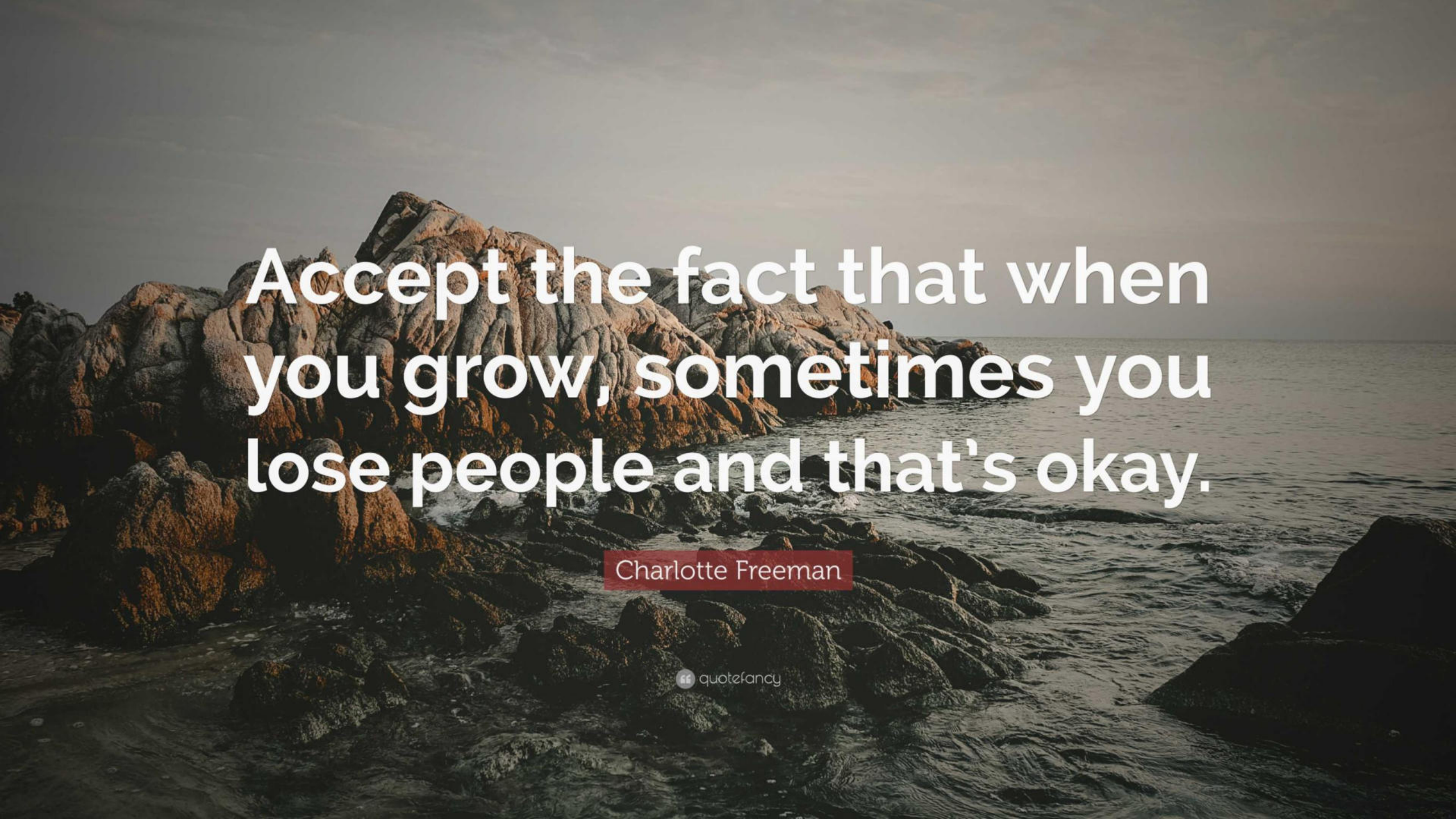
Accept the fact that when you grow, sometimes you lose people and that's okay.
Charlotte Freeman
quotefancy

