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USING AI TO INCREASE STUDENT ENROLMENT

Using AI to increase student enrolment

The AI-powered campaign is aimed at spreading awareness about advantages of studying in the State-run school; the headmaster gets the idea from her daughter, who is studying B.Tech

P. Sridhar

RAJANNA SIRCILLA

In a novel campaign to boost enrolment in the Zilla Parishad High School at Vattemla in Rajanna Sircilla district of Telangana, the school headmaster K. Suryanarayana is spearheading an AI-powered campaign on social media to increase student enrolment in the State-run school in the next academic year.

The novel idea struck him when his daughter, who is studying in third year B.Tech at IIITDM-Kancheepuram, explained to him about



K. Suryanarayana. SPECIAL ARRANGEMENT

the multifarious applications of AI during her recent visit to her native place for summer vacation.

Translating the idea into action, he claimed to

have created a 'virtual AI anchor', a computerised avatar, to highlight the benefits of studying in the ZPHS, Vattemla.

"The 'AI anchor' reads out a text in Telugu

highlighting the salient features of the ZPHS such as English medium instruction, well-qualified teachers, mid-day meals, free textbooks, two pairs of school uniform, digital lessons through T-Sat channel and so on," Mr. Suryanarayana said.

He said efforts are on to increase student enrolment in the school.

The campaign is aimed at spreading awareness about the advantages of studying in the State-run school endowed with well-qualified and experienced teachers. The ZPHS, Vattemla, recorded 100% results in the SSC exams last year.



Cannes do

Indian films are beginning to make a splash on the international stage

The moment after Payal Kapadia scripted history by becoming the first Indian filmmaker to win the Grand Prix award at the Cannes film festival for *All We Imagine as Light* will be etched in cinematic memory. As the 38-year-old walked to the stage, she pulled along the three main women protagonists of her film, Kani Kusruti, Divya Prabha and Chhaya Kadam, and the four posing with the prize has become the shot of the 77th edition of the festival, definitely for Indians. Bagging the second highest honour after the Palme d'Or (which went to American director Sean Baker's *Anora*) for her trilingual debut feature, an Indo-French collaboration, which shines a light on the story of two Malayali nurses and migrants working in 'Maximum City' Mumbai, is a big win for indie cinema. The last time an Indian film was in the competition section was 30 years ago with Shaji N. Karun's *Swaham* in 1994. "Please don't wait 30 years to have another Indian film," Kapadia said in her acceptance speech. Eschewing the usual song-and-dance trope or larger-than-life heroes, Kapadia's film is about a friendship between three very different women. She said friendship is a very important relationship for her, "because it can lead to greater solidarity, inclusivity and empathy towards each other. These are the values we should all be striving for".

The other important takeaway is Kapadia's remark that "it takes a village to make a film". Thanking her cast and crew, Kapadia talked about the Indian film-making ecosystem - "There are interesting films being made in India, and I am only a product of that." She also rooted for the Film and Television Institute of India (FTII), with which she had a run-in in 2015, where she said she watched world cinema. She was effusive about the strong film industry presence in most States, singling out the Malayalam film industry for its support to good cinema. India clearly made a splash at Cannes this year, with Kollata's Anasuya Sengupta winning the Best Actress in the Un Certain Regard section for her turn in Konstantin Bojanov's *The Shameless*; British-Indian film-maker Karan Kandhari's *Sister Midnight* in the parallel Director's Fortnight selection; FTII student Chidananda S. Nalk's short *Sunflowers Were The First Ones To Know* winning the top prize in the official LaCinef section; Cannes' competition for film school students; Cannes Classics releasing a remastered *Manthan*, Shyam Benegal's 1976 film, and so forth. For Kapadia, this was her third outing in Cannes - she had won the best documentary prize in 2021. With the Grand Prix prize just three years later, Kapadia will inspire young independent film-makers to tell their stories, and, hopefully, get the backing they deserve.

Maximum impact

IPL's 17th edition added a new dimension to the way cricket is played

Sunday's Indian Premier League final between Kolkata Knight Riders (KKR) and Sunrisers Hyderabad (SRH) at the M.A. Chidambaram Stadium in Chennai might have turned anti-climactic, but it should not deflect from what was an enthralling two months of cricket. KKR thrashed SRH by eight wickets to claim its third title - its first since 2014 - but the one-sided nature of the summit clash should not stain the latter's reputation. KKR and SRH had finished seventh and tenth, respectively, in 2023, but broke out of the rut by playing some of the boldest and most attacking cricket. Eight of the nine highest IPL totals came this season, and KKR and SRH accounted for five of those. These gargantuan scores can be attributed to the Impact Player rule, which allowed an extra batter or bowler to be drafted into the playing XI. But credit is also due to the respective teams' think-tanks that assembled such wholesome squads. KKR's stock was built on Shreyas Iyer's astute captaincy, the experience of Sunil Narine - most valuable player for a record third time - Andre Russell and Mitchell Starc, and a strong Indian core of Venkatesh Iyer, Varun Chakravarthy and Vaibhav Aroa. SRH brought in Pat Cummins to helm the side, and under the Aussie's calm leadership, Travis Head, Abhishek Sharma and Heinrich Klaasen redefined T20 batting.

