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Tamil Nadu: 22-07-2024

<p>Climate Model for Indian Regions by IIT Madras</p>	<p>Context:</p> <ul style="list-style-type: none">• Researchers at IIT-Madras have proposed a multimodal approach to quantify climate model uncertainty, crucial for accurate climate change estimates and informed climate planning. <p>Global Context:</p> <ul style="list-style-type: none">• Climate change researchers worldwide depend on the Intergovernmental Panel on Climate Change (IPCC) reports.• Global Climate Models (GCMs) are essential tools for predicting and demonstrating future climate impacts to policymakers.• GCMs, however, are not suitable for regional climate assessments. <p>Multimodal Climate Data:</p> <ul style="list-style-type: none">• Researchers advocate for using multimodal climate data to quantify uncertainties.• Factors contributing to uncertainty include future projections, natural variability, model uncertainty, and aerosol forcing complexities.• Two widely used models are Bayesian Model Averaging and Reliability Ensemble Averaging (REA). <p>REA Model and Its Applications:</p> <ul style="list-style-type: none">• The REA model addresses critical challenges in climate modelling, particularly in monsoon-prone regions like India.• It offers valuable insights for climate change projections.• The method utilizes model bias in replicating current climate and projecting variations, allowing weightage calculation for each model.• Provides dependable estimates of climate change variables and effectively quantifies uncertainty among diverse models. <p>Research Findings:</p> <ul style="list-style-type: none">• Based on the latest IPCC report, an ensemble of 26 global
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	<p>climate models was used to assess possible changes in seasonal precipitation in Coimbatore, Rajkot, Udaipur, and Siliguri.</p> <ul style="list-style-type: none"> • These cities have distinct climate conditions. • The study revealed that GCMs perform poorly for the skewed distribution of rainfall. • The REA method predicted the most reliable estimate of changes in climatic variables and quantified the uncertainty among various models.
<p>Efforts to Address Vulture Food Poisoning</p>	<p>Context:</p> <ul style="list-style-type: none"> • Vultures are facing mass deaths and nearing extinction due to food poisoning from non-steroidal anti-inflammatory drugs (NSAIDs) used in cattle treatment. • A public interest litigation was filed in the Madras High Court by K. Surya Kumar, a wildlife enthusiast, to address the issue. <p>Vulture Population Decline</p> <p>Historical Data:</p> <ul style="list-style-type: none"> • Vulture population in India plummeted from about nine crore in the 1980s to around 19,000 currently. • Tamil Nadu's current vulture population is estimated between 100 to 120. <p>Affected Species:</p> <p>Four species found in Tamil Nadu:</p> <ul style="list-style-type: none"> • Gyps bengalensis (White-rumped vulture) • Gyps indicus (Long-billed vulture) • Sarcogyps calvus (Asian king vulture) • Neophron percnopterus (Egyptian vulture) <p>Cause of Decline:</p> <ul style="list-style-type: none"> • Use of NSAIDs such as diclofenac, aceclofenac, ketoprofen, carprofen, nimesulide, and flunixin in cattle treatment. <p>Centre's Measures:</p> <ul style="list-style-type: none"> • Vultures listed in Schedule I of the Wild Life (Protection) Act, 1972, providing highest protection. <p>Action Plan for Vulture Conservation in India (2020-25) aims to:</p> <ul style="list-style-type: none"> • Prevent cattle carcass poisoning.



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- Promote conservation breeding.
- Establish vulture safe zones in various states.

Current Status:

- No proposals for vulture safe zones received from states.
- Ministry's notification (2011) highlighted the **verge of extinction for Gyps indicus and Gyps bengalensis in Tamil Nadu.**

State's Initiatives

Committee Formation:

- Tamil Nadu constituted a vulture conservation committee holding regular meetings.
- Recommendations for establishing a vulture rescue and habitation centre at Pethikuttai in Coimbatore.

Additional Efforts:

- **Incubation centre** at Gobi Arts and Science College, Erode.
- **Regular education** for veterinarians to avoid harmful NSAIDs.
- **Removal of invasive species** like Lantana camara and Prosopis juliflora to aid vulture nesting.
- **Conservation study of Terminalia arjuna trees** by the Advanced Institute for Wildlife Conservation.
- Carcasses of wild animals left in the open post-mortem to provide safe food for vultures.

CDSCO's Role

Drug Bans:

- Prohibited **diclofenac for animal use since July 2008.**
- Banned manufacture, sale, and distribution of ketoprofen and aceclofenac from July 31, 2023.
- Proposal to ban nimesulide discussed in January 2024; expert group formed for further study.
- No proposals yet for **banning carprofen and flunixin;** sub-committee examining the issue.

Current Developments

Census Data:

- Recent census shows a **minor increase in vulture population from 100 to 142 in Tamil Nadu.**



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Significant Discoveries of Pudukottai Archeological Site

Context:

- The **Porpanaikottai archaeological site in Pudukottai district** has been the focus of extensive archaeological excavation efforts.
- Initiated by the state archaeology department, the second phase of excavation has recently yielded significant findings.

Significant Discoveries:

- **Copper Nails:** Five copper nails unearthed, marking the first discovery of copper nails at this site.
- **Antimony Rod:** A 3cm rod made of copper found.
- **Additional Artifacts:** A total of 424 antiquities including **glass beads, glass bangles, iron, and copper objects** retrieved in this phase.

Significance of Findings:

- Discovery of **copper nails indicates continuous presence and usage of copper items at the site.**
- Director T Thangadurai notes the positive implications of these findings.

Historical Context:

- Excavations began after the **discovery of remains of an ancient fort and various antiques.**
- The second phase was launched by the state government in June.

First Phase Discoveries:

- **533 antiques** including **conch bangles, red and black pot fragments, pots engraved with Tamil, iron fragments, glass beads, golden nose stud, spindles, and weapons made of bones.**
- **Uncovered an ancient brick structure.**