**Ozone Layer Depletion**



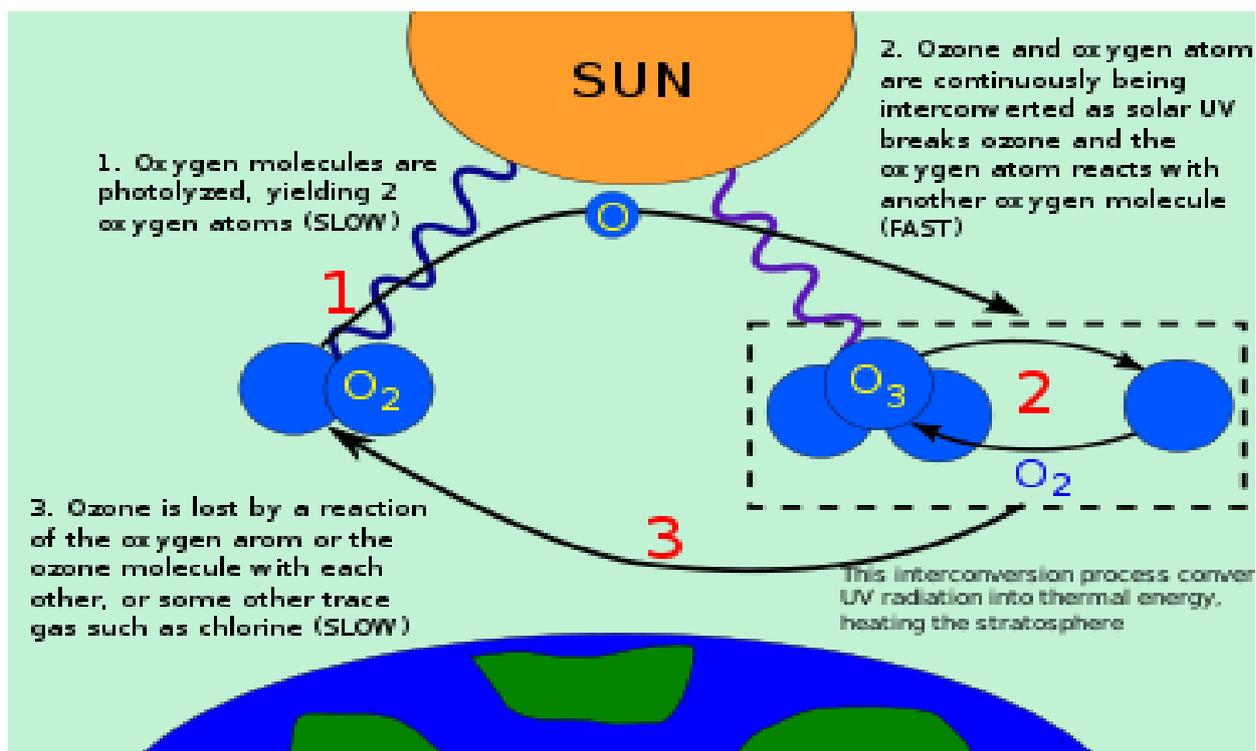
**Introduction**

- Ozone depleting substances are man-made gases that destroy ozone once they reach the ozone layer. The ozone layer sits in the upper atmosphere and reduces the amount of harmful ultra violet radiation that reaches Earth from the sun. Ultraviolet radiation can have detrimental effects on both humans and the environment. For instance inducing skin cancer and cataracts, distorting plant growth and damaging the marine environment.

**Ozone depleting substances:**

- There is a list of more than 20 substances that are controlled by the European law on ozone depleting substances and there are bans and restrictions on their production, import, export, placing on the market, use, recovery, recycling, reclamation and destruction. These substances are grouped and their common historical uses are presented for information:
- CFC and HCFCs - mostly used in refrigeration, air conditioning and heat pump systems. Only HCFCs can continue to be used for a limited period of time.
- Halons - used historically as fire suppression agents and firefighting, but now only allowed in very limited situations
- Carbon tetrachloride (Tetra chloromethane) - limited solvent use in laboratories and chemical and pharmaceutical industry.

- 1, 1, 1,-trichloroethane - limited solvent use in laboratories and chemical and pharmaceutical industry.
- Methyl bromide - historically used in fumigation, soil treatment, pest control, quarantine, market gardening. Methyl bromide is no longer registered for use in Ireland.
- Hydrobromofluorocarbons - historically used in fire suppression systems and firefighting.
- Bromochloromethane - historically used in the manufacture of biocides.



### Ozone Hole

- The ozone hole is an area in the stratosphere above Antarctica where chlorine and bromine gases from human-produced chlorofluorocarbons (CFCs) and halons have destroyed ozone molecules. ... While greenhouse gases absorb heat at relatively low altitudes and warm the surface, they actually cool the stratosphere.

### The Factors of Ozone Layer Depletion:

- Ozone layer depletion refers to the thinning of the protective ozone layer in the atmosphere.
- This happens when certain chemicals come into contact with ozone and destroy it.
- Chemical compounds that cause ozone layer depletion are called Ozone Depleting Substances (ODSs).



- Examples of ODSs are chlorofluorocarbons (CFCs), Hydrochlorofluorocarbons (HCFCs), carbon tetrachloride, methyl chloroform, Hydrobromofluorocarbons, halons, etc.
- Chlorofluorocarbons (CFC): The use of CFCs is one of the main reasons for the depletion of the layer. They are usually used as a coolant in refrigerators and air conditioners used in cars, etc. It is also used as an industrial solvent, in foam products and hospital sterilization equipment.
- Methyl chloroform: Finds its applications usually in industries for chemical processing, etc.
- Carbon tetrachloride: Normally used as a solvent.
- Chlorofluorocarbons are the most abundant ODS.
- The indiscriminate use of these chemicals causes ozone layer depletion.
- These ODSs are also powerful Green-House Gases (GHGs) and have a long life as well.
- There are a few natural causes also which cause ozone depletion such as volcanic eruptions, sunspots and stratospheric winds. However, these do not cause more than 1 - 2% of the ozone depletion.

### **Ozone Layer Preservation Depletion**

- The depletion of the Ozone Layer is a serious issue and various programmes have been launched by the government of various countries to prevent it. But, steps should be taken at the individual level as well.
- The IMO (International Maritime Organisation) mandated that cargo ships must not use fuel that has sulphur content any higher than 0.5%.
- This will be implemented from 1st January 2020 as this is one of the many environmental-related issues that is associated with the shipping industry.
- The Vienna Convention for the Protection of the Ozone Layer was signed in 1985 under which UN member countries recognized the importance of curbing damage to the ozone layer.
- As per the Convention's provisions, countries agreed to adopt the Montreal Protocol to further the goals of the Vienna Convention.
- The Montreal Protocol was signed in 1987 and entered into force in January 1989.
- The protocol gives provisions to reduce the production and consumption of ODSs in order to protect the ozone layer.

### **World Ozone Day**

- In 1994, the United Nations General Assembly voted to designate September 16 as the International Day for the Preservation of the Ozone Layer, or "World Ozone Day", to commemorate the signing of the Montreal Protocol on that date in 1987.

## Ramsar Convention



- The **Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat** is an international treaty for the conservation and sustainable use of wetlands.
- It is also known as the **Convention on Wetlands**. It is named after the city of Ramsar in Iran, where the convention was signed in 1971.
- The negotiations for the convention started in the 1960s by the different countries and NGOs for the protection of wetland habitats of migratory waterbirds.
  1. Finally, it came into force in 1975. India. There are **42 Ramsar Sites in India** listed under Ramsar Convention.
- India has added 10 more wetlands to the sites protected by the Ramsar Convention.

These are:

- **Maharashtra:** Nandur (state's first).
- **Punjab:** Keshopur-Miani, Beas Conservation Reserve, and Nangal.
- **Uttar Pradesh:** Nawabganj, Parvati Agra, Saman, Samaspur, Sandi, and Sarsai Nawar.
- This addition will help in achieving India's ambitious mission 'Nal se Jal' which aims to provide piped water connection to every household by 2024.
- As of October 2020, there are 171 contracting parties to the Ramsar Convention.

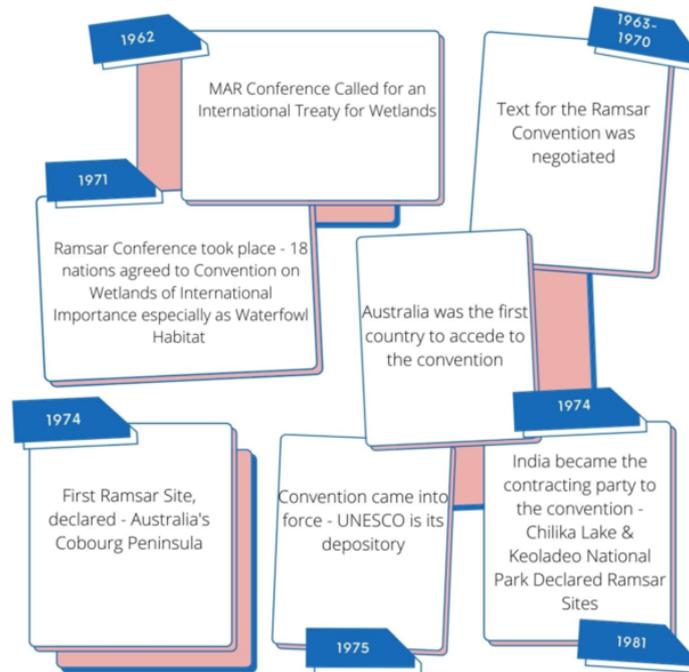
### Evolution of Ramsar Convention

- The Ramsar Convention came into force in 1975 with a mission to conserve and use wisely all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world. The evolution of this convention on wetlands is depicted below:

### RAMSAR CONVENTION

ADOPTED IN 1971

For the conservation of wetlands of national and international importance



### Purpose of the Ramsar Convention

- The convention works on **three pillars** that define the purpose of the Ramsar Convention:
  1. **Wise Use** – To work towards the wise use of all wetlands
  2. **List of Wetlands of International Importance** – Designate suitable wetlands under the Ramsar List to effectively manage those
  3. **International Cooperation** – To bring cooperation internationally over the transboundary wetlands, shared wetland systems and shared species.