As much as KKR and SRH broadened the horizon of T20s, IPL-17 witnessed spirited attempts by others to keep pace. Virat Kohli had his second-best IPL (74 runs) and scored at a never-seen-before rate (154.70). The belligerent hitting of Jake Fraser-McGurk and Tristan Stubbs kept Delhi Capitals in Playoffs for the first time, while Will Jacks played a crucial role in the Royal Challengers Bangalore's futuristic entry into the

Playing to the gallery can be injurious to rail safety

Believe it or not, adhering to the rules can sometimes invite disciplinary action. A few weeks ago, in one of the zonal railways, disciplinary action was sought to be taken against the pilot of a "light engine", i.e., a locomotive without a trailing load of coaches or wagons, who was tasked with clearing a train stranded in midsection as the locomotive had failed. The case was that the pilot had not spoken to his supervisor over the phone, but it was actually for not having run at a higher speed than 15 km that was permitted in the written authorisation given to him by the station master under the rules for operation in a section that is blocked by another train. Why was he asked to do this? It was to minimise the delay to passenger trains held up due to the disruption. Apparently, punctuality took priority over safety. Fortunately, with the incident gaining media attention, the proposed disciplinary action was withdrawn.

Of late, loco pilots and assistant pilots of the Indian Railways (earlier called drivers and assistant drivers), seem to be at the receiving end of an attitude of the management that can best be described as "playing to the gallery". Let me explain with two more examples.

The runaway train

On February 25, 2024, a train formation, consisting of two diesel locomotives, both unmanned, and 53 wagons, that were loaded with stone ballast, with no brake van, rolled out of Kathua station of the Northern Railway unmanned. Because of the continuous falling gradient of the terrain, the "pilotless train" in both locomotives continued its journey for over 70 kilometers before it could be finally stopped. Fortunately, by routing the runaway train through unoccupied lines along the way a major disaster was averted.

Since access to a copy of the inquiry report in this case has been denied under a restrictive clause of the Right to Information (RTI) Act 2005, this writer has had to go by the version put out in the media by one of the staff organisations. According to this version, the pilots, who were beyond their normal hours of duty, had requested to be relieved. But, instead of allowing them to proceed to their base station which was nearer, orders were issued to them to stable (park) the train and proceed by a passenger train (which had already arrived at the station) to another station further away from their base station. The insufficient time available to the pilots to ensure proper securing of the stabled load on a station with a gradient seems to have been a critical factor that led to the train rolling away. Yet, the most stringent provision of the



K. Balakesari
formerly of the Indian Railway Service of Mechanical Engineers, was also Member Staff, Railway Board

discipline and appeal rules of the Railways was invoked in this case to summarily remove the pilots along with the station master and a pointsman from service.

The third case is a serious accident, a tragedy wrapped in a mystery. On October 29, 2023, at about 7 p.m., the Visakhapatnam-Rayagada Passenger collided with the rear of the Visakhapatnam-Halisya Passenger, also travelling on the same line, between Kantakapalle and Almada stations on the Howrah-Chennai line. The collision led to the death of 14 passengers, apart from the pilot and assistant pilot of the rear train and the guard (train manager) of the train in front. Fifty passengers were injured.

There was a statutory inquiry after the accident, conducted by the Commissioner of Railway Safety (CRS), South Central Circle who functions under the Ministry of Civil Aviation. The Preliminary Report of the CRS/SC Circle, which was submitted in November 2023, a little over two weeks after the accident, had concluded that the accident was caused by "errors in train working" - essentially meaning that the station staff and the crew of the train in the rear had not followed the rules of operation on a section with automatic signalling in which some signals were also defective.

The case of 'distractions'

Over four months after the accident, in early March 2024 and before the publication of the Final Report of the CRS, the Minister for Railways announced to the media (Eureka!) that an inquiry conducted by the Railway officials a day after the accident had revealed that "errors in train working" of one of the trains involved in the accident was distracted as they were watching a cricket match on a mobile phone. Based on this finding, the Minister added, for good measure, that the Indian Railways would now be installing systems which would be able to detect any distractions and ensure that the pilots and assistant pilots are focused on train working.

The Preliminary Report of the CRS, accessed by this writer through the RTI route, nowhere mentions that the attention of the crew was diverted due to their watching a cricket match on a mobile phone. On the contrary, the CRS has commented that during the 10 minutes preceding the collision, the loco pilot of the rear train had performed nine different operations testifying to his alertness.

The Final Report of the CRS, which was released recently, essentially reiterates the conclusion of the Preliminary Report. And now, according to a report published in this daily on May 3, 2024, we are informed that "with no evidence forthcoming later in the mobile data

usage to substantiate the allegation that the loco pilots were watching cricket" on mobile phone at the time of the collision, the Railways have recalled the safety circulars issued in this context. This sordid episode - which seems to be a classic case of first formulating a theory and then later looking for evidence to support it - raises a few questions.

