Sustainable Development

➔ The **United Nations officially adopted a new set of global goals on September 25, 2015** to combat poverty, inequality and climate change over the next 15 years

What are the SDGs and how will they be measured?

- ✓ The SDGs are a set of **17 goals and 169 targets** aimed at resolving global social, economic and environmental problems.
- ✓ To be met over the next 15 years, beginning on **Jan 1, 2016**, the SDGs replace the Millennium Development Goals (MDGs) which were adopted in 2000
- ✓ Implementation of the new goals, requiring trillions of dollars in investment, will be monitored and reviewed using a set of global indicators

Who decided the SDGs?

- Governments came up with the idea at the **Rio+20 conference** on sustainable development in **Brazil 2012**. A working group with ***representatives of 70 nations*** drafted a proposed set of goals.
- At the same time, the United Nations ran public consultations around the world and an online survey asking people about their priorities for the goals.
- Governments negotiated a final version of the SDGs that are due to be **adopted by 193 countries at a Sept. 25-27, 2015 summit at the United Nations in New York**.

What did the MDGs accomplish?

- The United Nations says the **MDGs - a set of eight goals with 21 targets** - led to achievements including: -
  - ✓ More than halving the number of people living in **extreme poverty**, to **836 million in 2015** from 1.9 billion in 1990
  - ✓ **Gender parity** in primary schools in the majority of countries
  - ✓ Reducing the rate of children dying before their fifth birthday to **43 deaths per 1,000** live births from 90
  - ✓ A ***fall of 45 percent in the maternal mortality ratio*** worldwide
  - ✓ Some **37 million lives saved by tuberculosis prevention and treatment**, **over 6.2 million malaria deaths averted**, and **new HIV infection rates down by around 40 percent**
  - ✓ Access to improved **sanitation for 2.1 billion people**
  - ✓ **Official development assistance from developed countries up 66 percent in real terms to $135.2 billion**

So, why do we need the SDGs?

→ Some **795 million people still go hungry and around 800 million people live in extreme poverty**, with fragile and conflict-torn states experiencing the highest poverty rates

→ Between 2008 and 2012, **144 million people were displaced** from their homes by natural **disasters**, a number predicted to rise as the planet warms, bringing more extreme weather and rising seas

→ **Water scarcity affects 40 percent of the global population** and is projected to increase

→ Some **946 million people still practice open defecation**

→ **Gender inequality** persists in spite of more representation for women in parliaments and more girls going to school

→ **57 million children still denied right to primary education**

Sustainable Development Goals

Goal 1: End poverty in all its forms everywhere

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

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

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5: Achieve gender equality and empower all women and girls

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

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

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

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10: Reduce inequality within and among countries

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

Goal 12: Ensure sustainable consumption and production patterns

Goal 13: Take urgent action to combat climate change and its impacts*

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

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

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

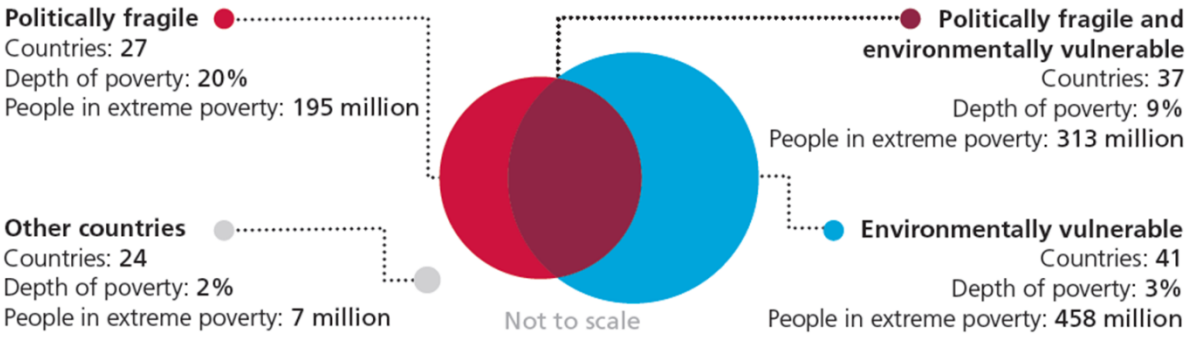
Sustainable Development Goals

Goal 1: End poverty in all its forms everywhere

Facts:

- Globally, the number of people living in extreme poverty has declined by more than half from 1.9 billion in 1990. However, 836 million people still live in extreme poverty. About **one in five persons in developing regions lives on less than $1.25 per day**.
- **Southern Asia and sub-Saharan Africa** are home to the overwhelming majority of people living in extreme poverty.
- High poverty rates are often found in small, fragile and conflict-affected countries.
- **One in four children under age five** in the world has ***inadequate height*** for his or her age

The vast majority of people living in extreme poverty live in countries that are environmentally vulnerable, politically fragile, or both



Notes: circles are representative of the number of people living in extreme poverty in countries in each group. Fragile states are defined based on the Fragile States Index 2015.[11] Environmentally vulnerable countries are defined based on INFORM 2015 mid-year update.[12]

Source: Development Initiatives, Investments to End Poverty Report 2015, Chapter 1

Targets:

- ✓ By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
- ✓ By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

- ✓ 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, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
- ✓ 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

Facts:

- ⇨ Globally, the **proportion of undernourished people in the developing regions** has fallen by almost half since 1990, from 23.3% in 1990-1992 to **12.9% in 2014-2016**. However, **one in nine people in the world today (795 million) are still undernourished**.
- ⇨ The vast majority of the world's ***hungry people live in developing countries***, where **12.9% of the population is undernourished**
- ⇨ **Asia is the continent with the hungriest people** – two-thirds of the total. The percentage in southern Asia has fallen in recent years, but in western Asia it has increased slightly
- ⇨ **Sub-Saharan Africa is the region with the highest prevalence (percentage of population) of hunger**. About one person in four there is undernourished
- ⇨ **Poor nutrition** causes nearly half ***(45%) of deaths in children under five – 3.1 million children each year***
- ⇨ **One in four of the world's children suffer stunted growth**. In developing countries the proportion rises to one in three
- ⇨ **66 million primary school-age children in developing countries attend classes hungry**, with 23 million in Africa alone
- ⇨ **Agriculture is the single largest employer in the world, providing livelihoods for 40% of today's global population**. It is the largest source of income and jobs for poor rural households.
- ⇨ 500 million small farms worldwide, most still rain fed, provide up to 80% of food consumed in a large part of the developing world. Investing in smallholder farmers is an important way to increase food security and nutrition for the poorest, as well as food production for local and global markets.

Targets:

- ✓ 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
- ✓ By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
- ✓ By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
- ✓ By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

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

Facts:

Child Health :

- ⇨ 17,000 fewer children die each day than in 1990, but more than six million children still die before their fifth birthday each year
- ⇨ Since 2000, measles vaccines have averted nearly 15.6 million deaths
- ⇨ Despite global progress, an **increasing proportion of child deaths are in sub-Saharan Africa and Southern Asia**. ***Four out of every five deaths of children under age five occur in these regions***

Maternal Health:

- ⇨ Globally, maternal mortality has **fallen by almost 50% since 1990**
- ⇨ In Eastern Asia, Northern Africa and Southern Asia, maternal mortality has declined by around two-thirds. But, the **maternal mortality ratio** – the proportion of mothers that do not survive childbirth compared to those who do – in developing regions is still 14 times higher than in the developed regions

- ⇨ Only half of women in developing regions receive the recommended amount of healthcare

HIV/AIDS:

- ⇨ By 2014, there were **13.6 million people accessing antiretroviral therapy**, an increase from just 800,000 in 2003
- ⇨ New HIV infections in 2013 were estimated at 2.1 million, which was 38% lower than in 2001
- ⇨ At the end of 2013, there were an estimated **35 million people living with HIV**
- ⇨ At the end of 2013, 240,000 children were newly infected with HIV

Targets:

- ✓ 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

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

Facts:

- ⇨ **Enrolment in primary education in developing countries has reached 91%,** but 57 million children remain out of school
- ⇨ More than half of children who have not enrolled in school live in **sub-Saharan Africa**

- ⇨ An estimated **50% of out-of-school children of primary school age live in conflict-affected areas**. Children in the poorest households are 4 times as likely to be out of school as children in the richest households
- ⇨ The world has **achieved equality in primary education between girls and boys**, but few countries have achieved that target at all levels of education
- ⇨ Among **youth aged 15 to 24, the literacy rate has improved globally from 83 per cent to 91 per cent** between 1990 and 2015

Targets:

- ✓ By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
- ✓ By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
- ✓ By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
- ✓ By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
- ✓ 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
- ✓ By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
- ✓ By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

Goal 5: Achieve gender equality and empower all women and girls

Facts:

- ⇨ In Southern Asia, only 74 girls were enrolled in primary school for every 100 boys in 1990. By 2012, the enrolment ratios were the same for girls and for boys
- ⇨ In sub-Saharan Africa, Oceania and Western Asia, girls still face barriers to entering both primary and secondary school
- ⇨ Women in Northern Africa hold less than one in five paid jobs in the non-agricultural sector
- ⇨ **In 46 countries, women now hold more than 30% of seats in national parliament** in atleast one chamber

Targets:

- ✓ End all forms of discrimination against all women and girls everywhere
- ✓ 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
- ✓ Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate
- ✓ Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
- ✓ 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

Facts:

- ⇨ In 2015, **91% of the global population is using an improved drinking water source**, compared to 76% in 1990. However, 2.5 billion people lack access to basic sanitation services, such as toilets or latrines
- ⇨ Each day, an **average of 5,000 children die due to preventable water and sanitation-related diseases**
- ⇨ **Hydropower is the most important and widely used renewable source of energy** and as of 2011, represented 16% of total electricity production worldwide.
- ⇨ Approximately 70% of all available water is used for irrigation
- ⇨ Floods account for 15% of all deaths related to natural disasters

Targets:

- ✓ 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
- ✓ By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
- ✓ By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
- ✓ By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

- ✓ By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

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

Facts:

- ➔ 3 billion people rely on wood, coal, charcoal or animal waste for cooking and heating
- ➔ **Energy is the dominant contributor to climate change, accounting for around 60% of total global greenhouse gas emissions**
- ➔ Energy from renewable resources – wind, water, solar, biomass and geothermal energy – is inexhaustible and clean. **Renewable energy currently constitutes 15% of the global energy mix**
- ➔ 1.3 billion people - **one in five globally – still lack access to modern electricity**

Targets:

- ✓ By 2030, ensure universal access to affordable, reliable and modern energy services
- ✓ By 2030, increase substantially the share of renewable energy in the global energy mix
- ✓ By 2030, double the global rate of improvement in energy efficiency

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

Facts:

- ➔ Global unemployment increased from 170 million in 2007 to nearly 202 million in 2012, of which about 75 million are young women and men
- ➔ **Nearly 2.2 billion people live below the US$2 poverty line** and poverty eradication is only possible through stable and well-paid jobs
- ➔ **470 million jobs are needed globally for new entrants to the labour market between 2016 and 2030**.
- ➔ ***Small and medium-sized enterprises that engage in industrial processing and manufacturing are the most critical for the early stages of industrialization and are typically the largest job creators***. They make up over 90% of business worldwide and account for between 50-60% of employment

Targets:

- ✓ Sustain per capita economic growth in accordance with national circumstances and, in particular, *at least 7 per cent gross domestic product growth per annum in the least developed countries*
- ✓ Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors
- ✓ Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the

formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

- ✓ Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
- ✓ 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
- ✓ By 2020, substantially reduce the proportion of youth not in employment, education or training
- ✓ 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
- ✓ By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products
- ✓ Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Facts:

- ➔ About 2.6 billion people in the developing world are facing difficulties in accessing electricity full time
- ➔ **2.5 billion people worldwide lack access to basic sanitation and almost 800 million people lack access to water**, many hundreds of millions of them in sub-Saharan Africa and South Asia
- ➔ 1 to 1.5 million people do not have access to reliable phone service
- ➔ For many African countries, particularly the lower-income countries, infrastructure constraints affect company productivity by around 40%
- ➔ **Manufacturing is an important employer, accounting for around 470 million jobs worldwide in 2009 – or around 16% of the world's workforce of 2.9 billion**. It is estimated that there were more than half a billion jobs in manufacturing in 2013
- ➔ Industrialization's job multiplication effect has a positive impact on society. **Every one job in manufacturing creates 2.2 jobs in other sectors**
- ➔ **In developing countries, barely 30% of agricultural production undergoes industrial processing. In high-income countries, 98% is processed**. This suggests that there are great opportunities for developing countries in agribusiness

Targets:

- ✓ Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
- ✓ Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries
- ✓ Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets
- ✓ By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
- ✓ Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

Goal 10: Reduce inequality within and among countries

Facts:

- ➔ On average – and taking into account population size **– income inequality increased by 11% in developing countries** between 1990 and 2010
- ➔ A significant majority of households in developing countries – more than 75% – are living today in societies where income is more unequally distributed than it was in the 1990s
- ➔ ***Children in the poorest 20% of the population are still up to three times more likely to die before their fifth birthday*** than children in the richest quintiles
- ➔ Social protection has been significantly extended globally, yet persons with disabilities are up to five times more likely than average to incur catastrophic health expenditures
- ➔ Despite overall declines in maternal mortality in the majority of developing countries, **women in rural areas are still up to three times more likely to die while giving birth than women living in urban centres**

Targets:

- ✓ By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average
- ✓ 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
- ✓ Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard

- ✓ Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality
- ✓ Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations
- ✓ Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions
- ✓ 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

Facts:

- ➔ Half of humanity – 3.5 billion people – lives in cities today. **By 2030, almost 60% of the world's population will live in urban areas**
- ➔ 828 million people live in slums today and the number keeps rising
- ➔ The **world's cities occupy just 2% of the Earth's land, but account for 60 – 80% of energy consumption and 75% of carbon emissions**. Rapid urbanization is exerting pressure on fresh water supplies, sewage, the living environment, and public health. But the high density of cities can bring efficiency gains and technological innovation while reducing resource and energy consumption
- ➔ Cities have the potential to either dissipate the distribution of energy or optimise their efficiency by reducing energy consumption and adopting green – energy systems. For instance**, Rizhao, China has turned itself into a solar – powered city; in its central districts, 99% of households already use solar water heaters**.

Targets:

- ✓ 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, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- ✓ Strengthen efforts to protect and safeguard the world's cultural and natural heritage
- ✓ 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, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

- ✓ 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

Goal 12: Ensure sustainable consumption and production patterns

Facts:

- ➔ If people worldwide switched to energy-efficient lightbulbs, the world would save US$120 billion annually.
- ➔ Should the **global population reach 9.6 billion by 2050**, the equivalent of almost three planets could be required to provide the natural resources needed to sustain current lifestyles.
- ➔ More than 1 billion people still do not have access to fresh water.
- ➔ **1.3 billion tonnes of food is wasted every year**

Targets:

- ✓ Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
- ✓ By 2030, achieve the sustainable management and efficient use of natural resources
- ✓ By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
- ✓ 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
- ✓ By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- ✓ Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle
- ✓ Promote public procurement practices that are sustainable, in accordance with national policies and priorities
- ✓ By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

Goal 13: Take urgent action to combat climate change and its impacts

Facts:

- ➔ The greenhouse gas emissions from human activities are driving climate change and continue to rise. They are now at their highest levels in history. **Global emissions of carbon dioxide have increased by almost 50% since 1990**

- The atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have increased to levels unprecedented in at least the last 800,000 years. **Carbon dioxide concentrations have increased by 40% since pre-industrial times, primarily from fossil fuel emissions and secondarily from net land use change emissions**. The **ocean has absorbed about 30% of the emitted anthropogenic carbon dioxide, causing ocean acidification**.
- Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850. In the Northern Hemisphere, 1983-2012 was likely the warmest 30-year period of the last 1,400 years.
- **From 1880 to 2012, average global temperature increased by 0.85°C.** Without action, the **world's average surface temperature** is projected to rise over the 21st century and is likely to **surpass 3 degrees Celsius this century** – with some areas of the world, including in the tropics and subtropics, expected to warm even more. The poorest and most vulnerable people are being affected the most
- The rate of sea level rise since the mid-19th century has been larger than the mean rate during the previous two millennia. Over the period 1901 to 2010, **global mean sea level rose by 0.19 [0.17 to 0.21] meters**
- ***From 1901 to 2010, the global average sea level rose by 19 cm as oceans expanded due to warming and melted ice***. The Arctic's sea ice extent has shrunk in every successive decade since 1979, with 1.07 million km² of ice loss every decade
- It is still possible, using an array of technological measures and changes in behaviour, to limit the increase in global mean temperature to two degrees Celsius above preindustrial levels
- There are multiple mitigation pathways to achieve the substantial emissions reductions over the next few decades necessary to limit, with a greater than 66% chance, the **warming to 2ºC** – the goal set by governments. However, delaying additional mitigation to 2030 will substantially increase the technological, economic, social and institutional challenges associated with limiting the warming over the 21st century to below 2 ºC relative to pre-industrial levels

Targets:

- ✓ Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
- ✓ Integrate climate change measures into national policies, strategies and planning
- ✓ Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
- ✓ Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Facts:

- ➔ Oceans cover three-quarters of the Earth's surface, contain 97% of the Earth's water, and represent 99% of the living space on the planet by volume.
- ➔ Globally, the **market value of marine and coastal resources and industries is estimated at $3 trillion per year or about 5% of global GDP**
- ➔ Globally, the levels of capture fisheries are near the ocean's productive capacity, with catches on the order of 80 million tons
- ➔ Oceans contain nearly 200,000 identified species, but actual numbers may lie in the millions
- ➔ **Oceans absorb about 30% of carbon dioxide produced by humans, buffering the impacts of global warming**
- ➔ **Oceans serve as the world's largest source of protein**, with more than 3 billion people depending on the oceans as their primary source.
- ➔ Marine fisheries directly or indirectly employ over 200 million people
- ➔ Subsidies for fishing are contributing to the rapid depletion of many fish species and are preventing efforts to save and restore global fisheries and related jobs, causing ocean fisheries to generate US$ 50 billion less per year
- ➔ As much as 40% of world oceans are heavily affected by human activities, including pollution, depleted fisheries, and loss of coastal habitats.

