

EDITORIAL HIGHLIGHTS

08-10-2026

GS 3: SCIENCE AND TECHNOLOGY

THE HINDU PAGE: 01

Chemistry Nobel for French-Japanese duo who expanded 'mirrored' molecules study

The Hindu Bureau
CHENNAI

French chemist Henri Kagan and Japanese chemist Kenso Soai were on Monday named the winners of the chemistry Nobel Prize for 2026 for their work showing how chemical reactions can amplify small asymmetries in molecules.

Their work centred on chiral molecules, which are molecules that can exist in two mirror-image forms, like a left and a right hand. Professor Kagan's work paved the way for scientists to tune chemical reactions to produce the desirable forms of drugs, agrochemicals, and fragrances. In 1986, Professor

Symmetric study

The duo's work is centred on molecules that can exist in two mirror-image forms, a property called chirality



■ **Henri B. Kagan**
Professor emeritus at the former Universite Paris-Sud, France



■ **Kenso Soai**
Professor emeritus at the Tokyo University of Science, Japan

■ Their study of chiral molecules expanded the understanding of why many molecules essential for life prefer just one of the two possible forms. The findings have been used to optimise chemical reactions as well

Kagan and his team made a landmark discovery involving catalysts – substances that influence reactions. They showed that a small imbalance in the 'handedness' of a catalyst could disproportionately bias the reaction's end products.

This finding was used to optimise chemical reactions.

Almost a decade on, Professor Soai and his colleagues showed that a chiral molecule could speed up the formation of other molecules with its own

handedness. His work expanded the understanding of why many molecules essential for life prefer just one of the two possible forms. The proteins in our bodies are made mostly of amino acids that have one of the two mirror-image arrangements.

The enzymes that catalyse chemical reactions in cells and the receptors that respond to chemical trigger signals are also chiral. As a result, the differently handed forms of a chiral drug can interact with these molecules to elicit varied responses, only one of which might be desirable. This was a challenge for chemists who had to manufacture the desirably handed form of a drug.

GS 3: SCIENCE AND TECHNOLOGY

INDIAN EXPRESS PAGE: 18

• NOBEL PRIZE IN CHEMISTRY

Mirror-image molecules and the chemistry of life



AMITABH SINHA

CERTAIN MOLECULES exist in two forms, each a non-superimposable mirror image of the other — like the left and right hands of human beings. Chemically, the two forms are the same in the sense that they are composed of the same set of atoms, connected in the same order. The difference is only in the relative three-dimensional arrangement of those atoms, such that one happens to be the mirror image of the other.

This structural asymmetry, called **chirality**, becomes particularly interesting in biology. Many of the fundamental molecules in biology, like the amino acids that make up proteins or the sugars in DNA, appear in only one form. The mirror image versions of these amino acids or the sugars do exist, but they are rarely used in these biological settings. This preference for homochirality in life forms has intrigued scientists for long.

This year's Nobel Prize in Chemistry has been awarded to two scientists, **Henry Kagan and Kenso Soai**, for demonstrating how this homochirality can emerge.

The normal chemical processes used to produce a chiral molecule results in the production of both forms, called **enantiomers**. Kagan developed a way of manipulating these processes in such a manner that one form was produced in much greater proportion than the other. Soai took a step further and designed the first chemical reaction in which only one of the enantiomers was produced. Outside of biological processes, such a result had never been achieved.

The first breakthrough

The propensity of biochemistry to prefer one particular enantiomer over the other was initially thought to be something unique for life forms. After all, when chiral

• 'FOR THE DISCOVERY OF NON-LINEAR EFFECTS AND AUTOCATALYSIS IN ASYMMETRIC ORGANIC SYNTHESIS'



"Like hands, all amino acids exist as two mirrored variants, but only one of them is found in the proteins in your cells. The other is rarely found in nature."



