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## 1. Antarctic Parliament Meeting highlights

### Why in News?

Last month, India hosted the 46th Antarctic Treaty Consultative Meeting (ATCM) in Kochi.

### What were the highlights of the Kochi meet?

Some of the major highlights of this year's Antarctic Parliament were: the push for an 'all inclusive' governance; the first-ever introduction to the tourism framework and the initiation of its drafting; and the announcement of the Maitri-II research station.



Antarctic Parliament in Kochi

**1. Tourism:** On matters of tourism, India had first raised concerns at the New Delhi ATCM meet way back in 2007. Operated mostly by private tour operators of select countries, Antarctica has been seeing an exponential rise in the number of visitors, and outside researchers coming there in recent years. Estimates suggest that in 2023, there were

one lakh visitors to Antarctica.

Experts working in the polar sciences argued that the impact of tourism on Antarctica is not fully understood, yet. All Antarctica Treaty Parties in attendance in Kochi agreed upon the need for having a framework for tourism.

**2. Maitri -II:** In Kochi, India announced a successor to its 35-year-old Maitri research base. The decision was welcomed positively. Now, India will get onto the drawing board and chalk out its architectural and environmental plans before the union government. Once ready, the environment report of Maitri-II will be tabled before and seek clearance from the Committee on Environment Protection. India is expected to get Maitri-II operational in the early 2030s.

**3. Attendees:** At Kochi, the Kingdom of Saudi Arabia became the latest entrant to the club of Antarctic Treaty Parties at the recently concluded meet.

Attended by more than 400 members representing 56 countries, the ATCM-46 in Kochi also saw discussions on sea ice change, protecting the emperor penguin, enhancing environmental impact assessment of major activities and developing an international framework for environmental monitoring in Antarctica.

### What was India's message?

As followers of Vasudhaiva Kutumbakam, India informed the Antarctic Parliament that it chooses to adopt an 'all inclusive' approach with nations, who wish to work towards preserving

Antarctica and its resources. India underscored the need for opening the Antarctic Treaty to more nations and together, shoulder responsibilities for governance, research, and framing laws and policies.

India's message was strong and clear: geopolitics from the mainland must not be a deterrent when it came to the issue of governance of Antarctica. India reminded the Consultative Parties (those with authority to vote and take decisions) at Kochi that the treaty cannot remain as an 'exclusive club' of select nations. Canada and Belarus have been working towards becoming Consultative Parties in the Treaty but they are yet to succeed.

### **Why is Antarctica important?**

1. It is the world's fifth largest continent spanning 14 million sq km area. Nearly 98% of Antarctica is covered in thick ice sheets which hold about 75% of the earth's freshwater reserves. This white continent is unique for its wildlife and pristine environment.

2. Located close to the South Pole, Antarctica experiences extreme cold, dry and windy conditions.

More importantly, under the global warming scenario, it is three poles of the Earth: the north, the south and the Himalayas, that are facing the maximum brunt. At the Kochi meet, more areas of Antarctica were earmarked as 'protected'.

3. The fastened rates of permafrost thawing are also a worry at these poles. Permafrost is the rock and soil layers frozen beneath the active ice sheet. Rising temperatures have accelerated the thawing of this permafrost, which in turn exposes and causes the organic matter, like plants, to decompose. This further leads to the release of carbon dioxide and methane into the atmosphere, adding to global climate change.

More geographical areas of the Antarctic have been 'protected' as areas previously studied by early Antarctic expeditions have been rendered unsafe due to thawing permafrost. In this year's meeting, 17 revised and new management plans for the Antarctic Specially Protected Areas were adopted.

4. Another risk over Antarctica due to growing tourism and increased human presence, in general, is that of the Highly Pathogenic Avian Influenza (HPAI). The Kochi deliberations focused on the newest scientific findings that the air and atmosphere over Antarctica were polluted and carried the potential risk of HPAI affecting the indigenous living creatures. The meeting underlined prescribing standard biosecurity guidelines for HPAI to eliminate and mitigate the risk to humans, as well as spreading the disease in Antarctica through human activities.