Targets:

- ✓ *By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution*
- ✓ *By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans*
- ✓ Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- ✓ *By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics*
- ✓ *By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information*
- ✓ *By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation*

- ✓ By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
- ✓ Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Facts:

- ➔ **Thirteen million hectares of forests are being lost every year**
- ➔ Around 1.6 billion people depend on forests for their livelihood. This includes some 70 million indigenous people. Forests are home to more than 80% of all terrestrial species of animals, plants and insects
- ➔ 2.6 billion people depend directly on agriculture, but **52% of the land used for agriculture is moderately or severely affected by soil degradation**.
- ➔ Due to drought and desertification each year, 12 million hectares are lost (23 hectares per minute), where 20 million tons of grain could have been grown
- ➔ **Of the 8,300 animal breeds known, 8% are extinct and 22% are at risk of extinction**
- ➔ As many as 80% of people living in rural areas in developing countries rely on traditional plant-based medicines for basic healthcare.

Targets:

- ✓ *By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements*
- ✓ *By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally*
- ✓ By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
- ✓ By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development
- ✓ *Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species*
- ✓ Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

- ✓ Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products
- ✓ *By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species*
- ✓ *By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts*

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

Facts:

- ➔ **The number of refugees of concern to the United Nations High Commissioner for Refugees (UNHCR) stood at 13 million in mid-2014**, up from a year earlier
- ➔ Corruption, bribery, theft and tax evasion cost some US $1.26 trillion for developing countries per year
- ➔ The **rate of children leaving primary school in conflict-affected countries reached 50% in 2011**, which amounts to 28.5 million children

Targets:

- ✓ Significantly reduce all forms of violence and related death rates everywhere
- ✓ End abuse, exploitation, trafficking and all forms of violence against and torture of children
- ✓ Promote the rule of law at the national and international levels and ensure equal access to justice for all
- ✓ By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime
- ✓ Substantially reduce corruption and bribery in all their forms
- ✓ Develop effective, accountable and transparent institutions at all levels
- ✓ Ensure responsive, inclusive, participatory and representative decision-making at all levels
- ✓ Broaden and strengthen the participation of developing countries in the institutions of global governance
- ✓ By 2030, provide legal identity for all, including birth registration
- ✓ Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Facts:

- ➔ **Official development assistance (ODA) stood at approximately $135 billion in 2014**
- ➔ In 2014, 79% of imports from developing countries entered developed countries duty-free
- ➔ **The debt burden on developing countries remains stable at about 3% of export revenue**
- ➔ The number of internet users in Africa almost doubled in the past four years.
- ➔ As of 2015, 95% of the world's population is covered by a mobile-cellular signal
- ➔ 30% of the world's youth are digital natives, active online for at least five years
- ➔ Internet penetration has grown from just over 6% of the world's population in 2000 to 43% in 2015
- ➔ But more than four billion people do not use the Internet, and 90% of them are from the developing world

Finance

- ✓ Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection
- ✓ Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the *target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries*
- ✓ Mobilize additional financial resources for developing countries from multiple sources
- ✓ Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress
- ✓ Adopt and implement investment promotion regimes for least developed countries

Technology

- ✓ Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism
- ✓ Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

- ✓ Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology

Capacity-building

- ✓ Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation

Trade

- ✓ Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda
- ✓ *Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries share of global exports by 2020*
- ✓ Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access

Systemic issues

Policy and institutional coherence

- ✓ Enhance global macroeconomic stability, including through policy coordination and policy coherence
- ✓ Enhance policy coherence for sustainable development
- ✓ Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development

Multi-stakeholder partnerships

- ✓ Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries

- ✓ Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

Data, monitoring and accountability

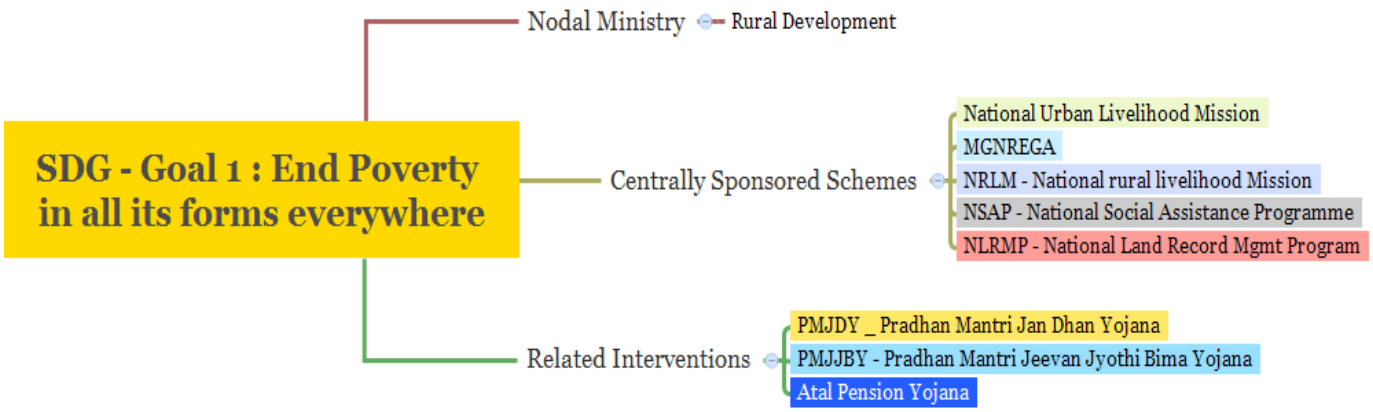
- ✓ *By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts*
- ✓ By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

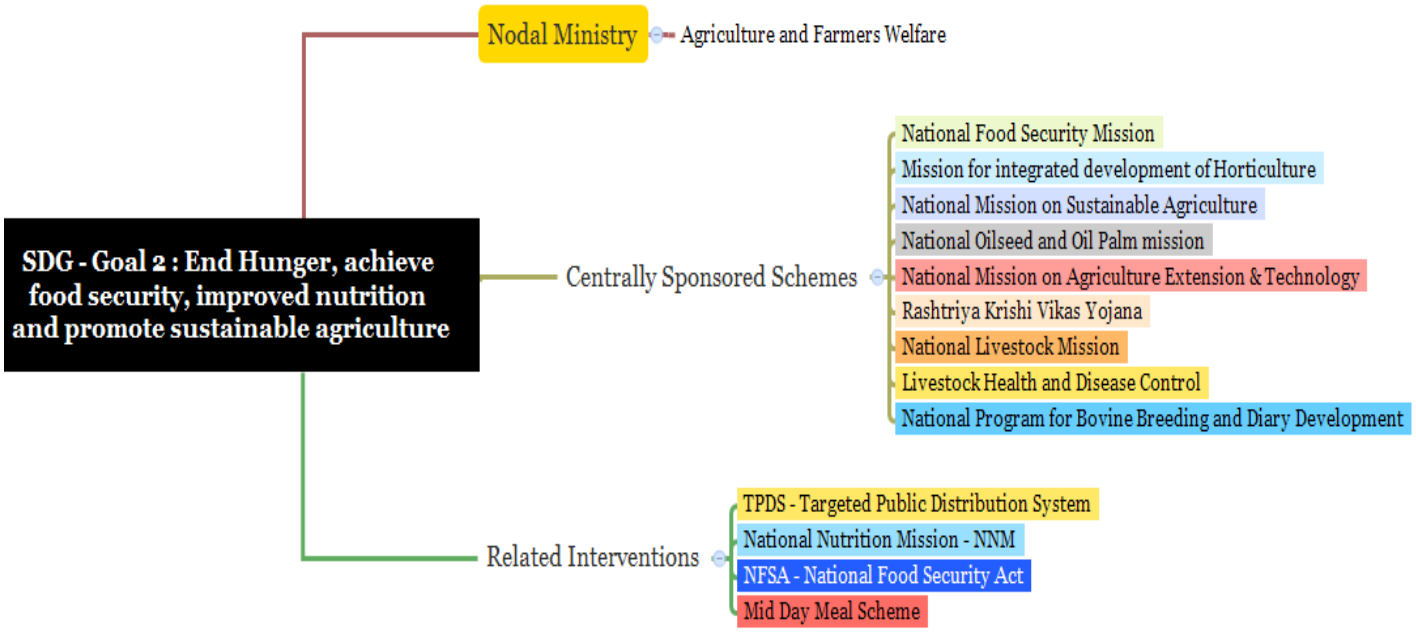
If we meet the SDGs, how will the world improve?

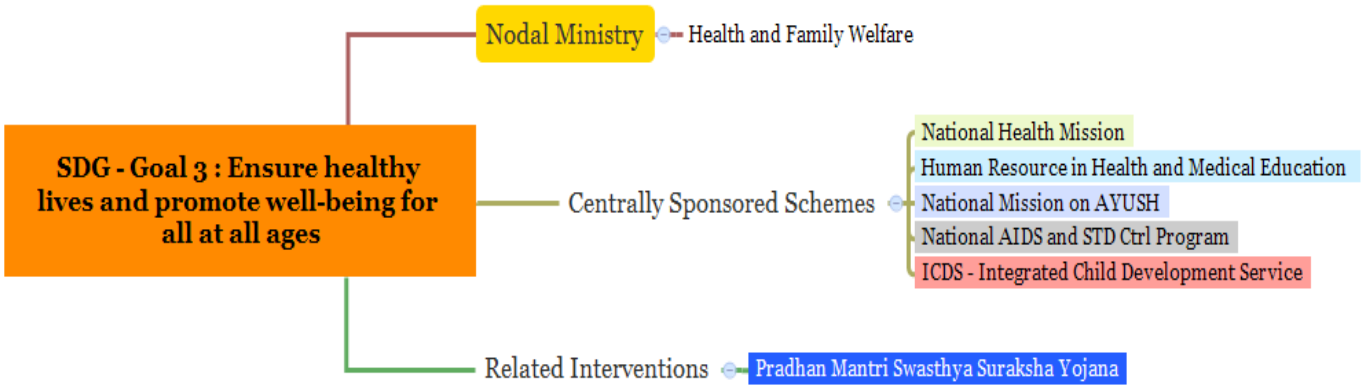
The 17 goals aim to achieve these wider aims by 2030:

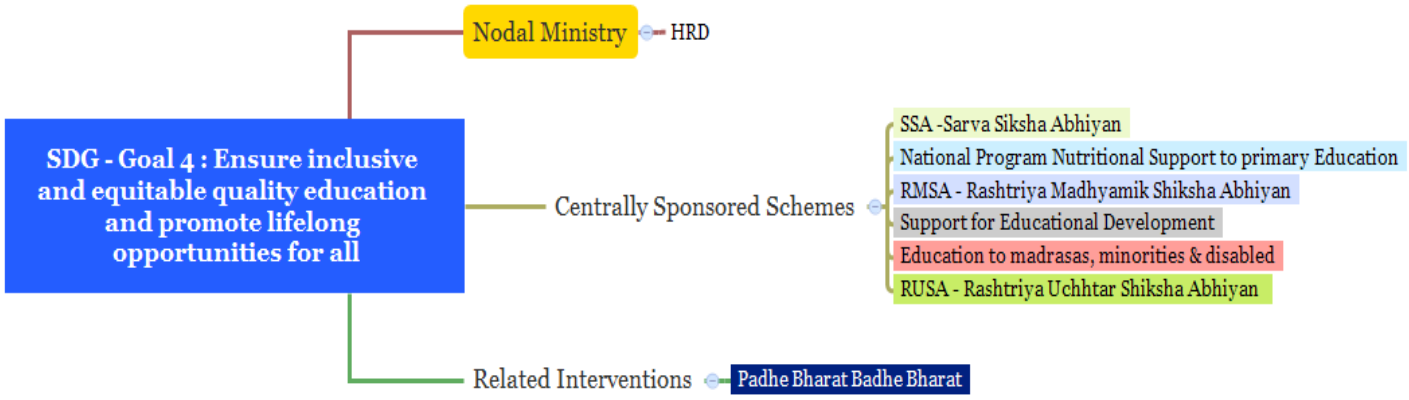
- → End poverty and hunger everywhere
- → Combat inequalities within and between countries
- → Build peaceful, just and inclusive societies
- → Protect human rights, and promote gender equality and the empowerment of women and girls
- → Ensure lasting protection of the planet and its natural resources
- → Create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all.