HENRI B. KAGAN, 96
Professor Emeritus
at then Université
Paris-Sud, France



KENSO SOAI, 76
Professor Emeritus
at Tokyo University
of Science, Japan

molecules were produced in laboratories, a mixture of both enantiomers was obtained in almost even proportions. However, way back in the early 1900s, German chemist Willy Marckwald had been successful in carrying out a chemical reaction in which the proportion of the yields of the two enantiomers was slightly asymmetric.

Marckwald had used a catalyst — a chemical that speeds up the reaction without itself getting consumed into it — which itself was chiral. And this had led to one mirror-image form being produced more than the other.

However, subsequent attempts to increase the asymmetry in the yields of the two enantiomers remained unsuccessful. Besides, scientists still did not understand how the use of a chiral catalyst was affecting the reaction in a manner that one enantiomer was produced in greater quantity.

It was Kagan, working in the 1980s, who eventually answered these questions. Before him, it was believed that there was a

WHEN MIRROR-IMAGE MOLECULES HARMED BABIES

A DRUG FOR MORNING SICKNESS

SICKNESS: Thalidomide was introduced in the late 1950s and marketed by a West German pharma company as a sedative. It was widely prescribed, including to pregnant women for morning sickness.



BIRTH DEFECTS: By 1961, doctors had linked the drug to severe birth defects. Thousands of babies across 46 countries were affected, many with phocomelia, in which limbs are severely shortened or absent.

THE MIRROR-IMAGE PROBLEM: Thalidomide exists as two mirror-image molecules, or enantiomers. One caused birth defects while the other produced the desired effects. Later, it was found the two forms can interconvert (change into each other) in the body.

ON THURSDAY: NOBEL PRIZE IN LITERATURE

Some key terms

Chirality: The phenomenon of molecules existing in mirror-image forms — much like your left and right hands.

Homochirality: The preference for one mirror-image form of a molecule in life forms.

linear relationship between the catalyst's chirality and the proportion in which the two forms of the product were produced. In other words, if the catalyst itself contained a disproportionate amount of one form, this would get reflected in the proportions of the final product as well.

Kagan was able to show that this was not true, and that much greater asymmetry in production could be achieved even if the catalyst was only mildly chiral. In the process he was also able to demonstrate the internal dynamics of how this was happening.

The next step

This breakthrough created a new excitement in the field. While studying one of the chemical reactions that had produced one particular enantiomer in large quantities, Soai realised that there were significant similarities in the catalyst used and the final product. That prompted him to explore autocatalytic reactions — chemical reactions in which the final products them-

selves act as catalysts.

None of the autocatalytic reactions known at the time Soai started experimenting with them in the 1990s were known to produce asymmetric formation of enantiomers. After about a decade of trying, he finally succeeded in carrying out an autocatalytic reaction that resulted in the production of one particular enantiomer, which then formed copies of itself in a self-replicating process. The final product contained 99.5% of one enantiomer, a result comparable to the kind of preference seen in biological processes for a particular version of a chiral molecule.

Mysteries of life

The work of Kagan and Soai has demonstrated that homochirality can be obtained in the laboratory as well. It was not exclusive to nature. Their work does not solve the origin of the puzzle of life — how biological processes themselves preferred homochirality. But it did open up fresh avenues for scientists to try and understand the chemistry of life.

Possibly the biggest practical implication of their work has been in the pharmaceutical industry. Many drug molecules are chiral, and it matters immensely which particular enantiomer has to be used.

This is because the human bodies prefer only those enantiomers. The other variety of molecule might not just be ineffective, they can even be harmful.

Before this Nobel Prize-winning work showed how one single enantiomer could be produced, pharma companies had been manufacturing the drug molecules as a mixture of both enantiomers, and then the desirable enantiomer was separated through a separate process. This was an expensive, wasteful and often technically difficult way of achieving the final result.

The asymmetric synthesis of a particular enantiomer, as shown by Kagan and Soai, is already being used widely by the pharmaceutical industry. This is relevant for the manufacturing of all other substances that are meant to interact with living organisms, including flavours, fragrances and agricultural chemicals like pesticides.