Troubling questions

If, as it turns out now, no evidence was forthcoming from the mobile call records to substantiate the allegation that the pilots were watching a cricket match, on what basis was an announcement made four months after the CRS submitted his Preliminary Report, by the Union Minister for Railways to that effect? Was there an attempt at the lower levels to plant a red herring? After all, watching a cricket match on a mobile phone can be blamed on a reckless crew, whereas the flouting of rules of train operation in automatic signalling territory by the station staff and the loco crew partially reflects on the administration for improper training of the staff or ineffective monitoring of train working under abnormal conditions.

The episode, unfortunately, also exposes a surprising lack of professionalism in the Railways at various levels in dealing with the investigation of a serious accident. And, what is even worse, it also shows a deplorable lack of sensitivity in handling a matter involving two deceased railway employees.

Each case recounted above is vastly different from the other. Yet, there are some common threads running through all of them. All involved loco pilots. Each case was linked to rail safety. Each case showcased an over-weening eagerness at various levels of the hierarchy to punish or blame, almost expecting approbation from "the gallery" for a tough, no-nonsense approach. The gallery varies in each case: the immediate superior, the bosses in the Ministry, or the media and the public at large.

These cases also call for some serious introspection. With nearly 10% vacancies in the cadre of loco pilots and also ever increasing volumes of freight traffic handling each year, it is a no-brainer that such record-breaking performances are made possible only by the regular breach of the rules governing the duty hours of the running staff to a significant extent. There are also other issues such as continuous night working and inadequate rest at home stations, all of which point to the need for putting in place a mechanism to give focused attention to the major issues concerning loco pilots. Meanwhile, playing to the gallery can adversely impact rail safety.

A heavy-handed approach in dealing with Indian Railway locomotive pilots can be counter productive

Chabahar's opportunities and challenges

The recently concluded contract between India and Iran, which gives New Delhi rights to invest in and operate the Shahid-Behesti terminal at Chabahar Port for another 10 years, has created many headlines. The port remains the crown project anchoring economic relations between the two countries. The deal came at a precarious time in West Asia as the war in Gaza continues unabated, Israel-Iran tensions remain critical, and the passing of Iran's President and Foreign Minister in a helicopter accident challenges domestic politics in Tehran.

Representative of India's thinking

There is no denying that the Chabahar project is an important endeavour for both economic and strategic reasons. At the core of it, Chabahar, for India, represents its thinking from the perspective of an extended neighbourhood, and not necessarily as part of its West Asia outlook. The port is a fulcrum of the International North-South Transport Corridor, a project looking towards seamless linking India with Central Asia and Russia, bypassing Pakistan. Beyond this, Chabahar is also astutely tuned into the 'new' realities of Afghanistan. The Taliban-led interim government in Kabul has also thrown its weight behind the port, offering an investment of \$35 million as it looks to secure alternatives and not be economically reliant on Pakistani ports such as Karachi or the China-backed Gwadar. In November 2023, Taliban leader Mullah Baradar visited Chabahar, with Shahid-Behesti visible in the background.

Bilaterally for India and Iran, Chabahar is also a symptom of challenges between the two states. While there is a lot of public championing for the project, and for good reasons, it was not for Chabahar, India-Iran ties today would look extremely dry. The reasons are multifaceted and tied to both country's views of their national,

regional, and geopolitical interests. Instead of expanding projects and economic cooperation beyond Chabahar, many older ones, such as the gas field Farzad-B which was discovered by Indian state-owned enterprise ONGC Videsh, have now been written off. Another old bilateral platform, the Iran/Hind shipping company, was dissolved in 2013 because of sanctions. Chabahar, is a legacy project, which has its foundations going back to 2003. This was an era when India was opening to developing economic assets abroad. Chabahar in Iran was one, Sakhalin-1 in Russia, was another.

A reflection of diplomacy

The geopolitics today that surrounds India's play in Chabahar, and Iran's levers, make for an interesting study. This latest iteration of the deal was signed not too long after both Israel and Iran exchanged missile fire and came critically close to a full-scale conflict. India's Adani Group, meanwhile, has also invested in a large port project in Israel. The company bought Israel's Haifa port on the Mediterranean Sea for \$2 billion. This was also made possible in part due to India's participation in new diplomatic and economic endeavours with the United States, Israel, and Arab partners, such as the I2U2 and India-Middle East-Europe Economic Corridor. The fact that India's buy-in into Haifa was not a constraint for the Chabahar deal to go through is not only a testament to Indian diplomacy but also for the U.S. to also recognise that this kind of access which New Delhi has is beneficial, and not detrimental, to Washington.

Recent remarks from the U.S. over potential sanctions against Chabahar stand out as myopic. This is a relation with Iran and the continuity of Chabahar's development, which offers access to difficult political terrain such as Central Asia, and even Afghanistan, could bring in a significant level of integration and help in building

alternatives to China-backed projects. Despite public discourse, China's heavy financial might and the 2021 strategic deal with Iran, does not automatically make Tehran subservient to Beijing. Iran is a quintessential survivalist state and plays a diverse set of cards in its playbook of geopolitics.