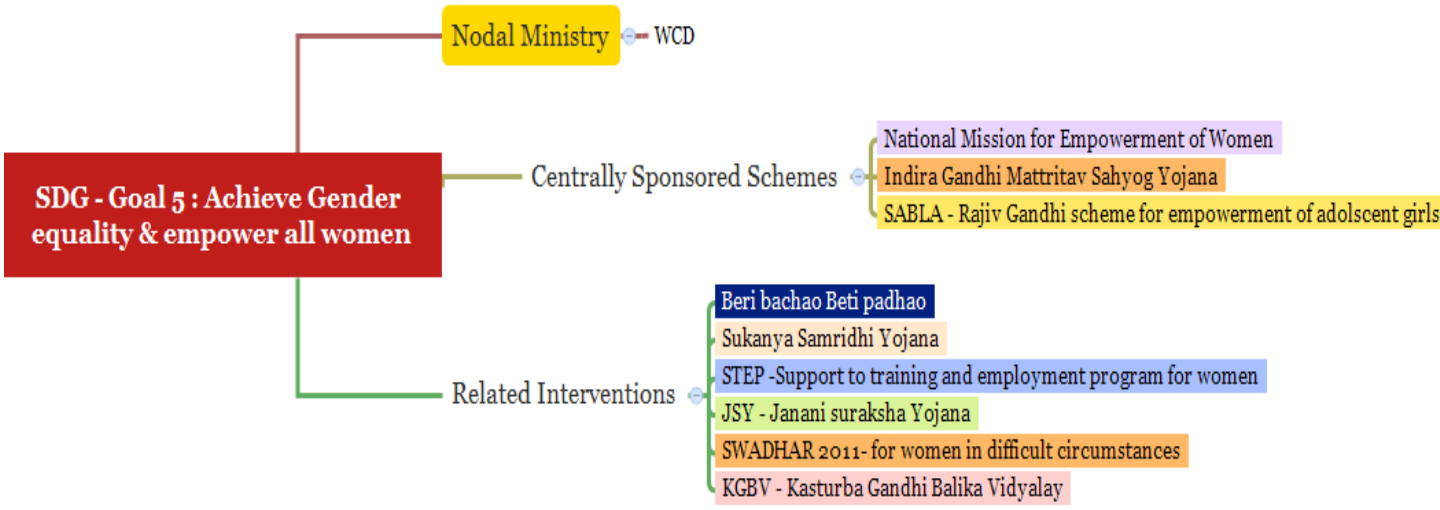
Sustainable Development Goals and India

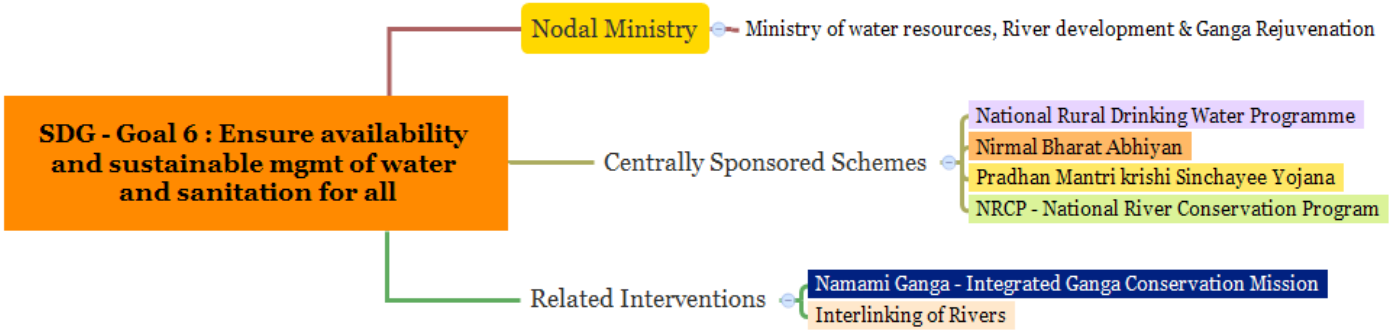


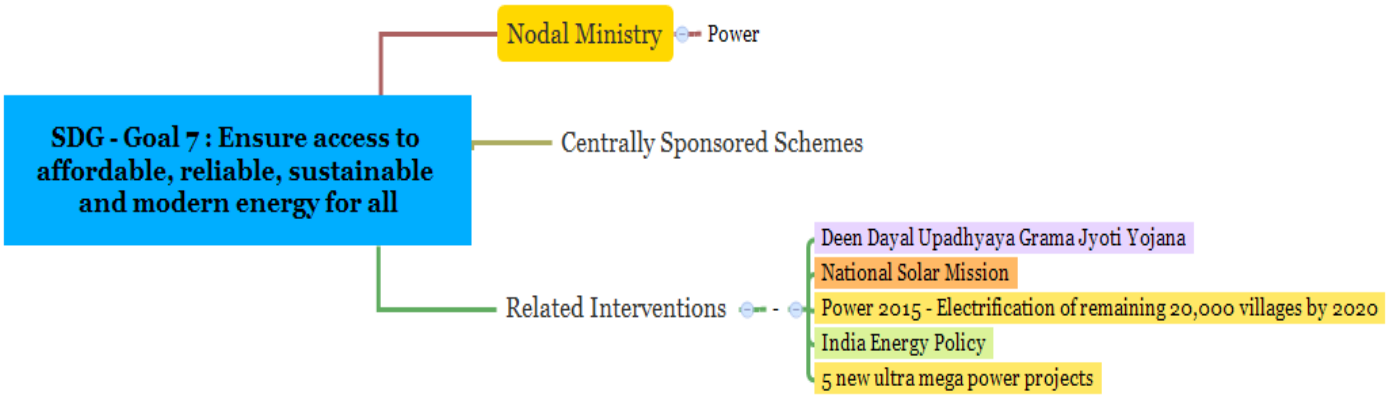


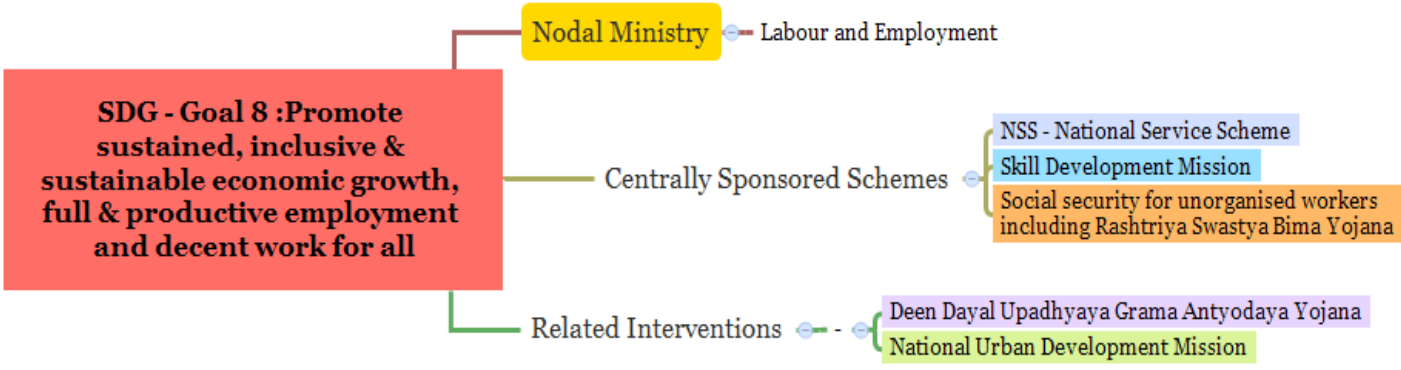


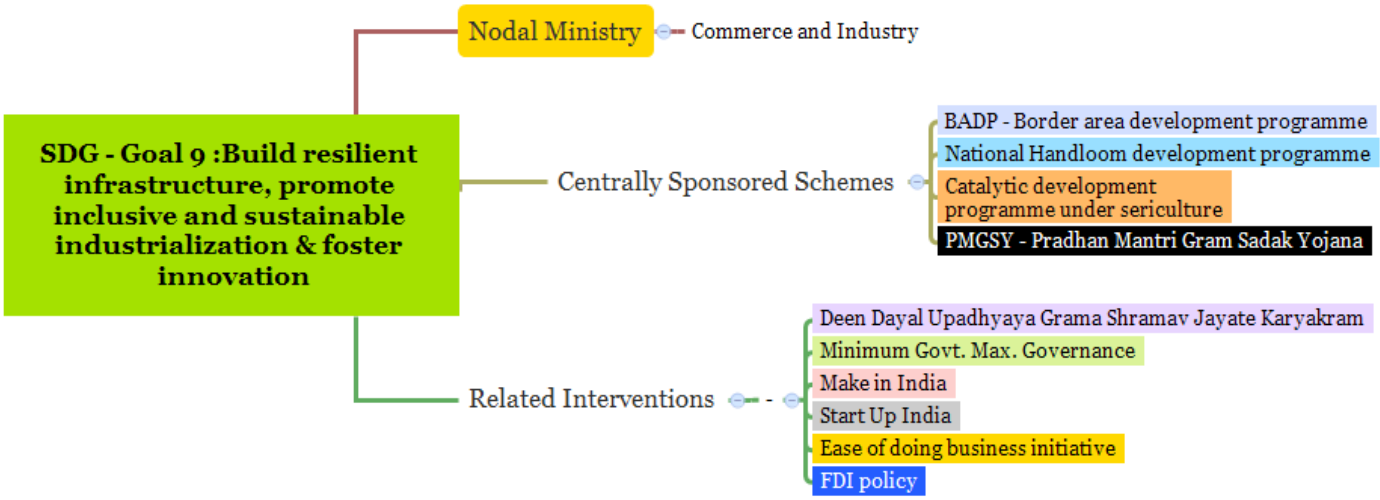


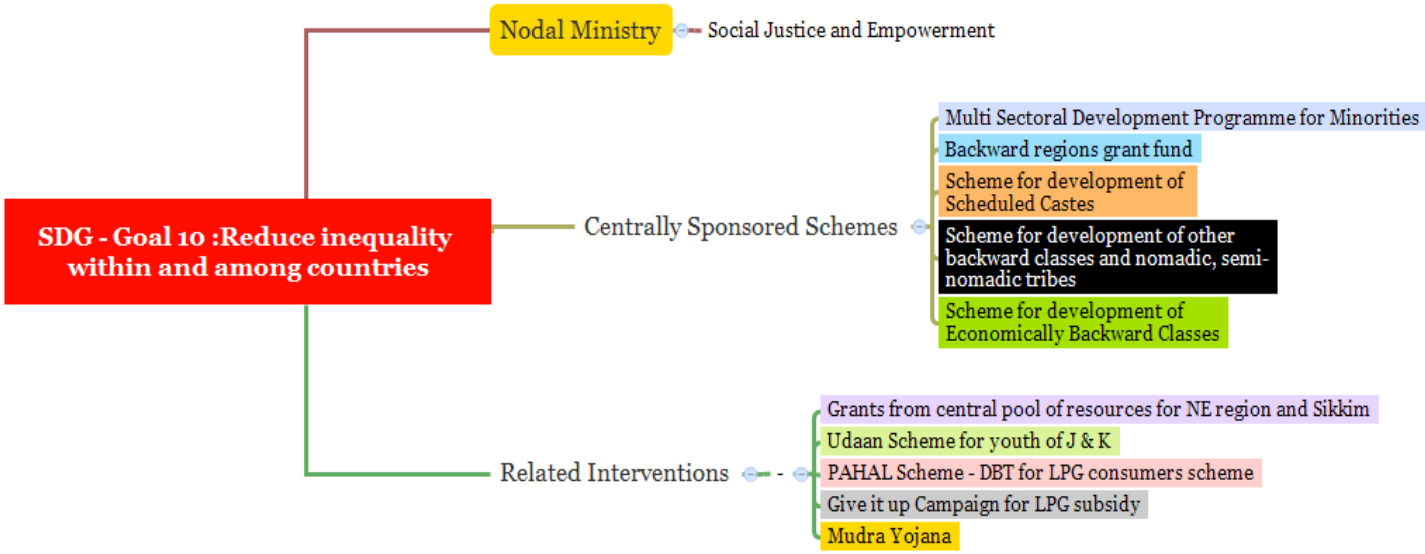


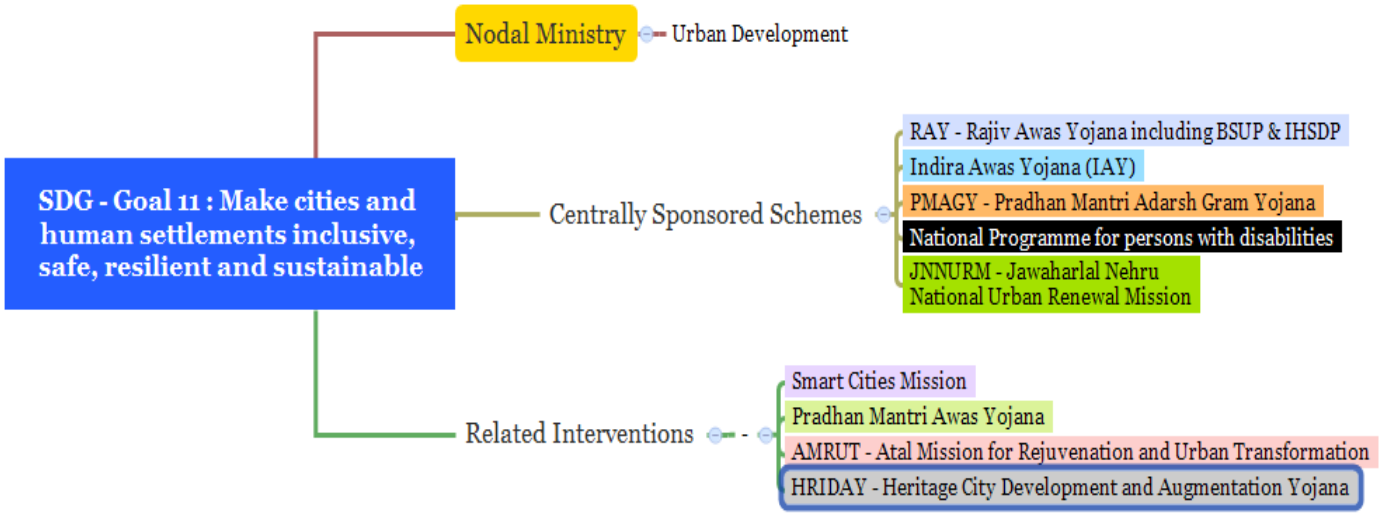


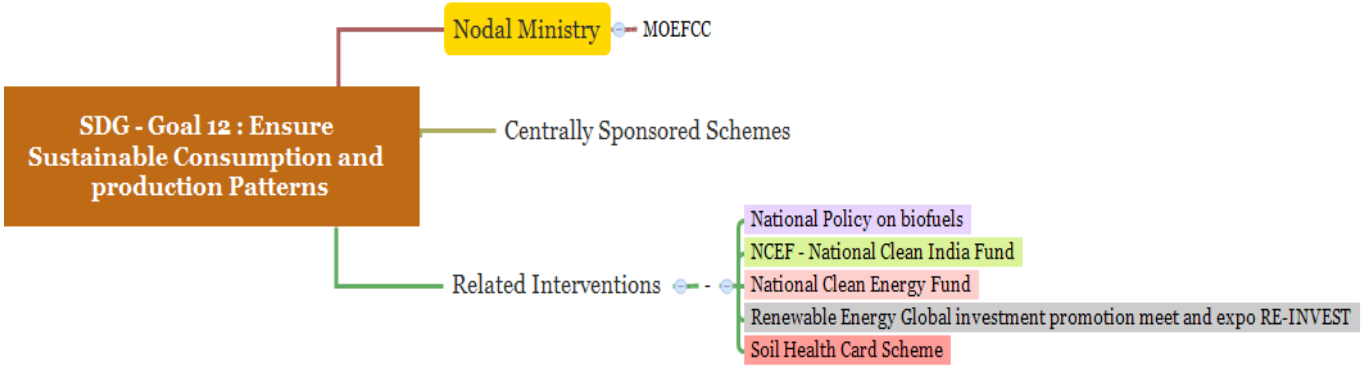


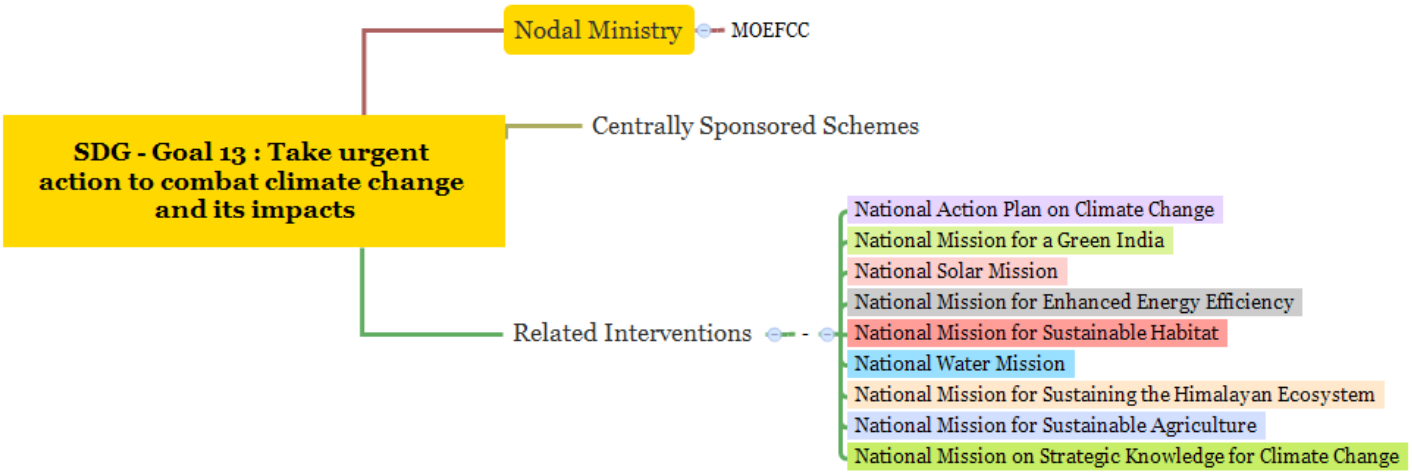


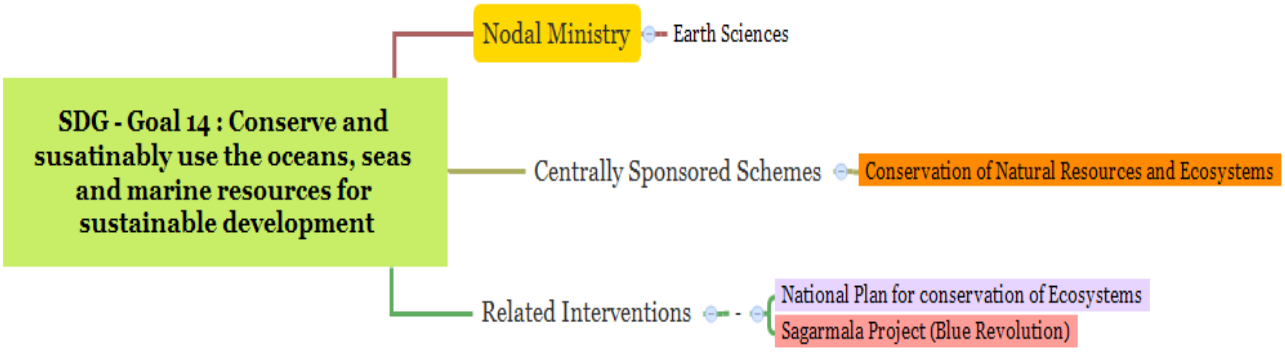


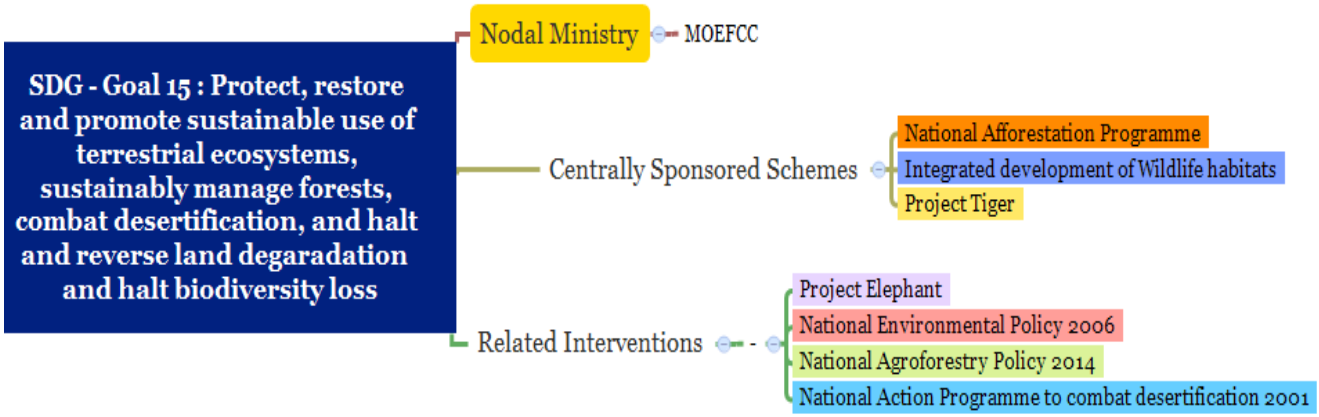


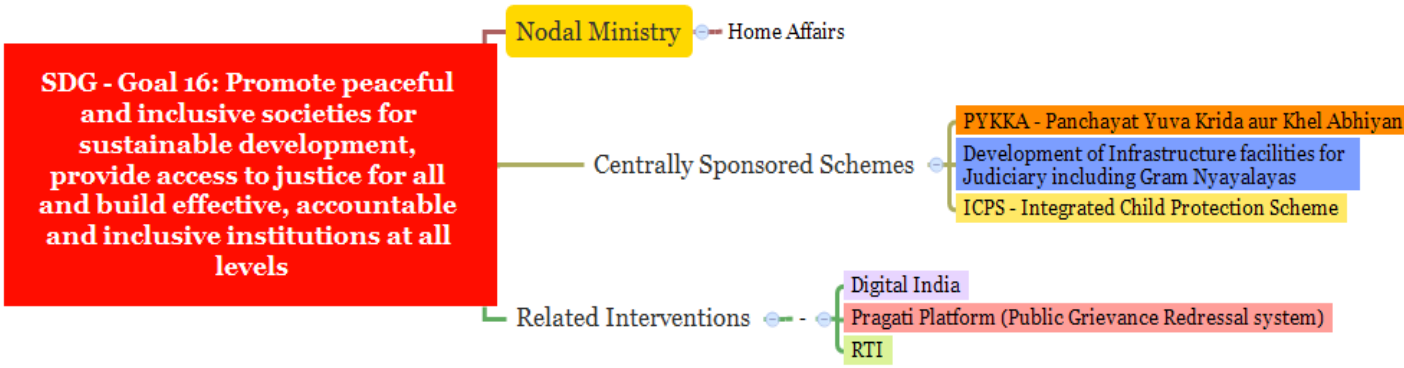


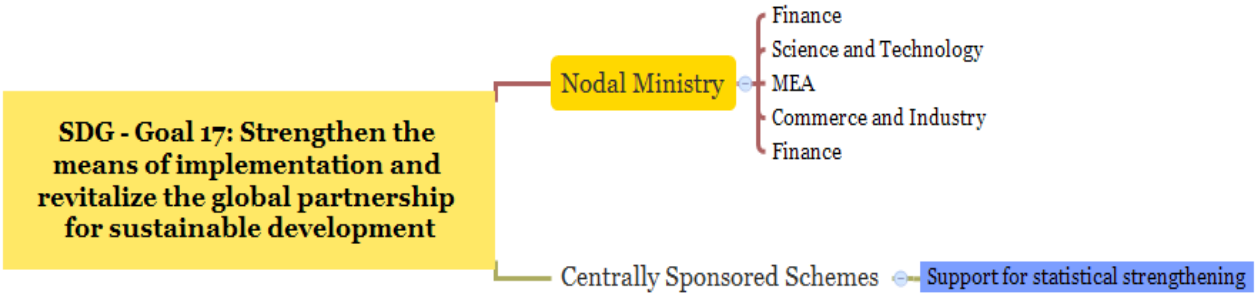












Environmental Legislations

Environmental Segments

- ✓ The earth and its environment may be divided into several segments, the names of which end in sphere.
- ✓ The spheres include the **atmosphere**, **lithosphere (rocks)**, **hydrosphere (water), biosphere (living things), and magnetosphere (magnetic fields)**.