Page No. 1, GS 3

A man standing amid the debris of his collapsed house near Kumbakonam. SPECIAL ARRANGEMENT

Cyclone Ditwah weakens; 3 die in rain-related incidents

The Hindu Bureau
CHENNAI

Cyclone Ditwah began to weaken on Sunday even as it continued its slow northward movement over the Bay of Bengal, parallel to the coast of northern Tamil Nadu and Puducherry. Torrential rain led to three deaths, with two persons killed by collapsing walls in Thanjavur and Thoothukudi districts and one person electrocuted in Mayiladuthurai.

Over 2,300 people were in relief camps on Sunday morning, State Minister for Revenue and Disaster Management K.K.S.S.R. Ramachandran said, adding that 230 huts have been damaged and 56,000 hectares of crops are under water.

The centre of the cyclonic system stayed around 80 km from the coast as it moved at a speed of just 5 kmph on Sunday morning, weakening to a deep depression by Sunday night, according to the Regional Meteorological Centre. It was expected to come within 30 km of the coastline by midnight.

334 dead, over 300 missing in Sri Lanka

COLOMBO
At least 334 people have died and 370 remain missing as Sri Lanka reels from the impact of Cyclone Ditwah. Huge number of fatalities were reported from Badulla, Kandy, Nuwara Eliya, and Matale districts, home to some of the most economically marginalised communities. » PAGE 16

Light rain likely

Light to moderate rain is likely at isolated places over T.N. and Puducherry-Karaikal on Monday, with thunderstorms and lightning at a few places. Heavy rain is likely at isolated places in Tiruvallur district. Gale winds are likely to decrease gradually, with speeds of 45-55 kmph, gusting to 65 kmph. Sea conditions are likely to improve gradually.

CONTINUED ON
» PAGE 12

Content.

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- **The name “Ditwah” was contributed by Yemen.**

Content.

- In 2000, a group of nations called WMO/ESCAP (World Meteorological Organisation/United Nations Economic and Social Commission for Asia and the Pacific), which comprised Bangladesh, India, the Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand, decided to start naming cyclones in the region.

- After each country sent in suggestions, the WMO/ESCAP Panel on Tropical Cyclones (PTC) finalised the list.

- The WMO/ESCAP expanded to include five more countries in 2018 — Iran, Qatar, Saudi Arabia, United Arab Emirates and Yemen.

- The list of 169 cyclone names released by IMD in April 2020 were provided by these countries — 13 suggestions from each of the 13 countries.

What are the guidelines to adopt names of cyclones?

While picking names for cyclones, countries need to follow some rules.

- The proposed name should be neutral to (a) politics and political figures (b) religious believes, (c) cultures and (d) gender
- Name should be chosen in such a way that it does not hurt the sentiments of any group of population over the globe
- It should not be very rude and cruel in nature
- It should be short, easy to pronounce and should not be offensive to any member
- The maximum length of the name will be eight letters
- The proposed name should be provided with its pronunciation and voice over
- The names of tropical cyclones over the north Indian Ocean will not be repeated. Once used, it will cease to be used again.

Bangladesh	Nisarga	Nisarga	Biparjoy	Biporjoy	Arnab	Ornab	Upakul	Upokul
India	Gati	Gati	Tej	Tej	Murasu	Murasu	Aag	Aag
Iran	Nivar	Nivar	Hamoon	Hamoon	Akvan	Akvan	Sepand	Sepand
Maldives	Burevi	Burevi	Midhili	Midhili	Kaani	Kaani	Odi	Odi
Myanmar	Tauktae	Tau'Te	Michaung	Migjaum	Ngamann	Ngaman	Kyarthit	Kjathi
Oman	Yaas	Yass	Remal	Re-Mal	Sail	Sail	Naseem	Naseem
Pakistan	Gulab	Gul-Aab	Asna	As-Na	Sahab	Sa-Hab	Afshan	Af-Shan
Qatar	Shaheen	Shaheen	Dana	Dana	Lulu	Lulu	Mouj	Mouj
Saudi Arabia	Jawad	Jowad	Fengal	Feinjal	Ghazeer	Razeer	Asif	Aasif
Sri Lanka	Asani	Asani	Shakhti	Shakhti	Gigum	Gigum	Gagana	Gagana
Thailand	Sitrang	Si-Trang	Montha	Mon-Tha	Thianyot	Thian-Yot	Bulan	Bu-Lan
United Arab Emirates	Mandous	Man-Dous	Senyar	Sen-Yaar	Afoor	Aa-Foor	Nahhaam	Nah-Haam
Yemen	Mocha	Mokha	Ditwah	Ditwah	Diksam	Diksam	Sira	Sira