### What are wetlands?

- As per the broad definition of Ramsar Convention, “Wetlands are “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.”

### Examples of Wetlands are:

- Marine and coastal areas
- Estuaries
- Lakes and rivers
- Marshes and peatlands
- Groundwater and human-made wetlands such as rice paddies, shrimp ponds, and reservoirs



### **Important Facts about the Ramsar Convention**

1. It is the only international treaty that addresses a specific ecosystem (wetland.)
2. Originally, the treaty focussed on the conservation of the habitats for waterbirds.
3. The official name of the treaty is The Convention on Wetlands of International Importance, especially as Waterfowl Habitat.
4. With time, the treaty has broadened its horizon and covers all aspects of wetland conservation.
5. The Ramsar Conventions contains three important subjects:
  1. The contracting parties which are now 171 in numbers have to designate suitable wetlands in their territory under the Ramsar List of Wetlands of International Importance.
  2. The designated wetlands have to be wisely used and taken care of.
  3. Shared wetland systems over the territories of more than one contracting party have to be used wisely by the parties concerned after due consultation
6. As of October 2020, there are 2406 wetlands in the list of wetlands of international importance.
7. Ramsar Convention is not a regulatory regime.
8. Ramsar Convention was modified by the Paris Protocol in 1982 and by the Regina Amendments in 1987.
9. Montreux Record - It is a mechanism that was launched in 1990 and is associated with the Ramsar Advisory Mission. It is a register of the list of those Ramsar Sites that need urgent attention. One can read more about Montreux Record at the linked article.
10. World Wetlands Day - It was first celebrated in 1997. It is celebrated each year on 2nd February to mark the anniversary of the Ramsar Convention and promote its mission.
11. A conference of the contracting parties (COP) to the convention meets every three years.
12. The Ramsar Convention has **six international organization partners**:
  1. Birdlife International
  2. IUCN
  3. Wetlands International
  4. WWF
  5. International Water Management Institute
  6. Wildfowl and Wetlands Trust
13. The convention comes with a six-year strategic plan. The latest one is the 4th Ramsar Convention Strategic Plan 2016-2024 which was approved at COP12 of the convention.
14. Ramsar Convention's Standing Committee has 18 members that are elected at COP till the next COP elects new members.



15. The Convention works in three languages – English, Spanish and French.

### **India and Wetland Conservation**

➤ Ramsar Convention entered into force in the country on 1st February 1981. India's initiatives to conserve the national wetlands (4.63% of the total geographical area) are:

#### **1. Wetlands (Conservation and Management) Rules, 2017**

2. The Ministry of Environment, Forest & Climate Change released a set of guidelines in January 2020 for implementation of the Wetland Rules 2017.

3. India regulated the following wetlands:

1. Wetlands designated under the Ramsar List.
2. Those wetlands are notified under central, state, and UT rules.

4. India does not regulate the following wetlands under Wetlands Rules:

1. River channels
2. Paddy fields
3. Human-made water bodies specifically constructed for drinking water purposes; aquaculture purposes; salt production purposes; recreation purposes; and for irrigation purposes
4. Wetlands falling within areas covered under the Indian Forest Act, 1927; Forest (Conservation) Act, 1980; and State Forest Acts.
5. Wetlands falling within areas covered under the Wildlife (Protection) Act, 1972.
6. Wetlands falling within areas covered under the Coastal Regulation Zone Notification, 2011.

### **List of Ramsar Sites in India**

- The Ramsar Convention was signed in 1971 with the aim of “conservation and wise use of wetlands with local, national and international cooperation for overall sustainable development of the world”.
- The Ramsar sites are maintained in the Montreux Record to track any major ecological changes that might affect any of the wetland sites positively or in a reverse way.
- The Ramsar convention entered into force in India on 1 February 1982.
- **India currently has 42 sites designated as Wetlands of International Importance (Ramsar Sites). This is the highest in South Asia.**



### List of Ramsar Sites in India

➤ (as of December 2020)

No	Name	Location	Designated	Area (km <sup>2</sup> )
1	Ashtamudi Wetland	Kerala	19 August 2002	614
2	Beas Conservation Reserve	Punjab	26 September 2019	64
3	Bhitarkanika Mangroves	Odisha	19 August 2002	650
4	Bhoj Wetland	Madhya Pradesh	19 August 2002	32
5	Chandra Taal	Himachal Pradesh	8 November 2005	0.49
6	Chilika Lake	Odisha	1 October 1981	1165
7	Deepor Beel	Assam	19 August 2002	40
8	East Kolkata Wetlands	West Bengal	19 August 2002	125
9	Harike Wetland	Punjab	23 March 1990	41
10	Hokera Wetland	Jammu and Kashmir	8 November 2005	13.75
11	Kanji Wetland	Punjab	22 January 2002	1.83
12	Keoladeo National Park	Rajasthan	1 October 1981	28.73
13	Keshopur-Miani Community Reserve	Punjab	26 September 2019	34
14	Kolleru Lake	Andhra Pradesh	19 August 2002	901
15	Loktak Lake	Manipur	23 March 1990	266
16	Nalsarovar Bird Sanctuary	Gujarat	24 September 2012	123
17	Nandur Madhameshwar	Maharashtra	21 June 2019	14
18	Nangal Wildlife Sanctuary	Punjab	26 September 2019	1
19	Nawabganj Bird Sanctuary	Uttar Pradesh	19 September 2019	2
20	Parvati Aranga Bird Sanctuary	Uttar Pradesh	2 December 2019	7
21	Point Calimere Wildlife and Bird Sanctuary	Tamil Nadu	19 August 2002	385
22	Pong Dam Lake	Himachal Pradesh	19 August 2002	156.62
23	Renuka Lake	Himachal Pradesh	8 November 2005	0.2
24	Ropar Wetland	Punjab	22 January 2002	13.65
25	Rudrasagar Lake	Tripura	8 November 2005	2.4
26	Saman Bird Sanctuary	Uttar Pradesh	2 December 2019	5



27	Samaspur Bird Sanctuary	Uttar Pradesh	3 October 2019	8
28	Sambhar Lake	Rajasthan	23 March 1990	240
29	Sandi Bird Sanctuary	Uttar Pradesh	26 September 2019	3
30	Sarsai Nawar Jheel	Uttar Pradesh	19 September 2019	2
31	Sasthamkotta Lake	Kerala	19 August 2002	3.73
32	Sundarban Wetland	West Bengal	1 February 2019	4230
33	Surinsar-Mansar Lakes	Jammu and Kashmir	8 November 2005	3.5
34	Tsomoriri	Ladakh	19 August 2002	120
35	Upper Ganga River (Brijghat to Narora Stretch)	Uttar Pradesh	8 November 2005	265.9
36	Vembanad-Kol Wetland	Kerala	19 August 2002	1512.5
37	Wular Lake	Jammu and Kashmir	23 March 1990	189
38	Asan Barrage	Uttarakhand	21 July 2020	4.44 stretch
39	Kanwar Taal or Kabar Taal Lake	Bihar, Begusarai	21 July 2020	26.2
40	Sur Sarovar	Uttar Pradesh, Agra district	13 November 2020	4.31
41	Lonar Lake	Maharashtra, Buldhana district	13 November 2020	4.27
42	Tso Kar Wetland Complex	Ladakh, Leh district	17 November 2020	95.77



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BATCH	TOTAL NO.OF TEST	TOTAL NO.OF QUESTIONS
UPSC PRELIMS (2022)	36	4200
TNPSC PRELIMS (2021-2022)	20+5	3675
TNPSC GROUP I MAINS	27	540
TNPSC GROUP II MAINS	40	-

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## State Wise List of Indian State Animals (Symbols)

List of Indian state animals with Common and Scientific Names is as follows

S.No.	Name of State	Name of State Animal (Common Name)	Name of State Animal (Scientific Name)
1	Andhra Pradesh	Blackbuck (Kala Hiran)	<i>Antilope cervicapra</i>
2	Arunachal Pradesh	Gayal	<i>Bos frontalis</i>
3	Assam	One horned rhinoceros	<i>Rhinoceros unicornis</i>
4	Bihar	Gaur (Indian bison)	<i>Bos gaurus</i>
5	Chhattisgarh	Asian water buffalo (Wild water buffalo)	<i>Bubalis arnee</i>
6	Goa	Gaur (Indian bison)	<i>Bos gaurus</i>
7	Gujarat	Asiatic lion	<i>Panthera leo persica</i>
8	Haryana	Blackbuck (Kala Hiran)	<i>Antilope cervicapra</i>
9	Himachal Pradesh	Snow leopard	<i>Panthera uncia</i>
10	Jammu and Kashmir	Kashmir stag	<i>Cervus elaphus hanglu</i>
11	Jharkhand	Indian elephant	<i>Elephas maximus indicus</i>
12	Karnataka	Indian elephant	<i>Elephas maximus indicus</i>
13	Kerala	Indian elephant	<i>Elephas maximus indicus</i>
14	Madhya Pradesh	Barasingha / swamp deer	<i>Rucerosus duvaucelii</i>
15	Maharashtra	Indian giant squirrel	<i>Ratufa indica</i>
16	Manipur	Brow antlered Deer	<i>Rucerosus eldii eldii</i>
17	Meghalaya	Clouded leopard	<i>Neofelis nebulosa</i>
18	Mizoram	Sumatran serow / Serow	<i>Capricornis sumatraensis</i>
19	Nagaland	Gaur (Indian bison)	<i>Bos gaurus</i>