The Biden administration would benefit by not blindly following former U.S. President Barack Obama's doctrine on how to deal with India-Iran ties, and Chabahar, at its centre. New Delhi burnt its fingers by giving Mr. Obama too much room when it completely stopped importing oil from Iran. This took Tehran, consistently among India's top two suppliers of oil for decades, out of the top 10. Even if India's thinking was to build influence in Washington around the nuclear deal negotiations, Donald Trump as the U.S. President and the unilateral exit of the U.S. under his watch from the Joint Comprehensive Plan of Action (JCPOA) in 2018, recalibrated how non-partisanship and the stability of critical U.S. foreign policies were to be viewed thereafter.

The bigger picture

Finally, for Chabahar, there are two main points to consider moving forward. First, the port project cannot be the singular major play in the bilateral relationship. This concentration of interests is volatile. Second, the U.S. must move towards being accommodative on sanctions against Chabahar. Viewing the port as a collateral against problematic Iranian policies in West Asia would not be an accurate understanding of the big picture of India's own outreach towards its extended neighbourhood which could benefit larger American aims as well.

This is important to be considered at a time when the U.S. itself maintains a channel with the Iranians not only through Swiss intermediaries but, increasingly, through Oman and Qatar as well.

The geopolitics around India's play in Chabahar and Iran's levers is interesting



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WHERE ANIMALS ARE DYING BY A THOUSAND CUTS

Where animals are dying by a thousand cuts

Elections have concluded in most constituencies in Uttar Pradesh, with unemployment, inflation, and agrarian distress likely to have been the core issues motivating the voters. With more than a million abandoned cattle decimating harvests and farm-based livelihoods, however, electoral winds may blow in strange directions in this largely agrarian and electorally pivotal State. These stray cattle, or “*chutta jaanwar*” as they are colloquially known, were born out of the disruptions wrought on a functioning livestock economy by state policies and state-empowered vigilantes. The transport and trade of cattle without permits has been illegal in U.P. since 1955. Cattle trade, however, thrived until recently. It was enabled by a clandestine network of traders, and the tacit acceptance of communities that the meat industry is an integral part of the livestock economy.

Impact on wildlife

While the impacts of stray cattle on farm livelihoods have been widely covered, we want to highlight their toll on wildlife populations in the biodiverse Terai areas of U.P., spanning the districts of Pilibhit, Lakhimpur Kheri, and Bahraich. The U.P. Terai landscape is renowned for its thriving sugarcane agriculture and two tiger reserves that harbour populations of endangered species such as tigers, rhinoceros, swamp deer, and Bengal florican. Here, forests, grasslands, and agriculture seamlessly blend to create a vast wilderness within which people and wildlife live cheek by jowl. Paroxysmal conflicts with tigers and chronic crop losses to herbivores have been the norm across the landscape. Some people set up simple fences to protect their farms. Others, with farms adjoining protected areas, pool resources and use their influence to have fences set up along the farm-forest boundary.

With stray cattle venturing into



Sankarshan Rastogi

is an ecologist. Views are personal



Rekha Warrier

is an ecologist. Views are personal

In the U.P. Terai, farmers are putting up razor-wire and electric fencing to guard their farms against stray cattle. The toll these fences are likely taking on wildlife remains unaccounted for

farmlands proximate to villages and busy roads, farmers are adopting deadlier measures such as putting up razor-wire and high-voltage electric fencing. These are designed to kill or inflict debilitating injuries on anything that crosses their path. Reports of wounded cattle dying are common. But the toll these fences are likely taking on the plethora of wildlife that use these farms remains unaccounted for. In the U.P. Terai, sugarcane farmlands serve as vital wildlife movement corridors. Being able to move unhindered between protected areas is key to ensuring the survival of wide-ranging species. Ensuring this movement, while preventing and mitigating conflicts, is a huge challenge now, which is further complicated by deadly fences intended for crop-raiding stray cattle.

The potential for large populations of unvaccinated free-ranging cattle to transmit diseases such as bovine tuberculosis and lumpy skin diseases to wild populations also remains underappreciated. Multiple cases of the latter were reported recently from various districts of U.P., including parts of the Terai. The presence of large numbers of cattle within farmlands and along forest boundaries is also creating a large prey base that potentially facilitates the residence of tigers within farmlands, which creates fertile grounds for more conflicts.

Farmers recognise stray cattle as a serious menace, even as they wrestle with their beliefs in the divinity of cows. Some of their newer convictions about the extraordinariness of cows – “the only animal that inhales and exhales oxygen” – rests uneasily alongside the recognition that in terms of utility, they are outmatched by buffaloes. The ubiquitousness of tractors, the loss of grazing commons, changing aspirations, and rising input costs have made cattle rearing an increasingly impractical activity. Communities that were once pastoral have over the decades

become largely agrarian, with livestock rearing primarily supporting their household needs. High-yielding buffalo breeds, so far exempt from bans on trade and slaughter, fill this niche better than cattle do. Demand for buffaloes is dented only on account of their high purchase and rearing costs.

