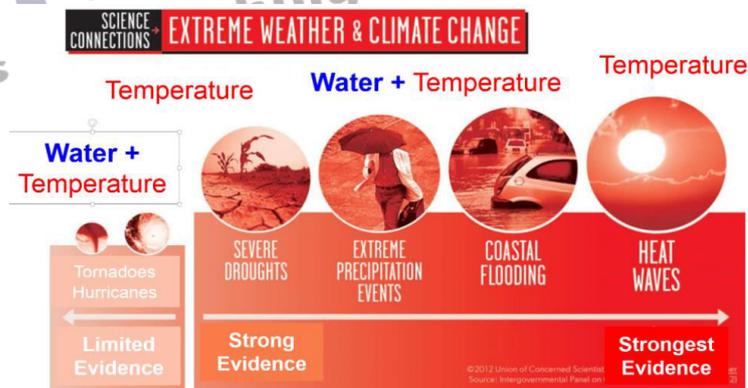


CLIMATE

The severe climate disasters of 2022

- ❖ **CONTEXT: Representatives from nations around the world are heading towards the concluding phase of the ongoing United Nations Climate Change Conference (COP 27) in Sharm el-Shaikh, Egypt.**
- The conference has witnessed nations participating in discussions that emphasize climate finance, including adaptation and mitigation finance, by bringing the concept of 'loss and damage' into the forefront. The world's biggest emitters – China, the United States, the European Union and India – account for more than half of historical emissions of greenhouse gases.
- As developing and vulnerable nations like India continue to demand compensation from developed nations for climate-induced damages, we look back at global catastrophes which severely impacted life on Earth during the year.
- ❖ **Pakistan floods: The worst in the country's recent history**
- According to World Meteorological Department "Human-caused climate change likely increased the intense rainfall that flooded large parts of Pakistan."
- Pakistan recorded 62 per cent less than normal rainfall in the month of March, and the warmest April preceding the monsoon season. Glaciers melted as a result of these heat waves, which led rivers to swell. Access to basic necessities became difficult for 33 million people of Pakistan's 220 million population.
- Extreme rainfall further triggered the most devastating floods from June to September 2022. Over 1,500 people were killed, with millions being displaced and developing serious health issues such as skin infections, malaria and diarrhoea. A national emergency was declared on August 26, 2022. According to a Reuters report, the overall damages in the nation were estimated at about \$30 billion.
- At COP27, the country's Prime Minister Shehbaz Sharif sought debt relief and compensation as a part of "loss and damage" funds for disaster-hit nations.
- ❖ **Hurricane Ian in the US: Costliest climate-induced disaster of the year**
- NASA data revealed that warm ocean waters in the Gulf of Mexico powered Hurricane Ian in the US towards the end of September 2022, making it one of the strongest hurricanes to hit the country in recent memory. About 101 lives were lost, and monetary losses worth more than \$100 billion, were suffered.
- The escalation brought severe floods, relentless rains and strong winds to southwestern Florida. According a report, "La Niña", fueled "favorable conditions for hurricanes in the North Atlantic over the past three years." Warmer ocean waters strengthen and sustain such storms.
- ❖ **European droughts: Likely to have been the 'worst in 500 years'**
- Europe was struck by two extreme heat waves in June and July 2022. As per a quarterly disaster report published by insurance agency Aon in October 2022, heat waves claimed approximately 16,000 lives.
- Following the deadly summer heat, many regions of Europe witnessed severe droughts since the beginning of this year, which worsened in the month of August.
- Water levels in Europe's biggest rivers – Rhine, Po, Loire, and Danube – shrunk, and dry conditions continue to prevail in different parts of the continent.
- The Global Drought Observatory (GDO) report by the European Commission's research wing, declared 47% of the continent in "warning" conditions, while another 17% remained on alert.
- The heatwave and water shortages have "created an unprecedented stress on water levels in the entire EU."
- According to a report by World Weather Attribution, "human-induced climate change – especially high temperatures – increased the likelihood of observed soil moisture drought events." But even in the UK, heatwaves and drought pushed trees into their "survival modes," which made them turn into an autumnal shade in August 2022.
- North America, mainland China and other parts of the Northern Hemisphere also saw extreme heat conditions during the summer of 2022.
- ❖ **Spain and Portugal: Driest climate in 1200 years**
- An atmospheric high-pressure system, which causes dry air to descend over subtropical regions in the Northern Hemisphere during winter and spring seasons, called Azores high, has the ability to block wet weather outlets. This caused dry conditions in Iberian peninsula in southwestern Europe, and the Mediterranean region. Spain and Portugal hence faced the driest weather in 1,200 years, along with wildfires.