20	Odisha	Sambar deer	<i>Rusa unicolor</i>
21	Punjab	Blackbuck (Kala Hiran)	<i>Antilope cervicapra</i>
22	Rajasthan	Camel (Oont)	<i>Camelus dromedarius</i>
23	Sikkim	Red panda	<i>Ailurus fulgens</i>
24	Tamil Nadu	Nilgiri tahr / Nilgiri ibex	<i>Nilgiritragus hylocrius</i>
25	Telangana	Spotted deer / Axis deer	<i>Axis axis</i>
26	Tripura	Phayre's leaf monkey / Phayre's langur	<i>Trachypithecus phayrei</i>
27	Uttar Pradesh	Swamp deer	<i>Rucervus duvaucelii</i>
28	Uttarakhand	White-bellied musk deer	<i>Moschus leucogaster</i>
29	West Bengal	Fishing cat	<i>Prionailurus viverrinus</i>
30	Andaman and Nicobar Islands	**	**
31	Chandigarh	**	**
32	Dadar and Nagar Haveli	**	**
33	Daman and Diu	**	**
34	Delhi	Nilgai / Blue bull	<i>Boselaphus tragocamelus</i>
35	Lakshadweep	Butterfly fish	<i>Chaetodon falcula</i>
36	Puducherry	Squirrel	**

### List of Indian state Birds with Common and Scientific Names is as follows

S.No	Name of State	Name of State Bird (Common Name)	Name of State Bird (Scientific Name)
1	Andhra Pradesh	Indian roller (Neelkanth)	<i>Coracias benghalensis</i>
2	Arunachal Pradesh	Great hornbill	<i>Buceros bicornis</i>
3	Assam	White-winged duck	<i>Asarcornis scutulata</i>
4	Bihar	House sparrow	<i>Passer domesticus</i>



5	Chhattisgarh	Hill myna	<i>Gracula religiosa</i>
6	Goa	Flame-throated Bulbul	<i>Pycnonotus gularis</i>
7	Gujarat	Greater flamingo	<i>Phoenicopterus roseus</i>
8	Haryana	Black Francolin	<i>Francolinus francolinus</i>
9	Himachal Pradesh	Western Tragopan	<i>Tragopan melanocephalus</i>
10	Jammu and Kashmir	Black-necked Crane	<i>Grus nigricollis</i>
11	Jharkhand	Asian koel (Koel)	<i>Eudynamys scolopaceus</i>
12	Karnataka	Indian roller (Neelkanth)	<i>Coracias benghalensis</i>
13	Kerala	Great hornbill	<i>Buceros bicornis</i>
14	Madhya Pradesh	Asian paradise flycatcher	<i>Terpsiphone paradisi</i>
15	Maharashtra	Yellow-footed green pigeon	<i>Treron phoenicoptera</i>
16	Manipur	Mrs. Hume's Pheasant	<i>Syrmaticus humiae</i>
17	Meghalaya	Hill myna	<i>Gracula religiosa</i>
18	Mizoram	Mrs. Hume's Pheasant	<i>Syrmaticus humiae</i>
19	Nagaland	Blyth's Tragopan	<i>Tragopan blythii</i>
20	Odisha	Indian roller (Neelkanth)	<i>Coracias benghalensis</i>
21	Punjab	Northern Goshawk	<i>Accipiter gentilis</i>
22	Rajasthan	Great Indian bustard	<i>Ardeotis nigriceps</i>
23	Sikkim	Blood pheasant	<i>Ithaginis cruentus</i>
24	Tamil Nadu	Emerald dove	<i>Chalcophaps indica</i>
25	Telangana	Indian roller (Neelkanth)	<i>Coracias benghalensis</i>
26	Tripura	Green imperial pigeon	<i>Ducula aenea</i>
27	Uttar Pradesh	Sarus crane	<i>Grus antigone</i>
28	Uttarakhand	Himalayan monal	<i>Lophophorus impejanus</i>
29	West Bengal	White-breasted kingfisher	<i>Halcyon smyrnensis</i>
30	Andaman and Nicobar Islands	Andaman Woodpigeon	<i>Columba palumboides</i>



31	Chandigarh	Indian Grey Hornbill	<i>Ocyrceros birostris</i>
32	Dadar and Nagar Haveli	**	**
33	Daman and Diu	**	**
34	Delhi	House sparrow	<i>Passer domesticus</i>
35	Lakshadweep	Sooty tern	<i>Onychoprion fuscatus</i>
36	Puducherry	Asian koel	<i>Eudynamys scolopaceus</i>



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## The Implementation of UNGA Resolutions 61/105 and 64/72 in the Management of Deep-Sea Fisheries on the High Seas

For the past eight years, the issue of protecting biodiversity in the deep sea in areas beyond national jurisdiction - the high seas - has been extensively debated by the United Nations General Assembly (UNGA) and in other international fora. The UNGA adopted a series of resolutions, beginning with Resolution 59/25 in 2004, which called on high seas fishing nations and regional fisheries management organisations (RFMOs) to take urgent action to protect vulnerable marine ecosystems (VMEs) from destructive fishing practices, including bottom trawl fishing, in areas beyond national jurisdiction (UNGA, 2004).

- A report from the **United Nations (UN) Secretary General in 2006** on progress on the implementation of the 2004 resolution concluded that little action had been taken to protect deep-sea ecosystems on the high seas from the adverse impacts of bottom fisheries despite the fact that “deep-sea habitats in these areas are extremely vulnerable and require protection”. (UNSG, 2006)
- As a result of a review by the UNGA regarding the effectiveness of the measures called for in **Resolution 59/25**, the UNGA called for a series of **specific actions to be taken by states and RFMOs in UNGA Resolution 61/105, adopted by consensus in December 2006 (UNGA, 2007)**. Resolution 61/105 committed nations that authorise their vessels to engage in bottom fisheries on the high seas to take a series of actions, outlined in Paragraph 83 of the resolution (see Annex I of this report).

### The four main action points are summarised as follows.

- Conduct assessments of whether bottom fishing activities have significant adverse impacts (SAIs) on VMEs.
- **To ensure** that if fishing activities have significant adverse impacts they are managed to prevent such impacts, including through closing areas to bottom fishing where VMEs are known or likely to occur, or they are not authorised to proceed.
- **To establish and implement** protocols to cease fishing where an encounter with VMEs occurs during fishing activities, and to report such encounters so that appropriate measures can be adopted with respect to that site.
- **To implement measures** in accordance with the precautionary approach, ecosystems approaches and international law and to sustainably manage deep-sea fish stocks.



- A set of International Guidelines for the Management of Deep-Sea Fisheries in the High Seas (FAO Guidelines) were then negotiated under the auspices of the **United Nations Food and Agriculture Organization (UN FAO)** to, inter alia, further define and agree to criteria for the conduct of impact assessments of high seas bottom fisheries; identify VMEs; and then assess whether deep-sea fisheries would have “significant adverse impacts” on VMEs. **The FAO Guidelines were adopted in August 2008.** Key elements of the Guidelines are contained in Annex II of this report (FAO, 2009a).
- **In 2009, the UNGA determined that Resolution 61/105 had not been implemented sufficiently.**
- As a result the **General Assembly adopted** additional provisions in Resolution **64/72 (UNGA, 2009)**. This resolution reaffirmed the **2006 resolution and made it clear that the measures called for in Resolution 61/105** should be implemented, consistent with the FAO Guidelines, by flag states and RFMOs prior to allowing, or authorising, bottom fishing on the high seas to proceed.
- Resolution 64/72 placed particular emphasis on conducting impact assessments of bottom fisheries on the high seas and called on states and RFMOs to “ensure that vessels do not engage in bottom fishing until such assessments have been carried out”. **Resolution 64/72 further called for stock assessments and conservation measures** to ensure the long-term sustainability of deepsea fish stocks and non-target species, and the rebuilding of depleted fish stocks (UNGA, 2009: Paras 119–120). Key paragraphs of both resolutions are contained in Annexes I and III of this report.
- A comprehensive review of the extent to which RFMOs and states have been implementing the relevant UNGA resolutions has not previously been conducted.
- This report assesses the measures and regulations adopted with regards to the four key actions in the 2006 UNGA Resolution 61/105 and reinforced by Resolution 64/72 by the following RFMOs:
  - **North East Atlantic Fisheries Commission (NEAFC);**
  - **Northwest Atlantic Fisheries Organization (NAFO);**
  - **General Fisheries Commission for the Mediterranean (GFCM);**
  - **South East Atlantic Fisheries Organisation (SEAFO);**
  - **Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR).**
- The report also reviews the interim measures adopted by the states participating in the negotiation of the new **North Pacific Fisheries Commission (NPFC)**,
- **The South Pacific Regional Fisheries Management Organisation (SPRFMO)**, and in the Southern Indian Ocean. The review covers the measures adopted



both prior to and in response to the 2006 UNGA resolution. The key findings of the report include the following.

### **Conducting impact assessments of individual bottom fishing activities**

- The degree to which nations conducted impact assessments varied widely. Despite the call from the UNGA for impact assessments for all bottom fisheries in the high seas, some RFMOs have had no Contracting Parties conduct impact assessments (e.g. NEAFC, NAFO), while in other areas all Contracting Parties have submitted impact assessments (e.g. CCAMLR, NPFC), or some Contracting Parties have conducted impact assessments (e.g. SPRFMO).
- The impact assessments undertaken also varied in their scope. In some cases, Contracting Parties conducted full risk assessments that included details of fishing history, intended fishing operations, gear to be used, a full definition of VMEs likely to be encountered, and a full ecological risk assessment in consultation with scientists, managers and industry to assess the potential impacts of the proposed fishing operations. Other impact assessments lacked sufficient information to assess the impacts of proposed fishing operations or were based on incorrect assumptions about the presence or lack of presence of VMEs.
- In addition, several RFMOs have not required impact assessments for exploratory fisheries in new areas and/ or existing fishing areas, despite the UNGA resolutions and FAO Guidelines (FAO, 2009a) that call for all deep-sea bottom fisheries to be assessed.