GS 2: INTERNATIONAL RELATIONS

THE HINDU PAGE: 08

India's stakes in the Global Pandemic Agreement

At the United Nations High Level Meeting (UN HLM), in New York in September 2026, India made official remarks on the Political Declaration on **Pandemic Prevention Preparedness and Response (PPPR)**. The Declaration is part of the emerging global legal regime on pandemics led by the WHO-Pandemic agreement (PA).

Shaping the framework

The PA was adopted by 124 member-states in 2025, including India. No country voted against it, while 11 abstained, reflecting alignment across high-, middle- and low-income countries (HICs/LICs/LMICs). The negotiations hinged on how to balance national sovereignty with international cooperation and solidarity, exposing the fault lines between the Global North and the Global South. Key issues included whether a global treaty can set binding targets for measures such as 'One Health' without securing funding for countries with fragile health systems. Or whether national pandemic regulations can be harmonised through global frameworks. And whether private manufacturers can be required to share vaccines in real time at affordable prices.

The PA is not yet open for ratification because negotiations are still ongoing for an annex concerning the Pathogen Access and Benefit-Sharing (PABS) system. PABS could help ensure that, during a pandemic, LICs and LMICs receive a fair share of vaccines, medicines and other therapeutics.

Even without ratification, the PA has created a first-of-its-kind global legal regime for the PPPR. Operationalisation requires countries such as India to balance interests of the HICs, LICs and LMICs. This will determine whether the PA will further entrench the inequities of the COVID-19 pandemic or make global health governance truly inclusive.

At the UN HLM, India succeeded in enshrining the multilateral components of the PA within the principle of national sovereignty. India reiterated its commitment to strengthen global pandemic preparedness but stressed that effective



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pandemic management requires that international coordination is demonstrated. The first is equitable access to drugs, vaccines and therapeutics and the creation of global public goods, such as digital infrastructure (which admittedly align with its own national priorities).

The second is a respect for national sovereignty and the primacy of member-states in shaping global policy interventions according to national circumstance. As a contrast, the United States rejected the Declaration, calling the PABS and WHO's role in declaring pandemics as a challenge to its national interests.

India's line

In its remarks, India has acknowledged the concerns of the Global North and the South. Both sides have upheld national sovereignty as paramount on several provisions. The African countries did not give consent to commitments to monitor the human-animal-environment interface, a key source of pandemic outbreaks, without significant funding, which was not guaranteed by the Global North. Similarly, countries in the Global North did not want binding targets with regards to technology transfer (and other similar provisions).

But as India said at the UN HLM, 'Global Solidarity must be demonstrated through action'; India must be an active player in the finalisation of the global PPPR regime. India is already actively engaged in the PABS negotiations and must lead the Global South in the post PABS context. India can consider three options. First, developing partnerships on technical areas of the PA (One Health, surveillance, health workforce strengthening) to build trust with other countries in the Global South, and a 'store' of operational solutions to tricky national sovereignty problems.

Second, leveraging its leadership role within existing global political groupings. For example, the H20 summit (a health and development G-7 and G-20 partnership) will take place under the United Kingdom's G-20 leadership at the end of 2027; pandemic preparedness is one of the core health agendas. During India's G-20 presidency in

2023, India launched the Global Initiative for Digital Health and holds considerable influence within the platform's health initiatives. Another is 'Partners for Multilateralism', which was launched in 2026 by the European Union (co-sponsors are Australia, Barbados, Brazil, Canada, India and Kenya).

Third, strengthening and aligning domestic policy and regulatory architecture around its own priorities for the PA. Global leadership always rests on domestic strengths. India must ensure that its national policies on PPPR such as regulation of access to biological material and distribution of the benefits uphold the highest standards of equity which India can then demand at the global level.

A South-South health role

An equitable global regime on PPPR is in India's interests as much as a responsibility towards the Global South. India is the pharmacy of the world, manufacturing one of the largest shares of vaccines in the world in terms of volume. Yet, it needs an equitable global vaccine distribution regime. The patents for the vaccines that India manufactures are held by global pharmaceuticals. India is also import-dependent for Active Pharmaceutical Ingredients (APIs).