- Scientists claim that the “most frequent Azores highs could only have been caused by the climate crisis, caused by humanity’s carbon emissions.” Rainfall in the region is likely to drop by 10-20% by 2100, severely impacting food production.
- ❖ **India recorded natural disasters almost every day in 2022**
- According to a report India recorded “extreme weather events on 241 of 273 days” in the first nine months of 2022.
- Thunderstorms, persistent rains, cyclones, droughts, heat waves, lightning, floods and landslides occurred all throughout these months. Himachal Pradesh recorded the highest number of deaths (359), followed by Assam and Madhya Pradesh.
- Overall, these disasters claimed about “2,755 lives, affected 1.8 million hectares (ha) of crop area, destroyed over 416,667 houses and killed close to 70,000 livestock.” The CSE report describes these disasters as “the watermark of climate change.”
- ❖ Besides these climate events, on the whole, increasing surface temperatures and global warming continue affecting Earth. According to a study by the US National Oceanic and Atmospheric Administration (NOAA), in 2022, the “June-August global land and ocean surface temperature were 1.6°F above the 20th-century average of 60.1°F. August was the sixth-warmest, and October the fourth-warmest, in NOAA’s 143-year record.

PRELIMS

1. WHO launches new strategy to tackle antimalarial drug resistance in Africa

❖ **CONTEXT: The World Health Organization has launched a new strategy to combat antimalarial drug resistance in Africa November 17, 2022. WHO released the strategy during World Antimicrobial Awareness Week — an annual global campaign to raise awareness about the growing threat of antibiotic resistance.**

- Some recent reports from Africa indicated growing parasite resistance to artemisinin (the major component of malaria drugs). There are alarming indications that some parasites are resistant to drugs that are combined with artemisinin, the WHO said in a press release.
- Some 96 per cent of malaria infections and fatalities worldwide in 2020 were from sub-Saharan Africa. Nearly four in five of these deaths were among children under five.
- Artemisinin resistance has been identified in several countries in Africa (notably in Uganda, Rwanda and Eritrea). Cases are rising in many countries and progress made towards fighting malaria has stalled in recent years.
- New dangers, such as antimalarial drug resistance, could erode the progress made over the last two decades. Full-blown treatment failure could result in very dangerous outcomes, given Africa’s overwhelming reliance on artemisinin-based combination therapies (ACT).
- Resistance to artemisinin alone seldom results in treatment failure. However, resistance to artemisinin and the partner drug in ACT therapy can significantly increase treatment failure rates.
- The new strategy builds on the knowledge from earlier and current global programmes. It aims to reduce the threat and effects of antimalarial drug resistance in Africa through four pillars.
 - ✓ Strengthening surveillance of antimalarial drug efficacy and resistance.
 - ✓ Optimising and regulating diagnostics and therapeutics to limit drug pressure through pre-emptive measures.
 - ✓ Reacting to resistance by limiting the spread of antimalarial drug-resistant parasites
 - ✓ Stimulating research and innovation to leverage existing tools and develop new tools against antimalarial drug resistance.
- Although antimalarial drug resistance is a serious cause for concern, artemisinin-based combination therapies remain the best available treatment for uncomplicated P falciparum malaria and can continue to prescribe and use artemisinin-based combination therapies to treat confirmed malaria.
- Six different ACTs are currently advised by WHO as first- and second-line treatments for uncomplicated P falciparum malaria.
- Artemisinin and its derivatives, isolated from the plant artemisia annua, are potent medications renowned for their quick reduction of Plasmodium parasite counts in the blood of malaria patients.
- ACTs combine with partner drugs — artesunate, artemether or dihydroartemisinin. Artemisinin compounds lessen the number of parasites during the first three days of treatment. The partner drug’s role is to eliminate the remaining parasites and treat the infection.

