Environmental Sciences (ESI 101) Modular

1st B.Tech Common, Sec- E, F, G, H

Unit-4	Details to be covered
Sustainability	Human use of Earth, Sustainable Consumption, Environmental justice and Ethics, an overall pan for Sustainable living, Environmental Pollution caused by power plants, vehicles, Open burning of solid wastes and fire crackers
Faculty:-	Prof Biswajit Paul, Dept. of Env. Sc. & Engg.
Weightage:-	Regular Assessment- Quiz-30 Marks, Sem-70 Marks

Environmental Sciences (ESI 101) Modular

I B Tech Common (2022–2023 Monsoon Semester), Section – E, F, G, H

LECTURE PLAN

S. No	Topics	Expected Lecture Hours	Faculty
1	Ecology and pollution: How ecosystem work, Ecosystems and evolution, human population change and the environment, environmental resistance and carrying capacity, fresh water resources and water pollution, mineral and soil resources.	03	SRS
2	Earth's Atmosphere: Structure and composition of atmosphere, stability of the atmosphere, wind and global atmospheric circulation, air pollutants and global atmospheric changes such as ozone depletion and acid rain. Environmental problems of urban areas air and air pollution.	03	MKJ
3	Climate; GHG and climate change, sources of GHG, Climate change science, The atmospheric energy balance and greenhouse effect and actions to address climate change.	03	SKG
4	Sustanibilty : Human use of earth, sustainable consumption, environmental justice and ethics, an overall plan for sustainable living, environmental pollution caused by power plants, vehicles, open burning of soild wastes and fire crackers.	03	BP
	Grand Total	**12**	

Sustainability

United Nations
Framework Convention on
Climate Change

UNFCCC

Paris Agreement

G20
भारत 2023 INDIA

COP27
SHARM EL-SHEIKH
EGYPT 2022

GRI-Global Reporting Initiative

These Countries Teaches Us Sustainability

The M-A-I-N acronym – **militarism, alliances, imperialism and nationalism** (As per Google)
I will say M-A-I-N acronym - **Mineral Acquisition in Neighbourhood.**

Group of Twenty- G20

The **Group of Twenty (G20)** is the premier forum for international economic cooperation.
It plays an important role in shaping and strengthening global architecture and governance on all major international economic issues.

1999 : Inception of G20
The G20 was founded in 1999 after the Asian financial crisis as a forum for the Finance Ministers and Central Bank Governors to discuss global economic and financial issues.

India holds the Presidency of the G20 from 1 December 2022 to 30 November 2023. (Pragati Maidan-Venue)
Advancing the 2030 Agenda, Infusing New LiFE into Green Development and Accelerating Progress on the SDGs.

The G20 Summit is held annually, under the leadership of a rotating Presidency. The G20 initially focused largely on broad macroeconomic issues, but it has since expanded its agenda to inter-alia **include trade**, **environment**, **climate change**, **sustainable development**, **health**, **agriculture**, **energy** and **anti-corruption**.

भारत 2023 INDIA

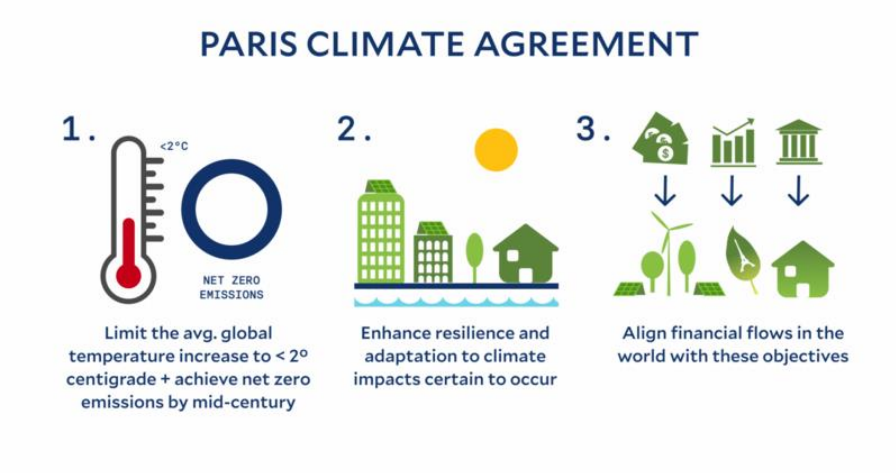
Paris Agreement

- The Paris Agreement is a **legally binding international treaty on climate change**. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016.

- Its goal is to **limit global warming** to well below **2^0**, **preferably to 1.5 degrees Celsius**, compared to **pre-industrial levels.**

- To achieve this long-term temperature goal, countries aim to **reach global peaking of greenhouse gas emissions as soon as possible** to achieve a climate neutral world by mid-century.

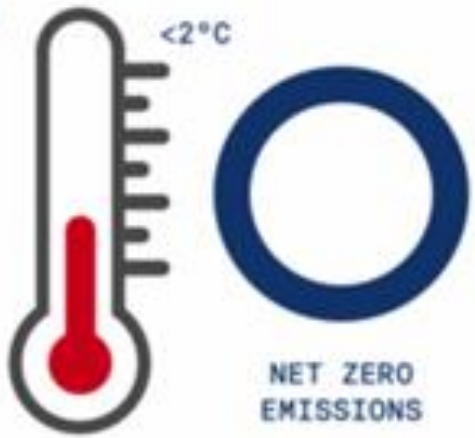
- The Paris Agreement is **a landmark** in the multilateral climate change process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects.



UNITED NATIONS
PARIS CLIMATE AGREEMENT
SIGNING CEREMONY
22 APRIL 2016

PARIS CLIMATE AGREEMENT

1.



Limit the avg. global temperature increase to < 2° centigrade + achieve net zero emissions by mid-century

2.

Enhance resilience and adaptation to climate impacts certain to occur

3.

Align financial flows in the world with these objectives

How does the Paris Agreement work?

