ENGLISH EDITORIAL

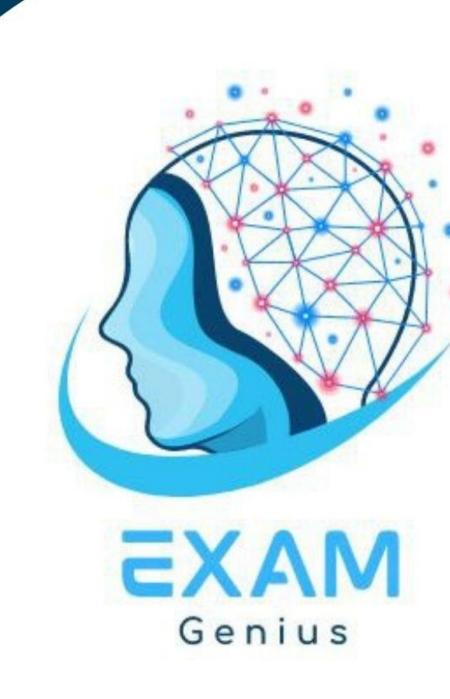
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EDITORIAL 01

Unnatural disaster: On the Wayanad landslides

Kerala must restore denuded flora and rehabilitate people in vulnerable areas

Climate change can encourage unprecedented weather, precipitating natural disasters of magnitudes that may surprise local responders. The calamitous landslides in Wayanad district in Kerala on July 30 are not necessarily such disasters. Parts of Kerala have been bearing the brunt of heavy rains during the southwest monsoon and landslides are a yearly affair. But deadly landslides are new. This week, heavy rains triggered multiple landslides that have killed 200 people and laid waste to a few villages. The region is a tourist destination and incentivises infrastructure development to maximise revenue potential. The Chaliyar river here springs from an altitude of around 2 km and flows in a sheer path down towards Vellarmala, bringing fast waters that also sweep relatively more sediment downstream. The rains this year further increased the river's volume and force, which swept up debris and deposited it in the villages settled on less steep land where many of the deaths have







been reported. But the tragedy is compounded by the fact that heavy rains here in 2020 had caused the Chaliyar to strip swaths of its upstream areas of plant cover, leaving more rocks and humus vulnerable to being displaced.

The geographical peculiarities of landslide-prone Idukki, Kottayam, Malappuram, and Wayanad have been evident for years; they also feature prominently on landslide risk maps. Blame for the landslides' deadly recurrence must thus be shared by climate change and a State that has been repeatedly caught off-guard. A recurring issue is an abject lack of advance warning and emergency preparedness. Landslides are more common in ecologically fragile areas. The monsoons have been producing more short bursts of intense rain, resulting in some soil types becoming easier to dislodge while quarrying; linear infrastructure development, construction activities, and monocropping have compromised ecosystems' ability to cope with changing natural conditions. For these reasons, patterns of land use must not change and the State must restore denuded flora and rehabilitate people in these areas to ensure they have other opportunities for their welfare. As recommended by the Western Ghats Ecology Expert Panel, Kerala must also decline engineering projects in ecologically sensitive areas and their surroundings, and







constitute, equip, staff, and empower expert committees that deliberate the feasibility of other projects here. Indeed, the panel's recommendations were designed to tame the effects of unpredictable weather without also denting economic growth, but Kerala today is sliding past the point of having an option to balance development needs with environmental concerns.

SUMMARY

Kerala has experienced a series of deadly landslides, including the recent one in Wayanad district, which killed 200 people and left a few villages devastated. The Chaliyar river, which flows through the region, has been prone to landslides for years and is prone to landslide risk maps. The state has been caught off-guard by climate change and lack of advance warning and emergency preparedness. Landslides are more common in ecologically fragile areas, and the state must restore denuded flora and rehabilitate people in these areas. The Western Ghats Ecology Expert Panel recommends declining engineering projects in ecologically sensitive areas and establishing expert committees to deliberate the feasibility of other projects. Kerala is currently unable to balance development needs with environmental concerns.







Vocabulary

1. Precipitaing

Meaning: "Precipitating" means causing something to happen suddenly or unexpectedly. In a scientific context, it can also refer to the process of causing a substance to be separated from a solution, often by a chemical reaction.

2. Magnitudes

Meaning: "Magnitudes" refers to the size, extent, or importance of something. It can describe physical quantities (like the magnitude of an earthquake) or abstract concepts (like the magnitude of an impact or achievement).