Building cow shelters

These dueling commitments towards one’s livelihood and ideas of cultural identity result in farmers propounding innovative ideas to solve the issue. Popular among these is the suggestion that the government needs to build cow shelters, including within protected areas, to allow cattle to enjoy the forest air and readily available fodder. These sentiments mirror those expressed towards crop-raiding wildlife species in the Terai. Like many landscapes with protected areas, communities in the Terai view the tiger reserves and wildlife as exclusive government property. It is unsurprising then that they wish to see the stray cattle, which they refer to as “*Yogi-Modi ki gay* (Yogi-Modi’s cows)”, be cared for within the government’s protected area where, they believe, other crop raiders owned by the government reside.

Protected areas in the U.P. Terai are small, fragmented, and their most productive grasslands are declining due to environmental change. The future of several imperiled species depends on sustaining and enhancing these grassland areas. Creating cow shelters within protected areas does not serve this end. While this has not yet been mooted as a possibility by the government, given recent trends, and the fact that the U.P. government spends more on feeding stray cattle than on pensions for widows and the elderly, it is not implausible.

Who will eventually reap electoral dividends from voters’ complicated relationship with stray cattle remains to be seen. In the interim, animals both domestic and wild are dying by a thousand cuts across the Terai.

Vocabulary = cheek by jowl. (Idiom) = live very close to each other.

- ❖ Amid repeated deaths from animal attacks and rising anger over them, Kerala declared mananimal conflict as a state-specific disaster, becoming the first state in the country to do so.



What is Man-Animal Conflict?

- ❖ Meaning:
 - ☛ It relates to the interaction between wild animals and humans, as well as the negative consequences for people, their resources, wild animals, and their habitats.
 - ☛ Human-wildlife conflict has reached alarming levels in states across India. For example,
 - In Maharashtra, human-wildlife conflict led to the death of 86 people in 2021 and 105 in 2022 - a sharp increase compared with the last decade when average human deaths were around 40.
- ❖ Causes:
 - ☛ Growing populations of human or animal overlap with established wildlife or human territory, resulting in a loss of resources.
 - ☛ Habitat and corridor fragmentation as a result of legal and unlawful land use changes, such as mining clearances or agricultural encroachment.
 - ☛ Changing cropping patterns attract wild animals to agriculture.
 - ☛ Habitat destruction as a result of the spread of invasive alien species, etc.
 - ☛ India currently has more than 700 protected areas. However, 70% of elephant ranges, 40% of lion ranges and 35% of tiger ranges are outside protected areas (WWF).
 - ☛ Ecologist Madhav Gadgil said the Wildlife Protection Act 1972 has enabled an atmosphere where wild animals can invade human habitations with impunity.
 - He explained the optimal foraging theory in ecology, which states that animals try to maximise nutrient intake while minimising time, effort and risks.

Impacts of Man-Animal conflict

Impacts on Humans:

- **Loss of life and injury:** Wild animal attacks can cause serious injuries or even death to people. This is a major concern, especially for communities living close to wildlife habitats.
- **Economic losses:** Livestock attack by predators can cause significant economic hardship for farmers and breeders. Additionally, damage to crops or property caused by wild animals can be costly.
- **Psychological trauma:** Experiencing a wild animal attack or living in fear of such an attack can cause significant psychological distress for people.
- **Disruption of livelihoods:** The presence of wild animals can sometimes force people to abandon their homes or livelihoods, particularly if traditional practices like farming or grazing become too risky.
- **Public health risks:** In some cases, human-animal conflict can lead to the transmission of diseases between humans and wildlife.

Impacts on Wildlife:

- **Deaths and injuries:** Reactive killings by humans are a major threat to wildlife populations. Animals can be injured or killed by accidents involving human infrastructure like roads or power lines.
- **Habitat loss and fragmentation:** As human-animal conflict intensifies, measures may be taken to restrict wildlife movement or exclude them from certain areas. This can lead to further habitat loss and fragmentation, making it even more difficult for wildlife populations to flourish.
- **Disruption:** The constant threat of conflict with humans can be a major risk for wild animals. This can disrupt their natural behavior patterns, such as feeding, breeding, and migration.



❖ Solutions:

- Better enforcement and a pragmatic policy: To address the issue will lessen incidences of man-animal conflict.
- Involvement of local communities: According to the Future for All Report 2021 (by WWF and UNEP), involving local communities will foster coexistence between humans and wildlife, as it is impossible to completely eliminate human-wildlife conflicts.
- Awareness campaigns: To educate, guide, and advise the general public about man-animal conflict, including information dissemination via various types of media.
- Skill-development initiatives: People living in and around the forest would benefit from reduced pressures on both agricultural and forest land.

Case Study - Success Story of Kerala in Managing Man-Animal Conflict

- ❖ Kerala had about 5,700 (19% of nationwide population of 30,000 in 2017) wild elephant population and elephants killed 2,036 people in India (between 2018-2021) and Kerala accounted for only 81 (4%) of these deaths.
- ❖ What has kept man-animal conflicts under control in Kerala?
 - The boundaries between wilderness and civilization have mostly stayed unchanged in recent years.
 - Changes in agriculture practices. For example, coffee, pepper, and tea plantations, where jumbos have little interest.
 - Jumbos are named from their characteristics. Kabali, for example, is an elephant who lives in the Athirapally jungle in Thrissur district and is known to attack or chase automobiles.