- Implementation of the Paris Agreement requires **economic and social transformation**, based on the best available science.
- The Paris Agreement works on a **5- year cycle** of increasingly ambitious climate action carried out by countries.
- By 2020, countries submit their plans for climate action known as **nationally determined contributions (NDCs)**.

NDC

Countries communicate :

- actions they will take to **reduce their Greenhouse Gas emissions** in order to reach the goals of the Paris Agreement.
- actions they will take to **build resilience to adapt** to the impacts of rising temperatures.

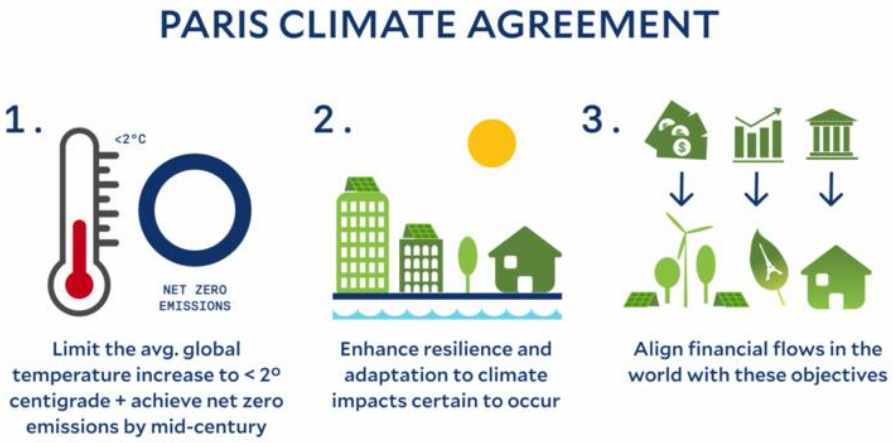
Long-Term Strategies

- the Paris Agreement invites countries to formulate and submit by 2020 **long-term low greenhouse gas emission development strategies** (LT-LEDS).

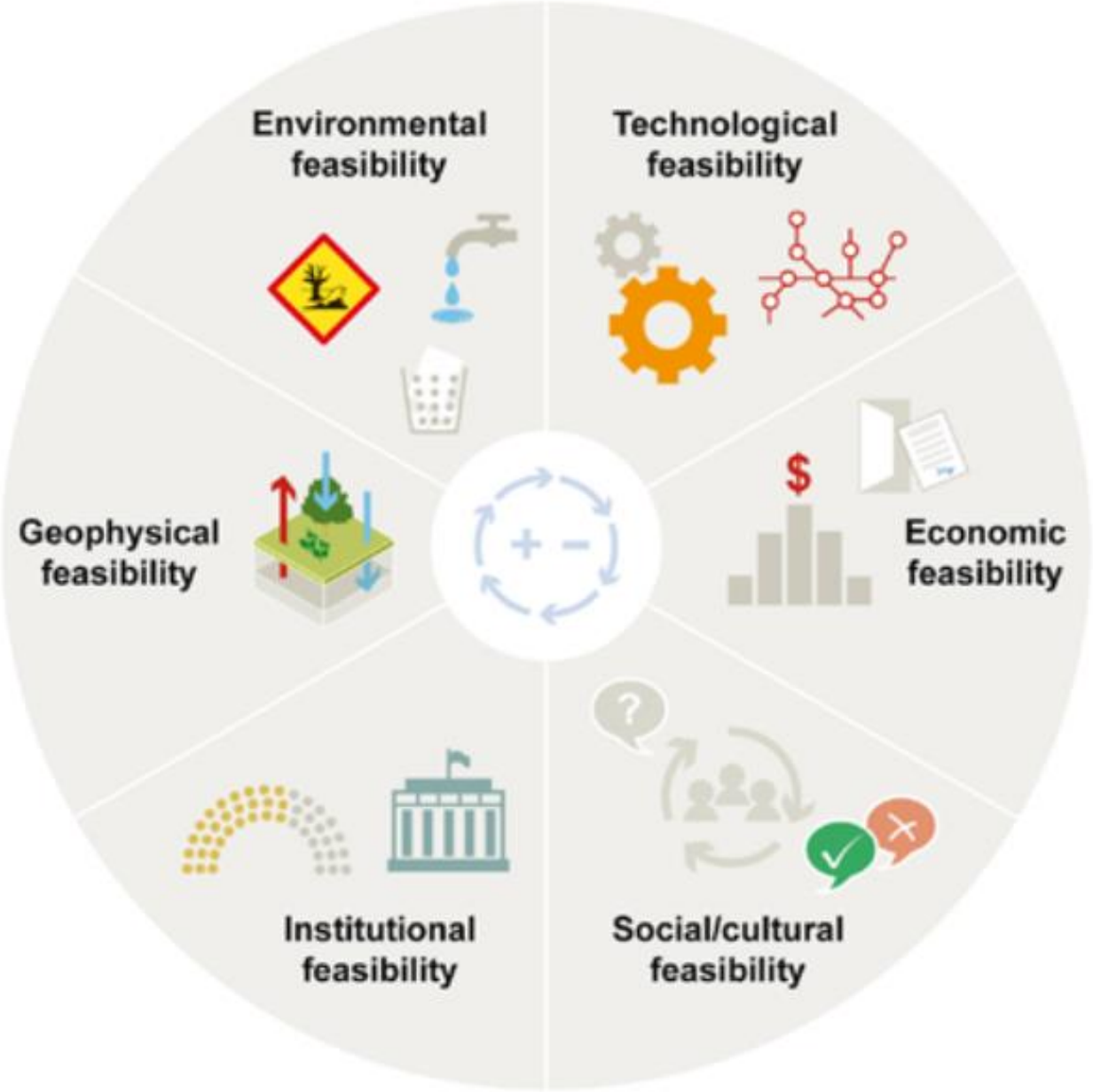
How are countries supporting one another?