Mains Question

- Explain the ideal geographical and atmospheric conditions required for the formation of tropical cyclones. Why are cyclones more frequent in the Bay of Bengal than in the Arabian Sea?”

- उष्णकटिबंधीय चक्रवातों के गठन के लिए आवश्यक भौगोलिक और वायुमंडलीय परिस्थितियों की व्याख्या कीजिए। साथ ही बताइए कि बंगाल की खाड़ी में अरब सागर की तुलना में चक्रवात अधिक क्यों बनते हैं?

Modi urges people to take part in Kashi Tamil Sangamam

Page No. 14, GS 1

It will help strengthen the spirit of 'Ek Bharat, Shrestha Bharat', he says in *Mann Ki Baat* address; PM highlights record production of food grain

The Hindu Bureau
NEW DELHI

Describing Tamil as the pride of India, Prime Minister Narendra Modi on Sunday urged people to participate in the upcoming Kashi Tamil Sangamam as part of the endeavour to strengthen the spirit of "Ek Bharat, Shrestha Bharat (One India, great India)".

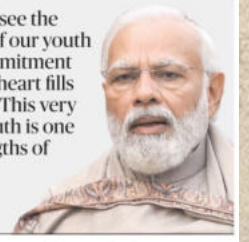
"Tamil culture is great. Tamil language is great. Tamil is the pride of India," Mr. Modi said in Tamil in his *Mann Ki Baat* address. The fourth Kashi Tamil Sangamam, organised on the theme "Learn Tamil-Tamil Karkalam", commences on December 2 at Namo Ghat in Kashi.

Recounting various recent events, Mr. Modi noted that on November 26, a special event was held at the Central Hall of Samvidhan Sadan, the old Parliament House, on "Constitution Day". The 150th anniversary of *Vande Mataram* marked the beginning of an array of nationwide programmes.

Food grain production

Mr. Modi said the country had set a historic record with food grain production of 357 million tonnes, an increase of 100 million tonnes in 10 years. India being declared the host of Commonwealth Games is another major achievement. He recently inaugurated the world's largest LEAP (leading edge aviation propulsion) engine maintenance, repair and overhaul (MRO) facility in Hyderabad, marking a significant step in augmenting India's aircraft maintenance and repair capability.

> Every time I see the dedication of our youth and the spirit of commitment of our scientists, my heart fills up with enthusiasm. This very dedication of the youth is one of the greatest strengths of Viksit Bharat
>
> **NARENDRA MODI**
> Prime Minister



Last week, the indigenously designed *INS Mahe* was inducted into the Navy. "People in Puducherry and the Malabar Coast were delighted by the name [of the vessel] itself... many in Kerala and Tamil Nadu noted that the warship's crest resembles the traditional flexible sword of Urumi and Kalaripayattu," said Mr. Modi.

He underscored the importance of private space company Skyroot's Infinity Campus in giving a fresh boost to India's space ecosystem. He also mentioned a challenge organised by Indian Space Research Organisation (ISRO) to fly drones in conditions similar to that of Mars, where GPS navigation is not possible and drones would suddenly fall to the ground. "The drones had to fly with the help of their cameras and inbuilt software...," he said, praising a team from Pune that succeeded in flying its drone in such conditions for some duration after multiple attempts.