2. Hwasong-17

❖ **CONTEXT: North Korea said it test fired its massive new Hwasong-17 intercontinental ballistic missile (ICBM), in what analysts said may be the first successful launch of the system after doubts were raised about earlier claims.**

➤ **How big is North Korea’s Hwasong-17 ‘monster missile’?**

- The Hwasong-17 is nuclear-armed North Korea’s biggest missile yet, and is the largest road-mobile, liquid-fuelled ICBM in the world.



- Its diameter is estimated to be between 2.4 and 2.5 metres, and its total mass, when fully fuelled, is likely somewhere between 80,000 and 110,000 kg, according to 38 North, a U.S.-based programme that monitors North Korea.
- Unlike North Korea's earlier ICBMs, the Hwasong-17 is launched directly from a transporter, erector, launcher (TEL) vehicle with 11 axles.
- **How far can it fly?**
- The missile launched on recently flew nearly 1,000 km (621 miles) for about 69 minutes and reached a maximum altitude of 6,041 km.
- According to Japan the weapon could travel as far as 15,000 km (9,320 miles), enough to reach the continental United States.
- **Previous launches**
- North Korea previously claimed it had successfully launched a Hwasong-17 for the first time on March 24 2022, when state media said it flew for 67.5 minutes to a range of 1,090 km (681 miles) and a maximum altitude of 6,248.5 km (3,905 miles).
- After that launch, however, analysts and intelligence officials in South Korean and the United States had concluded that the North had actually launched a Hwasong-15, which was first tested in 2017.
- **Previous sightings**
- North Korea first unveiled the previously unseen ICBM at an unprecedented pre-dawn military parade in October 2020, with analysts noting it appeared "considerably larger" than the Hwasong-15.
- It was displayed a second time at a defence exhibition in Pyongyang in October 2021. After examining photos of the exhibit, analysts concluded the official designation of this large ICBM is most likely "Hwasong-17", not Hwasong-16.
- Officials in Seoul and Washington said launches on Feb. 27 and March 5 involved the Hwasong-17 ICBM system, though they did not test its full capability or range. Some analysts say those tests may have involved only one stage.
- **Design**
- The Hwasong-17's size has prompted analysts to speculate that it will be designed to carry multiple warheads and decoys to better penetrate missile defences.
- Some observers said that the satellite technology that North Korea claimed to have tested in the Feb. 27 and March 5 launches could also be used for a multiple independently targetable reentry vehicle (MIRV) system, potentially allowing a single missile to drop nuclear warheads on different targets.
- North Korea has made preparations to resume nuclear testing for the first time since 2017, South Korea and the United States say, and officials say new tests could help develop warheads for MIRV systems.
- 3. **Koronivia Joint Work on Agriculture (KJWA)**
- ❖ **CONTEXT: India expressed concern over the draft decision text on the Koronivia Joint Work on Agriculture and claimed that by insisting on extending the scope for mitigation to agriculture, developed nations are preventing a pro-poor and pro-farmer decision, endangering the very foundation of global food security.**
- ❖ **About**
- The Koronivia Joint Work on Agriculture (KJWA) is a landmark decision under the United Nations Framework Convention on Climate Change (UNFCCC) that recognizes the unique potential of agriculture in tackling climate change.
- The Koronivia decision covers six interconnected subjects, including soils, nutrient use, water, livestock, techniques for evaluating adaptation, and the socio-economic and food security implications of climate change throughout the agricultural sectors.
- The choice is in line with FAO's main mission to end hunger, food insecurity, and malnutrition; lessen rural poverty; and increase the productivity and sustainability of agriculture, forestry, and fisheries.
- ❖ **India's argument**
- India has argued that rich countries aim to use the world's agriculture, lands, and seascapes as a site of mitigation for their wasteful, excessive emissions, which is why they are attempting to expand the scope of mitigation to include agriculture.
- India claimed that these are "survival" emissions from the poor, not "luxury" emissions.
- Agriculture is practised by small and marginal farmers in most developing countries around the world who till hard, toil hard, and brave the vagaries of harsh weather and climate variability as well as the additional stress of climate change."
- "The developed countries' high historical cumulative emissions are to blame for the current climate disaster in the world.
- By making any significant changes to their way of life, these countries are unable to cut their internal emissions.
- Instead, they are looking for less expensive options abroad, according to those familiar with the negotiations who asked to remain anonymous.