- **Finance**
- **Technology**
- **Capacity Building**

https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agre



Different feasibility for limiting warming to 1.5^{0}C



COP27

The **2022 United Nations Climate Change Conference** or **Conference of the Parties of the UNFCCC**, more commonly referred to as **COP27.**
It was the 27th United Nations Climate Change conference,

At the **Sharm el-Sheikh Climate Change Conference** (COP 27), countries came together to take action towards achieving the world's collective climate goals as agreed under the Paris Agreement and the Convention. The conference took place from 6-20 November 2022 in Sharm el-Sheikh, Egypt.

SUSTAINABLE DEVELOPMENT

- Sustainable Development recognizes that development, meaning change in and improvement of Quality of Life (QoL), will occur within the present generation, but that this development should not diminish the opportunity for continued development in future.

❑**Factors** : **Economic**, **Social** & **Environmental**

- Those people with higher standard of living generally have more power to improve their own lives than the people who are improvised.
- Increased Population, Increased use of non-renewable energy, Increased use of natural resources, Increased Agriculture & Fishing- are not Sustainable.

SUSTAINABLE DEVELOPMENT GOALS

The SDGs were formulated in 2015 by the United Nations General Assembly (UNGA) as part of the Post-2015 Development Agenda, which sought to create a future global development framework to succeed the Millennium Development Goals, which ended that year.

https://www.niti.gov.in/verticals/sustainable-dev-goals

SUSTAINABLE DEVELOPMENT GOALS

17 SDG- Goals

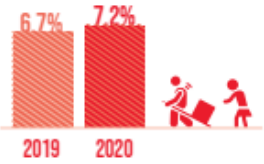
Goal No 1 : No poverty
Goal No 2 : Zero hunger
Goal No 3 : Good health and well-being
Goal No 4 : Quality education
Goal No 5 : Gender equality
Goal No 6 : Clean water and sanitation
Goal No 7 : Affordable and clean energy
Goal No 8 : Decent work and economic growth
Goal No 9 : Industry, innovation and infrastructure
Goal No 10 : Reduced inequalities
Goal No 11 : Sustainable cities and communities .
Goal No 12 : Responsible consumption and production.
Goal No 13 : Climate action
Goal No 14 : Life below water
Goal No 15 : Life on land
Goal No 16 : Peace, justice and strong institutions
Goal No 17 : Partnership for the Goals

1 NO POVERTY

END POVERTY IN ALL ITS FORMS EVERYWHERE

MORE THAN
4 YEARS OF PROGRESS
AGAINST POVERTY
HAS BEEN ERASED
BY COVID-19

WORKING POVERTY
RATE ROSE FOR THE FIRST TIME IN **TWO DECADES**



PUSHING AN ADDITIONAL
8 MILLION WORKERS
INTO POVERTY

RISING INFLATION AND IMPACTS OF WAR IN UKRAINE **FURTHER DERAIL PROGRESS**

NUMBER OF PEOPLE LIVING IN EXTREME POVERTY IN 2022

UNEMPLOYMENT **CASH BENEFITS** DURING THE **PANDEMIC** (2020)

DISASTER-RELATED DEATHS **ROSE SIXFOLD** IN 2020

LARGELY AS A RESULT OF **THE PANDEMIC**

2 ZERO HUNGER

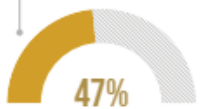
END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

CONFLICT, COVID-19, CLIMATE CHANGE AND GROWING INEQUALITIES
ARE CONVERGING TO UNDERMINE
FOOD SECURITY WORLDWIDE

ABOUT **1 IN 10 PEOPLE** WORLDWIDE ARE **SUFFERING FROM HUNGER**

NEARLY **1 IN 3 PEOPLE** LACK REGULAR ACCESS **TO ADEQUATE FOOD (2020)**

SOARING FOOD PRICES AFFECTED



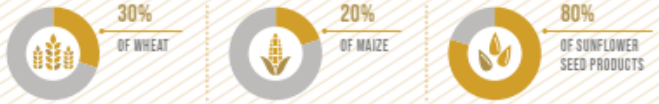
OF COUNTRIES IN 2020
(UP FROM 16% IN 2019)

149.2 MILLION CHILDREN UNDER AGE 5 SUFFER FROM **STUNTING** (2020)

TO REDUCE STUNTING IN CHILDREN **BY 50% BY 2030**, ANNUAL RATE OF DECLINE **MUST DOUBLE** (FROM 2.1 TO 3.9% PER YEAR)

UKRAINE CRISIS TRIGGERED **FOOD SHORTAGES** FOR THE **WORLD'S POOREST PEOPLE**

UKRAINE AND THE RUSSIAN FEDERATION SUPPLY GLOBAL EXPORTS:



3 GOOD HEALTH AND WELL-BEING

ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

Ayushman Bharat

COVID-19

IS THREATENING DECADES OF PROGRESS IN GLOBAL HEALTH

INFECTED MORE THAN **500 MILLION** PEOPLE WORLDWIDE (MID-2022)

LED TO **15 MILLION** DEATHS (2020-2021)

DISRUPTED ESSENTIAL HEALTH SERVICES: **92% OF COUNTRIES** (END 2021)

HALTED PROGRESS ON **UNIVERSAL HEALTH COVERAGE**

GLOBAL LIFE EXPECTANCY

IMMUNIZATION COVERAGE

PREVALENCE OF ANXIETY / DEPRESSION

DEATHS FROM TUBERCULOSIS & MALARIA

22.7 MILLION CHILDREN MISSED BASIC VACCINES IN 2020

3.7 MILLION MORE THAN IN 2019

PANDEMIC CLAIMED THE LIVES OF **115,500 FRONT-LINE** HEALTH-CARE WORKERS

TUBERCULOSIS DEATHS

RISE FOR THE FIRST TIME SINCE 2005

1.2 MILLION (2019) — 1.3 MILLION (2020)

•Health and Wellness Centres (HWCs)
•Pradhan Mantri Jan Arogya Yojana (PM-JAY)