India needs access to the latest technology from the Global North to strengthen the manufacturing of high-grade personal protective equipment and medical devices. At the same time, India needs to lead South-South Cooperation and share its technological strength with other countries in the Global South.

India's health system has a continental scale, and as India's Health Secretary stated at the UN HLM, its interventions in digital health infrastructure, laboratories networks and One Health are valuable as global public goods. An effective PA needs an engaged India, and a strong PA will strengthen India's own pandemic management.

This article is based on a forthcoming CSEP working paper on the Pandemic Agreement

India's leadership can help bridge the divides in global pandemic governance

GS 2: SOCIAL JUSTICE

THE HINDU PAGE: 09

India struggles to curb leprosy transmission

India continues to report more leprosy cases, childhood infections and disability than projected, highlighting the need to interrupt transmissions

DATA POINT

Devyanshi Bihani
Nitika Francis

India's leprosy programme is falling short of several projections set for 2025-26. The country reported 91,783 new leprosy cases in 2025-26, 41.2% higher than the projected 65,000. New cases among children were 91.6% above the projection while the rate of Grade 2 Disability (G2D) among new cases was 1.34 per million, against a projected one per million (Table 1).

India's national prevalence rate was 0.56 cases per 10,000 population at the end of March 2026, below the elimination target of a prevalence rate below one case per 10,000 (Chart 1). But the burden remains concentrated geographically. Chhattisgarh had the highest prevalence among States/UTs at 1.66 cases per 10,000 population, followed by Jharkhand (1.51), Chandigarh (1.49), Odisha (1.25) and Maharashtra (1.14) (Map 1).

At the district level, 14.8% of districts had a prevalence rate above one case per 10,000 in 2025-26, down from 18.6% in 2013-14 (Chart 2) but 114 districts still remained above the programme's elimination target. Moreover, only 148 districts have provisionally achieved interruption of transmission, against a projected 300.

G2D was also concentrated in a few States/UTs. Chandigarh, Delhi, Chhattisgarh, Jharkhand and Odisha together accounted for 42.5% of the 1,945 G2D cases reported in 2025-26. Chandigarh recorded the highest rate at 13.54 per million, followed by Delhi (11.53) and Chhattisgarh (7.87) (Chart 3).

Single Dose Rifampicin Post-Exposure Prophylaxis (SDR-PEP), a preventive dose given to people who have been in contact with a leprosy patient, was administered to 91.2% of the 16.94 lakh eligible contacts in 2025-26, up from 71.4% of the 6.48 lakh in 2019-20 (Chart 4).

Leprosy burden

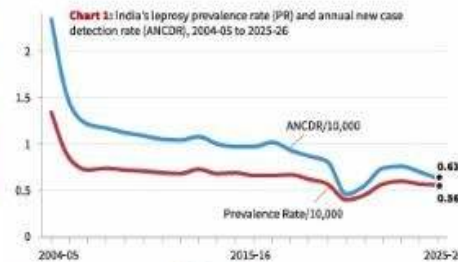
The data for the charts were sourced from the National Leprosy Eradication Programme annual report (2025-26). The projections mentioned in Table 1 are from the National Strategic Plan and Roadmap for Leprosy 2023-2027 published in 2023.



Changing lives: Granodaya school located at Venkatapuram in Kanchipuram district admits children of leprosy patients. SHARU JOHNI

Table 1: Projections vs actual figures for key indicators. *provisionally achieved interruption of transmission

Indicator	2025-26 projection	2025-26 actual	Gap
Annual new leprosy cases	65,000	91,783	26,783 above (+41.2%)
Child cases (annual new)	2,000	3,832	1,832 above (+91.6%)
Child cases with G2D	25	37	12 above (+48%)
G2D rate in new cases (per million)	1	1.34	0.34 above (+34%)
Districts achieving interruption of transmission	300	148*	152 short (49.3%)



Map 1: Prevalence Rate (PR) of leprosy across States and Union Territories in 2025-26, per 10,000 population