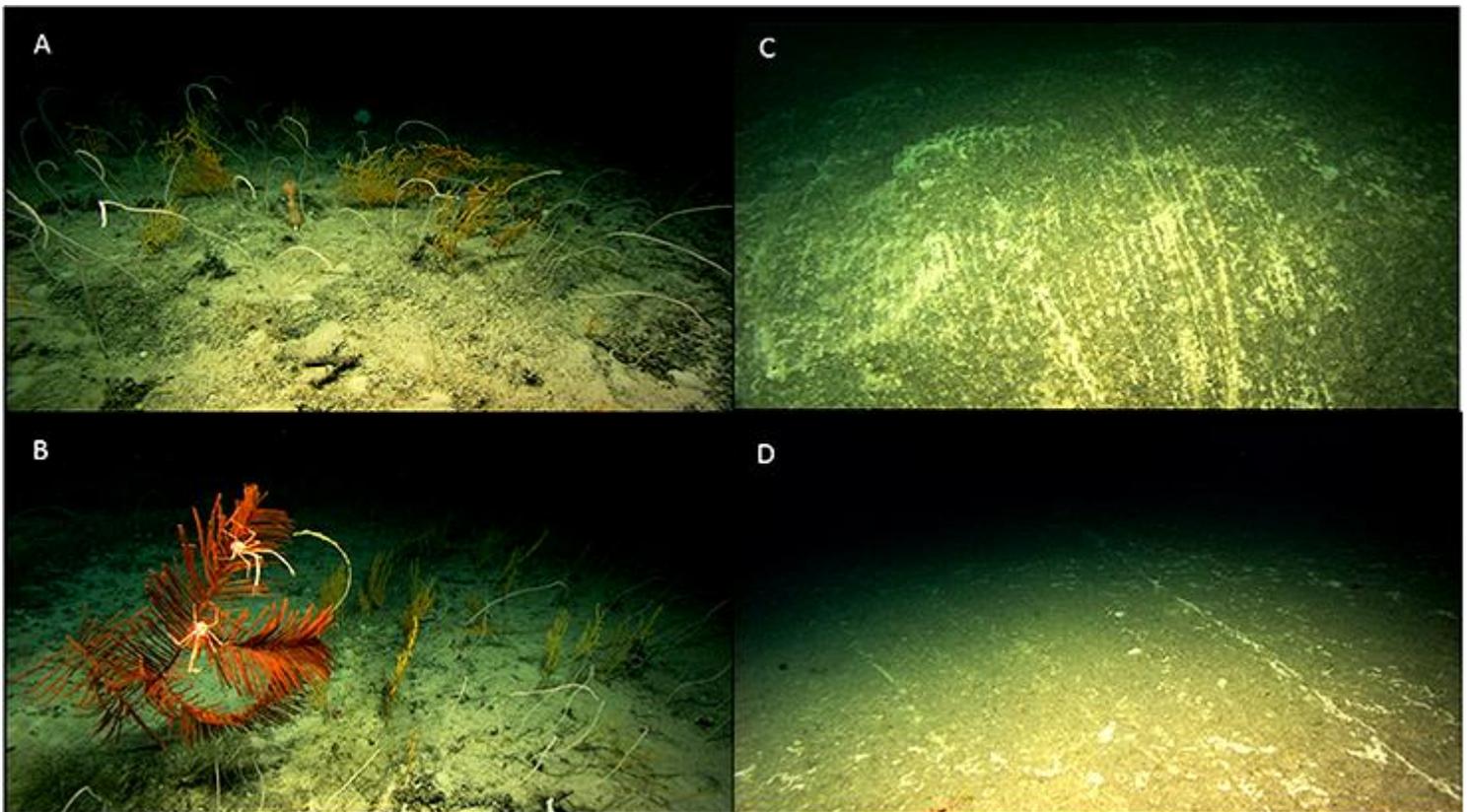
### **Preventing impacts on vulnerable marine ecosystems**

- RFMOs have undertaken a variety of measures to protect known or suspected VMEs within their Regulatory Areas. In some cases, technical measures were adopted, such as the banning of gillnets below a certain depth or from the entire region because of the high risk of by-catch and ghost fishing (e.g. NEAFC, SEAFO, SPRFMO) or prohibiting of bottom trawling (CCAMLR).
- Most RFMOs have adopted spatial conservation measures to protect VMEs, although the extent and type of closures implemented by the RFMOs varied (e.g. NEAFC, NAFO, SEAFO, GFCM and, most recently, CCAMLR). Some have not closed all areas despite strong evidence of the presence of VMEs (e.g. NEAFC) and some have closed very few areas despite evidence of wide ranging destruction of VMEs by bottom fishing and potential ecological consequences, not only in terms of ecosystem function but also in terms of loss of essential habitat for species targeted by fisheries (e.g. GFCM).
- In most cases, closures have not been implemented because the lack of information on deep-sea ecosystems has prevented RFMOs from identifying where VMEs exist and scientific information on where some VME types (e.g.

stonely corals) are likely to occur has not been used. There is also evidence that some RFMOs have limited their interpretation of which species can form VMEs (e.g. only corals or sponges; NEAFC, NPFC) or what structurally constitutes a VME (e.g. only areas where a very high density of individuals on the seabed are recognised as VMEs; NPFC).

- In most cases, this likely reflects the use of the few example VMEs referred to in the UNGA resolutions and FAO Guidelines rather than being based on a scientific assessment of the full range of types of VMEs that may be found within a specific geographic area (FAO, 2009a).

### Sustainably managing deep-sea fish stocks



- For most of the target and by-catch species taken in deep-sea bottom fisheries on the high seas, there is insufficient information on the biology, life history, fishing mortality and geographic range of stocks of these species.
- This information is crucial for evaluating stock status, sustainable harvest levels and biological reference points for each population. In the absence of such data it is important that the precautionary principle is applied in the management of deep-sea fish stocks. Instead, the report found evidence that many deep-sea fish stocks were not subject to assessment or long-term management plans. Furthermore, where specific management advice was provided by scientists or scientific bodies (e.g. the International Council for Exploration of the Sea [ICES]), total allowable catches (TACs) set by RFMOs or



states often exceeded advice, even where there was a significant possibility of overfishing or collapse of a fish stock.

- The high biodiversity of high seas fish communities means that by-catch in many high seas fisheries forms a significant proportion of overall catch. In some cases, populations of by-catch species have collapsed to the point where they have become threatened with local extirpation or extinction under IUCN Red List criteria.
- In many cases, little action has been taken to manage by-catch species with a low productivity, although exceptions include skates, rays and grenadiers in Antarctica and the banning of gillnets by several RFMOs, which are associated with high by-catch of species like sharks.
- For several of the RFMOs reviewed, there was evidence from observer information and catch data from scientific advisory bodies to RFMOs, of significant levels of misreporting, under-reporting or non-reporting of catch, particularly of by-catch species, in the deep-sea fisheries.
- For the other RFMOs the extent of reporting of catches is unknown. Accurate reporting of catches of target and by-catch species is required to assess fishing mortality on populations and, without such data, formulation of management plans that ensure sustainable levels of exploitation are extremely difficult.
- For most areas, with the possible exception of the Southern Ocean, most of these deep-sea fisheries are also not regulated sufficiently to ensure sustainable levels of exploitation of target species or mortality of non-target by-catch species. Fishery management plans for deep-sea fisheries in high seas areas and the establishment of biological reference points aimed at ensuring the long-term sustainability of deep-sea fisheries are rare.

### **Encounter rules**

- The requirement to establish rules to ensure that fishing ceases when potential VMEs are encountered is a complex area of the UNGA resolutions. Implementation of these rules is particularly problematic for deep-water regions of the high seas where there are few data available on benthic ecosystems and the interactions between bottom fishing gear and VMEs. Encounter protocols have been generally implemented as move-on rules, whereby, at a threshold weight of by-catch of VME-associated species in a single trawl tow or set of static fishing gear, a vessel moves away from the area and reports the encounter. In some cases, the diversity of VME-associated species is also taken into account.
- A number of significant problems with move-on rules were identified in the present report. For many RFMOs, move-on rules for VME encounters apply to only a limited number of VME-related species, despite scientific evidence of and, sometimes, specific advice by scientific bodies on the presence of, various types of VMEs within RFMO Regulatory Areas. This has resulted from



RFMOs using only the example VMEs mentioned in UNGA Resolution 61/105 and the FAO Guidelines or from simply using move-on rules developed by other RFMOs without considering the specific biogeography or biodiversity within a region.

- Further, the threshold by-catch weights that trigger move-on rules are set at such a high level by many RFMOs that they are unlikely to result in triggering the action to cease fishing in the vicinity of a VME, nor to report the presence of a VME to the responsible management authority. Many RFMOs are also using the same threshold levels for different kinds of fishing gear and for different kinds of organisms.
- These practices fail to take into account the different impacts of neither active and passive fishing gear, nor the different vulnerability and likelihood of retention of different VME species when impacted by fishing gear. In most cases, this is likely to lead to underestimation of VME encounters. Many RFMO encounter rules require a vessel to move two nautical miles (nm) when a threshold weight of VME organisms is caught as by-catch. This is likely to be ineffective as a conservation measure for mobile fishing gears with long tow times as it is impossible to identify where a VME encounter occurs along a tow using commercial bottom trawl gear (commercial trawl tows are up to 20nm long). In this case the mid-point of the tow, usually the point used as the centre of the 2nm temporary exclusion zone for the fishing vessel, could be as far as 10nm from the actual VME.
- It is also questionable whether a 2nm move-on rule is effective for passive fishing gears, such as long lines, where the gear may be up to 20km long, although a better idea of encounter position can be attained by recording which VME species were caught on which segments of the gear and then estimating the area of encounter on the seabed from the position of deployment.
- Several RFMOs (e.g. NEAFC, NAFO) also use move-on rules that differentiate between fished and no fished areas. This is inconsistent with Paragraph 23 of the FAO Guidelines, which requires that deep-sea fisheries should be rigorously managed throughout all stages of their development, including experimental, exploratory and established phases.

## The World Heritage Convention



United Nations  
Educational, Scientific and  
Cultural Organization



World  
Heritage  
Convention

- The most significant feature of the 1972 World Heritage Convention is that it links together in a single document the concepts of nature conservation and the preservation of cultural properties.
- The Convention recognizes the way in which people interact with nature, and the fundamental need to preserve the balance between the two.

