

3. Global Climate Risk Index: Concerns for India

Prelims Level: Environment

Mains Level: GS-III Conservation, Environmental Pollution and Degradation, Environmental Impact

Assessment.

- Around the world, people are experiencing both the subtle and stark effects of climate change. Gradually **shifting weather patterns, rising sea levels** and more **extreme weather events** are all clear and devastating evidence of a rapidly changing climate. The impacts of climate change affect every country on every continent. They're creating unprecedented challenges for millions of people already burdened by poverty and oppression. The devastating consequences are felt in **both rich and poor countries** across the globe.
- As per a report released by international environment think-tank **Germanwatch**, around 60 million people were affected by extreme weather in 2018. **India** recorded the **highest number of fatalities** due to climate change and the **second highest monetary losses** from its impact last year.

The rich, the poor and the Earth:

- The Mother Earth has shown equality between both the rich and the poor countries, in terms of damages caused due to Climate Change. The **High-Income Countries**, are also affected due to changes in global climate, where their **damage is predominantly economical**. Countries like Germany and Japan, the face of industrialized nations, face heatwave and droughts.
- The **Low-Income and Middle-Income Countries** face both economic and human loss. These countries are more vulnerable as they **do not have finance to adapt or infrastructure to mitigate** the damages caused by the climate extremities.
- **The Climate Risk Index**, has another set of ranking for the period 1999-2018 — which is based on average values over a twenty-year period. In the 1999 to 2018 period Puerto Rico is the most vulnerable followed by Myanmar, Haiti, Philippines and Pakistan. **India** is ranked **17th under long term vulnerability**.

India's Increasing Vulnerability:

- In the **Climate Risk Index 2020**, published by German watch, **India's rank** has worsened from the **14th spot in 2017 to 5th in 2018** in the global vulnerability ladder. The increasing vulnerability is attributed to the increase in the spells of severe rainfalls and

its associated floods and landslides. In 2018, the **South-West Monsoon** severely affected the country.

**“No country is immune to the Climate Change,
but India is Particularly Vulnerable”**

- The 2018 **Kerala floods**, which is termed as **the worst flood in Kerala in nearly a century**, has claimed around 400 lives and also made more than two lakh people to leave their homes.
- The **cyclones Titli and Gaja** hit the coastal states of India **left around four lakh citizens without electricity** for days.
- **Heat** related disasters like heat waves have created **severe economic damages**.

India and the Anthropocene:

- Climate change **impacts the Economic Performance and affects lives of millions** in any country. India is highly vulnerable due to its high proportion of population and the pressure it exerts on water, air, soil and forest. The **growing population and poverty**, increases the risks associated.

**“For India, Climate Change is, not just an Environmental concern,
But a biggest developmental challenge.”**

- According to **IMD data**, India’s Average temperature has risen by **0.6°C**, between 1901-10 to 2009-18.
- The **World Bank data**, claims that Climate Change could push the average temperature in India by **29.1°C**, by the end of the century from the current **25.1°C**. And this could impact the GDP per capita in the future.
- According to the **Economic Survey 2018**, the climate change is taking toll on both **agricultural productivity and farmers income**.
- Droughts and extreme temperature, may shrink farmer’s income by **4-14%**. In the **construction sector**, increase in the temperatures, makes the life of the workers miserable, and also decreases their productivity.
- In the case of **Agriculture**, the climate change may affect the cultivation of crucial tropical crops like Banana.
- **India** is the **world’s largest cultivator** and consumer of banana. According to a study, the rising temperatures may cause decline banana productivity.

- **Some parts of India are more vulnerable than others** – Average temperature in the last decade increased by 1°C in Rajasthan, Gujarat, Tamil Nadu, Kerala and the parts of North Eastern India, compared to the historical average in 1950-1980 period.
- **Cities are getting hotter-** there is an increase in number of extremely hot days across the cities in India, with, the cities having high economic activities are directly linked to increase in temperature. This causes, **increase in the occurrence and the spread of diseases**, which in turn, leads to **decrease in the productivity**.
- According to the **Journal Energy and Environment Science**, Climate change may leave India without enough water even to cool the power plants, in the near future.