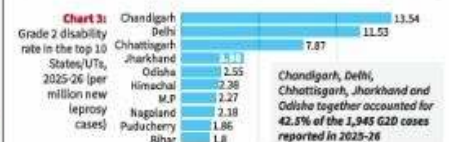
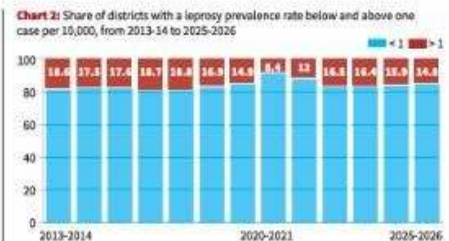
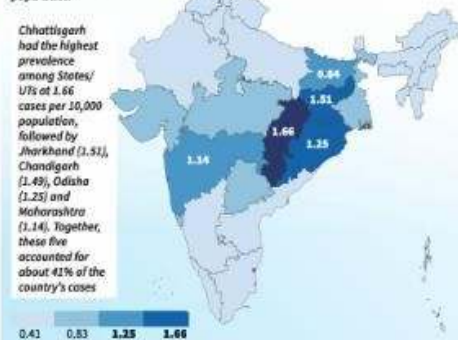
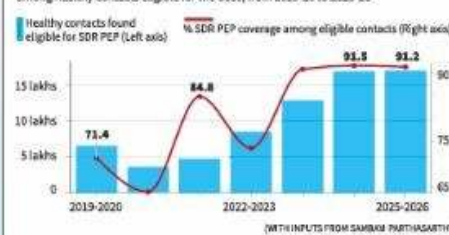


Chart 4: Single-Dose Rifampicin-Post-Exposure Prophylaxis (SDR-PEP) coverage among healthy contacts eligible for the dose, from 2019-20 to 2025-26



GS 3: ECONOMY

THE HINDU PAGE: 10

India's trade caught in the middle

India's trade surplus with the U.S. is critical as it offsets a structural trade deficit with China, but a heavy U.S. tariff and the potential impact of AI on exports could put this surplus at risk and intensify pressure on the rupee; India should treat the tariff threat as a wake-up call to diversify its export markets and products

ECONOMIC NOTES

Rohit Azad
Indranil Chowdhury

Finance Minister Nirmala Sitharaman said on Monday that India-U.S. trade talks have reached a "plateau" and further concessions from either side might be difficult. To begin with, those celebrating India extracting a great trade deal from the U.S. miss the point. While a deal with some relaxations may be better than no deal, we have to compare the situation against the status quo, i.e., what it was before the Trump tariff was imposed. This piece attempts to discuss the importance of the trade surplus that India runs with the U.S. in this context. What makes the situation difficult is that India runs a trade deficit with China (red bars in Chart 1) but a surplus with the U.S. (blue bars in Chart 1). And it is not just that India buys goods from China that are not easily substitutable, at least not in the short run. I.e., it is a structural deficit that is not easy to reverse. On the other hand, the heavy tariff on Indian goods that Donald Trump has threatened to impose, and the development of artificial intelligence (AI), could reverse its surplus with the U.S. Combine these two factors, and India faces a serious problem on the trade front.

India is caught between the devil and the deep blue sea.

Forex market and the rupee's value
Like many other markets, the price of a currency is determined by its demand and supply. In India's case, let us consider the value of the Indian rupee (INR). As a proxy for a global currency, we take the U.S. dollar. How many rupees a dollar can buy is India's exchange rate vis-à-vis the U.S. dollar. A rise in the number of rupees a dollar can buy means a rise in the value (price) of the dollar and a fall in the value of the rupee.