### Convention contains

- *The Convention defines the kind of natural or cultural sites which can be considered for inscription on the World Heritage List.*
- The Convention sets out the duties of **States Parties** in identifying potential sites and their role in protecting and preserving them. By signing the Convention, each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage. The States Parties are encouraged to integrate the protection of the cultural and natural heritage into regional planning programmes, set up staff and services at their sites, undertake scientific and technical conservation research and adopt measures which give this heritage a function in the day-to-day life of the community.
- It explains how the **World Heritage Fund** is to be used and managed and under what conditions international financial assistance may be provided.
- The Convention stipulates the obligation of States Parties to report regularly to the World Heritage Committee on the state of conservation of their World Heritage properties. These reports are crucial to the work of the Committee as they enable it to assess the conditions of the sites, decide on specific programme needs and resolve recurrent problems.



- It also encourages States Parties to strengthen the appreciation of the public for World Heritage properties and to enhance their protection through educational and information programmes.

### **Brief History**

- The idea of creating an international movement for protecting heritage emerged after World War I. The 1972 Convention concerning the Protection of the World Cultural and Natural Heritage developed from the merging of two separate movements: the first focusing on the preservation of cultural sites, and the other dealing with the conservation of nature.

### **Preserving cultural heritage**

- The event that aroused particular international concern was the decision to build the Aswan High Dam in Egypt, which would have flooded the valley containing the **Abu Simbel temples**, a treasure of ancient Egyptian civilization. In 1959, after an appeal from the governments of Egypt and Sudan, UNESCO launched an international safeguarding campaign. Archaeological research in the areas to be flooded was accelerated. Above all, the Abu Simbel and Philae temples were dismantled, moved to dry ground and reassembled.
- The campaign cost about US\$80 million, half of which was donated by some 50 countries, showing the importance of solidarity and nations' shared responsibility in conserving outstanding cultural sites. Its success led to other safeguarding campaigns, such as saving **Venice and its Lagoon (Italy)** and the **Archaeological Ruins at Moenjodaro (Pakistan)**, and restoring the **Borobodur Temple Compounds (Indonesia)**.
- Consequently, UNESCO initiated, with the help of the International Council on Monuments and Sites (ICOMOS), the preparation of a draft convention on the protection of cultural heritage.

### **Linking the protection of cultural and natural heritage**

- The idea of combining conservation of cultural sites with those of nature comes from the United States of America. A White House Conference in Washington, D.C., in 1965 called for a 'World Heritage Trust' that would stimulate international cooperation to protect 'the world's superb natural and scenic areas and historic sites for the present and the future of the entire world citizenry'. In 1968, the International Union for Conservation of Nature (IUCN) developed similar proposals for its members. These proposals were presented to the 1972 United Nations conference on Human Environment in Stockholm.
- Eventually, a single text was agreed upon by all parties concerned. The Convention concerning the Protection of World Cultural and Natural Heritage was adopted by the General Conference of UNESCO on 16 November 1972.

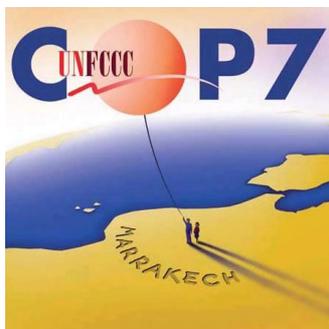


- The same General Conference adopted on 16 November 1972 the Recommendation concerning the Protection, at National Level, of the Cultural and Natural Heritage.
- By regarding heritage as both cultural and natural, the Convention reminds us of the ways in which people interact with nature, and of the fundamental need to preserve the balance between the two.

### **Benefits of Ratification**

- The overarching benefit of ratifying the **World Heritage Convention** is that of belonging to an international community of appreciation and concern for universally significant properties that embody a world of outstanding examples of cultural diversity and natural wealth.
- The **States Parties to the Convention**, by joining hands to protect and cherish the world's natural and cultural heritage, express a shared commitment to preserving our legacy for future generations.
- The prestige that comes from being a State Party to the Convention and having sites inscribed on the **World Heritage List** often serves as a catalyst to raising awareness for heritage preservation.
- A key benefit of ratification, particularly for developing countries, is access to the **World Heritage Fund**. Annually, about US\$4 million is made available to assist States Parties in identifying, preserving and promoting World Heritage sites. Emergency assistance may also be made available for urgent action to repair damage caused by human-made or natural disasters. In the case of sites included on the **List of World Heritage in Danger**, the attention and the funds of both the national and the international community are focused on the conservation needs of these particularly threatened sites.
- Today, the World Heritage concept is so well understood that sites on the List are a magnet for international cooperation and may thus receive financial assistance for heritage conservation projects from a variety of sources.
- Sites inscribed on the World Heritage List also benefit from the elaboration and implementation of a comprehensive management plan that sets out adequate preservation measures and monitoring mechanisms. In support of these, experts offer technical training to the local site management team.
- Finally, the inscription of a site on the World Heritage List brings an increase in public awareness of the site and of its outstanding values, thus also increasing the tourist activities at the site. When these are well planned for and organized respecting sustainable tourism principles, they can bring important funds to the site and to the local economy.

## UN Climate Change Conference - 2001 (Marrakesh Agreement)



### 2001 United Nations Climate Change Conference

- At the COP 7 meeting in Marrakesh, **Morocco from 29 October to 10 November 2001**, negotiators wrapped up the work on the Buenos Aires Plan of Action, finalizing most of the operational details and setting the stage for nations to ratify the Kyoto Protocol.
- The completed package of decisions is known **as the Marrakesh Accords**. The United States delegation maintained its observer role, declining to participate actively in the negotiations.
- Other parties continued to express hope that the United States would re-engage in the process at some point and worked to achieve ratification of the Kyoto Protocol by the requisite number of countries to bring it into force (55 countries needed to ratify it, including those accounting for 55% of developed-country emissions of carbon dioxide in 1990).
- **The date of the World Summit on Sustainable Development (August-September 2002) was put forward as a target to bring the Kyoto Protocol into force. The World Summit on Sustainable Development (WSSD) was to be held in Johannesburg, South Africa.**

### The main decisions at COP 7 included:

- Operational rules for international emissions trading among parties to the Protocol and for the CDM and joint implementation;
- A compliance regime that outlined consequences for failure to meet emissions targets but deferred to the parties to the Protocol, once it came into force, the decision on whether those consequences would be legally binding;
- Accounting procedures for the flexibility mechanisms;
- A decision to consider at COP 8 how to achieve a review of the adequacy of commitments that might lead to discussions on future commitments by developing countries.



## **United Nations Conference on Sustainable Development (2015)**

- **The United Nations Summit on Sustainable Development 2015** garnered visibility, political support and impetus for a truly transformative 2030 Agenda and its implementation. The very large number of Heads of State or Government as well as high-level leaders from business and civil society who participated is evidence of the enthusiasm generated by this new Agenda.
- The sense of **achievement was reinforced by the address by His Holiness Pope Francis prior to the opening plenary**. Over 200 speakers addressed the high-level plenary session of the Summit, including the Co-Chairs of the Summit, Heads of State and Government, other high-level representatives of Member States, the United Nations Secretary General, and representatives from international organizations, business sector and civil society. Large numbers also contributed actively to the in-depth discussions on the issues addressed in the interactive dialogues.
- Throughout the Summit, Heads of State and Government **welcomed the 2030 Agenda** and emphasized its transformative, universal and inclusive nature, its applicability to all countries and stakeholders and its motto of leaving no one behind. Its linkages with peace, security, human rights and good governance were also lauded. Many said that the success of the 2030 Agenda would not be measured by what was promised, but what would be delivered. The debates focused on many themes of global concern addressed in the Agenda. Regional and national development challenges were stressed by many, with emphasis on the needs of countries in special situations. The central roles of global partnership, means of implementation and partnerships in the Agenda's implementation were prominent. The engagement of stakeholders, including through partnership, was highly emphasised and over fifty partnership events were held during the Summit.
- The participation of development partners, including civil society organisations and the private sector, in the preparation of the SDGs and the 2030 Agenda has been unprecedented. In order to fully achieve the Agenda, it will be necessary to continue to be inclusive, bringing together stakeholders everywhere to be engaged in the Agenda's implementation. The Summit's six Interactive Dialogues covered a broad range of issues. Participants underscored that national ownership of the 2030 Agenda is key for implementation, together with citizen engagement and breaking down silos. Much emphasis was also placed on the need to forge innovative partnerships between governments, businesses and civil society

**SUSTAINABLE DEVELOPMENT GOALS**



➤ More than 150 world leaders gathered at **United Nations Headquarters in New York** to adopt an ambitious new sustainable development agenda at a 3day summit that commenced **Friday 25 September**.

➤ 2015 presents a historic and unprecedented opportunity to bring the countries and citizens of the world together to decide and embark on new paths to improve the lives of people everywhere. These decisions will determine the global course of action to end poverty, promote prosperity and well-being for all, protect the environment and address climate change.



- Agreed by the 193 Member States of the UN, the new agenda, Transforming Our World: 2030 Agenda for Sustainable Development consists of a Declaration, 17 Sustainable Development Goals and 169 targets.

## Health-related Sustainable Development Goals targets

### Goal 1. End poverty in all its forms everywhere

- Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable
- By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

### Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons

### Goal 3. Ensure healthy lives and promote well-being for all at all ages

- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
- By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
- By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
- By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol
- By 2020, halve the number of global deaths and injuries from road traffic accidents
- By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes



- Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
- By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate
- Support the research and development of vaccines and medicines for the communicable and noncommunicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all
- Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States
- Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

#### **Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**

- By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
- Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, nonviolent, inclusive and effective learning environments for all

#### **Goal 5. Achieve gender equality and empower all women and girls**

- Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
- Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
- Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences



**Goal 6. Ensure availability and sustainable management of water and sanitation for all**

- By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

**Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all**

- By 2030, ensure universal access to affordable, reliable and modern energy services

**Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

- By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
- Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
- Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

**Goal 10. Reduce inequality within and among countries**

- By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
- Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies

**Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable**

- By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
- By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons



- By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
- By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

### **Goal 12. Ensure sustainable consumption and production patterns**

- By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

### **Goal 13. Take urgent action to combat climate change and its impacts\***

- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

### **Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**

- End abuse, exploitation, trafficking and all forms of violence against and torture of children
- By 2030, provide legal identity for all, including birth registration

### **Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development**

- By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.