4 QUALITY EDUCATION

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

COVID-19 PANDEMIC

HAS DEEPENED A **GLOBAL LEARNING CRISIS**

147 MILLION CHILDREN MISSED OVER HALF OF IN-PERSON INSTRUCTION IN 2020-2021

24 MILLION LEARNERS (PRE-PRIMARY TO UNIVERSITY LEVEL) **MAY NEVER RETURN TO SCHOOL**

ENTRENCHED INEQUITIES IN EDUCATION HAVE ONLY **WORSENED** DURING THE PANDEMIC

EDUCATION IS A LIFELINE

FOR CHILDREN IN CRISES

REMOTE LEARNING IS OFFERED TO **3 MILLION** UKRAINIAN CHILDREN IN THE CHAOS OF WAR (APRIL 2022)

MANY COUNTRIES ARE **IMPROVING** SCHOOL INFRASTRUCTURE AS CLASSROOMS REOPEN

GLOBALLY, PRIMARY SCHOOLS (2019-2020)

25% LACK — ELECTRICITY — DRINKING WATER — BASIC SANITATION

50% LACK — COMPUTERS — INTERNET ACCESS

5 GENDER EQUALITY

ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

IT WOULD TAKE ANOTHER

40 YEARS

FOR **WOMEN AND MEN** TO BE **REPRESENTED EQUALLY** IN **NATIONAL POLITICAL LEADERSHIP**

AT THE CURRENT PACE

WOMEN'S SHARE IN NATIONAL PARLIAMENTS

WOMEN ACCOUNTED FOR **39%** OF TOTAL EMPLOYMENT IN 2019,

BUT **45%** OF GLOBAL EMPLOYMENT LOSSES IN 2020

MORE THAN 1 IN 4 WOMEN (15+ YEARS)

HAVE BEEN SUBJECTED TO INTIMATE **PARTNER VIOLENCE** (641 MILLION) AT LEAST ONCE IN THEIR **LIFETIME**

GENDER-RESPONSIVE BUDGETING NEEDS TO BE STRENGTHENED

PROPORTION OF COUNTRIES WITH SYSTEMS TO TRACK GENDER-BUDGET ALLOCATIONS (2018-2021)

26% | COMPREHENSIVE SYSTEMS

59% | SOME FEATURES OF A SYSTEM

15% | LACKING MINIMUM ELEMENTS OF SUCH A SYSTEM

ONLY 57% OF WOMEN (15-49 YEARS)

ARE MAKING THEIR OWN INFORMED DECISIONS ON **SEX AND REPRODUCTIVE HEALTH CARE**

(64 COUNTRIES, 2007-2021)

6 CLEAN WATER AND SANITATION

ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

THE WORLD'S **WATER-RELATED ECOSYSTEMS** ARE BEING DEGRADED AT AN ALARMING RATE

OVER THE PAST 300 YEARS,

OVER 85%

OF THE PLANET'S WETLANDS HAVE BEEN **LOST**

FOR AT LEAST **3 BILLION PEOPLE,** THE QUALITY OF THE WATER THEY DEPEND ON IS UNKNOWN DUE TO **A LACK OF MONITORING**

MEETING **DRINKING WATER, SANITATION** AND **HYGIENE** TARGETS BY 2030 REQUIRES A **4X** INCREASE IN THE PACE OF PROGRESS

AT CURRENT RATES, IN 2030

1.6 BILLION PEOPLE WILL LACK SAFELY MANAGED DRINKING WATER

2.8 BILLION PEOPLE WILL LACK SAFELY MANAGED SANITATION

1.9 BILLION PEOPLE WILL LACK BASIC HAND HYGIENE FACILITIES

733+ MILLION PEOPLE LIVE IN COUNTRIES WITH HIGH AND CRITICAL LEVELS OF **WATER STRESS** (2019)

ONLY ONE QUARTER OF REPORTING COUNTRIES HAVE >90% OF THEIR **TRANSBOUNDARY WATERS** COVERED BY **OPERATIONAL ARRANGEMENTS** (2020)

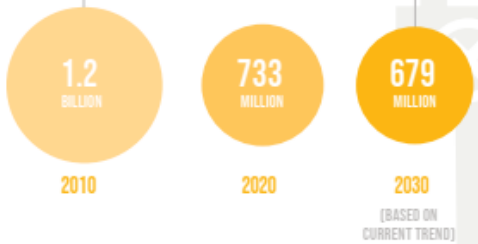
7 AFFORDABLE AND CLEAN ENERGY

ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

IMPRESSIVE PROGRESS IN ELECTRIFICATION HAS SLOWED

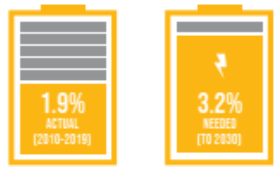
DUE TO THE CHALLENGE OF REACHING THOSE HARDEST TO REACH

NUMBER OF PEOPLE WITHOUT ELECTRICITY



PROGRESS IN ENERGY EFFICIENCY NEEDS TO SPEED UP TO ACHIEVE GLOBAL CLIMATE GOALS

ANNUAL ENERGY-INTENSITY IMPROVEMENT RATE

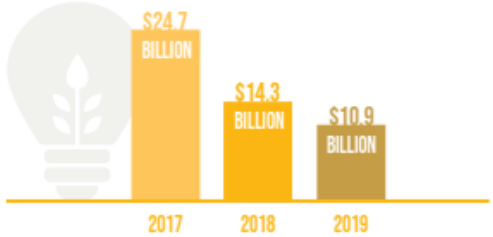


2.4 BILLION PEOPLE

STILL USE INEFFICIENT AND POLLUTING COOKING SYSTEMS

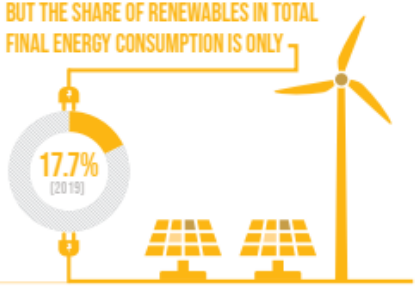
(2020)