Atmosphere:

- The Earth's atmosphere is a **layer of gases** surrounding the planet Earth and **retained by the Earth's gravity**.
- It contains roughly (by molar content/volume) **78.08% nitrogen, 20.95% oxygen, 0.93% argon, 0.038% carbon dioxide**, trace amounts of other gases and a variable amount (average around 1%) of water vapor. This mixture of gases is commonly known as air.
- The atmosphere **protects life on Earth** by absorbing ultra violet solar radiation and reducing temperature extremes between day and night.
    - **Troposphere is the first layer above the surface** and contains half of the Earth's atmosphere. Weather occurs in this layer.
    - Many **jet aircraft's fly in the stratosphere** because it is very stable. Also, the ozone layer absorbs harmful rays from the sun.
    - **Meteors or rock fragments burn up in the mesosphere**.
    - **Thermosphere is a layer with auroras**. It is also where the space shuttle orbits.
    - The **atmosphere merges into space in the extremely thin exosphere**. This is the ***upper limit of our atmosphere***.

Lithosphere:

- The **Earth is not a perfect sphere**. It is flattened at the poles and bulges at the equator.
- By tracking the orbit of satellites, it is possible to determine accurately the shape of the Earth.
- **The shape of the Earth is called the Geoid**.
- Concentrations of earthquakes outline several large segments of the lithosphere called **plates**.
- The **lithosphere plates 'float' on the asthenosphere** and move about the Earth's surface. Some plates carry whole continents with them. The theory that describes these plates and their movement is called **plate tectonics**.

- At the **mid-ocean ridges**, new rock is produced by volcanism and the plates move away from each other. Where two plates approach each other, one is thrust downward into the mantle where it is heated and melted.
- Two hundred million years ago all the Earth's continents formed a single land mass called **Pangaea**. The continents began to drift apart about 150 million years ago.
- Today, the drifting continues. For example, **every year North America moves 2-3 centimeters (about 1 inch) farther from Europe**.

Hydrosphere:

- Earth is the only planet in our solar system on which **liquid water is present**.
- More than two-thirds of the Earth's surface is covered by water.
- In addition to the oceans, the hydrosphere consists of water in lakes and streams, subsurface water, the ice of glaciers and water vapor in the atmosphere.
- About **13% of the Earth's sea space surface is covered by ice**, the amount of ice and its distribution in the Polar Regions influence how much energy the Earth absorbs from the Sun. This in the turn has an effect on Earth's climate.
- In **temperate regions**, most precipitation in winter is as snow.
- In higher elevations, some snow may last through the summer months.
- The melting of the snow may provide water for irrigation and hydroelectric power.
- **The water of the hydrosphere is in constant motion**.
- Water evaporates from both the land and seas.
- The water vapor in the atmosphere condenses to form clouds and falls as rain or snow. That which falls on land is carried, eventually, to the sea to begin the cycle. This is the **water cycle**.

Magnetosphere:

- The Earth's magnetic field is like that produced by a large bar magnet. However, the **interior of the Earth is not permanently magnetized**.
- The magnetic field may be explained by the **dynamo theory**.
- In this theory, the **magnetic field is produced by rotation of Earth's fluid metallic core**.

Biosphere:

- The biosphere is the part of Earth, including air, land, surface rocks and water, within which life occurs, and which biotic processes in the turn alter or transform.
- From the broadest bio physiological point of view, the biosphere is the **global ecological system integrating all living beings and their relationships**, including their interaction with the elements of the lithosphere, hydrosphere, and atmosphere.
- This biosphere is postulated to have evolved, beginning through a process if biogenesis or bio poesies, at least some 3. 5 billion years ago.

Environmentalism

- Environmentalism has in roots in the ancient civilizations.
- The emergence of towns & cities all over the world in ancient times promoted materialism & as a result the earlier life style in tune with the environment was gradually abandoned.
- Many old fashioned people at that time wanted a life style which is in harmony with the environment.
- In Ancient India, the **emergence of Buddhism & Jainism** also all centered around such environmentalism.
- In the medical times also there were many environmental movements mostly inspired by "Arabic medical treatises" written by writers such as Alkindus, Almasihi, and Altamimi. These books raised many issues related to air, water and soil contamination, solid waste mishandling & environmental assessment of certain localities.
- Many **tribal uprisings** during Indians national movements in India are a part of environmentalism.

In the 20th century…

Environmentalists all over the world raised many causes about the effect of modern developments on bio-diversity. The complete extinction of **Tasmanian tiger (a marsupial), cheetah in India, Californian condor** led the environmentalists & wild life conservationists to work for the protection of wild life & their habitats.

In 1972, **United States banned the agricultural use of DDT** as it was proved harmful to ecology & human health. After that many countries including India also banned DDT. Such effects of wild life, human & raising environmental pollutions many pressure groups with international recognition like Green peace, friends of Earth & PETA came into existence.

In India, the environmentalism took a new shape & developed as a major protest against any project that hit environment, only after the **Chipkoo movement**. Chipkoo

movement had a tremendous influence & impact on other environmental movements not only in India but also all over the world. The movement clearly demonstrated people's participation in environmentalism. The Chipkoo movement was started by a group of female peasants in **Uttaranchal region of India to protest the brutal killing of a girl "Amruta Devi"**. The movement began in Chancoli district of U.P. and spread throughout the Uttaranchal Himalayas by the end of the decade. The movement not only was against the cutting of trees but also to reclaim the traditional forest rights that were threatened by the contractor system of state forest department. The chipkoo activists hugged trees to prevent their cutting & even protested limestone min.

Chipkoo movement was the **ban on cutting the trees for 15 years in the forest of U.P. in 1980**. Later on the ban was also imposed in U.P., Karnataka, Rajasthan, Bihar, Western Ghats & Vindhyas.

The birth of UN in 1945 resulted in many formal organizations for the protection of environment, wildlife and habitats. The environmental movements & protests against environment degradation carried out mostly in the beginning by many non-formal organizations could not yield good results as UN agencies like UNESCO, UNEP, FAO came into force. The members of countries were advised to carry environmental protection mechanisms. Hence all the important environmental legislations in all parts of the world came out in 1945. At the global level, the setting up world conservation union i.e, IUCN and its active role in identifying the endangered species led to their conservation.

The other import programmes, conferences & treaties are man and Biosphere programmes by UNESCO, Stolkhom conference-1972, Earth summit-1992, Montreal protocol-1987, key to protocol-1997, convention of Biological diversity-1993, etc. Even today, the environmentalists are worried about the effects of the climate change on the environment & its components. Today environmentalists want to identify regions with high bio-diversity as well as threatened for conservation. A new mode of environmentalism that became popular in last decade was the movement of **bio-diversity hotspots**. As of new, **34 bio-diversity hotspots which are terrestrial habitats**. Occupying just 2.3% of the land surface but host more than 60% of the world's bio-diversity.

Environmentalists who support bio-diversity hotspots want UN & other related organizations, to support their cause & help in protecting these endemic rich regions of the world. GOI enacted many environmental legislations after 1970 but only due to severe pressure at the Domestic & International level some of the important legislation include

1. Wildlife conservation act, 1972
2. Water prevention & control of pollution act, 1976

3. Water pollution less act, 1977
4. Forest conservation act, 1980-ancended in 1988
5. Air prevention & control of pollution act, 1981
6. Environment protection act, 1986
7. The National Bio-diversity act, 2002.

The GOI is also implementing various national & international treaties. The most important of which include Montreal's protocol, Ramsar convention, CITES [convention of international trade in endangered species], Kyoto protocol & convention of biological bio-diversity.

GOI recently started NAPCC in June outlining existing and future policies and programs addressing climate mitigation and adaptation

Air (Prevention and control of pollution) Act, 1981:

The Government of India passed this act in 1981 to **clean up our air by controlling pollution**. The act states that source of air pollution such as vehicles, industries, power plants etc are not permitted to release CO2, CO, particulate matter, SO2, Nitrogen oxide, volatile organic compounds and toxic substances.

The **main objectives** of this act are

a. To provide for prevention, control

b. To provide for establishment of central & state boards with a new to implement the act

c. To confer on the boards the powers to implement the provisions of the act & assign to the board functions relating to pollution

This act is implemented throughout the country and **came into force on May 16, 1981**. The act consists of **7 chapters and 54 sections**. The act was amended in 1987 and 1988.

Chapter 1: The first chapter mentions the extent and commencement of the act and also discusses important definitions in first two sections. The important definitions are:

i) **Air pollutant** means any solid, liquid, gaseous substance including noise present in atmosphere in such concentration as may be or tend to be injurious to human being or other living creature or plants or property or environment.

ii) **Approved appliances** means any equipment or gadget used for the bringing of any combustible material or for generating or consuming any few, gas of particulate matter and approved by the state board for the purpose of this act.

iii) **Automobile** means any vehicle powered either by internal combustion engine or by any method of generating power to drive such vehicle by burning fuel.

iv) **Emission** means any solid or liquid or gaseous substance coming out of any chimney or any other outlet.

v) **Occupier** means in relation to any factory or premises means the person who has control over the affairs of the factory or premises & includes in relation to any substance, the person in the substance (in brief we can written this)

Chapter 2: Chapter 2 contains the information about **constitution of central and state boards for prevention of air pollution in 3 to 15 sections**. These sections discuss the terms and conditions of service of the members of the board, their disqualifications and meeting of the board. There is association of members to the board for particular purpose.

Chapter 3: This chapter elaborately discusses the **power and functions of the board between 16 to 18 sections**. The functions of both central and state boards as well as their power to give directions are included in chapter 3.

Chapter 4: Chapter 4 discusses provisions for **prevention and control pollution from 19 to 31 sections**. The power to declare air pollution control areas, to set standards for emissions, to restrict certain industrial plants, to entry & inspect and obtain information without notice, to take sample of emissions, prepare the reports etc are discussed in this chapter.

Chapter 5: Chapter 5 discusses **funds, accounts and audit of state and central boards in 32 to 36 sections**. The contributions made by the central government and state govts in their budget. The funds of the boards, their accounts and annual reports are discussed here.

Chapter 6: Chapter 6 elaborately discusses **penalties and procedures to punish any person or industry whoever contravenes the act and is responsible for air pollution**. This chapter has 37 to 46 sections. Any failures to comply with the provisions of the act results in penalties whoever fails to intimate the occurrence of emission of acts in air pollution. The atmosphere in excess of the standards or whoever gives false information & makes false statement shall be punishable with imprisonment for form which may extend to 3 months or with fine or with both. Whoever contravenes any provisions of the act shall be punishable with imprisonment for a term which may extend to 3 months or with fine which may extend to Rs. 10000 or with both and in case of

continuing contravention with an additional fine which may extend to Rs. 5000 for everyday during which such contravention continues after conviction for the 1st such contravention.

Chapter 7: The chapter 7 discusses **miscellaneous aspects in the sections 47 to 54**. These miscellaneous aspects include special provisions for the boards, dissolutions of the state boards, maintenance of the register by the boards, containing particulars of the persons to whom consent has been granted. This chapter also includes central powers of central and state governments to make rules.

Forest Conservation Act 1980:

- The **Indian forest Act of 1972** consolidated all the previous laws regarding the forests that were passed before 1920.
- This act remained in force till 1980 when it was realized that **protecting forests for timber production alone was not acceptable**, the other rules of protecting services that the forests provide and their values assets such as biodiversity were also identified. Hence a new act was essential and this led to the forest conservation Act of 1980 and its amendment in 1988.
- In 1992, the 73rd and 74th amendments of the constitutions furthered governance through Panchayats. They allow the state to invest in Local Panchayats with the authority to manage local forest resources. This act is discussed in five sections.

Section 1:

In this section, the title, extent and commencement were discussed. This act **extends to the whole of India except the state of Jammu and Kashmir**.

Section 2:

In this section, **restrictions are discussed on the reservation of the forest or use of forest land for non-forest purpose**. Under this section, no state government or other authority shall make except with the prior approval of the Central Govt any order directing,

a) That any reserved forest or any portion shall cease to be reserved

b) That any forest land or any portion thereof may be used for any non-forest purpose

c) that any forest land or any portion thereof may be assigned by the way of lease or to any private person or to any authority or corporation or any other organization not owned, managed or controlled by govt.

d) That any forest land or any portion thereof may be cleared of trees which have grown naturally in that land or portion for the purpose of using it for reforestation.

The non-forest activities include the cultivation of tea, coffee, spices, robber, palms, horticultural crops or medicinal plants.

Section 3:

Under section 3, the central government may constitute advisory committees consisting of members as it may deem fit to advice on any matter connected with conservation of forests which may be referred to it.

Under section 3A, penalty for the contravention of the provisions of the act are mentioned. Whoever contravenes any provisions of section 2 shall be punishable with simple imprisonment for a period which may extend to 15 days.

Under section 3B, offences by the authorities and government depts. are discussed. Those who are found to be guilty of the offence shall be liable to be proceeded against and punished accordingly.

Section 4:

In this section, the power of the central government to make rules by notification in the official gazette is discussed.

Section 5:

In this section, the **repeal of forest (conservation) Ordinance, 1980** has been mentioned.

The Environment (Protection) Act, 1986:

The Environment (protection) Act, 1986 not only has important constitutional implications but also an international background. The **spirit of the proclamation adopted by the United Nations conference on Human Environment held in Stockholm in June 1972** was implemented by the government of India by creating this act. The main objective of this act is to provide the protection and improvement of environment (which include water, air, land, human being, other living things, plants, micro organisms and properties) and for matters connected there with.

The Act consists of **4 chapters and 26 sections**

Chapter I: Chapter I is preliminary and is discussed in two sections. It extends to the whole India. The important definitions are: environment, environmental pollution, handling & occupier.

Chapter II: The powers of central government to make measures to protect and improve environment, the appointment of the officers and their power and functions, the power to give directions and the rules to regulate environmental pollution are discussed in 3 to 6 sections of this chapter.

Chapter III: In this chapter, prevention, control and abatement of environmental pollution was elaborated between 7 & 17 sections. Persons carrying an industry are not allowed to discharge pollutions in excess of the standards. No person shall handle any hazardous substance except in accordance with the safeguards prescribed by the act. Any person empowered by the central government has the powers of entry and inspection of any industry handling any hazardous substances.

9th section deals with the right of entry, inspection of officers of state, central boards of any industry or municipality without any notice especially to check meters.

10th & 11th sections deal about levy of interest on cess if not paid within the prescribed time.

12th section deals with recovery of cess & penalties if cess is not paid within the prescribed time

13th section provides a chance for the aggrieved to appeal against the penalties imposed

14th section elaborately discusses the penalties (that includes 6 months imprisonment or Rs. 1000 fine or both)

15th section deals about action on management of polluting industries, 16th section deals with amendments and 17th section deals with a provision of making new rules from time to time.

Water (prevention & control of pollution) Act, 1974:

- An act to provide for the prevention & control of water pollution **came into force on March 23, 1974**.
- The main objective of this act is to **maintain & restore the wholesomeness of water & water bodies**.
- This act has 8 chapters & 64 sections.

- The **1st chapter** discusses the preliminary issues in 1 & 2 sections. The title application & commencement of the act is discussed in section-I & this act applies to all the states & UTs of the country including Jammu & Kashmir.
- Section-II elaborates important definitions like board, occupies, outlet, pollution, sewage, effluent, trade including any big effluent.
- **Chapter-2** has sections from 3-12 in which the constitution of central & state boards, terms & conditions of service of the members, their disqualification, constitution of committers & temporary association of the other persons with the board are discussed.
- **Chapter-3** consists of 13-15 sections in which joint boards are (elaborately) discussed. A joint board can be constituted in the pursuance of an agreement entered into by the central & the central govt or any of its officer shall have the power to take samples of air, water, soil & other substances from the factory for the purpose of analysis. The central govt may also make rules by notification in the official Gazette. Any person whoever fails to comply with the provisions of the act shall be punishable with an imprisonment for a form which may extend to five years or with fine which may extend to Rs. 100000 or with both. In the case of failure or if the committer continues, additional fine of Rs. 5000/- everyday during which the contraction continuous, will be in posed.
- **Chapter 4:** In this chapter, miscellaneous topics are mentioned and elaborated between 18 & 26 sections. No suit prosecution or any other legal proceedings shall be initiated against govt or its employee with respect of anything which is done in good faith in the pursuance of this act civil court shall have jurisdiction to entertain any suit or proceedings in respect of anything done or action taken or any direction issued by the central govt under this act.

The water (prevention and control of pollution) cess Act, 1977:

- This is an act to provide for the levy and collection of a cess on water consumed by persons carrying on certain industries and by local authorities with a new to augment the resources of the central and state boards for the prevention and control of water pollution constituted under water(prevention and control of pollution)Act, 1974.
- This act includes 17 sections.

Section 1 discusses the title, extent and commencement of the act. It extends to the whole of India except the state of Jammu and Kashmir.

In the **Section 2**, important definitions like local authority, specified industry, board are mentioned. Any word or expression used but not defined in this act and defined in water

(prevention and control of pollution) act, 1974 shall have the meanings respectively assigned to them in that act.

The **3rd section** deals with levy and collection of cess. The cess shall be payable by every person, carried on by any special industry and every local authority and shall be calculated on the basis of the water consumed for any of the purpose.

The **4th section** discusses affixation of meters. Meters should be affixed to measure the quantity of water consumed. Whoever fails to affix any meter will be given a notice. Even if after notice the meter is not fixed then the authorities shall fix the meter and the cost of such meter together with the cost of affixing meter shall be recovered.

The **5th section** deals with furnishing of returns. Every industry or local authority liable to pay the cess shall furnish return at regular intervals regarding the use of water and cess paid.

The **6th and 7th sections** discuss assessment of cess and rebate provisions. The officer to whom a return has been furnished should make an enquiry and assess the amount of cess payable by the party. The local authority or any industry if deals install any waste treatment plants shall be entitled to the rebate of 25% of the cess.

Under the **section 8**, the crediting of the proceeds of the cess to the consolidated fund of India has been discussed.

Chapter-4 has 16-18 sections. In these sections, the function of central & state boards are discussed. The main function of the boards is to control water pollution & to promote cleanliness of water bodies like streams & wells.

Chapter-5 includes 19-35 sections. In this the provisions for the prevention & control of water pollution are discussed. The power of the board to take samples of effluents & power to entry & inspect & making restrictions on new outlets & new discharges, the power of the state boards to carry out certain works & emergency provisions in the case of stream or well are elaborately discussed.