## United Nations Conference on Sustainable Development (2012) (Rio 2012, Rio+20)



**RIO+20**  
United Nations  
Conference on  
Sustainable  
Development

- The **United Nations Conference on Sustainable Development - or Rio+20** - took place in Rio de Janeiro, Brazil on 20-22 June 2012. It resulted in a focused political outcome document which contains clear and practical measures for implementing sustainable development.
- In Rio, Member States decided to launch a process to develop a set of **Sustainable Development Goals (SDGs)**, which will build upon the Millennium Development Goals and converge with the post 2015 development agenda.
- The Conference also adopted ground-breaking guidelines on green economy policies.
- Governments also decided to establish an intergovernmental process under the General Assembly to prepare options on a strategy for sustainable development financing.
- Governments also agreed to strengthen the **United Nations Environment Programme (UNEP)** on several fronts with action to be taken during the 67th session of the General Assembly.
- They also agreed to establish a high-level political forum for sustainable development. Decisions on its detailed form are expected to be taken during the upcoming session of the General Assembly, with the aim of having the **first session of the forum at the beginning of the 68th session of the Assembly.**
- Governments also requested the United Nations Statistical Commission, in consultation with relevant United Nations system entities and other relevant organizations, to launch a programme of work in the area of measures of progress to complement gross domestic product in order to better inform policy decisions.
- Governments also adopted the 10-year framework of programmes on sustainable consumption and production patterns, as contained in document A/CONF.216/5, and invited the General Assembly, at its sixty-seventh



session, to designate a Member State body to take any necessary steps to fully operationalize the framework.

- The Conference also took forward-looking decisions on a number of thematic areas, including energy, food security, oceans, cities, and decided to convene a Third International Conference on SIDS in 2014.
- The Rio +20 Conference also galvanized the attention of thousands of representatives of the UN system and major groups. It resulted in over 700 voluntary commitments and witnessed the formation of new partnerships to advance sustainable development.

### Objectives

- The conference had three objectives—to secure renewed political commitment for sustainable development, to assess the progress and implementation gaps in meeting previous commitments, and to address new and emerging challenges.

### Conference themes

- The official discussions had two main themes, how to build a green economy to achieve sustainable development and lift people out of poverty, including support for developing countries that will allow them to find a green path for development; and how to improve international coordination for sustainable development by building an institutional framework.



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## United Nations Conference on the Human Environment (Stockholm Conference)



15 September 1971 - United Nations Headquarters, New York. Mr. Maurice F. Strong, Secretary-General of the United Nations Conference on the Human Environment (right), shows United Nations Secretary-General U Thant a design for the official Conference poster. To the left is Mr. Keith Johnson (Jamaica), Chairman of the Preparatory Committee for the Conference. (Photo Credit: UN Photo/Teddy Chen)

- The **United Nations Conference on the Human Environment** was held in Stockholm, Sweden from **June 5-16 in 1972**.
- When the United Nations General Assembly decided to convene the 1972 Stockholm Conference, taking up the offer of the Government of Sweden to host it, UN Secretary-General U Thant invited Maurice Strong to lead it as Secretary-General of the Conference, as the Canadian diplomat (under Pierre Trudeau) had initiated and already worked for over two years on the project.
- The United Nations Environment Programme, or UNEP, was created as a result of this conference.
- **Indira Gandhi** attended it

### Introduction

- Sweden first suggested to the United Nations Economic and Social Council ECOSOC in 1968 the idea of having a UN conference to focus on human interactions with the environment.



- ECOSOC passed resolution 1346 supporting the idea. General Assembly Resolution 2398 in 1969 decided to convene a conference in 1972 and mandated a set of reports from the UN secretary-general suggesting that the conference focus on “stimulating and providing guidelines for action by national government and international organizations” facing environmental issues.
- Preparations for the conference were extensive, lasting 4 years, including 114 governments, and costing over \$30,000,000.

### Issues at the Conference

- The Soviet Union and other Warsaw Pact nations boycotted the conference due to the lack of inclusion of East Germany, which was not allowed to participate as it was not a full member of the UN.
- At the conference itself, divisions between developed and developing countries began to emerge. The Chinese delegation proved hostile to the United States at the conference, issuing a 17-point memorandum condemning United States policies in Indochina, as well as around the world. This stance emboldened other developing countries, which made up 70 of the 122 countries attending. Multiple countries including Pakistan, Peru, and Chile issued statements that were anti-colonial in nature, further worrying the United States delegation. So harsh was the criticism that Rogers Morton, at that time secretary of the interior, remarked “I wish the Russians were here”, to divert the attention of the Chinese criticisms.
- In 1972, environmental governance was not seen as an international priority, particularly for the Global South. Developing nations supported its creation of the UNEP, not because they supported environmental governance, but because of its headquarters’ location in Nairobi, Kenya, as the UNEP would be the first UN agency to be based in a developing country.

### Stockholm Declaration

- The meeting agreed upon a Declaration containing 26 principles concerning the environment and development; an Action Plan with 109 recommendations, and a Resolution.

### Principles of the Stockholm Declaration:

1. Human rights must be asserted, apartheid and colonialism condemned
2. Natural resources must be safeguarded
3. The Earth’s capacity to produce renewable resources must be maintained
4. Wildlife must be safeguarded
5. Non-renewable resources must be shared and not exhausted
6. Pollution must not exceed the environment’s capacity to clean itself
7. Damaging oceanic pollution must be prevented



8. Development is needed to improve the environment
  9. Developing countries therefore need assistance
  10. Developing countries need reasonable prices for exports to carry out environmental management
  11. Environment policy must not hamper development
  12. Developing countries need money to develop environmental safeguards
  13. Integrated development planning is needed
  14. Rational planning should resolve conflicts between environment and development
  15. Human settlements must be planned to eliminate environmental problems
  16. Governments should plan their own appropriate population policies
  17. National institutions must plan development of states' natural resources
  18. Science and technology must be used to improve the environment
  19. Environmental education is essential
  20. Environmental research must be promoted, particularly in developing countries
  21. States may exploit their resources as they wish but must not endanger others
  22. Compensation is due to states thus endangered
  23. Each nation must establish its own standards
  24. There must be cooperation on international issues
  25. International organizations should help to improve the environment
  26. Weapons of mass destruction must be eliminated
- One of the seminal issues that emerged from the conference is the recognition for poverty alleviation for protecting the environment. The Indian Prime Minister Indira Gandhi in her seminal speech in the conference brought forward the connection between ecological management and poverty alleviation.
  - The Stockholm Conference motivated countries around the world to monitor environmental conditions as well as to create environmental ministries and agencies. Despite these institutional accomplishments, including the establishment of UNEP, the failure to implement most of its action programme has prompted the UN to have follow-up conferences. The succeeding United Nations Conference on Environment and Development convened in Rio de Janeiro in 1992 (the Rio Earth Summit), the 2002 World Summit on Sustainable Development in Johannesburg and the 2012 United Nations Conference on Sustainable Development (Rio+20) all take their starting point in the declaration of the Stockholm Conference.
  - Some argue that this conference, and more importantly the scientific conferences preceding it, had a real impact on the environmental policies of the European Community (that later became the European Union).



- For example, in 1973, the EU created the Environmental and Consumer Protection Directorate, and composed the first Environmental Action Program. Such increased interest and research collaboration arguably paved the way for further understanding of global warming, which has led to such agreements as the **Kyoto Protocol** and the **Paris Agreement**, and has given a foundation of modern environmentalism.



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## United Nations Environment Programme



- The UNEP is an international environmental authority engaged in establishing a global environmental agenda and promoting the efficient implementation of the environmental dimension of the United Nations Sustainable Development Programme.
- The UNEP is a leading global environmental authority established on **5<sup>th</sup> June 1972**.
- **Headquartered** in Nairobi, the UNEP is headed by an Executive Director.
- UNEP is an **agency of the United Nations**.
- It **coordinates the UN's environmental activities**.
- It assists developing countries in implementing environmentally sound policies and practices.
- It was founded as a result of the **United Nations Conference on the Human Environment 1972**.
- It has overall responsibility for environmental problems among United Nations agencies.
- Addressing climate change or combating desertification, are overseen by other **UN organizations**, like the UNFCCC and the United Nations Convention to Combat Desertification.
- UNEP's activities cover a wide range of issues regarding the atmosphere, marine and terrestrial ecosystems, environmental governance and green economy.
- The **World Meteorological Organization** and **UN Environment** established the **Intergovernmental Panel on Climate Change (IPCC)** in 1988.
- UN Environment is also one of several **Implementing Agencies for the Global Environment Facility (GEF)** and the **Multilateral Fund for the Implementation of the Montreal Protocol**.



- It is also a member of the **United Nations Development Group**.
- UNEP has registered several successes, such as the **1987 Montreal Protocol**, and the **2012 Minamata Convention, a treaty to limit toxic mercury**.
- UNEP has sponsored the development of solar loan programmes.
- The solar loan programme sponsored by UN Environment helped finance solar power systems in India.

### UNEP Objectives

- The UNEP's stated mission is to offer leadership and promote partnership in caring for the environment through informing, inspiring and enabling countries and peoples to enhance their quality of life without compromising that of future generations.
- The UNEP has a few focus areas, in which they prioritise work. They are:
  1. Climate change
  2. Ecosystem management
  3. Disasters and conflicts
  4. Environmental governance
  5. Resource efficiency
  6. Chemicals and waste
  7. Environment under review

### UNEP Functions

- The major functions of the UNEP are discussed below:
  - The UNEP engages in developing global conventions on the environment and related issues. It hosts the secretariats of various conventions such as:
    - Minamata Convention
    - United Nations Convention on Biological Diversity
    - Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
    - Basel Convention
    - Stockholm Convention
    - Rotterdam Convention
    - Montreal Protocol
    - Vienna Convention
    - Convention on Migratory Species
    - Tehran Convention
    - Bamako Convention
    - Carpathian Convention
    - Climate & Clean Air Coalition (CCAC)
  - It promotes environmental science and related information.
  - It finances and implements developmental projects related to the environment.



