IPCC Report

- First, the amount of carbon that the world can cumulatively emit before reaching key temperature limits, i.e., the world's 'carbon budget', is far lower for the 1.5° C than the 2° C target.
- Modelled global pathways suggest that limiting warming to 1.5° C (with a probability of >50% requires greenhouse gas (GHG) emissions to be reduced by 43% by 2030 (median estimate), while the same number for limiting warming to 2° C (probability of >67%) is 21%.
- Thriving for a 1.5° C target implies deep and immediate reductions in emissions in all sectors and regions, which makes more salient different national circumstances and questions of climate equity and operationalisation of the United Nations Framework Convention on Climate Change's core principle of Common but Differentiated Responsibility and Respective Capabilities.
- The IPCC report points out that humanity had already consumed 4/5ths of its total carbon budget for 1.5° C by 2019, with developed economies consuming the lion's share. The report also notes that existing modelling studies, which are often used to assess emission trajectories, do not explicitly account for questions of equity.
- Second, the recognition of greater risks at lower temperatures points to the necessity of early climate adaptation. The report highlights that adaptation itself has limits, which implies that some losses and damages of climate change are inevitable.
- For example, the report finds that some coastal and polar ecosystems have already reached hard limits in their ability to adapt to a changing climate.
- The leading message of the report is that of urgently adopting 'climate-resilient development' a developmental model that integrates both adaptation and mitigation to advance sustainable development for all.
- Prioritising and addressing equity and social justice in transition processes are shown to be key to climate -resilient development.
- The report strikes a particularly upbeat note on the co-benefits of climate action for air quality.
- A cost -benefit analysis suggests that the air quality and health benefits of mitigation outweigh its costs.
- The report points out that there are gaps between modelled sustainable

pathways and what countries have pledged (ambition gaps) as well as substantial gaps between what countries pledge and what they actually do (implementation gaps).

- Delayed action risks locking-in to high carbon infrastructure in this decade, and creating stranded assets and financial instability in the medium term.
- Therefore, high upfront investments in clean infrastructure are imperative.
- However, despite sufficient global capital, both adaptation and mitigation financing need to increase many-fold: between three to six times for annual modelled mitigation investments, from 2020 to 2030.

THE HINDU

Semiconductors

- The Union Government has disbursed around ₹1,645 crore in performance -linked incentives (PLI) for electronics manufacturers so far, as part of its efforts to bring in more of the electronics supply chain to India.

Why is the government encouraging semiconductor manufacturing?

- Semiconductor fabrication units, or fabs, turn raw elements such as silicon into integrated circuits that are fit to be a part of practically all electronic hardware in the world.
- Fabs are highly capital -intensive undertakings, costing billions of dollars for large facilities.
- Semiconductor fabs of today may still be building circuits, but they require a highly reliable and high-quality supply of water, electricity, and insulation from the elements, reflecting the high degree of precision, cost, and capital needed to make the sophisticated circuits.
- China pulled ahead of Taiwan last year, in terms of share of global sales from fabs, according to a report by the Semiconductor Industry Association (SIA)
- Foundry companies", which turn silicon into semiconductors
- Foundries are facilities that produce metal castings and offer casting-related services. A foundry is a factory where metal is melted and cast into new shapes.

What other advantage does India have?

- A large part of semiconductor manufacturing involves design and intellectual labor.
- India has an advantage here, as a large portion of semiconductor design engineers globally is either Indian or Indian- origin; chip-making firms such as Intel and NVIDIA have large facilities in India that are flush with Indian talent working on design problems.
- This is an advantage as China is losing control over in the face of sanctions and an ageing population.
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Will India's semiconductor ambition be limited?

- The government appears to be developing the parts of the ecosystem that have promise for sustainable growth and fiscal feasibility.
- If like-minded nations each specialise in different aspects of the semiconductor and electronics manufacturing process, and work together on distribution, that still solves the geopolitical problem of Chinese dominance without simply monopolizing power with a different country.

CAMPA

- Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC), a U.N. expert body, states that not degrading existing ecosystems in the first place will do more to lower the impact of the climate crisis than restoring ecosystems that have been destroyed a finding that speaks to an increasingly contested policy in India that has allowed forests in one part of the country to be cut down and 'replaced' with those elsewhere.

Why is afforestation contested?

- India has committed to adding "an additional (cumulative) carbon sink of 2.5-3 GtCO2e through additional forest and tree cover by 2030", as part of its climate commitments to the U.N. Afforestation is also codified in the Compensatory Afforestation Fund Management and Planning Authority (CAMPA), a body chaired by the Environment Minister.

- When forest land is diverted to non--forest use, such as building a dam or a mine, that land can longer provide its historical ecosystem services nor host biodiversity.
- According to the Forest (Conservation) Act, of 1980, the project proponent that wishes to divert the land must identify land elsewhere to afforest and pay for the land value and the afforestation exercise.

Why does CAMPA matter?

- The money paid sits in a fund overseen by the CAMPA. As of 2019, the fund had ₹47,000 crores.
- The CAMPA has come under fire for facilitating the destruction of natural ecosystems in exchange for forests to be set up in faraway places.

How do ecosystems compare to renewable energy?

- The IPCC report also found that the sole option (among those evaluated) with more mitigating potential than "reducing the conversion of natural ecosystems" was solar power and that the third highest was the wind.
- .But many solar parks in India have triggered conflicts with people living nearby because they limit land use and increase local water consumption.
- A 2018 study published in Nature Ecology & Evolution also found that wind farms in the Western Ghats had reduced the "abundance and activity of predatory birds, which consequently increased the density of lizards".
- However, the IPCC report also noted that "reducing the conversion of natural ecosystems" could be more expensive than wind power, yet still less expensive than "ecosystem restoration, afforestation, [and] restoration", for every $GtCO_2e$.

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