

Ironing effect

The iron press /Ironing effect

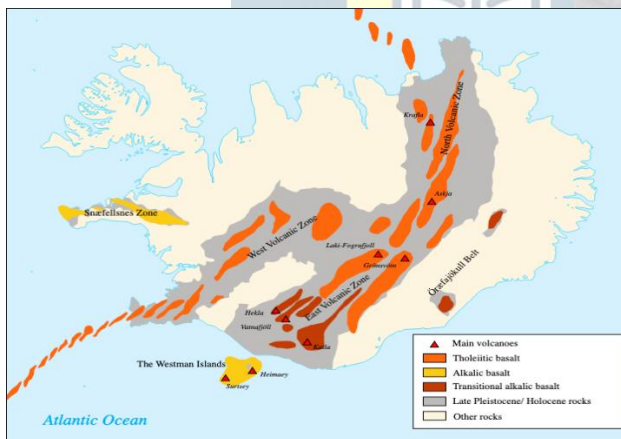
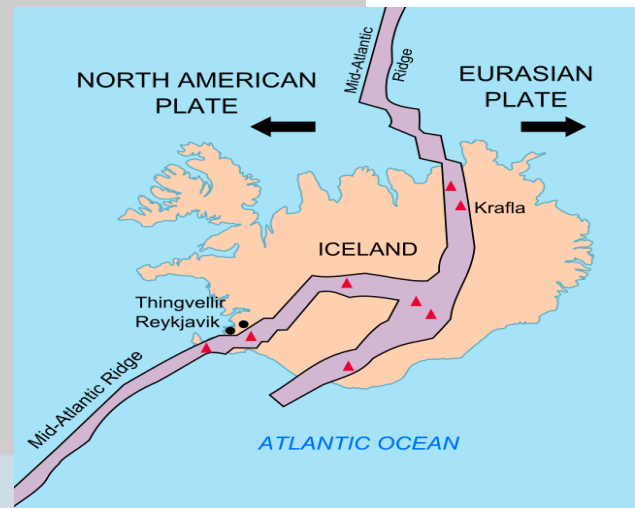
- The iron press is a wonderful machine.
- There are two important ingredients to this wonder: it has a heavy metal base (often some alloy of iron, thus the name) and that it heats up.
- Our clothes are made of some plant or animal fibres, like cotton, wool, etc.
- Fibres are long chain molecules often made of carbon, oxygen, and hydrogen very similar to the glucose and sugar that we eat.
- These molecules can be really, really long.
- If the water molecule, which is made of two hydrogen atoms and an oxygen atom, is the size of a pencil, a typical cellulose fibre, one of the primary molecules of cotton, would be about 100 metres long!
- These kinds of molecules are called polymers. Polymers make up many things around us, including plastic, soap, and even tomato ketchup.
- There are synthetic polymers (made in a lab, like plastic) and then naturally occurring ones, such as cotton.
- When you wash your clothes, these molecules become knotted around each other like noodles when you cook a packet,
- This is often because of the water molecules that become stuck between and around these molecules.
- When you iron your cloth, what you are really trying to do is rearrange these long molecules into neat, straight patterns.
- In the process, some of these water molecules escape and evaporate.
- Heat is nothing but energy: it causes all the atoms and molecules to vibrate a bit and that does the trick.
- As we know, each of these cellulose molecules is very long and they can have various twists and turns along their length, like one strand in a noodle.
- The Hindu

Volcanic eruption in Iceland



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- A volcano that had rumbled for weeks erupted in southwestern Iceland, spewing semi molten rock into the air in a spectacular show of the earth's power in the land known for fire and ice.
- Iceland, which sits above a volcanic hotspot in the North Atlantic, has about 20 hours of darkness a day in December.
- Iceland averages an eruption every four to five years. The most disruptive in recent times was of the **Eyjafjallajökull volcano**, which in 2010 spewed huge clouds of ash into the atmosphere



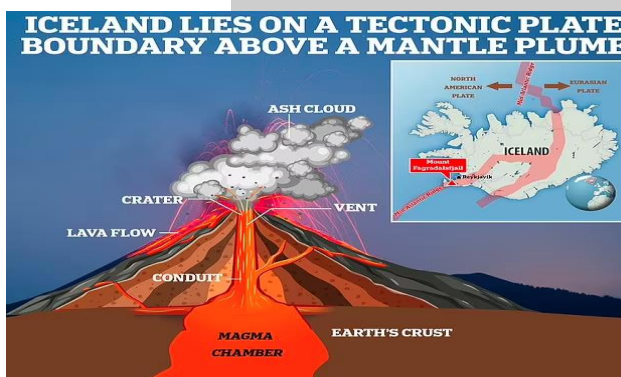
- A volcanic range on the Reykjanes Peninsula, about 50 km southwest of the capital, Reykjavik, has erupted thrice since 2021, after being dormant for 800 years.

- The nearby **Blue Lagoon geothermal spa** one of Iceland's biggest tourist attractions.

The Hindu

EU Bloc law

- EU countries and lawmakers reached an agreement on Wednesday on an overhaul of the **bloc's laws on**



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handling asylum seekers and migrants.

- The reform includes speedier vetting of irregular arrivals, creating border detention centres, accelerated deportation for rejected asylum applicants and a solidarity mechanism to take pressure off southern countries experiencing big inflows.
- The migration issue has taken on a harder political edge in Europe in recent years with the rise of nationalist anti immigrant parties in several EU countries, including Italy, Sweden and the Netherlands.
- The Hindu

COP 28 Outcome

What happened with respect to the loss and damage fund?