Winter tourism

Drawing attention to winter tourism, Mr. Modi urged people to visit the Himalayan valleys. He said this season Uttarakhand attracted a lot of people. He said the Winter Games would be organised there soon.

The "Wed in India" campaign had also picked up in winter, he noted. On Navy-related tourism, he mentioned museums in Gujarat's Diu and Goa and those located in *INS Dronacharya* (Fort Kochi); Samudrika Naval Marine Museum in Srivijayapuram, formerly known as Port Blair; Rabindranath Tagore Beach in Karwar; and Visakhapatnam.

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- It is a cultural initiative that aims to celebrate the deep-rooted historical and cultural ties and strengthen the ancient civilizational bond between Tamil Nadu and Kashi (Varanasi).

- The event aligns with the Ek Bharat Shreshtha Bharat initiative, emphasizing the integration of India’s diverse cultural heritage.

Historical Significance:

- **The historical ties between Kashi (Uttar Pradesh) and Tamil Nadu date back to the 15th century when King Parakrama Pandya of Madurai traveled to Kashi to bring back a sacred lingam for his temple (Sivakasi, Tamil Nadu).**
- **The Pandya rulers also established the Kasi Viswanathar Temple in Tenkasi, located in southwestern Tamil Nadu, near the Kerala border.**
- **This deep-rooted spiritual and cultural connection underscores the essence of the Kashi Tamil Sangamam initiative.**
- **Nodal Ministry: The Ministry of Education in collaboration with various ministries and the Government of Uttar Pradesh.**

Objectives:

- **Knowledge Sharing: Encouraging interactions between scholars, researchers, artisans, and professionals.**
- **Academic Collaboration: Facilitating discussions on Indian Knowledge Systems in alignment with National Education Policy (NEP) 2020.**
- **Promoting Traditional Art and Craft: Showcasing classical Tamil art, literature, and cuisine to a national audience.**
- **Youth Engagement: Providing young participants an immersive experience in India's civilizational ethos.**

Page No. 14, GS 3

New finds highlight Great Nicobar project site's biodiversity

Pankaj Sekhsaria

A new species of snake with only four records till date, and a potentially new species of bird photographed only thrice in over a decade are among the latest finds from the site of the Great Nicobar Island mega infrastructure project. Described in November, the two are among the nearly 40 new species reported from here since 2021.

These include two species of frogs, four crabs, two geckos and a number of insects, including flies, moths, and beetles. Nearly half of these have been described in 2025 alone.

Named *Lycodon irwini* after the renowned Australian zookeeper Steve Irwin, the new wolf snake was described in the journal *Evolutionary Systematics* by a team of researchers that included R.S. Naveen and S.R. Chandramouli of the Pondicherry University, Zeeshan A. Mirza of the Max Planck Institute for Biology, and naturalist Girish Choure.

Restricted range

Given the snake's rarity, its sharply restricted range and potential threats, the researchers have recommended that it be classified as "Endangered" under the International Union for Conservation of Nature (IUCN) Red List criteria.

A paper on the Great Nicobar Crake was published recently.

It is from the same east coast of Great Nicobar that birders Pia Sethi and Nitu Sethi from Delhi and Vikram Shil from Port Blair had recently published a paper on the Great Nicobar Crake (*Rallina sp*).

Writing in the journal *Indian Birds*, the authors note that very little is known of its "biology, distribution, or population status" and suggest this could be a new species to science given the "distinctive set of (its) morphological features, including several novel ones".

1,800 species of fauna

Great Nicobar Island is reported to have 650 species of plants and over 1,800 species of fauna. The region also boasts of remarkable genetic biodiversity, exhibiting about 24% endemism among some faunal groups. The regular discovery of new species, including the latest finds, highlights the island's rich biodiversity.

"I am delighted to hear of the new snake and of a new species of crake that has been tentatively described from Great Nicobar," said Asad Rahmani, prominent ornithologist and former director of the Bombay Natural History Society.

