

Humboldt's enigma

What is Humboldt's enigma?

- The world's tropical areas receive more energy from the Sun because of the earth's angle of inclination.
- So the tropics have greater primary productivity, which then facilitates greater diversity: more ecological niches become available, creating more complex ecosystems and greater biological diversity.
- The proponents of Humboldt's enigma have held that the earth's tropical areas by themselves don't contain all the biodiverse regions, and that many areas outside the tropics are highly biodiverse.
- These places are mountains. Indeed, while we expect diversity to decrease away from the tropics, mountains have been an important exception.
- A simple way to think of Humboldt's enigma in India is to consider the biodiversity in our tropical areas, south of the Tropic of Cancer passing through Madhya Pradesh and Chhattisgarh.
- These areas are supposed to be the most diverse in the country. The Western Ghats plus Sri Lanka biodiversity hotspot lies in this zone.
- However, the eastern Himalayas are much more diverse.

What drives biodiversity?

- The history of the earth, its geography, and the climate are the main drivers of mountain diversity.

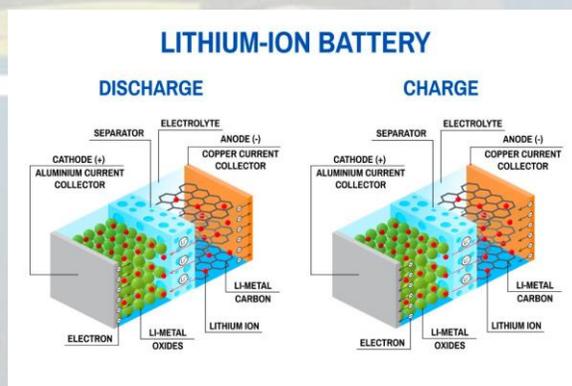
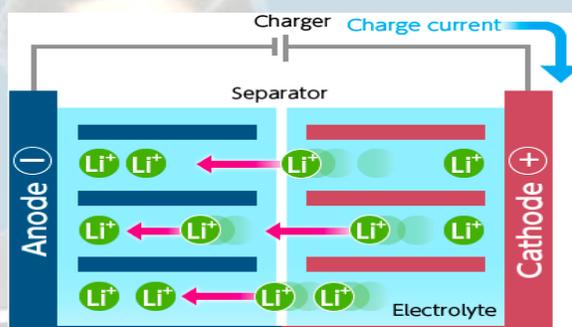
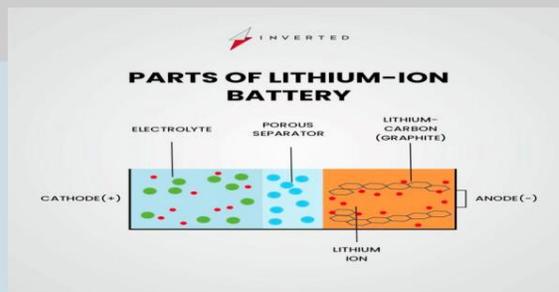
- And different biodiversity at different locations is the result of changes in how these factors have intermingled over time and space. We know mountains host two processes that generate biodiversity.
- First: geological processes, like uplifts, result in new habitats where new species arise, so the habitats are 'cradles'.
- Second: species on some climatologically stable mountains persist there for a long time, so these spots are 'museums' that accumulate many such species over time. Coastal tropical sky islands (mountains surrounded by lowlands), like the Shola Sky Islands in the Western Ghats, are a good example.
- Here, old lineages have persisted on the mountain tops as climates and habitats fluctuated around them in the lower elevations.
- This is the reason some of the oldest bird species in the Western Ghats, such as the Sholicola and the Montecincla, are housed on the Shola Sky Islands.
- The northern Andes range including Chimborazo is considered the most biodiverse place in the world. Another critical force in biodiversity formation is geology.
- National programmes are trying to address these gaps, including the National Mission on Himalayan Studies, the National Mission for Sustaining the Himalayan Ecosystem, and the National Mission on Biodiversity and Human Wellbeing. They need to be strengthened, and bolstered by the will to support basic research on diversity.

The Hindu

Child nutrition

- To markedly improve child nutrition and combat undernutrition in India, three key strategies can be the largest needle movers.
- First, promoting early breastfeeding, along with continued breastfeeding for two years, coupled with appropriate complementary feeding starting at six months, is essential.
- This not only prevents stunting but also fosters optimal child development. Government initiatives, such as the Mother's Absolute Affection Programme, need expansion to provide comprehensive lactation support and create breastfeeding-friendly environments. Leveraging mobile technology to educate mothers about the criticality of exclusive breastfeeding in the first six months is also vital.
- At the same time, improving maternal nutrition is crucial, as healthier mothers have healthier babies.
- Second as children grow, diversifying their diet becomes crucial. India should implement and scale up community-based complementary feeding programmes.
- These can educate parents about the importance of adding a variety of foods to their child's diet after six months of age, focusing on locally available, nutrient rich food options.
- Finally, adding an extra Anganwadi worker to each Anganwadi centre could help.
- The Hindu

Li battery



- All EVs on the road today are powered by lithium ion batteries.
- It consists of two electrodes (an anode and a cathode) separated by a liquid electrolyte.
- Lithium atoms in the anode give up electrons which travel to the cathode through an external wire this stream of electrons provides the current that powers the motor of the vehicle.