In **chapter-6** the contributions by central government to the central board & the contributions by the state government to the state board, the funds allocated in the budget, annual reports of the central & state Government's are discussed in sections 34-40.

In **chapter-7**, penalties & procedures are discussed in sections 41-50. Whoever contravenes or violates the provisions of the act shall be punishable with imprisonment for a term which shall not be less than 2 years but which may extended to 6 years & with fine of Rs. 10000 or both.

In **chapter-8**, miscellaneous areas are elaborated between 51-64 sections. The constitution of central & state water laboratories to carry out regular tests on the samples of water provided is discussed. The central government by notification in the official gazette applies such person as it thinks fit to be government analysts for the purpose of analysis of samples of water or of sewage or trade effluents sent for analysis. The chapter also discusses returns & reports. The central board shall furnish to the central government & a state board shall furnish to the state government & to the central board such reports, returns, statistics, accounts & other information with respect to its activities.

Indian Legislations, Policies and Programmes

- ✓ In 1972, the **Stockholm Conference propounded the concept of "eco-development"** implying a process of ecologically sound development of positive management of the environment for human benefit
- ✓ The same year, a committee called the **National Committee on Environmental Planning and Coordination (NCEPC)** was set up in India under the initiative of the then prime minister, Indira Gandhi, to coordinate environmental issues. In 1976, the constitution was amended by the 42nd Amendment Act to incorporate environmental concerns in the document, vide **Articles 48A and 51A**.
- ✓ In **1980**, another committee, the high power committee of the Planning Commission, was set up for reviewing existing legislative measures and administrative machinery for ensuring environmental protection and for recommending ways to strengthen them. Its recommendations led to the establishment of the **Department of Environment (DoE)** in November 1980 as a nodal agency for environmental protection and eco-development in India.
- ✓ The **Seventh Five Year Plan** was a turning point in the environment sector when serious attention was given to coastal and river pollution concerns. The ***Environment Protection Act was enacted and the Ganga Action Plan was also initiated*** at a cost of Rs 240 crore during the plan period. A Central Ganga Authority was also constituted under the chairmanship of the prime minister.

➔ In **1985**, the Department of Environment was upgraded to the **Ministry of Environment and Forests** at the Centre.

It is now the nodal agency for planning, promoting and coordinating environmental and forest programmes. Its main activities include:

i. Conservation and survey of flora, fauna, forests and wildlife;
ii. Prevention and control of pollution;

iii. Afforestation and regeneration of degraded areas; and
iv. Protection of environment.

These tasks are sought to be fulfilled through environmental impact assessment, eco-regeneration, assistance to organisations implementing environmental and forestry programmes, promoting research, extension training in these fields to augment the requisite manpower, dissemination of information on environmental matters, creation of environmental awareness among all sectors of the population, and cooperation at an international level.

- The earliest laws regarding control of air pollution were the **Bengal Smoke Nuisance Act of 1905 and the Bombay Smoke Nuisance Act of 1912**.
- In 1912, **Wild Birds and Animal Protection Act** were enacted.
- The **River Boards Act of 1956** provided for regulation and development of inter-state rivers.
- The **Water (Prevention and Control of Pollution) Act 1974** was enacted to deal with water pollution.
- The **Water (Prevention and Control of Pollution) Cess Act, 1977** was enacted to provide for the levy and collection of cess on water consumed by specified industries and local authorities to augment the resources of the Central and State Pollution Control Boards.
- In 1994, the **Environment Clearance Notification** came into effect. It was revised later in 2006 providing for comprehensive **Environment Impact Assessment (EIA)** process and clearance process for 39 develop-ment activities in eight categories

⇨ The **Paryavaran Vahini** scheme was launched by the Ministry during 1992-93 to create environmental awareness and to encourage involvement of people through active participation as well as to report illegal acts pertaining to forests, wildlife, pollution and environmental degradation. One Paryavaran Vahini is constituted for each district especially identified for this purpose. The selection of the districts is made on the basis of high incidence of pollution, density of tribal population and forest cover.

National Environment Policy, 2006

- The National Environment Policy builds on the existing policies (e.g. National Forest Policy, 1988; National Conservation Strategy and Policy Statement on Environment and Development, 1992; and the Policy Statement on Abatement of Pollution,1992; National Agriculture Policy, 2000; National Population Policy, 2000; National Water Policy, 2002 etc).
- It is intended to be a guide to action in regulatory reform; programmes and projects for environmental conservation; review and enactment of legislations by Central, State and Local Government.

- The **dominant theme of this policy** is that while conservation of environmental resources is necessary to secure livelihoods and well-being of all, the most secure basis for conservation is to ensure that people dependent on particular resources obtain better livelihoods from the fact of conservation, than from degradation of the resource.
- The policy also seeks to **stimulate partnerships of different stakeholders**, i.e. public agencies, local communities, academic and scientific institutions, the investment community, and international development partners, in harnessing their respective resources and strengths for environmental management.

Constitutional Provisions related to Environment:

According to 42nd amendment –

- ➔ **Article-48-A** of the constitution provides - "The state shall endeavor to protect, and improve the environment and to safeguard forest and wildlife of the country."
- ➔ **Article 51-A (g)** provides – "It shall be duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures,"

Thus our constitution includes environmental protection and conservation as one of our fundamental duties.

Government Infrastructure and Research Initiatives:

- The Ministry of Environment and Forests oversees the implementation of policies and programmes on conservation of the country's natural heritage – water resources, biodiversity, welfare of animals – as well as policies on reduction of pollution
- **Ministry of Environment and Forests is the nodal agency in the country for UNEP** and other international environmental programmes

There are institutions to survey the natural resources.

Botanical Survey of India:

- ✓ Established in **1890**
- ✓ Headquarters : **Kolkata**
- ✓ It **surveys and identifies the plant resources** in the country
- ✓ It has 9 circles located in different phyto-geographical regions of the country
- ✓ It **undertakes exploration tours** over the entire country and publishes the results

- ✓ It is the ***apex research organization under Ministry of Environment and Forests*** (MoEFCC) for carrying out taxonomic and floristic studies on wild plant resources of country.

Zoological Survey of India:

- ✓ Established in **1916**
- ✓ Headquarters : **Kolkata**
- ✓ It has 16 regional stations in different parts of the country
- ✓ Its main function is to **explore and survey the faunal biodiversity** of the country
- ✓ It is a ***subordinate organization of the Ministry of Environment and Forests***, Govt. of India

Forest Survey of India:

- ✓ HQ : **Dehradun**
- ✓ It is an organization for **forest resource assessment**
- ✓ 4 regional offices @ Shimla, Kolkata, Nagpur and Bangalore
- ✓ Its main activities are assessment of forest cover of the country by interpretation of remote sensing satellite data, and forest cover maps are drawn

Central Zoo Authority :

- ✓ **Statutory body**
- ✓ It is ***constituted under the Wild Life (Protection) Act***
- ✓ It regulates the functioning of the zoos but its role is more of a facilitator than a regulator.
- ✓ **Main objective** - To complement the national effort in conservation of wild life.
- ✓ Every zoo in the country is required to obtain recognition from the CZA for its operation. The Authority evaluates the zoos with reference to the parameters prescribed under the Rules and grants recognition accordingly.

Island Development Agency :

- ✓ IDA was set up on **June 01, 2017**
- ✓ The govt has chosen **10 islands in Lakshadweep and Andaman and Nicobar** for their holistic development in the first phase of work being done by newly constituted Island Development Agency (IDA)

- ✓ **10 islands** ➔ Smith, Ross, Aves, Long and Little Andaman in Andaman and Nicobar, and Minicoy, Bangaram, Suheli, Cherium and Tinnakara in Lakshadweep
- ✓ IDA sees the impact of policies and programmes of Andaman and Nicobar and Lakshadweep so that an integrated development of these islands can take place keeping in view aspects of environmental protection

G.B Pant Institute of Himalayan Environment and Development:

- ✓ **Autonomous Institute of the Ministry of Environment, Forest & Climate Change** (MoEF&CC), Govt. of India
- ✓ Established in **1988**
- ✓ HQ : **Almora**
- ✓ It carries out ***research projects in environmental aspects***

Indian Council of Forestry Research and Education (ICFRE):

- ✓ **Autonomous organisation of the Ministry of Environment, Forest & Climate Change** (MoEF&CC), Govt. of India
- ✓ HQ : **Dehradun**
- ✓ Its functions are to conduct forestry research; transfer the technologies developed to the states of India and other user agencies; and to impart forestry education.
- ✓ The council has 9 research institutes and 4 advanced centres to cater to the research needs of different bio-geographical regions
- ✓ The **mandate of the council** is to advise Govt of India on formulation of forestry research policy and to organize, direct and manage research and education in the forestry sector

Salim Ali Centre for Ornithology and Natural History (SACON):

- ✓ It is a **national centre for information, education and research in ornithology and natural history**
- ✓ It is an ***autonomous organisation established in 1990 as a public- NGO partnership between the MoEF&CC, and the Bombay Natural History Society(BNHS)*** under the Centre of Excellence Scheme and registered under the Indian Societies Registration Act.
- ✓ **HQ** : Anaikatti, Coimbatore, Tamil Nadu
- ✓ SACON is **associated with the Ministry of Environment and Forests**
- ✓ **SACON's mission** is: "To help conserve India's biodiversity and its sustainable use through research, education and peoples' participation, with birds at the centre stage"

MoEF established 9 centres of excellence in 1983 with a view to strengthening awareness, research and training in areas of environmental science and management. They are:

1) Centre for Environment Education (CEE), Ahmedabad on 'Environmental Education'
2) CPR Environment Education Centre (CPREEC), Chennai on 'Environmental Awareness'
3) Centre for Ecological Sciences (CES),Bangalore on 'Ecology of Western Ghats and Research'
4) Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore on 'Avian Ecology'
5) Centre for Environmental Management of Degraded Ecosystem (CEMDE), Delhi University, Delhi on Management of 'Degraded Ecosystem'
6) Foundation for Revitalization of Local health Traditions (FRLHT), Bangalore on 'Medicinal Plants & Traditional Knowledge'
7) Centre for Mining Environment(CME), Indian School of Mines, Dhanbad on 'Mining Environment'
8) Madras School of Economics (MSE),Chennai on 'Environmental Economics'
9) Tropical Botanic Garden and Research Institute (TBGRI), Thiruvananthapuram on 'Conservation of Tropical Plants'

Environment (Protection) Act, 1986 [Key Points]

➔ Environment Protection Act, 1986 is an Act of the Parliament of India. **In the wake of the Bhopal Tragedy, the Government of India enacted the Environment Protection Act of 1986 under Article 253 of the Constitution**

✓ Compared to previous laws on environment protection, this Act is a more effective and bold measure to fight the problem of pollution

✓ The **genesis of Act is in Article 48A (Directive Principles of State Policy) and Article 51A(g) (Fundamental Duties)** of the Indian Constitution

✓ It has **26 Sections and it has been divided into 4 chapters** relating to

1) Preliminary
2) General Powers of the Central Government
3) Prevention, Control, and Abatement of Environmental Pollution
4) Miscellaneous

The Act empowers the Central Government to take all appropriate measures to –

- Prevent and control pollution
- Establish effective machinery for the purpose of protecting
- Improving the quality of the environment
- Protecting, controlling and abating environmental pollution

- The Central Government or any other person duly authorized is empowered to collect the samples of air, water, soil or other substances as evidence of the offences under the Environment (Protection) Act, 1986
- It prescribes a special procedure for handling hazardous substances.
- If a Government Department offend this act, the Act holds the Head of the Department as guilty of the offence unless the head of the Department proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence
- It empowers and authorizes the Central Government to issue directions for the operation or process, prohibition, closure, or regulation of any industry. For this purpose government is also authorized to stop, regulate the supply of electricity or water or any other service directly without obtaining the order of the Court in this regard
- It grants immunity to the officers of the Government for any act done under the provisions of this
- The Central Government is also empowered to enter and inspect anyplace through any person or through any agency authorized by Central Government
- The Act debars the Civil Courts from having any jurisdiction to entertain any suit or proceeding in respect of an action, direction, order issued by Central Government or other statutory authority under this Act
- This act will be superior over anything inconsistent contained in any enactment other than this Act

National Green Tribunal Act 2010:

* **Approved by the President of India on June 2, 2010**
* It provides for the establishment of National Green Tribunal for the effective and expeditious disposal of cases relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto
* The **National Environment Appellate Authority** established under the National Environment Appellate Authority Act, 1997, shall, ***on the establishment of the National Green Tribunal under the National Green Tribunal Act, 2010 stand dissolved***

Salient features:

- ✓ The NGT is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.
- ✓ NGT is also not bound by the rules of evidence as enshrined in the Indian Evidence Act, 1872.
- ✓ It will be relatively easier for conservation groups to present facts and issues before the NGT, including pointing out technical flaws in a project, or proposing alternatives that could minimize environmental damage but which have not been considered.

- ✓ While passing Orders, decisions, awards, the NGT will apply the principles of sustainable development, the precautionary principle and the polluter pays principles. However, it must be noted that **if the NGT holds that a claim is false, it can impose costs including lost benefits due to any interim injunction**

Jurisdiction :

As per **Section 14 (1) The National Green Tribunal has jurisdiction over all civil cases** where a substantial question relating to environment (including enforcement of any legal right relating to environment), is involved and such question arises out of the implementation of the enactments **specified in Schedule I of the National Green Tribunal Act 2010**. The acts listed in Schedule 1 are:

- ✓ The Water (Prevention and Control of Pollution) Act, 1974
- ✓ The Water (Prevention and Control o[Pollution) Cess Act, 1977
- ✓ The Forest (Conservation) Act
- ✓ The Air (Prevention and Control of Pollution) Act, 1981
- ✓ The Environment (Protection) Act, 1986
- ✓ The Public Liability Insurance Act, 1991
- ✓ The Biological Diversity Act, 2002

The Tribunal shall hear the disputes arising from the questions referred to in sub- section (I) and settle such disputes and pass orders thereon.

Appellate jurisdiction under section 16 of the Act.

As per Section 15 (1) of the Act, the Tribunal may, by an order, provide -

(a) relief and compensation to the victims of pollution and other environmental damage arising under the enactments specified in the Schedule 1 (including accident occurring while handling any hazardous substance);

(b) for restitution of property damaged;

(c) for restitution of the environment for such area or areas, as the Tribunal may think fit.

National Green Tribunal :

- ✓ The NGT was **established in 2010 under the National Green Tribunal Act 2010**, passed by the Central Government.
- ✓ The stated objective of the Central Government was to provide a specialized forum for effective and speedy disposal of cases pertaining to environment protection, conservation of forests and for seeking compensation for damages caused to people or property due to violation of environmental laws or conditions specified while granting permissions.
- ✓ It **draws inspiration from Article 21** of Constitution of India, which assures the citizens of India the right to a healthy environment
- ✓ In October 2010, **India became the 3rd nation in the world after Australia and New Zealand to have special courts for environmental issues**
- ✓ The **tribunal has 20 members** – 10 from the Judiciary and 10 who are experts in the field of environmental and related sciences
- ✓ This is the first body of its kind that is required by its parent statute to apply the ***'polluter pays' principle and the principle of sustainable development***
- ✓ Appeals against the Tribunal can be moved in the Supreme Court

Structure :

➔ The **Principal Bench of the NGT** has been established in the National Capital – New **Delhi**, with regional benches in :

1) Pune (Western Zone Bench),
2) Bhopal (Central Zone Bench),
3) Chennai (Southern Bench) and
4) Kolkata (Eastern Bench)

- Each Bench has a specified geographical jurisdiction covering several States in a region. There is also a mechanism for circuit benches.
- The **Chairperson of the NGT is a retired Judge of the Supreme Court, Head Quartered in Delhi**. ***Other Judicial members are retired Judges of High Courts***.
- **Each bench of the NGT will comprise of at least one Judicial Member and one Expert Member**.
- Expert members should have a professional qualification and a **minimum of 15 years experience** in the field of environment/forest conservation and related subjects.

- The **NGT has not been vested with powers to hear any matter relating to the Wildlife (Protection) Act, 1972, the Indian Forest Act, 1927** and various laws enacted by States

relating to forests, tree preservation etc. Therefore, specific and substantial issues related to these laws cannot be raised before the NGT.

Biological Diversity Act, 2002:

- It was born out of India's attempt to realize the objectives enshrined in the **UN Convention on Biological Diversity (CBD) 1992**
- CBD recognizes the sovereign rights of states to use their own Biological Resources
- The Act provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources.

Objectives:

- Conservation of biological diversity
- Sustainable use of its components
- Fair and equitable sharing of the benefits arising from the utilization of genetic resources. (i.e. no greed)

The Act envisages a **three-tier structure to regulate access to the biological resources**, comprising of -

➔ National Biodiversity Authority (NBA)
➔ State Biodiversity Boards (SBB)
➔ Biodiversity Management Committees (BMC) - local level

Scheduled Tribes and other Traditional Forest Dweller (Recognition of Forest Rights) Act,2006

- It provides for the **restitution of deprived forest rights across India**, including both individual rights to cultivated land in forestland and community rights over common property resources.
- It **integrates conservation and livelihood rights of the people**.

FRA is a potential tool

✓ To empower and strengthen the local self-governance
✓ To address the livelihood security of the people
✓ To address the issues of Conservation and management of the Natural Resources and conservation governance of India

The Act recognizes and secures

- Individual rights + community Rights
- Right to protect, regenerate or conserve or manage any community forest resource which the communities have been traditionally protecting and conserving for sustainable use.
- Right to intellectual property and traditional knowledge related to biodiversity and cultural diversity
- Rights of displaced communities & Rights over developmental activities

Salient features

- ✓ **Nodal Agency for implementation – MoTA (Ministry of Tribal Affairs)**
- ✓ This Act is applicable for - **Tribal and Other Traditional Forest Dwelling Communities**
- ✓ It recognizes traditional forest dwellers rights provided they have for ***at least three generations prior to 13.12.2005 primarily resided in and have depended on the forest or forest land for bonafide livelihood needs***
- ✓ "generation" = period of 25 years
- ✓ **Maximum limit of the recognizing rights on forest land – 4 ha**
- ✓ Recognition of rights in - National Parks, Sanctuaries, Reserve Forest, Protected Forests
- ✓ The Act recognizes the right of ownership access to collect, use, and dispose of minor forest produce which has been traditionally collected within or outside village boundaries
- ✓ **Term "minor forest produce"** = non-timber forest produce of plant origin (including bamboo, brush wood, stumps, cane, tussar, cocoons, honey, wax, lac, tendu or kendu leaves, medicinal plants and herbs, roots, tubers and the like)
- ✓ The **rights conferred under the Act shall be heritable** but not alienable or transferable and shall be registered jointly in the name of both the spouses in the case of married persons and in the name of the single head, in the case of a household headed by a single person and in the absence of a direct heir, the heritable right shall pass on to the next of kin
- ✓ Till the recognition and verification procedure is completed, no member of a forest dwelling Scheduled Tribe or other traditional forest dwellers shall be evicted or removed from forest land under his occupation.