INTERNATIONAL FINANCIAL FLOWS TO DEVELOPING COUNTRIES FOR RENEWABLES DECLINED FOR A SECOND YEAR IN A ROW



TOTAL RENEWABLE ENERGY CONSUMPTION INCREASED BY A QUARTER BETWEEN 2010 AND 2019,

BUT THE SHARE OF RENEWABLES IN TOTAL FINAL ENERGY CONSUMPTION IS ONLY



8 DECENT WORK AND ECONOMIC GROWTH

PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL

GLOBAL ECONOMIC RECOVERY IS HAMPERED BY:

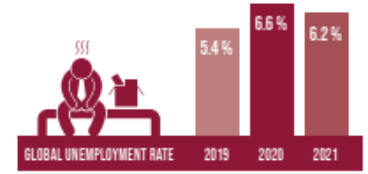
- NEW WAVES OF COVID-19
- RISING INFLATION
- SUPPLY-CHAIN DISRUPTIONS
- POLICY UNCERTAINTIES
- LABOUR MARKET CHALLENGES

GLOBAL ECONOMIC RECOVERY IS FURTHER SET BACK BY THE UKRAINE CRISIS

ANNUAL GROWTH RATE OF GLOBAL REAL GDP PER CAPITA (%)
(2018-2023)

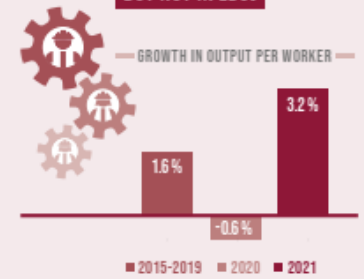
GLOBAL UNEMPLOYMENT

TO REMAIN ABOVE PRE-PANDEMIC LEVEL UNTIL AT LEAST 2023



1 IN 10 CHILDREN ARE ENGAGED IN CHILD LABOUR WORLDWIDE

WORKER PRODUCTIVITY HAS REBOUNDED, BUT NOT IN LDCs



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

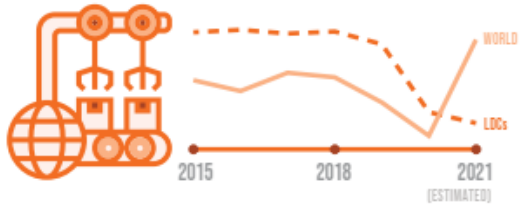
BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

GLOBAL MANUFACTURING

HAS REBOUNDED FROM THE PANDEMIC

BUT LDCs ARE LEFT BEHIND

MANUFACTURING GROWTH

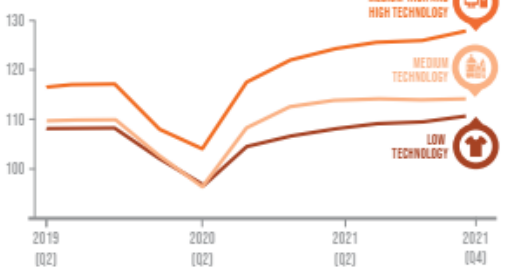


HIGHER-TECHNOLOGY INDUSTRIES

ARE FAR MORE RESILIENT IN CRISES

THAN THEIR LOWER-TECH COUNTERPARTS

MANUFACTURING PRODUCTION INDEX



SMALL-SCALE INDUSTRIES

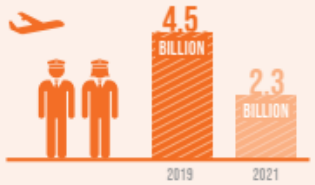
LACK ACCESS TO FINANCIAL SUPPORT FOR RECOVERY

ONLY 1 IN 3 SMALL MANUFACTURERS
ARE BENEFITING FROM A LOAN OR LINE OF CREDIT
(2020-2021)

PASSENGER AIRLINE INDUSTRY

IS STILL STRUGGLING TO

RECOUP CATASTROPHIC LOSSES



2.3 BILLION PASSENGERS IN 2021, COMPARED WITH 4.5 BILLION IN 2019

1 IN 3 MANUFACTURING JOBS

ARE NEGATIVELY IMPACTED BY THE CRISIS

10 REDUCED INEQUALITIES

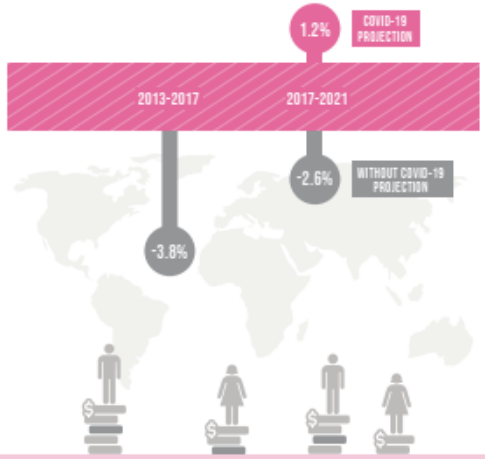
REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

PANDEMIC

HAS CAUSED THE FIRST RISE IN

BETWEEN-COUNTRY INCOME INEQUALITY IN A GENERATION

CHANGE IN BETWEEN-COUNTRY INCOME INEQUALITY
(2013-2021)



5,895 MIGRANTS

LOST THEIR LIVES IN 2021

THE DEADLIEST YEAR SINCE 2017 FOR MIGRANTS

1 IN 5

PEOPLE HAVE EXPERIENCED

DISCRIMINATION

ON AT LEAST ONE OF THE GROUNDS PROHIBITED UNDER INTERNATIONAL HUMAN RIGHTS LAW

GLOBAL REFUGEE FIGURE HITS RECORD HIGH

WAR IN UKRAINE PUSHES THE WORLD TOTAL EVEN HIGHER

NUMBER OF REFUGEES OUTSIDE THEIR COUNTRY OF ORIGIN INCREASED BY 44% BETWEEN 2015 AND 2021

11 SUSTAINABLE CITIES AND COMMUNITIES

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

NUMBER OF COUNTRIES WITH LOCAL DISASTER RISK REDUCTION STRATEGIES

NEARLY DOUBLED

BETWEEN 2015 AND 2021 (51 TO 98 COUNTRIES)