- It engages with national governments, NGOs, etc. in relation to environmental policy and implementation.
- The UNEP also formulates treaties and guidelines in the domain of international trade in harmful chemicals, international waterways pollution and transboundary pollution of air.
- It also awards and honours individuals as well as institutions that do stellar work in this field.

### Major Programmes of the UNEP

- Earth Hour
- Clean up the World
- Billion Tree Campaign
- Seal the Deal
- Pain for the Planet
- Awareness and Preparedness for Emergencies at Local Level (APELL)
- TUNZA
- Faith for Earth

### United Nations Environment Assembly (UNEA)

- The UNEP's governing body is called the **United Nations Environment Assembly**, which is said to be the world's highest decision making body on the environment.
  - It meets once in two years to establish priorities for international environmental policies and develop international environmental law.
  - Formed in 2012, it is headed by a Bureau and its President.
  - The Bureau comprises ten environment ministers of various countries who all hold two-year terms, based on geographical rotation.
  - Currently, it has 193 member states (all UN member countries).

### UNEP and India

- India has had a close relationship with the UNEP since the programme's inception. There are many projects completed, as well as ongoing projects, of the UNEP in India.
  - The UNEP's presence in India started in 2016 with an office at New Delhi.
  - The nodal agency for India's interactions with the UNEP is the GOI's Ministry for Environment, Forests and Climate Change.
  - The Permanent Representative of India to UNEP is India's High Commissioner for Kenya.
  - India's annual financial contribution to the UNEP is to the tune of USD 100,000.
  - The UNEP has recognised India's initiatives in the environment sector.



- The UNEP awarded PM Narendra Modi with the ‘**Champions of the Earth**’ award along with French President Emmanuel Macron in the category ‘**policy leadership**’.
- This was in recognition of the, among others, the International Solar Alliance, initiated by India.
- In 2019, India joined the Climate & Clean Air Coalition (CCAC), whose Secretariat is hosted by the UNEP.
- India plans to work with CCAC nations on best practices and experiences for the effective implementation of the National Clean Air Programme (NCAP).



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**United Nations General Assembly (1997)  
Earth + 5**

**EARTH  
SUMMIT**



**+5**

**Earth Summit + 5**

**Special Session of the UN General Assembly  
(23-27 June 1997, New York)**

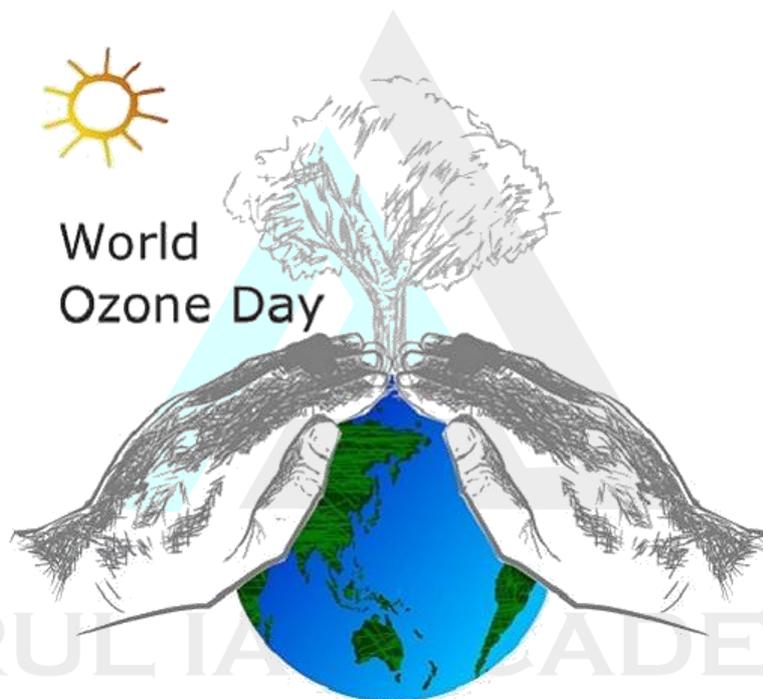
- **In 1992, more than 100 heads of state met in Rio de Janeiro, Brazil for the first international Earth Summit** convened to address urgent problems of environmental protection and socio-economic development. The assembled leaders signed the Convention on Climate Change and the Convention on Biological Diversity, endorsed the Rio Declaration on Environment and Development and the Forest Principles, and **adopted Agenda 21**, a 300 page plan for achieving sustainable development in the 21st century.
- The **Commission on Sustainable Development (CSD)** was then created to monitor and report on implementation of the Earth Summit agreements. It was agreed that a five year review of **Earth Summit progress would be made in 1997** by the United Nations General Assembly meeting in special session.
- **"Earth Summit + 5"** took stock of how well countries, international organizations and sectors of civil society had responded to the challenge of the Earth Summit, five years after it took place.
- As the **"Earth + 5" Summit** ended, in concluding remarks, **Secretary-General Kofi Annan** said the special session had sought to deepen the commitments made at Rio. He said in many areas, much had been accomplished; but in others, more time would be needed.

## Vienna Convention

- The Vienna Convention came into force in 1988 and was universally ratified by 2009. It is called the Convention for the protection of the Ozone layer.
- As on 16th September, International Day for the Preservation of the Ozone Layer was celebrated along with the convention's 35th anniversary.

### Purpose of the Vienna Convention

- The purpose of the Vienna Convention is to protect the ozone layer from depletion. 28 countries originally signed the convention on 22nd March 1985.
- On 16th September 2009, Vienna Convention along with **Montreal Protocol** was universally ratified and thus became the first treaties in the history of the United Nations to achieve universal ratification.



### 35 Years of Vienna Convention & Ozone Day

- In 2020, the world community celebrated the 35th anniversary of the Vienna Convention along with the International Day for the Preservation of the Ozone Layer (also known as the Ozone Day.)
- **The theme of Ozone Day 2020** – “Ozone for life: 35 years of ozone layer protection.”
- **Vienna Convention on the Law of Treaties (1969)** – It is a treaty of treaties that establishes comprehensive rules, procedures, and guidelines for how treaties are defined, drafted, amended, interpreted, and generally operated.
- **Vienna Convention on Diplomatic Relations (1961)** – It is a treaty that defines the framework of diplomatic relations between the member states and anchors diplomatic immunity. It has 192 members.



### 8 Salient Points on Vienna Convention

- The list below mentions the important points that aspirants should know about the Vienna Convention
- 1. Vienna Convention is the first of its kind to be signed by each member-state involved in it and was universally ratified on 16th September 2009.
- 2. To strengthen the Vienna Convention's goals of protecting the ozone layer, Montreal Protocol was brought in 1987 with an aim to reduce the production and consumption of (Ozone Depleting Substances) ODSs to protect the ozone layer.
- 3. In 1994, 16th September (The day when Montreal Protocol was made open for signatures and the Vienna Convention was universally ratified) was proclaimed as Ozone Day by the UN General Assembly.
- 4. The 8th amendment was made to Montreal Protocol and it came to be known as Kigali Agreement (The Amendment was signed in Rwanda's capital Kigali.) It aims to reduce the manufacture and usage of hydrofluorocarbons (HFCs) by about 80-85% from the baselines until 2045.
- 5. The member countries meet every three years to decide over research and systematic observations in the ozone layer.
- 6. Ozone Research Managers is a forum that was introduced post-Vienna Convention. It is a forum of experts specialized in research related to ozone modifications.
- 7. There is a multilateral fund that aids developing nations to help them make a transition from ozone-depleting harmful chemicals.
- 8. There are two trust funds associated with the Vienna Convention:
  1. Trust Fund for Vienna Convention
  2. Trust Fund for Research & Systematic Observations

### Vienna Convention – Conference of Parties

- A Conference of Parties (COP) is held triennially. **The latest COP will be the 12th COP to Vienna Convention that is scheduled to take place from 23 November to 27 November 2020 in Tashkent, Uzbekistan.** The 11th COP to Vienna Convention met in November 2017 in Montreal, Canada.

### Members of Vienna Convention

- There are 198 members under the Vienna Convention.
- The United Nations Environment Programme (UNEP) provides secretarial assistance to the Convention.

### Vienna Convention & India

- India is a member of the Vienna Convention. It acceded to the convention in 1991 and became a party to the Montreal Protocol in 1992.



### India's Actions in protecting the Ozone Layer

- The Ministry of Environment, Forest & Climate Change is entrusted with the work related to the Montreal Protocol protection and implementation.
- Ozone Cell is set up for effective and timely implementation of the Montreal Protocol.
- Carbon tetrachloride (CTC) has been completely phased out by India as of 1st January 2010.



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## **World Summit on Sustainable Development - 2002 (Earth Summit) Johannesburg**



- The **World Summit on Sustainable Development 2002** took place in South Africa, **from 26 August to 4 September 2002**. It was convened to discuss [sustainable development] organizations, 10 years after the first Earth Summit in Rio de Janeiro. (It was therefore also informally nicknamed **“Rio+10”**.)
- The Johannesburg Declaration was the main outcome of the Summit; however, there were several other international agreements.
- It laid out the **Johannesburg Plan of Implementation** as an action plan

### **Agreements**

- **Johannesburg, 27 August: agreement** was made to restore the world’s depleted fisheries for 2015. It was agreed to by negotiators at the World Summit.
- Instead of new agreements between governments, the Earth Summit was organized mostly **around almost 300 “partnership initiatives” known as Type II**, as opposed to Type I Partnerships which are the more classic outcome of international treaties.
- These were to be the key means to achieve the Millennium Development Goals. These are kept in a database of Partnerships for Sustainable Development.



### U.S. participation

- The absence of the United States rendered the summit partially impotent. George W. Bush boycotted the summit and did not attend. Except for a brief appearance by Colin Powell, who hurriedly addressed the closing stages of the conference while his airplane taxied on the runway of Johannesburg International, the US government did not send a delegation, earning Bush praise in a letter from conservative organizations such as Americans for Tax Reform, American Enterprise Institute, and Competitive Enterprise Institute.