- ✓ **Gramsabha** will be the competent authority for initiating the process of determining the nature and extent of individual or community forest rights or both that may be given to the forest dwelling Scheduled Tribes and other traditional forest dwellers.

National Forest Policy 1988:

- Aim - to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium which is vital for sustenance of all life forms, human, animal and plant

Objectives

- ✓ Maintenance of environmental stability through preservation and, where necessary, restoration of the ecological balance that has been adversely disturbed by serious depletion of the forests of the country
- ✓ Conserving the natural heritage of the country by preserving the remaining natural forests which are habitat to diverse flora and fauna
- ✓ Checking desertification
- ✓ Increasing the forest/tree cover in the country through massive afforestation and social forestry programs
- ✓ Meeting the requirements of fuel-wood, fodder, minor forest produce and small timber of the rural and tribal populations
- ✓ Increasing the productivity of forests to meet essential national needs
- ✓ To minimize pressure on existing forests

Major achievements of National Forest Policy:

- ✓ Increasing the forest/tree cover in the country through massive afforestation and social forestry programs
- ✓ Meeting the requirements of fuel-wood, fodder, minor forest produce and small timber of the rural and tribal populations
- ✓ Involvement of local communities in the protection, conservation and management of forests through Joint Forest Management Programme
- ✓ Conservation of Biological Diversity and Genetic Resources of the country through exsitu and in-situ conservation measures
- ✓ Significant contribution in maintenance of environment and ecological stability in the country

Wetlands (Conservation and Management) Rules 2010

- ✓ **Purpose** - To ensure that there is no further degradation of wetlands

- ✓ The rules specify activities which are harmful to wetlands like industrialization, construction, dumping of untreated waste and reclamation and prohibit these activities in the wetlands
- ✓ Other activities – like harvesting and dredging may be carried out only with prior permission from the concerned authorities
- ✓ The rules have classified the wetlands for better management and easier identification
- ✓ **Central Wetland Regulatory Authority** – It had been set up to ensure proper implementation of the Rules and perform all functions for management of wetlands in India
- ✓ Authority shall have a number of expert members apart from govt. representatives to ensure that wetland conservation is carried out in the best possible manner
- ✓ The Rules are a positive step towards conservation of wetlands in India. This will go a long way in protecting our wetlands which are under severe threat

India's National Action Plan on Climate Change

- The National Action Plan hinges on the development and use of new technologies
- The implementation of the Plan includes ***public private partnerships and civil society action***
- The focus will be on promoting understanding of climate change, adaptation and mitigation, energy efficiency and natural resource conservation
- There are **Eight National Missions which form the core of the National Action Plan**

1) National Solar Mission
2) National Mission On Sustainable Habitat
3) National Water Mission (NWM)
4) National Mission For Sustaining The Himalayan Ecosystem (NMSHE)
5) National Mission For A Green India
6) National Mission For Sustainable Agriculture (NMSA)
7) National Mission on Strategic Knowledge for Climate Change (NMSKCC)
8) National Bio-Energy Mission

National Solar Mission:

The National Solar Mission is a major initiative to **promote ecologically sustainable growth while addressing India's energy security challenge**.

The Mission has **3-phase approach**:

- Spanning the remaining period of the 11th Plan and first year of the 12th Plan (up to 2012-13) as Phase 1

- The 12th Plan (2013-17) as Phase 2
- The 13th Plan (2017-22) as Phase 3

Objectives:

- To establish India as a global leader in solar energy, by creating the policy conditions for its diffusion across the country as quickly as possible
- To create an enabling policy framework for the deployment of 100,000 MW of solar power by 2022
- To create favorable conditions for solar manufacturing capability, particularly solar thermal for indigenous production and market leadership

National Mission for Enhanced Energy Efficiency (NMEEE):

- NMEEE seeks to **strengthen the market for energy efficiency by creating conducive regulatory and policy regime**.
- NMEEE has been envisaged to foster innovative and sustainable business models to the energy efficiency sector.
- The NMEEE seeks to create and sustain markets for energy efficiency in the entire country which will benefit the country and the consumers

National Mission on Sustainable Habitat:

- "National Mission on Sustainable Habitat" seeks to promote sustainability of habitats through improvements in energy efficiency in buildings, urban planning, improved management of solid and liquid waste, modal shift towards public transport and conservation through appropriate changes in legal and regulatory framework
- It also seeks to improve ability of habitats to adapt to climate change by improving resilience of infrastructure, community based disaster management and measures for improving advance warning systems for extreme weather events

National Water Mission (NWM):

- Ensuring integrated water resource management for conservation of water, minimization of wastage and equitable distribution both across and within states

- **Developing a framework for optimum water use through increase in water use efficiency by 20% through regulatory mechanisms** with differential entitlements and pricing, taking the National Water Policy (NWP) into consideration.
- Ensuring that a considerable share of water needs of urban areas is met through recycling of waste water
- Meeting water requirements of coastal cities through the adoption of new and appropriate technologies such as low-temperature desalination technologies allowing use of ocean water
- Revisiting NWP to ensure basin-level management strategies to deal with variability in rainfall and river flows due to climate change
- Developing new regulatory structures to optimize efficiency of existing irrigation systems

National Mission for Sustaining the Himalayan Ecosystem (NMSHE):

Primary objectives:

- Develop a sustainable National capacity to continuously assess the health status of the Himalayan Ecosystem
- Assist States in the Indian Himalayan Region with their implementation of actions selected for sustainable development

National Mission for a Green India:

Mission Objectives

- ***Increased forest/tree cover on 5 million hectares (ha) of forest/non-forest lands* and *improved quality of forest cover on another 5 million ha of non-forest/forest lands* *(total of 10 million ha)***
- Improved ecosystem services including biodiversity, hydrological services, and **carbon sequestration from the 10 million ha of forest/ non-forest lands mentioned above**
- Increased forest-based livelihood income of about 3 million households, living in and around the forests
- **Enhanced annual CO_2 sequestration by 50 to 60 million tons in the year 2020**

National Mission on Seabuckthorn:

- **Seabuckthorn plant is popularly known as Leh berries**
- The MoEF and DRDO have launched a major national initiative for seabuckthorn cultivation in the high-altitude, cold desert ecosystems
- The initiative is one of many conservation measures for fragile high-altitude ecosystems
- Seabuckthorn, also called the **"Wonder plant" and "Ladakh gold"**

Uses:

- ✓ It has multi-purpose medicinal and nutritional properties, and also helps in soil conservation and nitrogen fixation
- ✓ Hardy, drought-resistant and tolerant to extreme temperatures from – 43º C to + 40º C, the plant has an extensive root system which can fix atmospheric nitrogen, making it ideal for controlling soil erosion and preventing desertification
- ✓ The initiative is a part of Sub-Mission on Cold Desert Ecosystems under the Green India Mission — which is a part of the National Action Plan on Climate Change

National Mission for Sustainable Agriculture (NMSA):

The NMSA has identified key dimensions for

- Adaptation and mitigation
- Improved Crop Seeds, Livestock and Fish Culture
- Water Efficiency
- Pest Management
- Improved Farm Practices
- Nutrient Management
- Agricultural Insurance
- Credit Support
- Markets
- Access to Information
- Livelihood Diversification

National Mission on Strategic Knowledge for Climate Change (NMSKCC):

Mission Objectives

- ➢ Formation of knowledge networks among the existing knowledge institutions engaged in research and development relating to climate science.

- Establishment of global technology watch groups with institutional capacities to carry out research on risk minimized technology selection for developmental choices
- Development of national capacity for modeling the regional impact of climate change on different ecological zones within the country for different seasons and living standards
- Establishing research networks and encouraging research in the areas of climate change impacts on important socio-economic sectors like agriculture, health, natural ecosystems, biodiversity, coastal zones, etc

National Bio-Energy Mission:

- The government is preparing a national bio-energy mission to boost power generation from biomass, a renewable energy source abundantly available in India
- The national mission will aim at improving energy efficiency in traditional biomass consuming industries, seek to develop a bio-energy city project and provide logistics support to biomass processing units
- It will also propose a GIS-based National Biomass Resource Atlas to map potential biomass regions in the country.
- According to estimates, ***biomass from agro and agro-industrial residue can potentially generate 25,000 MW of power in India***

Indian Network on Climate Change Assessment:

- **Launched by MoEF** in an effort to promote domestic research on climate change.
- Reports prepared by the INCCA will form a part of **India's National Communication (NatCom) to the United Nations Framework Convention on Climate Change (UNFCCC)**

National Communication (NATCOM)

In pursuance of the implementation of the provisions of UNFCCC, India's Initial National Communication (NATCOM) has been ***initiated in 2002 funded by the Global Environment Facility***

Wildlife Protection Act, 1972:

- This act has been **adopted by all the states except that of Jammu and Kashmir** which has a similar law enacted for the purpose of wildlife protection. The operation of the Act is mandatory in the Union Territories too
- It provides the basic framework to ensure the protection and management of wildlife.
- It was amended in 1982, 1986, 1991 and 1993 to accommodate provision for its effective implementation

Salient Features of Act:

- ✓ It has **7 chapters, 66 sections and 6 schedules**
- ✓ After various amendments it provides various tools to prevent damage to wildlife.
- ✓ **Schedules I to V** is in accordance with the risk of survival of the wildlife (fauna) enlisted in them
- ✓ Animals included in schedule are provided for total protection from hunting and the trade and commerce related to such animals are strictly regulated.
- ✓ **Schedule VI was added by amendment to Wildlife (protection) Act, 1991 to include plant species**.
- ✓ An expert committee, constituted by the Indian Board of Wildlife considers amendments to the Act, as and when necessary.
- ✓ With the amendment of the Act in 1991, powers of the State Governments have been withdrawn almost totally. Now the **State Governments are not empowered to declare any wild animal a vermin. "vermin" means any wild animal specified in Schedule V**.

→ Out of the six schedules, **Schedule I and part II of Schedule II provide absolute protection and offences** under these are prescribed the highest penalties.

→ **The penalties for Schedule III and Schedule IV are less and these animals are protected**.

→ **Schedule V includes the animals which may be hunted**. These are Common crow, Fruit bats, Mice & Rats only.

→ **Schedule VI contains the plants**, which are prohibited from cultivation and planting.

→ ***Declaration of Sanctuary, National Park and Game Reserves come under this act***

Forest (Conservation) Act of 1980

- **First Forest Act was enacted in 1927**
- Alarmed at India's rapid deforestation and resulting environmental degradation, Centre Government enacted the Forest (Conservation) Act in 1980.
- It was enacted to consolidate the law related to forest, the transit of forest produce and the duty livable on timber and other forest produce.
- Forest officers and their staff administer the Forest Act.
- Under the provisions of this Act, prior approval of the Central Government is required for diversion of forestlands for non-forest purposes.

- An Advisory Committee constituted under the Act advises the Centre on these approvals.
- The Act **deals with the four categories of the forests, namely reserved forests, village forests, protected forests and private forests**.

Reserved forest

- ✓ A state may declare forestlands or waste lands as reserved forest and may sell the produce from these forests.
- ✓ Any unauthorized felling of trees quarrying, grazing and hunting in reserved forests is punishable with a fine or imprisonment, or both

Village forests

- ✓ Reserved forests assigned to a village community are called village forests.

Protected forests

- ✓ The state governments are empowered to designate protected forests and may prohibit the felling of trees, quarrying and the removal of forest produce from these forests.
- ✓ The preservation of protected forests is enforces through rules, licenses and criminal prosecutions.

International Conventions

International Conventions related to Atmosphere:

1) **Montreal Protocol**
2) **Vienna Convention**
3) **United Nations Framework Convention on Climate Change (UNFCCC)**
4) **Kyoto Protocol**

Montreal Protocol:

- ⇨ Signed on **14-16 September, 1987**
- ⇨ **Location** → Montreal
- ⇨ Effective → 1 January 1989 if 11 states have ratified by then (came into force)
- ⇨ **Condition** → ratification by 20 states
- ⇨ **Signatories** → 46
- ⇨ **Ratifiers** → 197
- ⇨ **Montreal Protocol on Substances that Deplete the Ozone Layer**

- ***Protocol to the Vienna Convention for the Protection of the Ozone Layer***
- International treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion
- **First meeting** → Helsinki, May 1989
- **Undergone 8 revisions upto now** → Recent revision : 2016 (Kigali, adopted, but not in force)
- **Outcome** → ozone hole in Antarctica is slowly recovering
- **Includes CFCs (Chlorofluorocarbons) and HCFCs (Hydrochlorofluorocarbons)**
- Climate projections indicate that the ozone layer will return to 1980 levels between 2050 and 2070
- Montreal Protocol **does not deal with Hydrofluorocarbons (HFCs)**
- **HFCs** → extremely potent greenhouse gases
- Kofi Annan quoted Montreal Protocol as "perhaps the single most successful international agreement to date"
- Montreal Protocol ***does not address HFCs*** but these substances figure in the **basket of 6 greenhouse gases under the Kyoto Protocol**
- Developed countries following the Kyoto Protocol report their HFC emission data to the UNFCCC
- The **two ozone treaties (Vienna Convention and Montreal Protocol)** have been ratified by 197 parties [196 UN states + European Union]

India and protection of Ozone layer:

- **India became party of Vienna Convention in 1991 and of Montreal protocol in 1992**
- It ***ratified the Copenhagen, Montreal and Beijing Amendments in 2003***
- India produces **CFC-11, CFC-12, CFC-113, Halon-1211, HCFC-22, Halon-1301, Carbontetrachloride (CTC), methyl chloroform and methyl bromide**
- These Ozone Depleting Substances (ODS) are used in refrigeration and air conditioning, firefighting, electronics, foams, aerosol fumigation applications
- A detailed India Country Programme for **phase out of ODS was prepared in 1993**
- It ensured that phase out of ODS is according to national industrial development strategy + without undue burden on consumers and industries
- Access to Protocol's Financial Mechanism is in accordance with the requirements stipulated in the Montreal Protocol
- An Ozone cell and a steering committee on the Montreal protocol was setup by MoEF to facilitate implementation of India Country Programme for phasing out ODS production by 2010

- To meet its objectives govt. had exempted all non-ODS technology goods from Customs and Central Excise Duties

Vienna Convention:

- It is a **Multilateral Environmental Agreement**
- It was ***agreed upon at the Vienna Conference of 1985 and entered into force in 1988***
- In terms of universality, it is one of the most successful treaties of all time, as it had been **ratified by 197 states as well as the European Union**.
- It acts as a framework for the international efforts to protect the ozone layer. But, it does not include legally binding reduction goals for the use of CFCs, the main chemical agents causing ozone depletion
- These are laid out in the accompanying Montreal Protocol

United Nations Framework Convention on Climate Change (UNFCCC):

- The United Nations Framework Convention on Climate Change (UNFCCC) is an **international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth summit, held in Rio de Janeiro in1992**.
- **Objective** – to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."
- The framework set no binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms
- In that sense, treaty is considered legally non-binding. Instead, the treaty provides for updates (called "protocols") that would set mandatory emission limits
- UNFCCC is also the name of UN secretariat charged with supporting the operation of the convention

Conference of Parties (COP)

→ Conference of Parties, known as COP, is the ***decision-making body responsible for monitoring and reviewing the implementation of the United Nations Framework Convention on Climate Change***.

→ It brings together the **197 nations and territories** – called Parties – that have signed on to the Framework Convention.

→ The COP has **met annually since 1995**.

→ The **21st Session of the COP (COP21), held in Paris, France**, in December 2015, was historic in its outcome – the **first international climate agreement**

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

Classification of Parties and their commitments

Parties to the UNFCCC are classified as

Annex I - There are **43 Parties** to the UNFCCC listed in Annex I of the Convention, including the European Union. These Parties are **classified as industrialized (developed) countries and "economies in transition"** (EITs). The 14 EITs are the former centrally planned (Soviet) economies of Russia and Eastern Europe.

Annex II - Of the Parties listed in Annex I of the Convention, **24 are also listed in Annex II** of the Convention, including the European Union. These Parties are made up of **members of the Organization for Economic Cooperation and Development (OECD).** Annex II Parties are required to provide financial and technical support to the EITs and developing countries to assist them in reducing their greenhouse gas emissions (climate change mitigation) and manage the impacts of climate change (climate change adaptation)

Annex B - **Parties listed in Annex B of the Kyoto Protocol are Annex I Parties with first- or second-round Kyoto greenhouse gas emissions targets**. The first-round targets apply over the years 2008–2012. ***As part of the 2012 Doha climate change talks, an amendment to Annex B was agreed upon containing with a list of Annex I Parties who have second-round Kyoto targets, which apply from 2013–2020***. The amendments have not entered into force

Least-developed countries (LDCs) - **49 Parties are LDCs**, and are given special status under the treaty in view of their limited capacity to adapt to the effects of climate change

Non-Annex I - Parties to the UNFCCC not listed in Annex I of the Convention are mostly low-income developing countries. Developing countries may volunteer to become Annex I countries when they are sufficiently developed

Kyoto Protocol – COP-3 (KP)

- By 1995, countries realized that emission reductions provisions in the Convention were After 2 years this protocol was adopted.
- Due to complex ratification process, it **entered into force in 2005**.
- In short KP is what "operationalizes" the convention.
- It **commits industrialized countries to stabilize GHG emissions** based on the principles of the Convention.
- **Difference between protocol and convention** - while the Convention encouraged industrialized countries to stabilize GHG emissions, the Protocol commits them to do so inadequate

Targets

It sets binding emission reduction targets for **37 industrialized countries and the European community** in its first commitment period.

Why KP binds only developed countries?