LEAVING NO ONE BEHIND WILL REQUIRE AN **INTENSIFIED FOCUS** ON

1 BILLION SLUM DWELLERS

AS CITIES GROW, **MUNICIPAL SOLID WASTE** PROBLEMS **MOUNT**

GLOBALLY, **MUNICIPAL SOLID WASTE**

82% COLLECTED

55% MANAGED IN CONTROLLED FACILITIES (2022)

IN SUB-SAHARAN AFRICA, LESS THAN 1/3 OF CITY DWELLERS HAVE CONVENIENT ACCESS TO **PUBLIC TRANSPORTATION**

99% OF THE WORLD'S URBAN POPULATION BREATHE **POLLUTED AIR**

ACCORDING TO NEW WORLD HEALTH ORGANIZATION AIR QUALITY GUIDELINES OF $PM_{2.5}$ <5 UG/M³

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

UNSUSTAINABLE PATTERNS

OF **CONSUMPTION AND PRODUCTION** ARE ROOT CAUSE OF

TRIPLE PLANETARY CRISES

CLIMATE CHANGE | BIODIVERSITY LOSS | POLLUTION

OUR RELIANCE ON **NATURAL RESOURCES** IS INCREASING

RISING OVER **65%** GLOBALLY FROM 2000 TO 2019

TOO MUCH FOOD IS BEING LOST OR WASTED

IN EVERY COUNTRY EVERY DAY

HARVESTING → TRANSPORT → STORAGE → PROCESSING

13.3% OF THE WORLD'S FOOD IS LOST AFTER HARVESTING AND BEFORE REACHING RETAIL MARKETS

HOUSE → GROCERY STORE → HOUSEHOLD → RESTAURANT

17% OF TOTAL FOOD IS WASTED AT THE CONSUMER LEVEL

VAST MAJORITY OF THE WORLD'S ELECTRONIC WASTE IS **NOT BEING SAFELY MANAGED**

E-WASTE COLLECTION RATES (2019)

- 1.2% LATIN AMERICA AND THE CARIBBEAN
- 1.6% SUB-SAHARAN AFRICA
- 46.9% EUROPE AND NORTHERN AMERICA
- 22.8% GLOBAL AVERAGE

13 CLIMATE ACTION

TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

CLIMATE CHANGE

IS HUMANITY'S **"CODE RED" WARNING**

OUR WINDOW TO AVOID CLIMATE CATASTROPHE IS CLOSING RAPIDLY

DIFFERENT TEMPERATURE SCENARIOS FOR CORAL REEFS

CORAL REEFS

SEA LEVEL WILL RISE 30-60 CM BY 2100

SEA LEVEL RISE

DROUGHT ESTIMATED TO DISPLACE 700 MILLION PEOPLE BY 2030

DROUGHTS

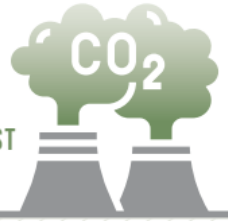
MEDIUM- TO LARGE-SCALE DISASTERS WILL INCREASE 40% FROM 2015 TO 2030

DISASTERS

ENERGY-RELATED CO_2 EMISSIONS INCREASED

6% IN 2021

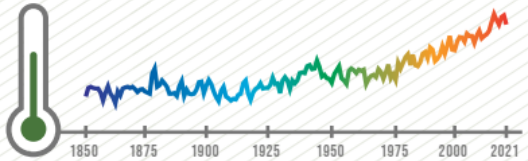
REACHING HIGHEST LEVEL **EVER**



CLIMATE FINANCE FALLS SHORT OF **$100 BILLION** YEARLY COMMITMENT

DEVELOPED COUNTRIES PROVIDED **$79.6 BILLION** IN CLIMATE FINANCE IN 2019

RISING GLOBAL TEMPERATURES CONTINUE UNABATED, LEADING TO **MORE EXTREME WEATHER**



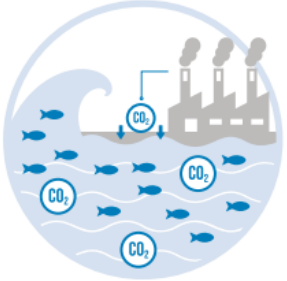
14 LIFE BELOW WATER

CONSERVE AND SUSTAINABLY USE THE OCEANS, SEA AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

OUR OCEAN

THE PLANET'S LARGEST ECOSYSTEM

IS ENDANGERED



INCREASING ACIDIFICATION IS THREATENING MARINE LIFE AND LIMITING THE OCEAN'S CAPACITY **TO MODERATE CLIMATE CHANGE**

THE OCEAN **ABSORBS** AROUND **1/4** OF GLOBAL ANNUAL **CO_2 EMISSIONS**

PLASTIC POLLUTION IS CHOKING THE OCEAN

17+ MILLION METRIC TONS OF PLASTIC ENTERED THE OCEAN IN 2021

PROJECTED TO **DOUBLE OR TRIPLE** BY 2040

90% OF THE WORLD'S FISHERS ARE EMPLOYED IN **SMALL-SCALE FISHERIES**

WHO NEED ACCELERATED SUPPORT DUE TO THE **PANDEMIC**

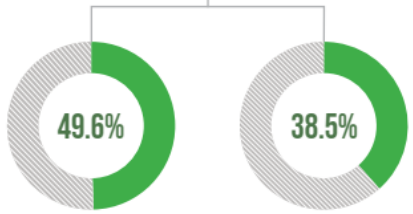
15 LIFE ON LAND

PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS

10 MILLION

HECTARES OF FOREST ARE DESTROYED EVERY YEAR

ALMOST 90% OF GLOBAL DEFORESTATION IS DUE TO AGRICULTURAL EXPANSION



133 PARTIES HAVE RATIFIED THE NAGOYA PROTOCOL, WHICH ADDRESSES ACCESS TO GENETIC RESOURCES AND THEIR FAIR AND EQUITABLE USE