- The developed nations have not put any new financial offers on the table, and the GEF and GCF, which are currently functioning interim operating institutions, are being persuaded to tackle the developed nations' excessive emissions by making agriculture a site of mitigation.
- By pushing to broaden the scope for agricultural mitigation, the rich nations are impeding a pro-poor and pro-farmer decision and jeopardising the basic basis of global food security.
- India depends heavily on agriculture. Almost half of all Indians rely on farm-derived income.
- ❖ **Global Environment Facility**
- The Global Environment Facility is the world's largest funder of nature restoration, biodiversity protection, pollution reduction, and climate change response in developing countries.
- It finances international environmental conventions and country-driven initiatives that generate global benefits.
- The GEF partnership connects 184 member governments with civil society, private sector, and the Indigenous Peoples and works closely with other environmental financiers for efficiency and impact.
- The five focal areas are biodiversity loss, chemicals and waste, climate change, international waters, and land degradation – and take an integrated approach to support more sustainable food systems, forest management, and cities.
- ❖ **Green Climate Fund (GCF)**
- GCF is a unique global platform that invests in low-emission and climate-resilient development as a way to combat climate change.
- GCF was created by 194 governments to restrict or lower greenhouse gas (GHG) emissions in developing nations and to support disadvantaged societies in their adaptation to climate change's inevitable effects.
- It is a critical element of the historic Paris Agreement - is the world's largest climate fund, mandated to support developing countries raise and realize their Nationally Determined Contributions (NDC) ambitions towards low-emissions, climate-resilient pathways.
- 4. **National Education Society for Tribal Students (NESTS)**
- ❖ **Context: A Memorandum of Understanding has been signed between National Education Society for Tribal Students (NESTS) and 1M1B Foundation (1M1B) at NESTS headquarters, New Delhi.**
- NESTS in partnership with the implementing agency, 1M1B aims to engage students of EMRSs in nation-building by enabling teachers and students to understand the world of possibilities offered by emerging technologies and become creators using Augmented reality (AR) and Virtual Reality (VR) to build India's Metaverse.
- The program will capacitate the teachers & students with Augmented Reality (AR) and Virtual Reality (VR) skills using the AR-VR skills curriculum launched by CBSE.
- The programme objectives include conduct of training and capacity-building programs for teachers and students of Eklavya Model Residential Schools (EMRSs).
- In pilot phase it is being implemented in 2 states, namely Rajasthan and Uttarakhand.
- **1M1B**
- 1 Million For 1 Billion (1M1B), is a USA based Not for Profit Company accredited to United Nations Organization with special consultative status to the UN Economic and Social Council (ECOSOC).
- It is associated with the United Nations Department of Global Communications and also is a registered credible organization with NGO Darpan Portal of NITI Aayog.
- It is a social innovation and future skills initiative aligned to the United Nations Sustainable Development Goals (SDGs).
- **The NESTS**
- National Education Society for Tribal Students (NESTS), an autonomous organization established under Ministry of Tribal.
- NESTS aimed at providing high quality education to the tribal students in their own environment.

ANSWER WRITTING

Q. Is inclusive growth possible under market economy? State the significance of financial inclusion in achieving economic growth in India.

In a market economy, the production of goods and services is directed by the laws of supply and demand and by profit with no government intervention.

The Organisation for Economic Co-operation and Development (OECD) defines inclusive growth as economic growth that is distributed fairly across society and creates opportunities for all.

Achieving inclusive growth in a market economy is a difficult prospect.

- The absence of government intervention does not leave any substantial scope for social welfare schemes.
- The profit-driven efficient utilisation does not take into consideration the deprivations faced by the marginalised sections of the population.
- This often results in the further socio-economic weakening of these sections such as job loss, etc.
- Market economy encourages privatisation, which in an unregulated manner, can prove to be detrimental to a large section of the population (high education fees and exorbitant prices of vaccines, essential medicines, etc.).

Financial Inclusion is the process of ensuring access to financial services for vulnerable groups at affordable costs.