Mains:

Q. Human-animal conflict is clear & present danger, and India can't afford to ignore it. Elucidate (250w/10m)

- ❖ Introduction: Write some points of the report.
 - ❖ Body: Write about the need to address these conflicts. Also write ways to tackle the issues.
 - ❖ Conclusion: Write a brief conclusion.
-
- ❖ The report 'A Future for All – A Need for Human-Wildlife Coexistence', released by WWF and UNEP said that India will be most-affected by human-wildlife conflict. It is because it has the world's second-largest human population as well as large populations of tigers, elephants, lions and other species. However, there is no government data on the deaths of animals due to human-animal conflict.



INDIA RELIES ON CHINA FOR MOST ELECTRONIC AND ELECTRICAL GOODS

India relies on China for most electronic and electrical goods

India sources over 50% of its mobiles, automatic data processing units, and semiconductor devices from China

DATA POINT

Wruthi Balaji, Aashreya C., & Vignesh Radhakrishnan

In FY24, China once again became India's top trading partner. This is the sixth time in the last 10 years that China has beaten the U.S. to emerge as India's top partner. A country is designated as a top trading partner if the total value of India's exports to it and imports from it exceeds that of any other country.

Notably, China's status as India's top trading partner is primarily due to the exceptionally high volume of imports from China, which overshadows the relatively low volume of exports to China by India. That is why India's trade deficit with China has been widening the fastest, in absolute terms, compared with other partners. India's trade relationship with the U.S. is the opposite, with India exporting more to the U.S. than what it imports. In fact, the gap between imports and exports, or the trade balance (trade surplus in this case), has been widening in recent years.

Chart 1 shows India's export and import in \$ billion with the U.S. and China. While imports from China have surged, exports to China have remained stagnant. On the other hand, exports to the U.S. as well as imports from the U.S. have increased, though the degree of increase in exports was greater than that of the imports.

Chart 2 shows the trade deficit/surplus of important partners of India since FY15. Among India's partners, China and the U.S. occupy the two extreme ends. With the U.S., India has a trade surplus of \$36.7 billion, while with China, India has a trade deficit of \$85.1 billion in FY24. Both these figures are the highest ever trade surplus and trade deficit recorded with the respective countries.

With most major trade partners, India has a trade deficit. Inter-

estingly, the trade deficit with Russia has skyrocketed in recent years, from just \$6.6 billion in FY22 to \$57.2 in FY24. A majority of this is due to the import of oil at a discounted price from Russia, after the West imposed sanctions on the country. Russia is currently the chief oil source for India.

India's trade surplus with the Netherlands has increased; this is also connected to the sanctions on Russia. About 40-45% of the crude oil sourced from Russia is converted to petrol, diesel, and other products by Indian refineries and sold to the Netherlands. The European country is sourcing petroleum products from India and not directly from Russia due to the sanctions. It then redistributes these products among its neighbours.

A majority of the items that India imports from China can be classified as electronics and electrical items. In the FY15 to FY24 period, India imported \$75 billion worth of mobiles/telephones, the biggest component in the import basket. This was followed by automatic data processing units (\$37 billion), semiconductor devices and diodes (\$28 billion), and electronic integrated circuits (\$27 billion). Chart 3 shows the tree map of India's top 20 imports from China in the FY15 to FY24 period. Thirteen of these 20 items were electronic or electrical items.

Not only is India buying electrical and electronic items from China in bulk, but also, China is the major source for most of these items, with very few alternatives. India sourced 54% of its mobiles/telephones from China in the FY15 to FY24 period. It also sourced close to 56% of automatic data processing units, about 70% of semiconductor devices and diodes, and 32% of electronic integrated circuits and micro assemblies from China in this period. Chart 4 shows item-wise imports from China in \$ billion and India's dependency on China for that product in percentage share.

Made in China

The data was sourced from the Ministry of Commerce and Industry



Chart 1: The chart shows India's export and import in \$ billion with the U.S. and China

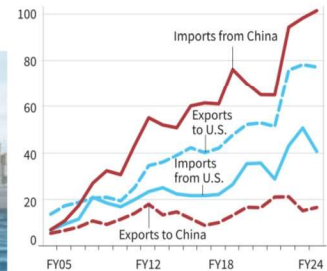
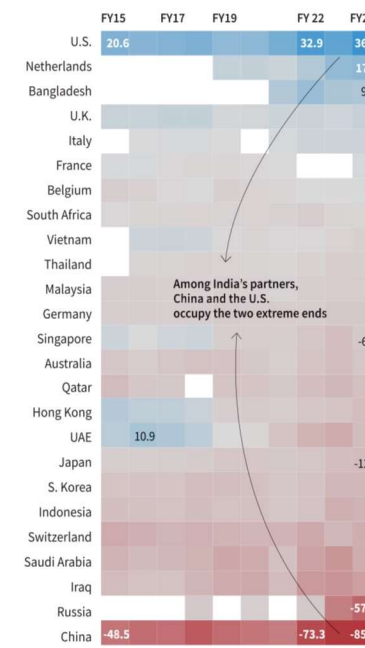