- Following the agreement reached at COP27 to create a 'Loss and Damage' (L&D) fund, the last year was dedicated to negotiations on fund management and financing.
- Moreover, the World Bank was designated to oversee and administer the fund.
- But concerns originating from the experiences of developing countries with the World Bank related to questions about legal autonomy,

flexibility, and decision making authority, and general scepticism about the fund's agility in responding promptly to emergencies, have emerged.

- There is also a prevailing sentiment among countries that the communities affected by climate related disasters should be able to directly access funding, preferably in the form of grants and not loans.

What about the global stocktake?

- This year's COP summit saw the first global stocktake (GST).
- According to the UNFCCC, the GST "enables countries and other stakeholders to see where they are collectively making progress towards meeting the goals of the Paris Agreement and where they are not".
- The decision of countries' at COP28 to transition away from fossil fuels was coupled with the ambition to triple renewable energy capacity by 2030.
- More than 20 countries also pledged to triple their nuclear energy capacity.
- However, the transition from fossil fuels is restricted to energy systems alone; they can continue to be used in the plastics, transport, and agriculture sectors.

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- The declaration also refers to 'transitional fuels', such as natural gas, for ensuring energy security.
 - while the declaration called for accelerated climate mitigation, it alluded to unproven and risky technologies such as carbon capture and storage (CCS) and carbon removal.
 - **What about green finance?**
 - The financial segment of the GST implementation framework explicitly recognizes the responsibility of developed nations to take the lead in climate finance.
 - There is also a reference to the private sector's role in addressing financial shortfalls and an imperative to supplement grant oriented, concessional finance to enable equitable transition in developing countries.
 - The Green Climate Fund received fresh support of \$3.5 billion, allowing it to finance adaptation and mitigation projects in vulnerable regions.
 - An additional \$188 million was pledged to the Adaptation Fund.
 - New partnerships between public and private sectors were forged to mobilise investments in renewable energy, sustainable agriculture, and infrastructure.
 - The COP28 Presidency also introduced ALTÉRRRA, an investment initiative with an ambitious goal to globally mobilise an unprecedented sum of \$250 billion by 2030.
- How did India fare at COP28?**
- The UAE declaration on climate and health came into being at COP28 through a partnership of the COP28 Presidency with the World Health Organization.
 - It recognizes the growing health impacts of climate change and acknowledges the benefits of climate action, including a reduction in air pollution and lowering the cost of healthcare.
 - The declaration, signed by 123 countries, has collectively committed \$1 billion to address the growing climate health crisis.
 - However, India didn't sign this declaration because reducing greenhouse gas (GHG) emissions in the health sector would mean reduction in emissions from gases used for cooling.
 - As India's healthcare infrastructure is still growing, such a commitment could compromise the healthcare

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requirements of a growing population, particularly rural.

- The Global Methane Pledge launched at COP26 received renewed attention at COP28, with the Climate and Clean Air Coalition becoming the new secretariat and partners of the pledge announcing more than \$1 billion in new grants for funding projects to reduce methane emissions from the agriculture, waste, and gas sectors.
- More than 150 countries signed the pledge to reduce methane pollution.
- India isn't a signatory to this pledge because it shifts focus from carbon dioxide to methane, a GHG with a lower lifetime.
- Also, methane emissions in India are primarily from rice cultivation and enteric fermentation (livestock rearing), which support the livelihoods of small and marginal farmers.

What are the takeaways?

- The COP28 outcomes had a lot of firsts, such as the declaration on climate and health, acknowledgement of the role of nature based solutions for biodiversity conservation and climate, and the need to transition away from fossil fuels.

- Some 134 countries also agreed to a landmark declaration to transition to sustainable and resilient food systems.
- However, some challenges and differences between developed and developing countries remain to be addressed.
- One key issue of contention was fossil fuel subsidies.
- While developed countries advocated for phasing them out, developing countries, including India, refused a phase out over implications on economic growth and development.
- Such a phase out also has social implications: several communities rely on fossil fuels (coal, in India's case) for gainful employment.
- Moreover, emphasising the principle of common and differentiated responsibilities and the historical responsibility of developed countries for GHG emissions, developing countries argued for increasing the flow of climate finance and technologies to facilitate just job transitions and inclusive development.
- Some other contentious issues spanned market mechanisms, financial resource allocation, the role

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of the World Bank as the agency for managing the L&D fund, and private sector engagement in climate action

Parliament security

- Parliament House following the attack in 2001.
- There are spike barriers, bollards, drop gates with the latest technology, scanners, Radio Frequency Identification (RFID) devices, anti-explosive checks, and additional manpower that form the layers of security.
- A phalanx of men and women from the central police forces are deployed in the outer precincts,
- neither door frame metal detectors nor handheld metal detectors can check for plastic or rubber, especially when hidden in one's shoes (as it was in this case).
- In fact, shoes are never checked in Parliament. The United States and Europe have moved to using millimeter wave scanners. Those who are watchful move ahead with the technology of the times.
- The posts of the two chiefs of the Central Reserve Police Force and the Central Industrial Security Force involved with Sansad security are vacant too.
- The inquiry into the breach has been entrusted with the Indo Tibetan Border Police (ITBP) chief whose force is involved in the security setup of Parliament.
- In the absence of the Joint Secretary, Security, the Lok Sabha and the Rajya Sabha each have a 'Director Security' to direct security operations
- It is not like the Special Protection Group (SPG) manned by the best Indian Police Service officers, who are always engaged in daily operations, monitor them for improvements as also scour for the latest technology to induct.

The Hindu