India's demand for dollars consists of its imports and capital outflows (outward Foreign Direct Investment (FDI) + Foreign Portfolio Investment (FPI)). A rise in the price of the U.S. dollar (a depreciation of the INR) means imports become more expensive for Indians because they have to shell out more INR to buy the same goods they were buying earlier. So, it is often assumed that demand for dollars falls with a rise in the price of the dollar. The supply of dollars to India comes from exporters, capital inflows (inward FDI + FPI), transfers, Net Factor Income from Abroad (NFI), and external borrowing and deposits. In contrast to imports, exports are assumed to vary positively with the price of the dollar. If a dollar can buy more rupees, then the cost of employing a computer coder sitting in India becomes cheaper for an American firm. Once you bring the demand and supply together (in Diagram 1(a)), the equilibrium value of the rupee is determined.

A caveat is in order. This is a simplified representation of reality. Firstly, India's exchange rate is not fully market-determined. The central bank manages the value of the rupee by intervening in the market to keep the exchange rate within a range of its preference (between the levels in Diagram 1). India has what is called a **managed float system**. How does the central bank intervene? If the demand

Trade-off on the cards

India's trade surplus with the U.S. faces uncertainty amid tariff persistent deficit with China

Diagram 1: India's forex market: A schematic representation

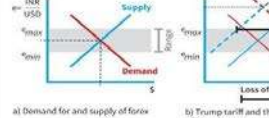
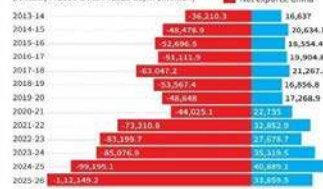


Chart 1a: Net exports with the U.S. and China (Annual, FY2013-24 and FY2025-26, in \$ million)



Source: Authors' calculation, Ministry of Commerce and Industry, Government of India (Charts: Azad & Chowdhury)



for dollars outpaces its supply by so much that the rupee threatens to depreciate below the level preferable to the central bank, it releases forex to the markets (thereby inflating the supply of forex available) and keeps the rupee within the range. It adds to its reserves if the opposite happens, i.e., the rupee appreciates outside that range.

Secondly, the demand and the supply curves are not as neat as they are presented here. For example, beyond a certain range of depreciation of the rupee, capital outflows for fear of loss in its dollar value may far outpace the fall in imports, making the demand curve vary positively with the exchange rate, i.e., a G-shaped demand curve. But we leave those complications aside for this piece.

Trump tariff and the tran crisis

Diagram 1 (b) is a schematic representation of the state that India is likely to be in. Faced with a rising dollar price of crude imports, the demand curve for India would go up significantly. This threatens a depreciation of the rupee (which is what has worried India so much). Since this threatens to push the exchange rate beyond its range, the central bank would have to run down its reserves to manage

If the U.S. continues to arm-twist India, it makes better economic sense for us to gradually diversify away from U.S. economy; what will be lost in the U.S. market could, at least potentially, be compensated within Global South

the rupee's value, as it has done in the last two years.

The role of a Trump tariff (added to the potential loss of exports that AI may bring in) needs to be seen in this context. Such a tariff, if implemented, will push the supply curve of dollars (due to a fall in exports to the U.S.) to the left and add to India's current woes on the external front. The extent of depreciation resulting from this is far beyond what India is facing currently. And to prevent the currency from depreciating beyond the upper bound may require a significant loss of reserves, an intervention which may set off a vicious cycle of capital outflow and depreciation.

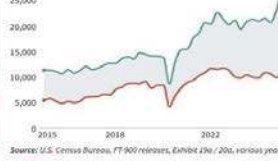
Chart 2 plots these demand and supply values for the last nine quarters to show that the demand for dollars has outpaced the supply for four out of the last nine quarters. And there has been a

Chart 2: Autonomous demand vs. supply of foreign exchange (Quarterly, \$ million, April 2024-June 2026)



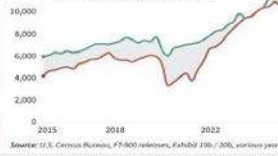
Supply of forex = Credit side of Current + Capital + Financial Account, excluding the Reserve Assets sub-item (RBI's own reserve transactions are the residual being financed, and not a private-market source of supply). Demand = the matching Debit side, same exclusion

Chart 3a: India-U.S. trade in goods (India exports to, and imports from, the U.S., Quarterly, Q1 2015-Q2 2026, in \$ million)



Source: U.S. Census Bureau, FPI-900 releases, Exhibit 236/200, various years

Chart 3b: India-U.S. trade in services (India exports to, and imports from, the U.S., Quarterly, Q1 2015-Q2 2026, in \$ million)



Source: U.S. Census Bureau, FPI-900 releases, Exhibit 236/200, various years

sharp rise in demand in the aftermath of the closure of the Strait of Hormuz.