Relevance: GS Prelims & Mains Paper II; International Organisations

Source: Indian Express

## **2. What is INCOIS's new product to forecast El Niño and La Niña conditions?**

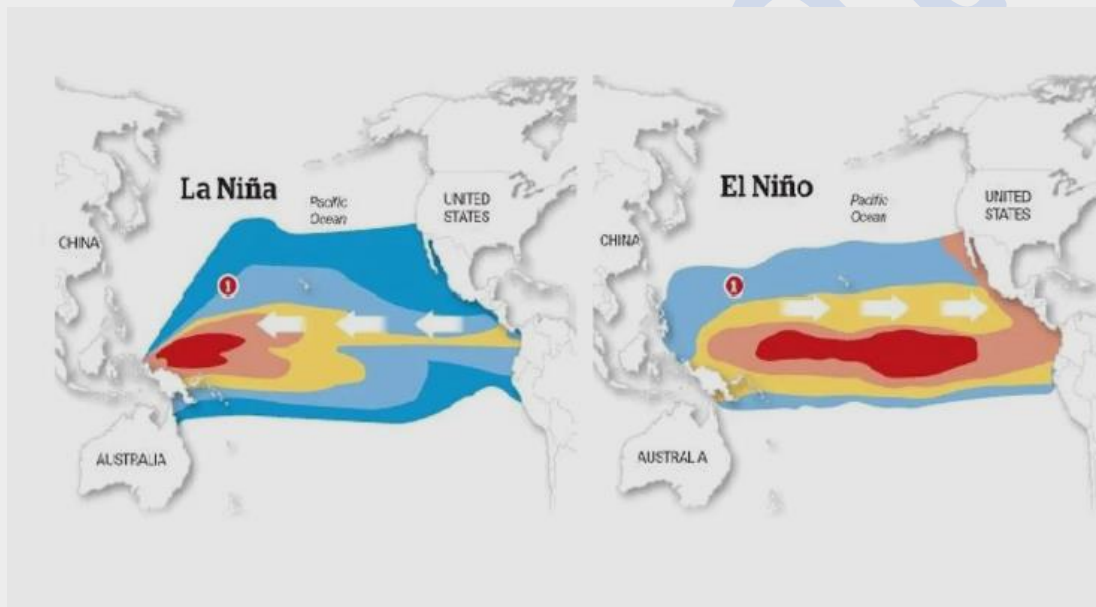
### **Why in News?**

Hyderabad-based Indian National Centre for Ocean Information Services (INCOIS) has developed a new product to predict the emergence of El Niño and La Niña conditions — they are different phases of El Niño Southern Oscillation (ENSO) — up to 15 months in advance.

### **But first, what is ENSO?**

ENSO is a climate phenomenon which involves changes in the temperature of waters in the central and eastern tropical Pacific Ocean, coupled with fluctuations in the overlying atmosphere. It can alter the global atmospheric circulation, which, in turn, influences weather across the world.

ENSO occurs in irregular cycles of 2-7 years and has three different phases — warm (El Niño), cool (La Niña), and neutral. In the neutral phase, the eastern side of the Pacific Ocean (near the northwestern coast of South America) is cooler than the western side (near the Philippines and Indonesia). This is due to the prevailing wind systems that move from east to west, sweeping the warmer surface waters towards the Indonesian coast. The relatively cooler waters from below come up to replace the displaced water.



In the El Niño phase, however, wind systems weaken, leading to lesser displacement of warmer waters. As a result, the eastern side of the Pacific becomes warmer than usual. In the La Niña phase, the opposite happens.

In India, while El Niño conditions usually lead to a weak monsoon and intense heatwaves, La Niña conditions result in a strong monsoon.

### **What is the new product?**

Known as Bayesian Convolutional Neural Network (BCNN), the new product uses the latest technologies such as Artificial Intelligence (AI), deep learning, and machine learning (ML) to improve forecasts related to the ENSO phases.

The model's prediction relies on the fact that El Niño or La Niña are connected to the slow oceanic variations and their atmospheric coupling, which gives sufficient lead time to issue early forecasts. It calculates the Niño 3.4 index value — used to determine the different phases

of ENSO phases — and makes the forecast. The index value is obtained by averaging the sea surface temperature (SST) anomaly in the central equatorial Pacific, extending from 5°N to 5°S, and 170°W to 120°W.

### **How does BCNN compare with existing models?**

There are largely two kinds of weather models used for forecasting. One is the statistical model, which generates forecasts based on various information sets received from different countries and regions. The other is the dynamic model, which involves a 3D mathematical simulation of the atmosphere done using High Performance Computers (HPC). The dynamic model is much more accurate than the statistical model.

The BCNN, however, is a combination of the dynamic model with AI. This helps it forecast the emergence of El Niño and La Niña conditions with a 15-month lead time — unlike other models which can give a prediction up to six to nine months in advance.

### **What is the prediction?**

According to the June 5 bulletin, La Niña conditions would emerge during July-September (probability 70-90%) and continue till February 2025.

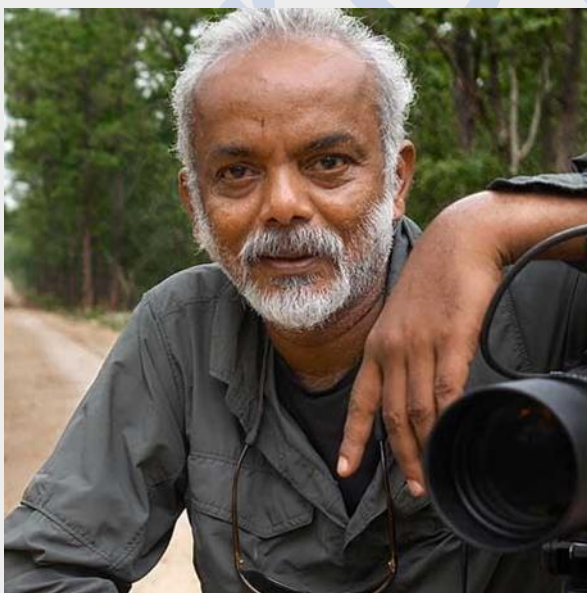
Relevance: GS Prelims

Source: Indian Express

## **3. Renowned Wildlife Filmmaker Shri Subbiah Nallamuthu announced as winner of V. Shantaram Lifetime Achievement Award**

### **Introduction**

The 18th Mumbai International Film Festival (MIFF) is honoring the illustrious wildlife filmmaker Shri Subbiah Nallamuthu by conferring upon him the much coveted V. Shantaram Lifetime Achievement Award.



Shri Subbiah Nallamuthu, has made exceptional contributions to wildlife cinematography, earning him global acclaim. His expertise extends to his tenure with the Indian Space Research Organisation (ISRO) as a high-speed cameraman.

### **About V Shantaram Lifetime Achievement Award**

The prestigious Dr. V Shantaram Lifetime Achievement Award is presented in every edition of MIFF, to a filmmaker for seminal contribution to documentary films and its movement in India. It carries a cash award of 10 lakh rupees, trophy and a citation. Other illustrious recipients of the award in previous

years include Shyam Benegal, Vijaya Mulay and other prominent filmmakers. The award is instituted in memory of legendary filmmaker V Shantaram.

Relevance: GS Prelims

Source: PIB

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