Chart 2: The chart shows the trade deficit/surplus of important partners of India since FY15 in \$ billion



Wruthi Balaji and Aashreya C. are interning with The Hindu Data team

Chart 3: The tree map of India's top 20 imports from China in the FY15 to FY24 period in \$ billion

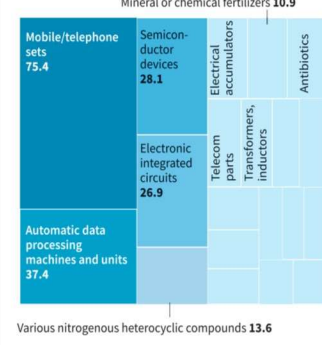
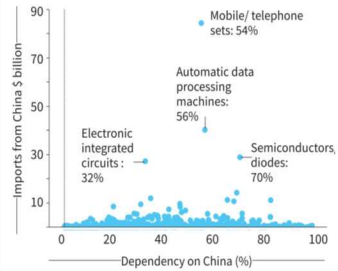


Chart 4: Item-wise imports from China in \$ billion and India's dependency on China for that product in % share



Practice Questions:

- Q. Discuss the implications of India's growing import dependency on China, as highlighted in the Global Trade Research Initiative (GTRI) report. Analyze the economic and national security dimensions, and propose strategic measures to mitigate risks and enhance domestic industries, considering the geopolitical competition with China.(250 words)
- Q. China is using its economic relations and positive trade surplus as tools to develop potential military power status in Asia". In the light of this statement, discuss its impact on India as her neighbour. (2017 - UPSE)



The strategic implications of this import dependency are 'profound' and affect not only economic but national security dimensions, calling for a reassessment of strategies. This is imperative not only to mitigate economic risks but also to boost domestic industries and reduce dependency on single-country imports, especially from a geopolitical competitor like China.

What does Heavy Import Reliance on China Imply?

- ❖ From the perspective of the government, the political and security challenges are deepened when the state is dependent on importing products and services from an unfriendly country.
- ❖ India imports most of the Active Pharmaceutical Ingredients (APIs) it uses in its pharmaceutical industry from China. The cost of Chinese APIs is cheaper than the Indian ones even on the Indian market.
 - ☛ The depth of the problem was revealed during the Covid-19 pandemic when due to travel restrictions, exports of Chinese APIs to India were temporarily restricted and consequently India had to cut its exports of APIs too.
- ❖ Approximately 24% of coal energy generated in India may be coming from plants that are using critical equipment imported from China. This, therefore, may not necessarily be considered a strategic dependence, but is certainly a form of a security challenge.
 - ☛ While there are demands to limit or even block such imports from China, this would simply mean forcing private Indian power companies to suffer higher costs.

Way Forward

- ❖ India cannot completely end its strategic dependence on the import of most crucial products. What it can do, however, is diversify this dependence by reducing China's role in it.
 - ☛ India can diversify dependence by working more with the U.S., Europe, South Korea and Japan. This way it will increase its reliance on countries with which it also enjoys good political relations.
- ❖ Providing further impetus to self-reliance in major sectors where India is a net-importer is a prudent way forward where technology and capital will have a huge role to play.



THE CONTROVERSY OVER EUCALYPTUS PLANTING IN KERALA

The controversy over eucalyptus planting in Kerala

Why did the Kerala government allow the Kerala Forest Development Corporation to plant eucalyptus trees? Why were environmentalists and social activists against the order?

The Hindu Bureau

The story so far:

The Kerala government issued an order allowing the Kerala Forest Development Corporation (KFDC) to plant eucalyptus trees for its financial sustenance in 2024-2025.

Environmentalists soon protested the decision saying the move would adversely affect forests and heighten human-animal conflicts in future. Subsequently, the head of the Forest Force submitted a report to the State Forest Minister saying it hadn't permitted the planting of eucalyptus trees inside forests. On May 20, the government amended its order to limit permission to only cut exotic tree species from lands in the KFDC's control.

What are KDFC and its plantations?
The KFDC was established on January 24, 1975, as part of a dynamic production forestry enterprise. According to the

KFDC website, the corporation has around 7,000 hectares (ha) of plantations. The plantation working circle includes the following species: Eucalyptus grandis, Acacia auriculiformis, Acacia mangium, Acacia crassicaarpa, Acacia pycnantha (also known as wattle), Alnus nepalensis, Casuarina equisetifolia, and Pinus patula. Eucalyptus plantations have a rotation age of nine years; Acacia auriculiformis trees, 18 years; and Acacia mangium, seven years. At the end of each cycle, plantations approved by the Union Ministry of Environment, Forests and Climate change are felled.

Clear-felled plantations are planted with species listed in a management plan. Before planting, experts check for soil quality and consult with the Kerala Forest Research Institute. As of this month, the KFDC website also said plantations of exotic species, including eucalyptus, would be converted to those of indigenous species once exotic flora has been felled "so as to be more ecologically

and environmentally friendly".

What was the issue with the order?