Criticality of the U.S. markets
Let us look at the trade surplus that India has with the U.S., which is the bone of contention for President Trump. If we divide the trade surplus into goods and services, we get a disaggregated picture of the current account surplus that India runs with the U.S. (see Chart 3). India's surplus in goods (Chart 3a) is much higher than it runs in services (Chart 3b) vis-à-vis the U.S.

The aim of Trump tariff is to reverse this goods balance in favour of the U.S. to the extent possible. If the U.S. continues to arm-twist India, it makes better economic sense for us to gradually diversify away from the U.S. economy. What will be lost in the U.S. market could, at least potentially, be compensated within the Global South provided the right trade and industrial policy architecture is in place.

India should, accordingly, treat the Trump tariff as a wake-up call and use this opportunity to focus on export growth by diversifying the exportable product mix and regional development.

(The authors are a part of the DevMac (Development Macroeconomics) network, which seeks pluralism in Economics)

THE GIST

India's trade deficit with China is structural, while rising crude import costs are putting pressure on the rupee and foreign exchange reserves

A U.S. tariff could further widen the external imbalance by reducing export earnings and triggering capital outflows and currency depreciation

India needs to strengthen export growth through a wider product mix and regional diversification, rather than relying heavily on the U.S. market

GS 2: INTERNATIONAL RELATIONS

INDIAN EXPRESS : PAGE NO -02

INDIAN EXPRESS PAGE: 01

SAUDI-LED COALITION SAYS IT INTERCEPTED & DESTROYED BALLISTIC MISSILE TARGETING KHAMIS MUSHAIT

Houthi hit Aden airport as fighting escalates in Yemen

King Khalid airport in Riyadh also targeted with several drones

Reuters

Sanaa, October 7

YEMEN'S HOUTHIS attacked Aden's international airport with ballistic missiles and explosive-laden drones on Wednesday, the country's Transport Ministry said, as fighting between the Iran-aligned group and Saudi-backed government forces intensified.

Battles have focused in recent days on areas around the Bab el-Mandeb Strait, a shipping route that has become more crucial for energy exports since the conflict between the US and Iran restricted trade through the Strait of Hormuz.

This week, Yemeni government forces with Saudi-led coalition air support launched a counter-offensive to recapture strategic territory near the strait and around the town of Mocha that the Houthis had captured in September, but it is unclear if their advance will hold.

The number of people displaced since the latest round of fighting began has risen to



Houthi supporters gather in solidarity with the movement as fighting escalates across several fronts, in Yemen, on Wednesday. REUTERS

more than 200,000, the International Organization for Migration said on Wednesday.

On Wednesday, the Saudi-led coalition said it had intercepted and destroyed a Houthi ballistic missile north of the Saudi capital Riyadh. It said it was tracking the launch platform over Houthi-controlled Sanaa and would destroy it, but gave no details of casualties or damage.

Houthi military spokesman Yahya Saree said in a statement that the group had targeted King Khalid International Airport in Riyadh with several drones. There was no immedi-

ate Saudi confirmation of an attack on the airport.

Any Houthi stranglehold on the Strait could threaten shipping or global oil flows, and Saudi Arabia has been seeking international assistance to repel the Houthis. Turkey is sending mainly defensive and technical support, two officials said on Wednesday, after the NATO member and Pakistan pledged to implement a collective defence commitment under their newly formed alliance.

Fighting on the western front remains concentrated in Dhubbab, overlooking Bab el-Mandeb,



where pro-government forces are advancing into strategic hills to the east, Yemeni military and government sources said. The Houthis said they repelled the attacks.