"Great Nicobar has perhaps the finest tropical rain forest left in India and this calls for its total protection," Dr. Rahmani added.

(Pankaj Sekhsaria is author/editor of seven books on the A&N Islands, including *The Great Nicobar Betrayal* [The Hindu Group, 2024] and *Island on Edge-The Great Nicobar Crisis*' [Westland 2025])

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2030 for 2036

India is trying to showcase Ahmedabad's sports infrastructure in Olympics bid

Exactly two decades after hosting its maiden Commonwealth Games (CWG), India will welcome the quadrennial extravaganza's centenary edition to its shores in 2030. The move is another unmistakable sign that India wants to be seen as a sports destination of repute. The choice of Ahmedabad as the host city is strategic too, for India has submitted the Letter of Intent to hold the 2036 Olympics with Ahmedabad as the front-runner. However, while the Olympics retains its allure and grandeur, the CWG has been beset with difficulties. Once signifying the imperial unity of the British empire, the CWG is struggling for relevance in the post-colonial world. Successive host cities have dropped out citing rising costs - Birmingham replaced Durban in 2022; Glasgow has come to the rescue for 2026 after the Australian State of Victoria withdrew, and Ahmedabad has stepped in for the Canadian province of Alberta. Not so long ago, India itself was cold to the competition, with the then Indian Olympic Association president Narinder Batra, in 2019, calling it "sub-standard" – albeit in his personal capacity – and strongly pitching for India's withdrawal. Also, when New Delhi conducted the Games in 2010, there were allegations galore of large-scale corruption and incompetence.

So, what merit does India see now? First, it is an important soft-power medium. Second, the nation's sporting aspirations have grown manifold, and though performances by its sportspersons have not kept pace, there is a genuine push toward diversifying on-field excellence and going beyond just cricket. India has world-class heroes such as double-Olympic medallist javelin thrower Neeraj Chopra to showcase, and there is hope that big ticket events, when held in one's backyard, can inspire a generation. There is the infrastructural uplift they can trigger, helping not just the athletes but also the public at large. But there are potential pitfalls too. In sporting terms, the CWG stands diminished. Glasgow 2026 will feature just 10 disciplines, and those such as badminton, hockey, shooting and cricket have been excised. There are very few sports that match up to international standards, for nations such as the United States and China are not part of the Commonwealth. India has won 61, 66, 64, 101 medals in the last four editions, but in the subsequent Olympics, it has secured just six, seven, two and six medals, respectively. India also has an escalating problem with doping, which can mar its standing if left uncontrolled. The financial outlay for the CWG should be kept in mind too, for costs can be prohibitive. Ahmedabad 2030, thus, offers opportunity and hope. It should be used to display a strong present and shape a glorious future.

Page No. 8, GS 3

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AIDS and TB fight — Tamil Nadu shows the way again

Page No. 8, GS 2

On World AIDS Day today (December 1), let us rewind to the mid-1980s, when Acquired Immunodeficiency Syndrome (AIDS) caused by the Human Immunodeficiency Virus (HIV) was devastating a whole generation of young adults in southern and eastern African nations. Many countries in this region had prevalence rates that were in double digits. With no treatment at that time, almost everyone infected with HIV developed AIDS in a few years and "opportunistic infections" such as tuberculosis (TB) or diarrhoea, which resulted in high levels of mortality.

By the early 1990s, India was in a similar situation, with HIV prevalent in almost all parts of the country – though below 1% of the adult population, mainly transmitted through unprotected heterosexual sex, except in a few north-eastern States where it was transmitted through the sharing of needles by youngsters addicted to narcotic drugs.

The TNSACS model

The Government of India responded quickly and launched the National AIDS Control Project in 1992 with a soft loan of $84 million from the World Bank. Every State government set up an AIDS Cell in the respective medical directorates. But fund flow through the Central and then the State government machinery was very slow. A solution was found in 1994 by Tamil Nadu. The State AIDS Cell was converted into a Registered Society named the Tamil Nadu State AIDS Control Society or TNSACS (www.tnsacs.in) under the Societies Registration Act. This facilitated a direct fund flow to TNSACS with a fair degree of autonomy in implementation.