- Simultaneously, lithium ions (now positively charged from the loss of an electron) travel through the electrolyte to reach the cathode.
- During charging, the process is reversed with lithium ions being forced to travel back through the electrolyte to the anode.
- There is a good reason why lithium is the material of choice for EV batteries. Lithium, the lightest solid element known to man, has a high propensity to give up its electron. Its small size enables the lithium ion to efficiently travel between electrodes through the electrolyte.
- This translates to lighter and smaller batteries with an ability to store large amounts of energy.
- However, today's Li ion batteries still leave a lot to be desired.
- Its energy density while high compared to earlier battery technologies, pales in comparison to petrol. Batteries are still slow to charge (compared to the few minutes it takes to fill petrol at a pump).
- There is a need to make batteries more affordable and increase their lifespan.
- The Hindu

Paraguay river

Contaminated catch



Spilling over: People fish next to a drainage that flows into the Paraguay River in Asunción, Paraguay on Sunday. AP

- The Paraguay River is a major river in south-central South America, running through **Brazil, Bolivia, Paraguay, and Argentina.**
- It flows about 2,695 kilometers (1,675 mi) from its headwaters in the **Brazilian state of Mato Grosso** to its confluence with the Paraná River north of **Corrientes and Resistencia.**



Pros and cons of simultaneous election

- A High-Level Committee (HLC) headed by Ramnath Kovind, former President of India, was constituted in September 2023 to examine the issue of holding simultaneous elections for the Lok Sabha, State Legislative Assemblies, and local bodies of all States. T.

What is the background?

- During the first four general election cycles in 1952, 1957, 1962, and 1967, the elections to the Lok Sabha and State legislative assemblies were held simultaneously.
- However, due to the subsequent premature dissolution of the Lok Sabha on seven occasions and the premature dissolution of legislative assemblies on various occasions, the elections to the Lok Sabha and various State assemblies are held at different times.

What is the case for simultaneous elections?

- The desirability of simultaneous elections can be discussed from the perspectives of cost, governance, administrative convenience and social cohesion.
- Firstly, it is estimated that the cost of holding general elections to the Lok Sabha is around ₹4,000 crore for the Central government.
- Each State assembly election would also cost considerable amount of money according to the size of the State.
- While this is the official expenditure of the government, the expenditure by parties and candidates are manifold times higher.
- Simultaneous elections would entail a reduction in these costs.
- Secondly, there are at least 56 State elections that happen every year. This results in political parties, including Ministers, being in 'permanent campaign' mode, which acts as a hindrance to policy making and governance.
- Further, the Model Code of Conduct that is enforced during the election process ranges usually from 45-60 days where no new schemes or projects can be announced by the Centre and concerned State governments.
- Third, administrative machinery in the districts slow down during the election period with the primary focus being the conduct of elections.
- There are also paramilitary forces that are withdrawn from the locations in which they

are posted and deployed to the concerned State for the smooth conduct of elections.

What are the challenges involved?

- Conducting elections simultaneously to the Lok Sabha and all State assemblies would result in national issues overshadowing regional and State specific issues.
- National political parties would have a significant advantage over regional parties on account of this mechanism.
- This would be detrimental to the federal spirit of our country which has been declared as a basic structure of the Constitution.
- Elections also serve as an effective feedback mechanism for governments in power.
- Apart from the federal and democratic issues discussed above, simultaneous polls will also require constitutional amendments. India is a parliamentary democracy where the governments at the Centre and the State need to enjoy majority in the Lok Sabha and the Legislative Assembly respectively.
- The duration of these houses is five years but it may be dissolved earlier if the party or coalition in power loses majority, and no alternative government can be formed.
- It may also be dissolved prematurely by the council of ministers in power to seek an early election.
- Further, State legislative assemblies can also be dissolved by imposing President's rule under Article 356 of the Constitution.
- Having a fixed tenure of five years for the Lok Sabha and State assemblies will

therefore require constitutional amendments to Articles 83, 85, 172 and 174 that deal with the duration and dissolution of Lok Sabha and Legislative assemblies.

- It will also require the amendment of Article 356.
- What are the various recommendations? The reports of the Law Commission (1999), and the Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice (2015), have dealt with the issue of simultaneous elections. The Law Commission had also submitted a draft report in 2018. The highlights of these discussions and recommendations can be summarized as follows (a) the elections to the Lok Sabha and nearly half of the State assemblies may be clubbed together in one cycle, while the rest of the State assembly elections can be held in another cycle after two and half years.
- This will require curtailing or extending the tenures of existing assemblies that will entail amendments to the Constitution and the Representation of the People Act, 1951;
- (b) any 'no confidence motion' in the Lok Sabha or Legislative Assembly should be mandatorily accompanied by a 'confidence motion' for the formation of an alternate government.
- If for any unavoidable reason, the Lok Sabha or State Assembly is to be dissolved prematurely, the duration of the newly constituted House should be only for the remainder period of the original House.
- This would act as a deterrent for MPs and MLAs pushing for premature dissolution of the House. It would instead encourage the

members to explore the possibility of forming an alternate government through feasible realignments; .

- (c) the by-e elections necessitated by death, resignation, or disqualification of members can be clubbed together and conducted once a year.
- It may be noted that Parliamentary democracies like South Africa, Sweden and Germany have fixed tenures for their legislatures.
- The elections to the National Assembly and provincial legislatures happen simultaneously in South Africa every five years, with the President of the country being elected by the National Assembly.

What can be an ideal solution?

- There is a lack of consensus among various political parties about the conduct of simultaneous elections. The ideal middle ground may be to conduct the Lok Sabha election in one cycle and all State assembly elections in another cycle after two and a half years.

The Hindu