- The government has initiated several schemes such as PM Jan Dhan Yojana (PMJDY) and PM Mudra Yojana (PMJY) aimed at effecting financial inclusion in the country.
 - These schemes are primarily to increase the coverage of the formal financial services in the country and enable a larger number of people to join the economic mainstream.
- The integration of a greater number of people into the formal economic system of the country and the development of the habit of saving which further contributes to economic growth.
- Extension of loans (PM Mudra Yojana) is also a key part of financial inclusion. With the availability of capital, more MSMEs, start-ups, etc., can be established that can play a crucial role in economic growth.
- Pension-related schemes (Atal Pension Yojana, etc.) also constitute a key part of financial inclusion. This allows the elderly population of the country to remain economically productive and allow them to lead a dignified life.
- Technology-driven financial inclusion (UPI) can also lead to economic growth since it helps in plugging leakages and enable larger people to integrate themselves with the formal financial services in the country.

The market economy despite being economically efficient is not the ideal system for the implementation of inclusive growth which is based on equity and socio-economic welfare.

MCQs

1. Consider the following statements:

1. The Koronivia Joint Work on Agriculture (KJWA) is the only programme to focus on agriculture and food security under UNFCCC.
2. It covers six interconnected subjects, including soils, nutrient use, water, livestock, techniques for evaluating adaptation, and the socio-economic and food security implications of climate change throughout the agricultural sectors.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) **Both 1 and 2**
- d) Neither 1 nor 2

2. Consider the following statements with reference to National Education Society for Tribal Students.

1. It is an autonomous organization established under Ministry of Tribal.
2. It allocates funds to Navodaya Vidyalaya for the expenses of tribal students.

Choose the correct statement/s using the codes given below

- a) **1 only**
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

3. Which of the following statements regarding 'Green Climate Fund' which was in news recently, is/are correct?

1. It is intended to assist the developing countries in adaptation and mitigation practices to counter climate change.
2. It is founded under the aegis of UNEP, OECS, Asian Development Bank and World Bank.

Select the correct answer using the code given below.

- a) **1 only**
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

4. With reference to 'Global Environment Facility', which of the following statements is/are correct?

- a) **It serves as financial mechanism for 'Convention on Biological Diversity' and 'United Nations Framework Convention on Climate Change'**
- b) It undertakes scientific research on environmental issues at global level
- c) It is an agency under OECD to facilitate the transfer of technology and funds to underdeveloped countries with specific aim to protect their environment
- d) Both (a) and (b)

5. Hwasong-17 intercontinental ballistic missile (ICBM) often seen I news is related to which of the following country?

- a) Japan
- b) North Korea
- c) South Korea
- d) China

6. Consider the following statements

1. Malaria elimination is defined as the interruption of local transmission of a specified malaria parasite species in a defined geographical area as a result of deliberate activities
2. Countries that have achieved at least 3 consecutive years of zero indigenous cases of malaria are eligible to apply for the WHO certification of malaria elimination.

3. In 2021 India has been certified by the WHO Director-General as malaria-free after Sri Lanka which was certified in 2016 as malaria free.

Choose the correct statement/s using the codes given below

- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 4 only
- d) 1 and 2 only**

7. Consider the following statements:

- 1. Drug resistance is the reduction in effectiveness of a medication.
- 2. When an organism is resistant to more than one drug, it is said to be multi drug resistant.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2**
- d) Neither 1 nor 2

8. Consider the following statements about the peninsulas, recently seen in news and select the correct statement/s?

- 1. Iberian Peninsula is surrounded by Bay of Biscay, Mediterranean Sea and Arctic Ocean.
- 2. Balkan Peninsula is surrounded by Black Sea, Aegean Sea and Adriatic Sea.
- 3. Caucasus lies to the north of Georgia, Azerbaijan and it separates Asia from Europe.

Select the correct code from below.

- a) 1 and 2
- b) 1 and 3
- c) 2 and 3**
- d) 1 only

9. Consider the following pairs

Rivers recently seen in news	Drained into
1. Po	Adriatic Sea
2. Loire	Atlantic Ocean
3. Rhine	Black Sea
4. Danube	North sea

How many above pairs is/are correct?

- a) One pair
- b) Two pairs**
- c) Three pairs
- d) All the pairs

10. Which of the following is/are the possible consequences of Azore High which was recently seen in news due to its expansion because of climate change?

- 1. Decrease in winter precipitation over Iberian Peninsula.
- 2. Grape production will decrease.
- 3. Drying of major western European rivers.

Choose the correct answer using the codes given below

- a) 1 and 2 only
- b) 2 and 3 only
- c) 2 and 3 only
- d) 1,2 and 3**