With no cure or even treatment for HIV at that time, quickly raising awareness among the adult population through targeted campaigns was the best strategy. This led to a steep drop in new infections and a plateauing of cumulative infections in Tamil Nadu, once considered a "hot spot" for HIV infections.

S. Ramasundaram

is a retired Indian Administrative Service (IAS) officer, Tamil Nadu, and, formerly, Project Director, TN State AIDS Control Society (1996-98) and Consultant, The World Bank for India's National AIDS Control Project (1998-99)

The Tamil Nadu model will help in TB control, just as it helped cut HIV infections in the 1990s

On witnessing the success of this model, the Government of India and the World Bank mandated the Tamil Nadu model for all the States in the Second National AIDS Control Project (1997-2002). Soon, every State converted its AIDS cell into an AIDS Control Society and launched vigorous awareness campaigns. As a result, India's adult HIV prevalence rate came down from a peak of 0.54% in the year 2000 to a low of 0.22% now.

The 2025 Global TB Report of the World Health Organization (WHO) paints a grim picture for India – 25% of the total number of people infected with TB globally (36 million) are in India. Compare this with the numbers for the AIDS epidemic – 7.5% of the global total number of people living with HIV (40 million) are in India. TB is the most common opportunistic infection in HIV-infected people, accounting for 25% of AIDS deaths in India. Further, India also has 25% of the global total number of people infected with multidrug-resistant tuberculosis (MDR-TB).

Response to the AIDS and TB epidemic

While the global target date for elimination of TB is 2030, India had set an ambitious target of achieving this by 2025, five years ahead of the global target date. Though this target has not been achieved in India as the year 2025 is coming to a close, the pace of decline in new TB cases is faster in India when compared to the global level. The Ministry of Health and Family Welfare, Government of India has accorded very high priority for the testing and reporting of TB infections in achieving the eradication of TB from India. This is critical, especially in view of the HIV-TB co-infection and high MDR-TB cases in India. The Pradhan Mantri TB Mukt Bharat Abhiyaan (PMTBMBA) supports the treatment of TB patients and the support of the community and corporate social responsibility programmes.

Replication in other States

As in the case of almost all social and economic indicators, there is wide variation among the States of India in TB infections also. Just five States – Uttar Pradesh, Maharashtra, Madhya Pradesh, Bihar and Rajasthan account for 56% of the total TB infections reported in India during 2024. Tamil Nadu has become the first State in the country to integrate a model, which predicts the possibility of TB deaths among patients, with the existing State-wide application which screens them at diagnosis.

The model, developed by the Indian Council of Medical Research-National Institute of Epidemiology (ICMR-NIE) will aid the State in bringing down the TB mortality rate. While screening with rapid test kits remains the first step, followed by reporting, starting treatment, nutrition support (in that order), Tamil Nadu has used ICMR-NIE software to reduce the TB burden in the State. The State National Health Mission team and the Central government's State TB Office work closely as partners with the same goal. Such rapid adoption of technologies and an efficient government delivery system of Tamil Nadu are the best model for eradication of TB in India in the next few years, just as the AIDS epidemic was controlled in India in the late 1990s and early 2000s, by adopting the TNSACS model.

The views expressed are personal

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India needs research pipelines

Mamidala Jagadesh Kumar,

Former Chairman, UGC and former Vice-Chancellor, JNU

India will not meet its growth ambitions on public grants alone. The countries that turned science into industry did one thing well: they matched firm outlays to campus strengths and kept that link steady for years. The policy question is clear. How do we move private research outlays from episodic Corporate Social Responsibility to a predictable pipeline that buys lab time, funds doctoral cohorts, and books pilot lines?