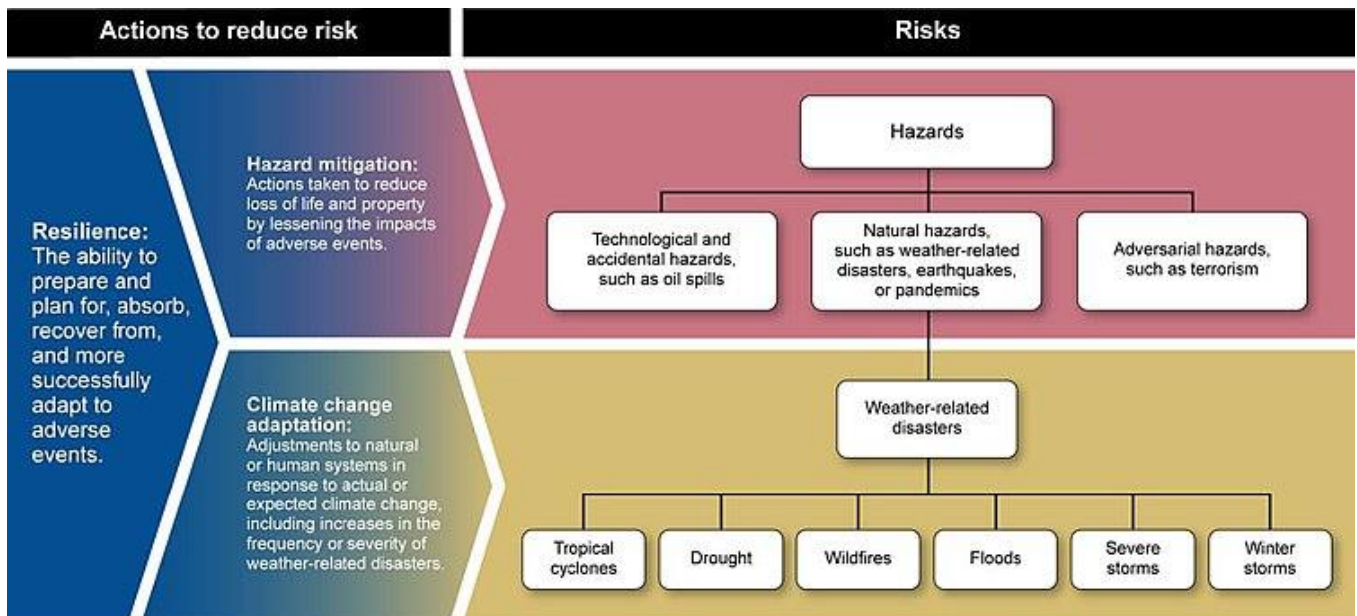
Concerns for India:

- 10% of India's **wildlife** is threatened with extinction.
- **Agricultural bio-diversity** has seen significant decline, in some regions the loss is severe, with loss of around 90% of the bio-diversity.
- Around half of the available **water bodies are heavily polluted** and they are neither potable nor can be used for agricultural purposes.
- More than 2/3rd of the **land has been degraded** to the level of sub-optimal productivity.
- **The air pollution** is growing, with more cities facing higher levels of pollution.
- **Electronic and chemical wastes** that are produced are far against our capacity to recycle or even manage.

What India Needs?

- According to **International Energy Agency**, **India** stands **second in the coal production**, next only to China. India also imports coal, to feed its starving thermal power plants. India receives a larger share of its electricity from coal. Therefore, India **needs to shift its focus towards non-fossil**, renewable energy to reduce its carbon emissions. India's **inefficient agricultural policies**, should be tweaked to reduce the excessive usage of water, fertilizers and electricity.

“Managing the unavoidable, and also, avoiding the unavoidable”



Source: GAO analysis of Presidential Policy Directive B, previous GAO work, and National Oceanic and Atmospheric Administration data. | GAO-16-454

- **Mitigation methods** – Increasing the non-fossil fuel capacity, increasing energy efficiency etc.,
- **Adaptation methods** – Improving the irrigation methods, reforestation, geo-engineering etc.,
- While India has left no stones unturned in its efforts towards climate change mitigation, India's adaptation efforts are still in development stage. India needs to enhance its political visibility of adaptation to entrain the adaptation process.
- India has been constantly working towards achieving the Sustainable Development Goals (SDG) of ending poverty, combating inequality and tackling the climate change. In the upcoming **Conference of Parties (CoP-25)** of UNFCCC, to be held in Madrid, India's approach is expected to be guided by **the principles of Equity & Common but Differentiated Responsibilities and Respective Capability (CBDR-RC)**.

“The Time for talking is over, the world needs to act now”

- Prime Minister of India, in the **Climate Action Summit**, convened by UN Secretary General, stated India's plan **to scale up its renewable energy target to 450GW**. India has also taken steps to rise up a **coalition for disaster resilient infrastructure**.
- India, through its **International Solar Alliance**, had brought a cohesive and robust global body which could win the twin goal of adaptation and integration of energy resources along with the climate change. India also ratified the **Paris Climate Agreement**, that seeks to limit Earth's warming to below 2°C of pre-industrial levels.

Way Forward:

- **Inter-linking** of rivers without compromising the sustainability.
- Development of **drought resistant** crops.
- Moving towards High Yielding crops like **GM crops**.
- Moving towards **non-fossil**, renewable energy resources.

While Mitigation efforts can reduce the economic damages incurred by the developed countries, the less developed and the developing countries need to push towards adaptation methodologies, to build a climate resilient economy, that can sustain climate change shocks in the future. To build such economy, they need technology and finance which must be made available through avenues like **climate financing** by the developed countries.

