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Tuting-Tidding Suture Zone (TTSZ)

- In major part of the Eastern Himalaya, the Himalaya takes a sharp southward bend and connects with the Indo-Burma Range.
- Tuting-Tidding Suture Zone (TTSZ) of the Arunachal Himalaya has gained significant importance in recent times due to the growing need of constructing roads and hydropower projects, making the need for understanding the pattern of seismicity in this region critical.
- Recent study in the TTSZ, Arunachal Pradesh, has revealed that the area is generating moderate earthquakes at two different depths.
- The study aims to explore the elastic properties of rocks and seismicity in this easternmost part of India.
- **The findings of the study are**

1. Low magnitude earthquakes are concentrated at 1-15 km depth, and slightly higher than 4.0 magnitude earthquakes are mostly generated from 25-35 km depth.
2. The intermediate-depth is devoid of seismicity and coincides with the zone of fluid/partial melts.
3. Exhumation and growth of Himalaya is a continuous process, which is because rocks on the lower surface of a fault plane move under relatively static rocks on the upper surface, a process called under thrusting of the Indian plate beneath its Eurasian counterpart.
4. This process keeps modifying the drainage patterns and landforms and is the pivotal reason for causing an immense seismic hazard in the Himalayan mountain belt and adjoining regions.

Hoplobatrachus Tigerinus

- It is commonly known as bull frog, native to the Indian subcontinent (Afghanistan, Bangladesh, India, Myanmar, Nepal and Pakistan).
- It is the largest frog in India.
- It is listed as least concern species under IUCN red list.
- It is placed under Indian Wildlife Act 1972: Schedule IV (protection with lesser penalties)
- Indian bullfrog tadpoles are carnivorous and eat other tadpoles (including their own species).

- Bullfrogs eat the native frogs as well and their diets overlap, indicating a possibility of competition.
- It is one of the invasive species on the islands of Andaman and Nicobar.

Pied Cuckoo

- Pied cuckoo is a bird with black and white plumage (pied) with a fancy crest on the head.
- It is found in Africa and Asia.
- In central and northern parts of India, pied cuckoos are migratory, they are seen only from just before the monsoon to early winter.
- They have high site fidelity, that is, they come back to the same location year after year.
- It is one of the few species that come to India in the summer, most other migratory species come in winter.
- Farmers have traditionally relied on the arrival of the pied cuckoo as a signal of arrival of monsoon and seed sowing.
- IUCN Status of the bird is Least Concerned.
- Recently, Wildlife Institute of India (WII), has decided to study the migration of the Pied Cuckoo Bird by tagging the bird with satellite transmitters, as a part of IBIN project.
- This is the first study in the country that seeks to trace and observe the migratory routes of the pied cuckoo.
- It will give information on the monsoon, changes in the monsoon and monsoon winds, erratic rainfall, seasonal fluctuations, water vapour pressure, etc.

Indian Bio resource Information Network (IBIN)

- Indian Bio resource Information Network (IBIN) is a larger project of Department of Biotechnology (DBT).
- IBIN is proposed to be uniquely placed as a single portal data provider on India's bio resource - plant, animal, marine, spatial distribution and microbial resources.

National Bio Pharma Mission

- It is an Industry-Academia Collaborative Mission of Department of Biotechnology (DBT).
- It aims for accelerating discovery research to early development for Biopharmaceuticals approved by the Cabinet for a total cost US$ 250 million.

- It is 50% co-funded by the World Bank is being implemented at Biotechnology Research Assistance Council (BIRAC).
- This program is dedicated to deliver affordable products to the nation with an aim to improve the health standards of India's population.
- Vaccines, medical devices and diagnostics and bio therapeutics are few of its most important domains, besides, strengthening the clinical trial capacity and building technology transfer capabilities in the country.

Unnat Bharat Abhiyan

- Unnat Bharat Abhiyan (UBA) is a flagship national programme of the Ministry of Human Resource Development.
- It envisions the transformational change in rural development processes by leveraging knowledge institutions to help build the architecture of an inclusive India.
- IIT Delhi is the National Coordinating Institute on behalf of the UBA.
- The Centre for Rural Development Technology (CRDT) as well as the RuTAG group of IIT Delhi are fully participating in the Unnat Bharat Abhiyan activities.
- Tribal entrepreneurs can able to get access to the expertise of the entire network of academic and research institutions under Unnat Bharat Abhiyan (UBA).

Assessment of Climate Change Report

- The first 'Assessment of Climate Change over Indian Region' was recently released by the Union Ministry of Earth Sciences.
- **Key projections of the report are as follows**

1. The coming decades are projected to witness a considerable rise in the mean, extreme and inter-annual variability of rainfall associated with monsoon.
2. Flood risks are higher over the east coast, West Bengal, eastern Uttar Pradesh, Gujarat, Konkan and cities like Mumbai, Chennai and Kolkata.
3. The Himalayan flood basins are projected to greater floods, due to the faster glacial and snow melting.
4. Storms in the Arabian Sea are gaining more strength and the trend is projected to continue.
5. In coming decades, the average duration of heatwaves during April-June is projected to double, and their frequency to rise by 3 to 4 times compared to 1976-2005.
6. Eastern India could face two more droughts per decade compared to what was experienced during 1976-2005, while the Southern Peninsula is

projected to experience one or two droughts fewer.

Source: PIB, the Hindu, Indian Express