### History

- The United Nations Conference on the Human Environment, was **first held in Stockholm, Sweden, in June 1972**, and marked the emergence of international environmental law. The Declaration on the Human Environment also known as the Stockholm Declaration set out the principles for various international environmental issues, including human rights, natural resource management, pollution prevention and the relationship between the environment and development. The conference also led to the creation of the United Nations Environment Programme.
- The Brundtland Commission set up by Gro Harlem Brundtland, the pioneer of sustainable development, provided the momentum for first Earth Summit 1992 - the **United Nations Conference on Environmental Development (UNCED)**, that was also headed by Maurice Strong, who had been a prominent member of the Brundtland Commission - and also for Agenda 21.
- **South Africa's first National Conference on Environment and Development** entitled, "Ecologise Politics, Politicise Ecology" was held at the University of the Western Cape in conjunction with the Cape Town Ecology Group and the Western Cape Branch of the World Conference on Religion and Peace in 1991. Prominent persons involved in this conference were Ebrahim Rasool, Cheryl Carolus, Faried Esack, and Julia Martin.
- The initial informal discussions on a possible **new Summit in 2002 were held in February 1998 and hosted by Derek Osborn** who co-chaired the preparatory meetings for Rio+5 and Stakeholder Forum for a Sustainable Future. A set of 10 governments started working informally to start putting together the possible agenda for a Summit. The non-papers produced in 1998 and 1999 ensured that when the **UN Commission met in 2000 it could agree to host another Summit in 2002.**

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### STAGE 1

#### PRELIMINARY EXAMINATION

##### Prelims

(Multiple Choice  
Questions Type)

- **Paper I**  
(General Studies:  
Duration- 2 Hours;  
Mark- 200)
- **Paper II**  
(CSAT Duration-  
2 Hours; 200 marks)

### STAGE 2

#### MAINS EXAMINATION

##### Mains

(Descriptive Type)

- All 9 Papers are  
3 Hour's duration
- GS Papers (I-IV),  
Optional subject for  
250 marks, while  
Compulsory and  
English Paper is for  
300 marks

### STAGE 3

#### PERSONALITY TEST/ INTERVIEW ROUND

To assess the candidate's Personality and  
suitability for a career in civil Services



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DATE	TOPICS	CURRENT AFFAIRS & GK SECTION	INDIA YEAR BOOK 2021
TEST NO.1	<b>INDIAN POLITY-1</b>	<ul style="list-style-type: none"><li>△ International organisations</li><li>✓ United Nations (Organs, Agencies, Programmes, and Funds),</li><li>✓ Socio-economic-political-cultural and religious organisations</li><li>△ Reports published by various organisations</li></ul>	<b>CHAPTERS</b>
	<ul style="list-style-type: none"><li>△ Historical Background</li><li>△ Salient Features of the Constitution</li><li>△ Preamble ; Making of the Constitution</li><li>△ Union and its Territory;</li><li>△ Citizenship</li><li>△ Fundamental Rights and Duties</li><li>△ Directive Principles of State Policy</li><li>△ Emergency Provisions</li><li>△ Amendments and Basic structure</li><li>△ Centre-state and Inter -state relations, federal system</li><li>△ Parliamentary system,Parliament,Parliamentary committees,forums,groups</li><li>△ President,vicepresident,prime minister,cabinet, etc</li><li>△ Supreme court, Judicial Review, Judicial Activism,PIL</li><li>△ State Government: Governor, CM,COM,State legislature</li><li>△ High courts,subordinate courts,etc</li><li>△ Special status for Jammu kashmir and some states</li></ul>		<ul style="list-style-type: none"><li>△ Polity</li><li>△ Justice and Law</li></ul>



DATE	TOPICS	CURRENT AFFAIRS & GK SECTION	INDIA YEAR BOOK 2021
TEST NO.2	<b>INDIAN ECONOMY</b> ▲ NCERT IX ▲ NCERT X ▲ NCERT XI ▲ NCERT XII	▲ News headlines from Economics ▲ Finance commission related ▲ RBI related ▲ Economical Issue related ▲ NITI ayog related ▲ Present Budget ▲ Economic survey	<b>CHAPTERS</b> ▲ Agriculture ▲ Basic Economic Data ▲ Commerce ▲ Education ▲ Finance ▲ Corporate Affairs ▲ Food and Civil Supplies ▲ Housing ▲ Labour ▲ Planning
TEST NO.3	<b>GEOGRAPHY-1</b> ▲ NCERT VI ▲ NCERT VII ▲ NCERT VIII ▲ NCERT IX ▲ NCERT X	▲ GI tag related (Geographical indicator) ▲ Places in news ▲ Map related (Physical except Asia)	<b>CHAPTERS</b> ▲ Culture and Tourism ▲ Energy ▲ Industry ▲ Transport ▲ Water Resources ▲ States and Union Territories
TEST NO.4	<b>INDIAN HISTORY-1</b> ▲ NCERT VI ▲ NCERT VII ▲ NCERT VIII ▲ NCERT IX	▲ Historical Places News ▲ UNESCO related ▲ Cultural Festival related ▲ Historical celebration(100 <sup>th</sup> ,125 <sup>th</sup> anniversary etc)	<b>CHAPTERS</b> ▲ National Symbols



DATE	TOPICS	CURRENT AFFAIRS & GK SECTION	INDIA YEAR BOOK 2021
TEST NO.5	<b>INDIAN HISTORY-2</b> ▲ NCERT X ▲ NCERT XI ▲ NCERT XII	▲ Art forms related (Music,drama,theatre forms, Folk arts, Martial etc) ▲ Heritage related ▲ Religion related ▲ National Leaders ▲ Organisation and newspapers during Indian national Movement	<b>CHAPTERS</b> ▲ India and the World
TEST NO.6	<b>ENVIRONMENT</b> ▲ NIOS (Environment book ) ▲ NCERT( VI TO XII)	▲ Environmental Organisation related ▲ IUCN related ▲ Climate Change related ▲ National parks ▲ Biosphere reserves ▲ Wildlife sanctuaries,etc	<b>CHAPTERS</b> ▲ Environment
TEST NO.7	<b>SCIENCE AND TECH -1</b> ▲ NCERT VI ▲ NCERT VII ▲ NCERT VIII ▲ NCERT IX	▲ Important Health days ▲ New inventions and discoveries ▲ Types of science branches and their founders	<b>CHAPTERS</b> ▲ Communications and Information Technology ▲ Defence ▲ Mass Communication
TEST NO.8	<b>SCIENCE AND TECH -2</b> ▲ NCERT X ▲ NCERT XI ▲ NCERT XII	▲ Diseases related ▲ Vaccines Related ▲ Latest Terminologies	<b>CHAPTERS</b> ▲ Health and Family Welfare ▲ Scientific and Technological Developments



DATE	TOPICS	CURRENT AFFAIRS & GK SECTION	INDIA YEAR BOOK 2021
TEST NO.9	<b>GEOGRAPHY-2</b> ▲ NCERT XI ▲ NCERT XII	▲ Map ✓ Physical - Asia ✓ Political - Asia ✓ (Special Importance to India and neighbours)	<b>CHAPTERS</b> ▲ Land and People
TEST NO.10	<b>INDIAN POLITY-2</b> ▲ NCERT VI -XII ▲ Local Government(Panchayat raj ,municipalities, union territories, scheduled areas) ▲ Constitutional Bodies ▲ Non constitutional Bodies ▲ Official language ▲ Election- Political parties, Electoral reforms, election laws, Anti-defection law, Pressure groups, etc ▲ Co-operative society and tribunals ▲ Public services ▲ National integration and foreign policy	▲ New Bills and acts ▲ New law Related ▲ Latest landmark verdict related ▲ Tribunals related(NGT,etc) ▲ Pollution related ▲ Controversy (Politics in state, Centre-state, Bureaucrats vs Ministers Related news	<b>CHAPTERS</b> ▲ Rural & Urban Development ▲ General Information
TEST NO.11	<b>CURRENT AFFAIRS</b> 2020,2021		<b>CHAPTERS</b> ▲ Diary of National Events ▲ Welfare ▲ Youth Affairs and Sports



## REVISION TEST

TEST NO.12	REVISION TEST NO.1 WORLD GEOGRAPHY AND INDIAN GEOGRAPHY
TEST NO.13	REVISION TEST NO.2 INDIAN POLITY AND CONSTITUTION
TEST NO.14	REVISION TEST NO.3 HISTORY (ANCIENT ,MEDIEVAL,MODERN)
TEST NO.15	REVISION TEST NO.4 INDIAN ECONOMY (INCLUDING PRESENT ECONOMIC SURVEY & BUDGET)
TEST NO.16	REVISION TEST NO.5 ENVIRONMENT AND AGRICULTURE
TEST NO.17	REVISION TEST NO.6 GENERAL SCIENCE AND SCIENCE AND TECH
TEST NO.18	REVISION TEST NO.7 CURRENT AFFAIRS
TEST NO.19	CSAT PAPER -2 (TEST NO.1)
TEST NO.20	CSAT PAPER -2 (TEST NO.2)
TEST NO.21	CSAT PAPER -2 (TEST NO.3)
TEST NO.22	CSAT PAPER -2 (TEST NO.4)
TEST NO.23	CSAT PAPER -2 (TEST NO.5)
TEST NO.24	CSAT PAPER -2 (TEST NO.6)
TEST NO.25	CSAT PAPER -2 (TEST NO.7)
TEST NO.26	CSAT PAPER -2 (TEST NO.8)
TEST NO.27	CSAT PAPER -2 (TEST NO.9)
TEST NO.28	CSAT PAPER -2 (TEST NO.10)



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UPSC-TEST-SCHEDULE

MOCK TEST	
TEST NO.29	FULL MOCK TEST NO.1
TEST NO.30	FULL MOCK TEST NO.2
TEST NO.31	FULL MOCK TEST NO.3
TEST NO.32	FULL MOCK TEST NO.4
TEST NO.33	FULL MOCK TEST NO.5
TEST NO.34	FULL MOCK TEST NO.6
TEST NO.35	FULL MOCK TEST NO.7
TEST NO.36	FULL MOCK TEST NO.8



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