Because it recognizes that they are largely responsible for the current high levels of GHG emissions in the atmosphere, which are the result of more than 150 years of industrial activity

- **CBDR (common but differentiated responsibility)** -heavier burden on developed nations
- Overall, these targets **add up to an average 5% emissions reduction compared to 1990 levels over the five-year period 2008 to 2012**

Architecture of KP

Beating heart of KP is made up of -

1. Reporting and verification procedures.
2. Flexible market-based mechanisms
3. A compliance system

Two things made KP tick

1. Emissions Reduction Commitments
2. Flexible Market Mechanisms

Emissions Reduction Commitments

- ✓ Joint Implementation (JI)
- ✓ The Clean Development Mechanism(CDM)
- ✓ Emission Trading
- ✓ Objective of above mechanisms - to facilitate, promote and enforce compliance with the commitments under the Protocol

Joint implementation:

It offers Parties a flexible and cost-efficient means of fulfilling a part of their Kyoto commitments, while the host Party benefits from foreign investment and technology transfer

Clean Development Mechanism

- It provides for ***emissions reduction projects which generate Certified Emission Reduction units (CERs) which may be traded in emissions trading schemes***
- E.g. A CDM project activity might involve a rural electrification project using solar panels or the installation of more energy efficient boilers. The mechanism stimulates

sustainable development and emission reductions, while giving industrialized countries some flexibility in how they meet their emission reduction or limitation targets

Carbon Trading

- ✓ Carbon trading is the process of **buying and selling permits and credits to emit carbon dioxide**. It has been a central pillar of the EU's efforts to slow climate change. The **world's biggest carbon trading system is the European Union Emissions Trading System** (EU ETS).
- ✓ 2 types of carbon trading – emission trading and offset trading

Emission Trading

- Also known as **carbon credit**
- A permit which allows a country or organization to produce a certain amount of carbon emissions and which can be traded if the full allowance is not used

Offset Trading/ Carbon Project/ 'baseline-and credit' trading

- **Another variant of carbon credit**.
- It is to be **earned by a country by investing some amount of money in such projects, known as carbon projects**, which will emit lesser amount of greenhouse gas in the atmosphere.
- For example, suppose a thermal plant of 800 megawatt capacity emit 400 carbon equivalents in the atmosphere. Now a country builds up a 800 megawatt wind energy plant which does not generate any amount of emission as an alternative of the thermal plant. Then by investing in this project the country will earn 400 carbon-equivalent.

Benefits of Flexible market mechanism

- Stimulating green investment in developing countries.
- Private sector to cut and hold steady GHG emissions at a safe level.
- To skip older, dirtier technology for newer, cleaner infrastructure and systems, with obvious longer-term benefits

Kyoto Protocol's compliance mechanism –

- Strengthen the Protocol's environmental integrity.
- Support the carbon market's credibility

- Ensure transparency of accounting by Parties

Non-Compliance of Kyoto and Penalties

- If a country does not meet the requirements for measurements and reporting – it loses the privilege of gaining credit through JI projects.
- If a country goes above its emissions cap, and does not try to make up the difference through any of the mechanisms available, then said country must make up the difference plus an additional 30% during the next period.
- The country could also be banned from participating 'cap and trade' program

International Conventions related to Wildlife

⇨ **India is a party to 5 major international conventions related to wildlife conservation**

1) **Convention on International Trade in Endangered Species (CITES)**
2) **Coalition Against Wildlife Trafficking (CAWT)**
3) **International Whaling Commission (IWC)**
4) **United Nations Educational, Scientific and Cultural Organisation – World Heritage Committee (UNESCO-WHC)**
5) **Convention on Migratory Species (CMS)**

Nodal agency for CITES , CAWT, IWC, UNESCO-WHC, CMS ➔ Ministry of Environment and Forests

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):

- ✓ **Formally Called** : Convention on International Trade in Endangered Species of Wild Fauna and Flora
- ✓ It is also known as **Washington Convention**
- ✓ It is a multilateral Treaty
- ✓ Participation is voluntary
- ✓ It is **legally binding** on the Parties, but it does not take the place of national laws.
- ✓ **Opened for sign** : 1973
- ✓ **Parties** : 182
- ✓ Aims to protect endangered plants and animals.
- ✓ Its aim is to ensure that **international trade** in specimens of wild animals and plants does not threaten the survival of the species in the wild, and it accords varying degrees of protection to **more than 35,000 species of animals and plants**.

It classifies plants and animals according to three categories, or appendices, based on how threatened :

- ✓ **Appendix I**: It lists species that are in danger of extinction. It prohibits commercial trade of these plants and animals except in extraordinary situations for scientific or educational reasons.
- ✓ **Appendix II**: They are those that are not threatened with extinction but that might suffer a serious decline in number if trade is not restricted. Their trade is regulated by permit.
- ✓ **Appendix III:** They are protected in at least one country that is a CITES member states and that has petitioned others for help in controlling international trade in that species.
- ✓ In addition CITES also restricts trade in items made from such plants and animals, such as food, clothing, medicine, and souvenirs

⇨ **Govt of India signed CITES on July 20, 1976**

Coalition Against Wildlife Trafficking (CAWT):

- ✓ Aims to focus public and political attention and resources on ***ending the illegal trade in wildlife and wildlife products***.
- ✓ Initiated in **2005**
- ✓ CAWT is a **unique voluntary public-private coalition**
- ✓ It's a Global Coalition of governments and international business and conservation organizations, working together to support each other's efforts to end the illegal trade in wildlife and wildlife products
- ✓ **CAWT is not a legal entity**
- ✓ India has joined hands with US and other partners against the illegal wildlife crime/trafficking

CAWT is leveraging the combined strengths of government and non-governmental partners to:

- ∗ Improve Wildlife Law Enforcement by expanding enforcement training and information sharing and strengthening regional cooperative networks
- ∗ Reduce consumer demand for illegally traded wildlife by raising awareness of the impacts of illegal wildlife trade on biodiversity
- ∗ Catalyse high-level political will to fight wildlife trafficking

International Whaling Commission (IWC):

- ∗ It is **global intergovernmental body** for the proper conservation of whale stocks
- ∗ **Set up under the International Convention for the Regulation of Whaling (1946)**

* ***In 1986 the Commission introduced zero catch limits for commercial whaling*** (it is still in place today), although the Commission continues to set catch limits for aboriginal subsistence whaling
* **India** ➔ member of the International Whaling Commission since 1981

UNESCO – WHO:

- UNESCO's World Heritage Convention is **responsible for listing of World Heritage Sites, which include both cultural and natural sites**
- The **wildlife dept. of the Ministry of Environment and Forests** of India is associated with the conservation of the natural world heritage sites
- An **externally-aided project** has also been undertaken by the ministry for the conservation of wildlife
    - ✓ The total period of the project is 10 yrs with 2 phases
    - ✓ The project will be undertaken in 4 world heritage sites of India
    1) **Kaziranga National Park**
    2) **Manas National Park**
    3) **Nanda Devi National Park**
    4) **Keoladeo National Park**

Convention on Migratory Species (CMS):

- Also known as **Bonn convention**
- Aim - to **conserve terrestrial, marine and avian migratory species throughout their range**.
- It is an **intergovernmental treaty**, concluded under the aegis of the **United Nations Environment Programme (UNEP)**, concerned with the conservation of wildlife and habitats on a global scale.
- ***Only global and UN-based intergovernmental organization established exclusively for the conservation and management of terrestrial, aquatic and avian migratory species*** throughout their range.
- **India** : member since 1983
- India **signed MoU with CMS at Bangkok in February 2007** for the conservation and management of **marine turtles and their habitats** of the Indian Ocean and South East Asia

International Conventions related to Marine Environment

UNCLOS:

- The **United Nations Convention on the Law of the Sea** (UNCLOS), also called the Law of the Sea Convention or the Law of the Sea treaty is the **international agreement** that ***resulted from the third United Nations Conference on the Law of the Sea*** (UNCLOS III), which took place between 1973 and 1982.

SOLAS:

- The **International Convention for the Safety of Life at Sea** (SOLAS) is an **international maritime treaty** which sets minimum safety standards in the construction, equipment and operation of merchant ships.

International Whaling Commission (IWC):

* It is **global intergovernmental body** for the proper conservation of whale stocks
* **Set up under the International Convention for the Regulation of Whaling (1946)**
* ***In 1986 the Commission introduced zero catch limits for commercial whaling*** (it is still in place today), although the Commission continues to set catch limits for aboriginal subsistence whaling
* **India** ➔ member of the International Whaling Commission since 1981

International Convention related to Land

UNCCD:

- It is a Convention to **combat desertification and mitigate the effects of drought through national action programs** that incorporate long-term strategies supported by international cooperation and partnership arrangements
- **Only internationally legally binding** framework set up to address the problem of desertification
- It is **based on the principles of participation, partnership and decentralization**—the backbone of Good Governance and Sustainable Development
- It is committed to a bottom-up approach, encouraging the participation of local people in combating desertification and land degradation.
- **'Desertification'** – it refers to land degradation in the drylands (arid, semi-arid and dry sub humid regions) resulting from various factors and does not connote spread or expansion of deserts.

- UNCCD is a unique instrument that ***recognizes land degradation as an important factor affecting some of the most vulnerable people and ecosystems in the world.***
- **Aim of convention** – adaptation + can help in SDG, sustainable development and poverty reduction
- The convention **promotes sustainable land management (SLM) as solution to global challenges**. SLM focuses on changes in land cover/land use in order to maintain and enhance ecosystems functions and services.
- **Land degradation is long-term loss of ecosystem function** and productivity caused by disturbances from which the land cannot recover unaided

International Conventions related to Hazardous Material

Stockholm Convention on POP (Persistent Organic Pollutants):

Stockholm Convention on POP was **adopted at a Conference of Plenipotentiaries in Stockholm, Sweden (2001) and entered into force in 2004**

Persistent Organic Pollutants:

- They are **organic chemical substances, that is, they are carbon-based**.
- They possess a particular combination of physical and chemical properties such that, once released into the environment, they
  - Remain intact for exceptionally long periods of time (many years).
  - Widely distributed in environment because of natural processes involving soil, water and, most notably, air.
  - Though not soluble in water, accumulate in the fatty tissue of living organisms including humans, and are found at higher concentrations at higher levels in the food chain
- In addition, POPs concentrate in living organisms through another process called **bioaccumulation**

Initially, twelve POPs have been recognized as causing adverse effects on humans and the ecosystem and these can be placed in 3 categories:

→ **Pesticides**: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxaphene;
→ **Industrial chemicals**: hexachlorobenzene, polychlorinated biphenyls (PCBs); and
→ **By-products:** hexachlorobenzene; polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF), and PCBs.

Annex A (Elimination)

●Aldrin ●Chlordane ●Dieldrin
●Endrin ●Heptachlor ●/▲Hexachlorobenzene
●Mirex ●Toxaphene ▲PCB

Annex B (Restriction)

●DDT

Annex C (Unintentional production)

■Polychlorinated dibenzo-*p*-dioxins and dibenzofurans
■Hexachlorobenzene ■PCB

●Pesticides / ▲Industrical chemicals / ■By-products

Later 9 new POPs were also added and 10th one was Endosulfan

Chemical	Annex	Specific exemptions / acceptable purposes
Alpha hexachlorocyclohexane ●/■	A	**Production**: none **Use**: none
Beta hexachlorocyclohexane ●/■	A	**Production**: none **Use**: none
Chlordecone ●	A	**Production**: none **Use**: none
Hexabromobiphenyl ▲	A	**Production**: none **Use**: none
Hexabromodiphenyl ether and heptabromodiphenyl ether (commercial octabromodiphenyl ether) ▲	A	**Production**: none **Use**: articles in accordance with the provisions of Part IV of Annex A
Lindane ●	A	**Production**: none **Use**: human health pharmaceutical for control of head lice and scabies as second line treatment
Pentachlorobenzene ●/▲/■	A and C	**Production**: none **Use**: none
Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride ▲	B	**Production**: for the use below **Use**: acceptable purposes and specific exemptions in accordance with Part III of Annex B (see the full list on page 7)
Tetrabromodiphenyl ether and pentabromodiphenyl ether (commercial pentabromodiphenyl ether) ▲	A	**Production**: none **Use**: articles in accordance with the provisions of Part IV of Annex A

●Pesticides / ▲Industrical chemicals / ■By-products

Basel Convention :

- The Basel Convention on the **Control of Transboundary Movements of Hazardous Wastes and Their Disposal**, usually known as the Basel Convention, 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)
- But It does not address the movement of radioactive waste

Waste under the Basel Convention

→ Wastes are substances or objects which are –
→ Disposed of or,
→ Are intended to be disposed of or,
→ Are required to be disposed of by the provisions of national law

Annex I of convention:

It lists those wastes that are classified as hazardous and subject to the control procedures under the Convention

Annex II of convention:

Wastes that require special consideration (known as "**other wastes**", and which primarily refer to household wastes)

Examples of wastes regulated by the Basel Convention:

- Biomedical and healthcare wastes
- Used oils
- Used lead acid batteries
- Persistent Organic Pollutant wastes (POPs)
- Polychlorinated Biphenyls (PCBs)
- 1000s of chemical wastes generated by industries and other consumers

Rotterdam Convention

- The Rotterdam Convention (formally, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade) is a **multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals**

- It promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labeling, include directions on safe handling, and inform purchasers of any known restrictions or bans
- Signatory nations can decide whether to allow or ban the importation of chemicals listed in the treaty, and exporting countries are obliged to make sure that producers within their jurisdiction comply.
- **It covers pesticides and industrial chemicals that have been banned or severely restricted for health or environment**

Annex III Chemicals

- ✓ Pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by two or more Parties + CoP decided to subject the PIC procedure
- ✓ Total – **43 chemicals** (32 – pesticides, 11 – industrial chemicals)

International Conventions related to Nature Conservation:

- → **United Nations Conference on Environment and Development (UNCED)**
- → **Convention on Biological Diversity (CBD)**
- → **Ramsar Convention on Wetlands**
- → **Convention on International Trade in Endangered Species of Fauna and Flora (CITES)**
- → **The Wildlife Trade Monitoring Network (TRAFFIC)**
- → **Convention on the Conservation of Migratory Species (CMS)**
- → **Coalition Against Wildlife Trafficking (CAWT)**
- → **International Tropical Timber Organization (ITTC)**
- → **United Nations Forum on Forest (UNFF)**
- → **International Union for Conservation of Nature and Natural Resources (IUCN)**
- → **Global Tiger Forum (GTF)**

United Nations Conference on Environment and Development (UNCED)

Also known as Rio Summit, Rio Conference, Earth Summit held in Rio de Janerio in June 1992

The issues addressed included –

- ✓ **Systematic scrutiny of patterns of production** — particularly the production of toxic components (like lead in gasoline, or poisonous waste including radioactive chemicals)
- ✓ Alternative sources of energy to replace the use of fossil fuels which delegates linked to global climate change

- ✓ New reliance on public transportation systems (like Delhi metro, BRTS) in order to reduce vehicle emissions, congestion
- ✓ The growing usage and limited supply of water

Important achievements of the summit

Documents:

- Rio Declaration on Environment and Development
- Agenda21
- Forest Principles

Legally binding agreements:

- Convention on Biological Diversity
- Framework Convention on Climate Change (UNFCCC)

Rio Declaration on Environment and Development

- Also called as Rio Declaration (shortened name)
- ***Short document produced at the 1992 UNCED***.
- It consisted of **27 principles** intended to guide future sustainable development around the world

Agenda 21

- It is an **action plan of UN related to sustainable development**.
- It was **outcome of UNCED in Rio**.
- It is a comprehensive blueprint of action to be taken globally, nationally and locally by organizations of the UN, governments, and major groups in every area in which humans directly affect the environment.
- The number 21 refers to an **agenda for the 21st century**

Agenda 21 for "culture"

- The **first World Public Meeting on Culture in Brazil (2002)** came up with the idea to draw up document guidelines for local cultural policies, a document comparable to what Agenda 21 meant in 1992 for the environment.
- It is the first document that advocates establishing the **groundwork of an undertaking by cities and local governments for cultural development**.

Rio+5

- As the name itself suggests it **was special session which took place after 5 years of Earth summit to appraise five years of progress on the implementation of Agenda 21**.
- Progress recognized as 'uneven'.
- Identified key trends including increasing globalization, widening inequalities in income and a continued deterioration of the global environment

Johannesburg Summit

The Johannesburg Plan of Implementation, agreed at the World Summit on Sustainable Development (Earth Summit 2002) affirmed UN commitment to 'full implementation' of Agenda 21, alongside achievement of the MDG (Millennium Development Goals) an other international agreements

Rio+20

- ✓ +20 means **after 20 years of 1992 Earth Summit**
- ✓ It is the **short name for the UN Conference on Sustainable Development** (it also took place in Rio de Janeiro, Brazil)
- ✓ World leaders, private sector, NGOs and other groups, came together to shape how we can reduce poverty, advance social equity and ensure environmental protection on an ever more crowded planet.

The official discussions focused on **two main themes** -

- How to building a green economy to achieve sustainable development + reduce poverty
- How to improve international coordination for sustainable development

Convention on Biological Diversity:

- Biodiversity knows no political boundaries and its conservation is therefore a collective responsibility of all nations.
- Convention on Biological Diversity (CBD) is a step towards **conserving biological diversity or biodiversity with the involvement of the entire world**.
- The historic Convention on Biological Diversity(Biodiversity Convention - a multilateral treaty) was opened for signature at the **Earth Summit in Rio de Janeiro** in 1992 and entered into in 1993.
- The convention called upon all nations to take appropriate measures for conservation of biodiversity and sustainable utilisation of its benefits.

- The Convention has three main goals:
    1. **conservation of biological diversity (or biodiversity);**
    2. **sustainable use of its components; and**
    3. **fair and equitable sharing of benefits arising from genetic resources.**

    - It is often seen as the key document regarding sustainable development.
    - The Convention is **legally binding**; countries that join it ('Parties') are obliged to implement its provisions.
    - **195 UN states and the European Union are parties to the convention**.
    - All UN member states—with the exception of the **United States**—have ratified the treaty.
    - At the 2010 10th Conference of Parties (COP) to the Convention on Biological Diversity in October in Nagoya, Japan, the **Nagoya Protocol** was adopted.

Ramsar Convention on Wetlands

- **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***
- The Convention was **signed on 2nd of February, 1971**
- The 2nd of February each year is **World Wetlands Day**
- **Number of parties to the convention (COP) is 169**
- At the center of the Ramsar philosophy is the "wise use" of wetlands.
- **Wise use:** maintenance of ecological character within the context of sustainable development.