A missile landed near the runway at Aden International Airport minutes before a Cairo flight was due to land, the Transport Ministry said. The flight was diverted to Jeddah, while two planes on the runway were moved away amid fears of further strikes. The Houthis did not immediately comment.

The Saudi-led coalition said it intercepted and destroyed a Houthi ballistic missile targeting Khamis Mushait, Saudi state TV reported. Separately, Houthi spokesman Yahya Saree said the group attacked Abha airport and a Khamis Mushait airbase with ballistic missiles and drones.

Iran must cut enrichment to end war: Vance

Reuters

Fairbanks, October 7

US VICE President JD Vance said in an exclusive interview with Reuters that Iran must make a "meaningful" reduction in its nuclear enrichment capacity to satisfy US demands and end the country's seven-month war, even as Washington was unsure how Tehran makes decisions in negotiations.

Vance said on Monday after a campaign trip in Alaska that any agreement would require Iran to reduce its nuclear enrichment capacity, rather than offer assurances of future nuclear drawdowns.

"If you don't want a nuclear weapon, then why do you need 60% enriched fuel? And if you want to show commitment to not building a nuclear weapon, don't build highly enriched fuel. That's a very basic threshold issue," Vance said.

"I think if they want to show a commitment to not building a nuclear weapon, they would do something meaningful on their enrichment capacity."

Washington's "requests and ideas" about Iran's nuclear program are at odds with Tehran's demands, a senior Iranian official told Reuters on Wednesday when asked about Vance's comment that Tehran must cut enrichment to end the war.

GS 3: ENVIRONMENT

INDIAN EXPRESS PAGE: 11

Average size of vertebrate populations declined 73% in 52 yrs: WWF

Nikhil Ghanekar
New Delhi, October 7

THE AVERAGE size of monitored vertebrate — mammals, fish, birds and amphibians — populations declined 73% over 52 years between 1970 and 2022, according to the World Wide Fund for Nature (WWF) biennial Living Planet Report, 2026.

As part of the Living Planet Index (LPI), average changes in the size of wild populations of vertebrate species are measured over time, tracking variations in relative abundance rather than absolute numbers.

This means that the size of

these populations fell by, on average, 73% during the assessment period, and it does not reflect the number of individual animals lost, nor the number of populations lost.

Habitat loss and degradation, overexploitation of resources, climate change, impact of invasive species, pollution and disease are some of the dominant drivers of changes across ecosystems and wildlife populations, the Living Planet Report stated.

The way the world produces and consumes food is the single largest driver of biodiversity loss. The food and agriculture system

is the leading cause of habitat destruction, overharvesting, and a major source of greenhouse gas emissions.

Even as the report noted the declining trends in wild populations, it also noted that nature can recover if society follows a clear pathway to trigger positive tipping points in the energy, food and finance systems that drive biodiversity loss.

"The Living Planet Report 2026 is both a stark reminder of the scale of the biodiversity crisis and a message of hope. While the Living Planet Index continues to highlight significant declines in monitored wildlife

populations, the report also shows that these declines are not inevitable," said Ravi Singh, Secretary General and CEO, WWF-India.

"Species recoveries, including those of tigers in India and globally, demonstrate what sustained conservation action, collaboration and long-term commitment can achieve," he added.

The LPI, produced by the Zoological Society of London, includes 35,803 population trends of 5,790 vertebrate species from 1970 to 2022.

The strongest declines, 85%, were seen in freshwater eco-

systems, followed by terrestrial ecosystems, at 69% and marine ecosystems at 59%. "Although the overall trend is negative due to the magnitude of the declining trends, half of the populations included in the LPI are stable or increasing," WWF said.

The report highlights recoveries in populations of green turtles, bluefin tuna, tigers and southern African elephants, which, it said, demonstrate that targeted conservation interventions can deliver proven results.

The report noted rise in global wild tiger numbers between 2010 and 2025 — from 3,200 to around 5,700 individuals.