In 2021, the State government had published an eco-restoration policy. Among other things, it sought to address what it called the "proliferation of invasive species that are not suitable for our environment" and the resulting "depletion of natural forests". Such depletion, according to the policy, was in turn forcing wild animals to move to human-occupied land in search of food and thus increasing the prevalence of human-wildlife conflict.

For example, a recent study by the Kerala State Forest Protective Staff Organisation – an association of frontline forest officers – found replacing exotic plants in forested areas with the corresponding natural species could help ensure food for wild elephants at Chinnakkanal in Munnar. The Chinnakkanal landscape is prime elephant habitat in the Munnar forest

division, and is filled with eucalyptus trees. The policy also acknowledged that invasive species of plants as well as animals had rendered "serious damage to natural habitats and ecosystems" and that "eradicating such invasive species ... is of high priority." Environmental activists alleged following the State's order – permitting the KDFC to plant eucalyptus trees – contravened the policy's aspirations and undermined efforts to beat back invasive species and mitigate human-animal conflicts.

What is eco-restoration?

Kerala has around 27,000 ha under industrial plantations. Against the backdrop of climate change and the promise researchers have said trees offer to mitigate against its worsening, the Kerala government had decided to phase out plantations of eucalyptus, acacia, wattle, and pine by 2024 and replace them with natural forests. This process is called eco-restoration. Many of these areas are currently overwhelmed with invasive species.

For example, in 2019, in the Marayoor Sardaar Division in Idukki, the forest department initiated a project supported by the UNDP, the National Bank for Agriculture and Rural Development, and the Compensatory Afforestation Fund Management and Planning Authority. Some 108 hectares of exotic species were removed to allow natural grasses to flourish. The result: water streams in the area were restored after a 30-year gap.

Subjective Question:

Q. What is Ecosystem Restoration ? Discuss its significance with suitable examples. (150 w/lom)

- ❖ Ecosystem restoration means assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems that are still intact.
 - ☛ Healthier ecosystems, with richer biodiversity, yield greater benefits such as more fertile soils, bigger yields of timber and fish, and larger stores of greenhouse gases.
 - ☛ All kinds of ecosystems can be restored, including forests, farmlands, cities, wetlands, and oceans.
 - ☛ Restoration initiatives can be launched by almost anyone, from governments and development agencies to businesses, communities, and individuals.
 - ☛ That is because the causes of degradation are many and varied, and can have an impact at different scales.
- ❖ As human activities increasingly impact natural environments, the need for restoration has become more urgent to preserve biodiversity, enhance ecosystem services, and combat climate change.
- ❖ Ecosystem restoration can take many forms, depending on the specific goals, the type of ecosystem involved, and the extent of degradation.

Significance of Ecosystem Restoration:

- ❖ Biodiversity Conservation: Restoring habitats helps conserve biodiversity by providing species with the conditions they need to thrive. It aids in the recovery of populations that may be declining and preserves the genetic diversity essential for species' adaptation to changing environments.



- ❖ **Climate Change Mitigation:** Ecosystems such as forests, peatlands, and mangroves are significant carbon sinks. Restoring these areas can sequester carbon dioxide from the atmosphere, helping to mitigate climate change.
- ❖ **Enhancing Ecosystem Services:** Healthy ecosystems provide invaluable services to humans, including clean water, air purification, pollination of crops, flood control, and recreational opportunities. Restoration efforts help ensure the continued provision of these services.
- ❖ **Economic Benefits:** Ecosystem restoration can also have economic benefits by creating jobs in activities like planting trees, managing protected areas, and eco-tourism. Moreover, restored ecosystems can support local economies through improved agriculture, fisheries, and forestry.

Ecosystem Restoration Practices:

- ❖ **Reforestation and Afforestation:** Planting trees in areas where forests have been cut down or degraded and establishing forests on lands that historically have not contained forests.
- ❖ **Wetlands Restoration:** Re-establishing the water flow and native vegetation of wetlands that have been drained, filled, or otherwise altered.
- ❖ **River and Stream Restoration:** Removing barriers like dams, re-meandering channels that have been straightened, and restoring riparian vegetation to improve water quality and habitat.
- ❖ **Peatland Restoration:** Blocking drainage channels to raise the water table and reintroduce native plant species in degraded peatlands.
- ❖ **Coral Reefs and Mangroves:** Replanting mangroves and transplanting corals or using artificial structures to promote coral growth in damaged reef areas.
- ❖ **Grasslands and Savannas:** Removing invasive species and reintroducing fire as a management tool to maintain ecosystem health.

Way Forward:

- ❖ Ecosystem restoration is a powerful tool for addressing environmental degradation, but it is just one part of a broader strategy that must also include the protection of existing intact ecosystems and the sustainable management of natural resources. Restoration projects work best when they are part of an integrated approach to land and water management that balances ecological, social, and economic objectives.
- ❖ The growing recognition of the importance of healthy ecosystems to human well-being and survival has led to increased investment in restoration projects around the world. By prioritizing ecosystem restoration, societies can work towards more resilient and sustainable landscapes that support both biodiversity and human prosperity for generations to come.

All The Best