BIODIVERSITY IS LARGELY NEGLECTED IN COVID-19 RECOVERY SPENDING

AROUND 40,000 SPECIES ARE DOCUMENTED TO BE AT RISK OF EXTINCTION OVER THE COMING DECADES

NEARLY HALF OF FRESHWATER, TERRESTRIAL AND MOUNTAIN KEY BIODIVERSITY AREAS ARE PROTECTED

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS

PLEAS FOR

GLOBAL PEACE GROW LOUDER

WORLD IS WITNESSING LARGEST NUMBER OF VIOLENT CONFLICTS SINCE 1946

AND

A QUARTER OF THE GLOBAL POPULATION LIVES IN CONFLICT-AFFECTED COUNTRIES (END 2020)

1/3 OF THE WORLD'S POPULATION MOSTLY WOMEN FEAR WALKING ALONE IN THEIR NEIGHBOURHOODS AT NIGHT

A RECORD 100 MILLION PEOPLE HAD BEEN FORCIBLY DISPLACED WORLDWIDE (MAY 2022)

GLOBAL HOMICIDE RATE DECLINED 5.2% BETWEEN 2015 AND 2020

FALLS SHORT OF THE "SIGNIFICANT REDUCTION" BY 2030 TARGETED IN THE SDGs

CORRUPTION IS FOUND IN EVERY REGION

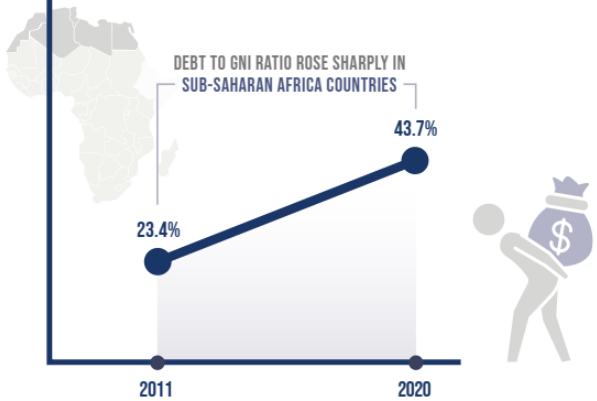
ALMOST 1 IN 6 BUSINESSES HAVE RECEIVED BRIBE REQUESTS FROM PUBLIC OFFICIALS

17 PARTNERSHIPS FOR THE GOALS

STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

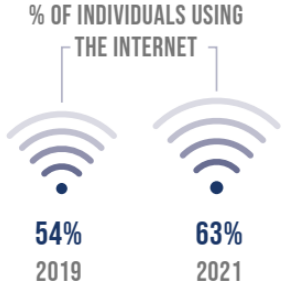
RISING DEBT BURDENS

THREATEN DEVELOPING COUNTRIES' PANDEMIC RECOVERY



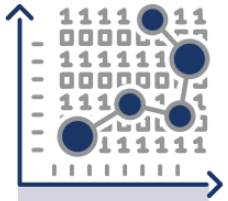
INTERNET

UPTAKE **ACCELERATED** DURING THE PANDEMIC



IN 2021

- **NET ODA** REACHED A NEW HIGH OF **$177.6 BILLION**, LARGELY DUE TO COVID-RELATED AID
- **FOREIGN DIRECT INVESTMENT** REBOUNDED TO **$1.58 TRILLION**, UP 64% FROM 2020
- **REMITTANCES** REACHED **$605 BILLION**, UP 8.6% FROM 2020



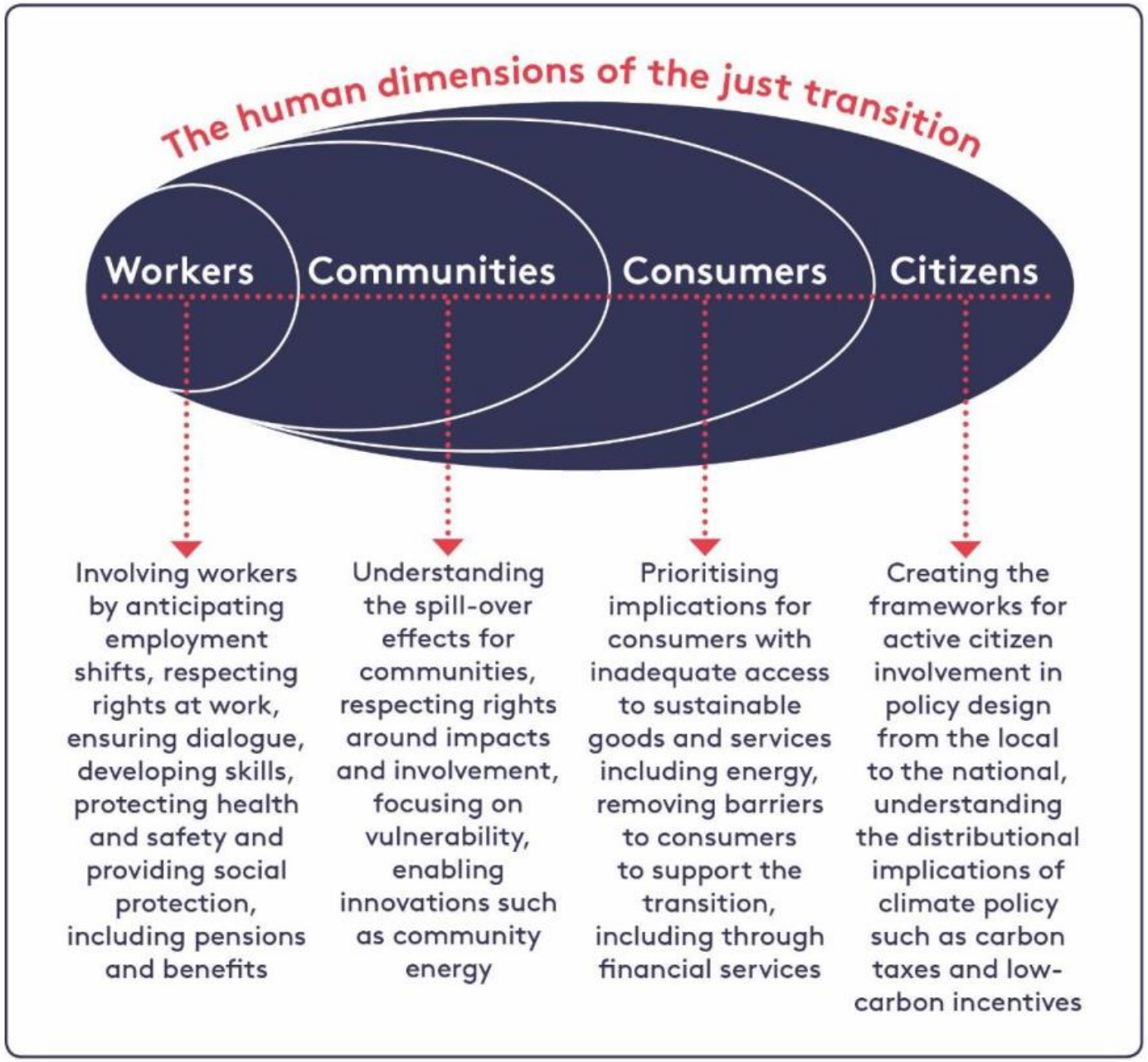
ODA FOR SDG DATA **DECLINED** BY MORE THAN **18%** IN 2020