Need for Such Convention

- Wetlands are indispensable for the countless benefits or **"ecosystem services"** that they provide humanity, ranging from freshwater supply, food and building materials, and biodiversity, to flood control, groundwater recharge, and climate change mitigation.
- 64% of the world's wetlands have disappeared in the last century.

What is wetland

✓ The Convention uses a broad definition of wetlands. It includes all lakes and rivers, underground aquifers, swamps and marshes, wet grasslands, peatland, oases, estuaries, deltas and tidal flats, mangroves and other coastal areas, coral reefs, and all human-made sites such as fish ponds, rice paddies, reservoirs and salt pans.

COP

- Conference of the Parties (COP) is the Convention's governing body consisting of all governments that have ratified the treaty.
- Every three years, representatives of the Contracting Parties meet as the Conference of the Contracting Parties (COP)
- COP is the policy-making organ of the Convention which adopts decisions (Resolutions and Recommendations) to administer the work of the Convention.

Under the Convention, the Contracting Parties commit to:

- Work towards the **wise use** of all their wetlands;
- Designate suitable wetlands for the List of Wetlands of International Importance (the "Ramsar List") and ensure their effective management;
- Cooperate internationally on trans boundary wetlands, shared wetland systems and shared species.

Ramsar Site

- At the time of joining the Convention, each Contracting Party undertakes to designate at least one wetland site for inclusion in the List of Wetlands of International Importance.
- The inclusion of a "Ramsar Site" in the List embodies the government's commitment to take the steps necessary to ensure that its ecological character is maintained.
- The **country with the highest number of Sites is the United Kingdom with 170**
- The **country with the greatest area of listed wetlands is Bolivia**.

The Montreux Record

✓ The Montreux Record 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.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):

- ✓ **Formally Called** : Convention on International Trade in Endangered Species of Wild Fauna and Flora
- ✓ It is also known as **Washington Convention**
- ✓ It is a multilateral Treaty
- ✓ Participation is voluntary
- ✓ It is **legally binding** on the Parties, but it does not take the place of national laws.
- ✓ **Opened for sign** : 1973
- ✓ **Parties** : 182

- ✓ Aims to protect endangered plants and animals.
- ✓ Its aim is to ensure that **international trade** in specimens of wild animals and plants does not threaten the survival of the species in the wild, and it accords varying degrees of protection to **more than 35,000 species of animals and plants**.

It classifies plants and animals according to three categories, or appendices, based on how threatened :

- ✓ **Appendix I**: It lists species that are in danger of extinction. It prohibits commercial trade of these plants and animals except in extraordinary situations for scientific or educational reasons.
- ✓ **Appendix II**: They are those that are not threatened with extinction but that might suffer a serious decline in number if trade is not restricted. Their trade is regulated by permit.
- ✓ **Appendix III: ** They are protected in at least one country that is a CITES member states and that has petitioned others for help in controlling international trade in that species.
- ✓ In addition CITES also restricts trade in items made from such plants and animals, such as food, clothing, medicine, and souvenirs

⇨ **Govt of India signed CITES on July 20, 1976**

Coalition Against Wildlife Trafficking (CAWT):

- ✓ Aims to focus public and political attention and resources on ***ending the illegal trade in wildlife and wildlife products***.
- ✓ Initiated in **2005**
- ✓ CAWT is a **unique voluntary public-private coalition**
- ✓ It's a Global Coalition of governments and international business and conservation organizations, working together to support each other's efforts to end the illegal trade in wildlife and wildlife products
- ✓ **CAWT is not a legal entity**
- ✓ India has joined hands with US and other partners against the illegal wildlife crime/trafficking

CAWT is leveraging the combined strengths of government and non-governmental partners to:

- * Improve Wildlife Law Enforcement by expanding enforcement training and information sharing and strengthening regional cooperative networks
- * Reduce consumer demand for illegally traded wildlife by raising awareness of the impacts of illegal wildlife trade on biodiversity

* Catalyse high-level political will to fight wildlife trafficking

Convention on Migratory Species (CMS):

- Also known as **Bonn convention**
- Aim - to **conserve terrestrial, marine and avian migratory species throughout their range**.
- It is an **intergovernmental treaty**, concluded under the aegis of the **United Nations Environment Programme (UNEP)**, concerned with the conservation of wildlife and habitats on a global scale.
- ***Only global and UN-based intergovernmental organization established exclusively for the conservation and management of terrestrial, aquatic and avian migratory species*** throughout their range.
- **India** : member since 1983
- India **signed MoU with CMS at Bangkok in February 2007** for the conservation and management of **marine turtles and their habitats** of the Indian Ocean and South East Asia

The Wildlife Trade Monitoring Network (TRAFFIC)

- TRAFFIC is a **non-governmental organization** working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.
- TRAFFIC is a **joint programme of World Wide Fund for Nature (WWF) and IUCN**.
- Traffic is ***complimentary to Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)***
- The **programme was founded in 1976, with headquarters now located in Cambridge, United Kingdom**.
- TRAFFIC's mission is to ensure that **trade in wild plants and animals is not a threat to the conservation of nature**.
- It investigates and analyses wildlife trade trends, patterns, impacts and drivers to provide the leading knowledge base on trade in wild animals and plants.

International Tropical Timber Organization (ITTO)

- ✓ It is an **intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources**.
- ✓ Its members represent about **80% of the world's tropical forests and 90% of the global tropical timber trade**.

- ✓ **India is a member of it**

What it does?

- Like all commodity organizations it is concerned with trade and industry, but like an environmental agreement it also pays considerable attention to the sustainable management of natural resources
- ITTO develops internationally agreed policy documents to promote sustainable forest management and forest conservation
- It assists tropical member countries to adapt such policies to local circumstances and to implement them in the field through projects
- It collects, analyses, and disseminates data on the production and trade of tropical timber and funds a range of projects

United Nations Forum on Forests (UNFF)

- The **Economic and Social Council of the United Nations** (ECOSOC), established the United Nations Forum on Forests (UNFF).
- The Forum has **universal membership**, and is **composed of all Member States of the United Nations and specialized agencies**.

Non-Legally Binding Instrument on All Types of Forests (NLBI)

- 7th session adopted it on all types of forests.
- 1st time – member states agreed to an international instrument for SFM.
- The instrument is **voluntary and non-legally binding**
- It is expected that it will create major impact on international cooperation and national action to reduce deforestation, prevent forest degradation, promotes sustainable livelihoods and decrease poverty for all forest dependent peoples

IUCN

- International Union for Conservation of Nature (IUCN) is a membership Union uniquely composed of both **government and civil society organizations**. It provides public, private and non-governmental organizations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together

- The organization is best known for **compiling and publishing the IUCN Red List**, which assesses the conservation status of species worldwide.
- **Headquarters** - Gland, Switzerland
- **Species are classified by the IUCN Red List into 9 groups**, set through criteria such as rate of decline, population size, area of geographic distribution, and degree of population and distribution fragmentation

Vision:

- Just world that values and conserves nature

Missions:

- To influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable
- IUCN supports scientific research, manages field projects globally and brings governments, NGOs, UN agencies, companies and local communities together to develop and implement policy
- IUCN Members include both States and non-governmental organizations

Global Tiger Forum (GTF)

- It is an **intergovernmental and international body** established with members from willing countries to ***save the remaining 5 sub-species of tigers in the wild distributed over 14 tiger range countries of the world***.
- **Formed in 1994 with its secretariat at New Delhi**
- ***Only inter-governmental and international body campaigning to save the TIGER worldwide***
- General Assembly of GTF shall **meet once in 3 years**

Goal: To highlight the rationale **for tiger preservation** and provide leadership and common approach throughout the world in order to safeguard the survival of the tiger, its prey and its habitat

Global Tiger Initiative (GTI):

It is an alliance of governments, international agencies, civil society, and the private sector united to save wild tigers from extinction

Goals:

- Support capacity-building in governments for responding effectively to the transnational challenge of illegal trade in wildlife
- Scientifically managing tiger landscapes in the face of mounting and varied threats
- Curtail international demand for tiger parts which are responsible for drastic declines in tiger populations
- To develop mechanisms for safeguarding habitats from development
- To create innovative and sustainable financing mechanisms for tiger landscapes including protected areas
- To build strong local constituencies for tiger conservation through development of economic incentives and alternative livelihoods for local people
- To spread the recognition among governments, international aid agencies and the public that tiger habitats are high-value diverse ecosystems

CLIMATE CHANGE – International Initiatives

United Nations Framework Convention on Climate Change (UNFCCC):

- The United Nations Framework Convention on Climate Change (UNFCCC) is an **international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth summit, held in Rio de Janeiro in1992**.
- **Objective** – to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."
- The framework set no binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms
- In that sense, treaty is considered legally non-binding. Instead, the treaty provides for updates (called "protocols") that would set mandatory emission limits
- UNFCCC is also the name of UN secretariat charged with supporting the operation of the convention

Conference of Parties (COP)

→ Conference of Parties, known as COP, is the ***decision-making body responsible for monitoring and reviewing the implementation of the United Nations Framework Convention on Climate Change***.

→ It brings together the **197 nations and territories** – called Parties – that have signed on to the Framework Convention.

→ The COP has **met annually since 1995**.

→ The **21st Session of the COP (COP21), held in Paris, France**, in December 2015, was historic in its outcome – the **first international climate agreement**

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

Classification of Parties and their commitments

Parties to the UNFCCC are classified as

Annex I - There are **43 Parties** to the UNFCCC listed in Annex I of the Convention, including the European Union. These Parties are **classified as industrialized (developed) countries and "economies in transition"** (EITs). The 14 EITs are the former centrally planned (Soviet) economies of Russia and Eastern Europe.

Annex II - Of the Parties listed in Annex I of the Convention, **24 are also listed in Annex II** of the Convention, including the European Union. These Parties are made up of **members of the Organization for Economic Cooperation and Development (OECD).** Annex II Parties are required to provide financial and technical support to the EITs and

developing countries to assist them in reducing their greenhouse gas emissions (climate change mitigation) and manage the impacts of climate change (climate change adaptation)

Annex B - Parties listed in Annex B of the Kyoto Protocol are Annex I Parties with first- or second-round Kyoto greenhouse gas emissions targets. The first-round targets apply over the years 2008–2012. ***As part of the 2012 Doha climate change talks, an amendment to Annex B was agreed upon containing with a list of Annex I Parties who have second-round Kyoto targets, which apply from 2013–2020***. The amendments have not entered into force

Least-developed countries (LDCs) - 49 Parties are LDCs, and are given special status under the treaty in view of their limited capacity to adapt to the effects of climate change

Non-Annex I - Parties to the UNFCCC not listed in Annex I of the Convention are mostly low-income developing countries. Developing countries may volunteer to become Annex I countries when they are sufficiently developed

Kyoto Protocol – COP-3 (KP)

- By 1995, countries realized that emission reductions provisions in the Convention were After 2 years this protocol was adopted.
- Due to complex ratification process, it **entered into force in 2005**.
- In short KP is what "operationalizes" the convention.
- It **commits industrialized countries to stabilize GHG emissions** based on the principles of the Convention.
- **Difference between protocol and convention** - while the Convention encouraged industrialized countries to stabilize GHG emissions, the Protocol commits them to do so inadequate

Targets

It sets binding emission reduction targets for **37 industrialized countries and the European community** in its first commitment period.

Why KP binds only developed countries?

Because it recognizes that they are largely responsible for the current high levels of GHG emissions in the atmosphere, which are the result of more than 150 years of industrial activity

- **CBDR (common but differentiated responsibility)** -heavier burden on developed nations
- Overall, these targets **add up to an average 5% emissions reduction compared to 1990 levels over the five-year period 2008 to 2012**

Architecture of KP

Beating heart of KP is made up of -

1. Reporting and verification procedures.
2. Flexible market-based mechanisms
3. A compliance system

Two things made KP tick

1. Emissions Reduction Commitments
2. Flexible Market Mechanisms

Emissions Reduction Commitments

- ✓ Joint Implementation (JI)
- ✓ The Clean Development Mechanism(CDM)
- ✓ Emission Trading
- ✓ Objective of above mechanisms - to facilitate, promote and enforce compliance with the commitments under the Protocol

Joint implementation:

It offers Parties a flexible and cost-efficient means of fulfilling a part of their Kyoto commitments, while the host Party benefits from foreign investment and technology transfer

Clean Development Mechanism

- It provides for ***emissions reduction projects which generate Certified Emission Reduction units (CERs) which may be traded in emissions trading schemes***
- E.g. A CDM project activity might involve a rural electrification project using solar panels or the installation of more energy efficient boilers. The mechanism stimulates sustainable development and emission reductions, while giving industrialized countries some flexibility in how they meet their emission reduction or limitation targets

Carbon Trading

- ✓ Carbon trading is the process of **buying and selling permits and credits to emit carbon dioxide**. It has been a central pillar of the EU's efforts to slow climate change. The **world's biggest carbon trading system is the European Union Emissions Trading System** (EU ETS).
- ✓ 2 types of carbon trading – emission trading and offset trading

Emission Trading

- Also known as **carbon credit**
- A permit which allows a country or organization to produce a certain amount of carbon emissions and which can be traded if the full allowance is not used

Offset Trading/ Carbon Project/ 'baseline-and credit' trading

- **Another variant of carbon credit**.
- It is to be **earned by a country by investing some amount of money in such projects, known as carbon projects**, which will emit lesser amount of greenhouse gas in the atmosphere.
- For example, suppose a thermal plant of 800 megawatt capacity emit 400 carbon equivalents in the atmosphere. Now a country builds up a 800 megawatt wind energy plant which does not generate any amount of emission as an alternative of the thermal plant. Then by investing in this project the country will earn 400 carbon-equivalent.

Benefits of Flexible market mechanism

- Stimulating green investment in developing countries.
- Private sector to cut and hold steady GHG emissions at a safe level.
- To skip older, dirtier technology for newer, cleaner infrastructure and systems, with obvious longer-term benefits

Kyoto Protocol's compliance mechanism –

- Strengthen the Protocol's environmental integrity.
- Support the carbon market's credibility
- Ensure transparency of accounting by Parties

Non-Compliance of Kyoto and Penalties

- If a country does not meet the requirements for measurements and reporting – it loses the privilege of gaining credit through JI projects.
- If a country goes above its emissions cap, and does not try to make up the difference through any of the mechanisms available, then said country must make up the difference plus an additional 30% during the next period.
- The country could also be banned from participating 'cap and trade' program

Bali Meet

- Held in 2007

Objectives:

- Aim - to push the world towards taking action that reduces the GHG gases in the atmosphere which cause CC.
- They were to discuss what after 2012? (what are countries expected to do after the first phase of Kyoto ends in 2012)
- Developing countries – "After 2012 developing countries like India and China also need to take some responsibility, as they are growing economically and increasing emissions".
- New set of principles which will decide what to do after 2012.

Bali Roadmap:

- A 2-year process to finalizing a binding agreement in **2009 in Copenhagen**
- Map includes –
  - ✓ The Bali Action Plan (BAP)
  - ✓ The Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol negotiations and their 2009 deadline
  - ✓ Launch of the adaptation Fund
  - ✓ Decisions on technology transfer
  - ✓ On reducing emissions from deforestation

Bali Action Plan

- It is a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012,in order to reach an agreed outcome and adopt a decision.
- It is divided into five main categories: shared vision, mitigation, adaptation, technology and financing

COP 15 Copenhagen Summit

- ✓ Discord between developing and developed nations
- ✓ Summit conclusion - Copenhagen Accord (a five nation accord- BASIC and US)
- ✓ Copenhagen Accord is a non-binding agreement
- ✓ Accord – "deep international emissions cuts are needed to hold the increase in global temperature to under 2°C"
- ✓ Under the Accord, developed countries (Annex I) agree to set targets for reductions in their greenhouse gas emissions by 2020.
- ✓ Developing countries agree to pursue nationally appropriate mitigation strategies to slow the growth of their emissions, but are not committed to reducing their carbon output.
- ✓ Developing countries, specially these with low-emitting economies should be provided incentives to continue to develop on a low-emission pathway
- ✓ Agrees that developed countries would raise funds of $30 billion from 2010:-2012 of new and additional resources
- ✓ Agrees a "goal" for the world to raise $100 billion per year by 2020

COP 16 Cancun Summit

- The outcome of the summit was an agreement adopted by the states' parties that called for the 100 billion USD per annum "Green Climate Fund", and a "Climate Technology Centre" and network.
- However the funding of the Green Climate Fund was not agreed upon. Nor was a commitment to a second period of the Kyoto Protocol agreed upon, but it was concluded that the base year shall be 1990 and the global warming potentials shall be those provided by the IPCC

Mechanism of COP 16

- ➢ Technology mechanism
- ➢ GCF (Green climate fund)
- ➢ Adaptation committee

Green Climate Fund

- Green Climate Fund is a fund within the framework of the UNFCCC
- Founded as a mechanism to redistribute money from the developed to the developing world, in order to assist the developing countries in adaptation and mitigation practices to counter climate change

- It is intended to be the centerpiece of efforts to raise Climate Finance of $100 billion a year by 2020
- Source of funding will be through government

Adaptation Fund

- ➢ It was established to finance concrete adaptation projects and programs in developing country Parties to the KP that are particularly vulnerable to the adverse effects of CC.
- ➢ It is financed from the share of proceeds on the CDM project activities and other sources of funding
- ➢ Supervised and managed by - Adaptation Fund Board (AFB)
- ➢ Upon invitation from Parties, the Global Environment Facility (GEF) provides secretariat services to the AFB and the World Bank serves as trustee of the Adaptation Fund, both on an interim basis

COP 17 Durban Summit

New global climate change regime

2 demands of India - that the principle of equity remain intact in any new climate regime and that this new global deal be launched after 2020

Outcome

- ✓ New deal to be finalized by 2015 and launched by 2020
- ✓ GCF launched, though empty as yet Green tech development mechanism put in place
- ✓ Equity finds place back in future climate talks
- ✓ Adaptation mechanism
- ✓ Transparency mechanism

India's gain and losses

- → Wins on all its important non-negotiables CBDR principle retained.
- → Secures 10 years of economic growth without carbon containment Intellectual Property Rights (IPR) and technology not as well anchored in new deal
- → Loopholes for developed world not fully blocked
- → Agriculture brought in by developed nations under CC