3. Calamitous

Synonyms: Disastrous, catastrophic

Antonyms: Fortunate, beneficial

4. Brunt

Synonyms: Impact, force

Antonyms: Relief, ease







5. Springs

Meaning: A place where water naturally flows to the surface from underground

6. Debris

Synonyms: Rubble, wreckage, detritus

Antonyms: Cleanliness, order, pristine condition

7. Compounded

Synonyms: Amalgamated, combined

Antonyms: Dismantled, separated

8. Swaths

Synonyms: Strips, bands

Antonyms: Patches, spots

9. Humus

Synonyms: compost, manure

Antonyms: Gravel, sand







10. Pecularities

Synonyms: Traits, characteristics

Antonyms: Commonalities, similarities

11. Fragile

Synonyms: delicate, brittle, frail

Antonyms: Robust, sturdy, strong

12. Denuded

Synonyms: stripped, bare

Antonyms: Covered, clothed

EDITORIAL 02

Problem power: On small modular reactor plan

Small modular reactors must deal with the cost of proliferation resistance

The Indian government is planning to team up with the private sector to study and test small modular reactors (SMRs). Nuclear energy is an important power source in the world's energy mix as it

waits for the development and maturation of (other) renewable energy technologies while fossil-fuel-based sources, especially coal, continue to remain relevant and more affordable. Nuclear power offers a sufficiently high and sustainable power output, even if externalised costs like those of building safe and reliable reactors and handling spent nuclear fuel complicate this calculus. Indeed, cost and time estimates that expand to nearly twice as much as at the point of a project's commissioning are not unheard of. The nuclear power tariff is thus higher from 'younger' facilities, even if they also fill gaps that haunt power from renewable sources. SMRs, of 10 MWe-300 MWe each, are smaller versions of their conventional counterparts. They aspire to be safer without compromising commercial feasibility by leveraging the higher energy content of nuclear fuel, a modular design, a smaller operational surface area, and lower capital costs. But the challenge is to have this aspiration survive SMRs' external costs.

The government's privatisation of nuclear power generation will also increase the demand for regulatory safeguards against radioactive material being diverted for military use. The first-generation SMRs are expected to use low-enriched uranium in facilities assembled on-site with factory-made parts, to produce







waste that can be handled using existing technologies and power that can be sold at economical rates. But the reactor will need frequent refuelling and will yield a consequential amount of plutonium; both outcomes will stress proliferation resistance. The IAEA has touted the use of 'safeguardable' reactor designs but such solutions will increase capital costs. Subsequent SMR generations may also require more enriched uranium, especially if their feasibility is pegged on longer periods of continuous generation, or more sophisticated systems to increase fuel-use efficiency, which would increase the operational surface area and the generation cost. In fact, nuclear reactors have a fixed baseline cost and safety expectations that do not change with energy output, which means SMR-based tariffs need not automatically be lower. This is why the Department of Atomic Energy increased its reactors' capacity from 220 MW to 700 MW. SMRs' ability to bolster the prospects of nuclear power in India will thus depend on their commercial viability — and in turn on the availability of less uncertain market conditions, stable grids, and opportunities to mass-produce parts — and the price of proliferation resistance.







SUMMARY

The Indian government plans to collaborate with the private sector to study and test small modular reactors (SMRs), which aim to be safer without compromising commercial feasibility. SMRs, with capacities of 10 MWe-300 MWe each, aim to be safer without compromising commercial feasibility by leveraging higher energy content of nuclear fuel, a modular design, a smaller operational surface area, and lower capital costs. However, the challenge lies in balancing the external costs of proliferation resistance. The government's privatisation of nuclear power generation will increase the demand for regulatory safeguards against radioactive material being diverted for military use. The first-generation SMRs will use low-enriched uranium, but frequent refueling and plutonium production will stress proliferation resistance. The commercial viability of SMRs in India depends on their commercial viability, market conditions, stable grids, and opportunities to mass-produce parts.

Vocabulary

1. Modular

Synonyms: flexible, adaptable

Antonyms: Rigid, fixed







2. Proliferation

Synonyms: Growth, expansion, increase

Antonyms: Reduction, decline, contraction

3. Maturation

Synonyms: Growth, development, ripening

Antonyms: Immaturity, undevelopment, regression

4. Haunt

Meaning: "Haunt" means to visit frequently or to persistently stay in the mind or memory, often in a troubling or unsettling way.

5. Feasibility

Synonyms: Practicality, viability, possibility, achievability

Antonyms: Impracticality, unfeasibility, impossibility

6. Leveraging

Synonyms: Utilizing, exploiting, harnessing

Antonyms: Ignoring, neglecting, disregarding







7. Diverted

Synonyms: Redirected, rerouted, deflected

Antonyms: Focused, concentrated, straightened

8. Enriched

Synonyms: Enhanced, improved, augmented

Antonyms: Depleted, diminished, reduced

9. Touted

Synonyms: Praised, acclaimed, promoted.

Antonyms: Criticized, condemned, discredited

10. Pegged

Synonyms: Fixed, attached, fastened

Antonyms: Loosened, detached, freed