AN EXAMPLE

Just Transition in Energy Sector

Coal→ Oil → Gas → Wind, Solar, Tidal, etc renewables

The consequences of failing to advance a just transition are severe for climate progress



RICH LAND POOR PEOPLE

Illegal & Unscientific Mining

Impact of ironore mining in Agriculture of Goa

Coal Theft

Illegal Mica Mining/Theft in Giridih

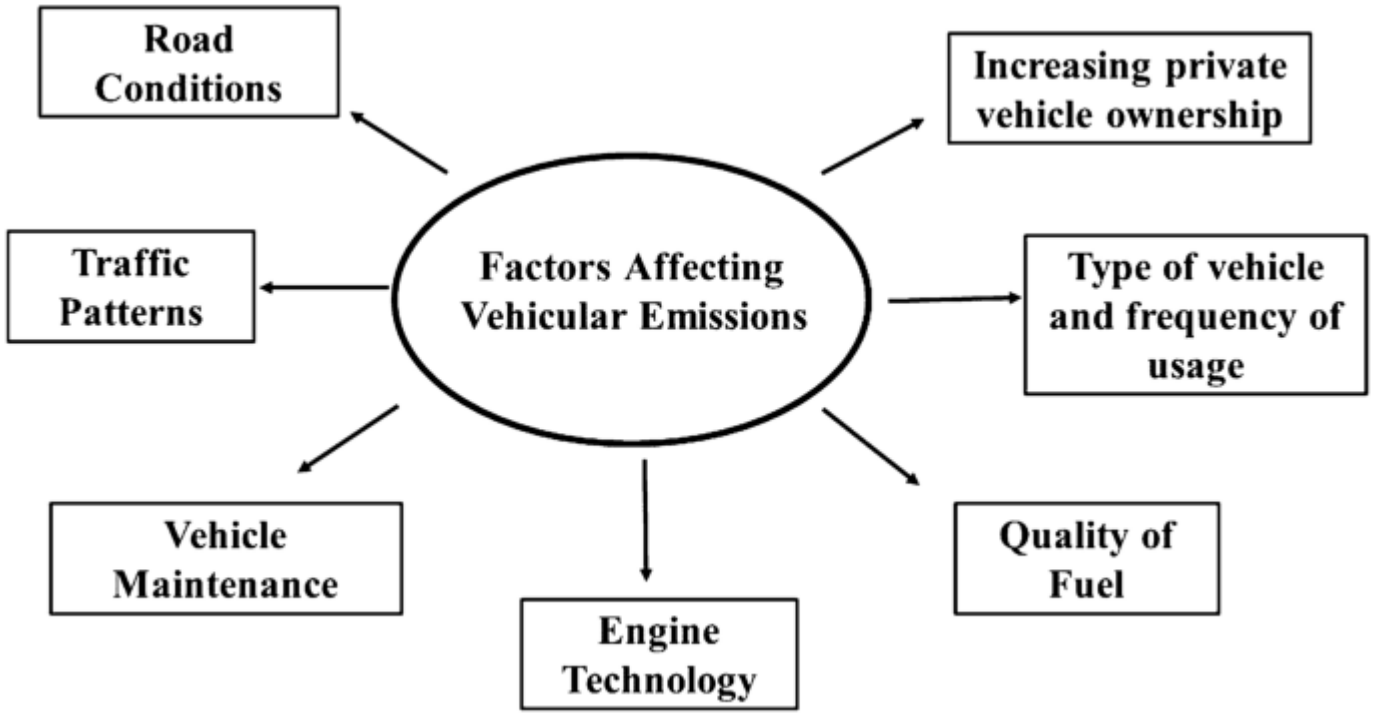
Illegal Coal Mining/Theft in JH, WB

IMPACT OF INDUSTRIES, TRAFFIC, MINING ON ENVIRONMENT

GLOBAL REPORTING INITIATIVE AND TRIPLE BOTTOM LINE CONCEPT

- The Global Reporting Initiative (GRI) was started in 1997 as a joint initiative of United Nation Environment Program (UNEP) and an NGO CERES.
- The goal was to enhance the quality, rigor and utility of Sustainability Reporting.
- Sustainability Reporting is an approach to detailed reporting of financial, environmental and social performance indicator (Triple Bottom Line Reporting).
- The GRI Sustainability Reporting Guidelines provide a detailed standard for measurement of economic (5), environmental(10) and social (21) performance.

https://www.globalreporting.org/


Road Conditions
Increasing private vehicle ownership
Traffic Patterns
Factors Affecting Vehicular Emissions
Type of vehicle and frequency of usage
Vehicle Maintenance
Engine Technology
Quality of Fuel