Global benchmarks

Leading tech firms run innovation budgets at industrial scale. In 2024, Meta's research outlay reached about $44 billion, near a third of revenue. Alphabet, Amazon, Apple, IBM, and Microsoft also reported multibillion-dollar programmes. In the U.S., enterprises booked roughly $692 billion of domestic research against about $14 trillion in net sales in 2022, a ratio near 5%. Policy instruments translate that investment into campus partnerships. The National Science Foundation's Industry-University Cooperative Research Centers pool company fees for pre-competitive university work. The Semiconductor Research Corporation funds multi-university consortia that train talent while tackling industry-relevant problems.

China's Huawei reported an R&D expenditure at 179.7 billion yuan in 2024, equal to 20.8% of revenue. More than half of Huawei's workforce is in R&D roles. Build Your Dreams , a Chinese multinational auto company, invested 54.2 billion yuan in 2024 on R&D against roughly 777 billion yuan of revenue, an intensity of nearly 7%.

These examples demonstrate one trait. Corporate research works with campuses through joint centres, shared lines, long-horizon consortia and open talent pipelines. India should scale this on Indian terms. The goal is self-reliance with open doors to global science while anchoring discovery to India's needs. Private research outlays need size, predictability, and structured linkages with higher education institutions (HEIs).

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Today, India's GERD sits near 0.65% of GDP, with enterprises funding about two-fifths. Advanced economies show a higher firm share. Yet India has bright spots. Tata Motors reported revenue of about ₹4.38 lakh crore in FY24 and R&D outlay of ₹29,398 crore, an intensity of 6.7%. Sun Pharma invested 6.7% of global revenues in R&D in FY24. Dr. Reddy's spent ₹22.9 billion, about 8.2% of sales. Bharat Electronics dedicated 6.24% of turnover to R&D in FY24, an important signal in a strategic sector. Reliance Industries recorded over ₹4,100 crore of R&D expenditure in FY2024-25.

In terms of partnerships, India already runs strong platforms. IIT Madras Research Park hosts more than 200 companies near faculty labs and student teams, creating a daily flow of ideas and talent. The Ministry of Defence promotes startup and research lab teaming through iDEX. The India Semiconductor Mission pairs industry investments with skill pipelines and academic partnerships, as seen in the Micron ATMP project at Sanand.

Policy actions

These strands form a workable base. The task now is to scale them and set clear expectations for private R&D expenditure and university linkages across sectors. First, we must set three-year R&D-to-sales ratios for autos, pharma, electronics, defence, space and energy that climb year by year, balanced with export goals and cash-flow realities. We must use shared IP frameworks that reward publication and commercialisation together. Second, reward co-funded projects and shared facilities and offer matching grants where industry rupees flow through HEIs for multi-year projects with open data deliverables and industry-relevant key performance indicators. Create a dedicated line item for university-managed pilot lines and testbeds that industry can book by the hour. Seed multi-university centres around a portfolio of problems rather than isolated projects. Third, modernise tax instruments for research. Weighted deductions can focus on measurable outputs such as patents, standards contributions, clinical milestones or field trials. Link incentives to proof of collaboration with accredited HEIs and to hiring graduate researchers into industry roles. Fourth, teach collaboration. Support campus programmes that train faculty and PhD scholars to work with industry, negotiate IP, and run translational projects. Bring more PhDs into product groups, create dual-track roles with adjunct appointments, and sponsor doctoral cohorts aligned to corporate roadmaps. Fifth, ask listed companies to report R&D investment and the share of spend that flows to Indian HEIs. Disclosure nudges boards to treat research as strategic, not incidental. Publicise results in Indian languages and in practitioner-friendly formats. That builds prestige around research careers and attracts talent.

India's university campuses sit next to some of the world's most dynamic markets, and they carry knowledge traditions that examine technology as part of a broader human inquiry. When corporate research engages that heritage, solutions gain depth and context and match what high-performing corporate R&D needs.

India has the labs, talent, and markets. The task before the industry is clear: set transparent targets, match grants that buy real lab time, and collaborate better. The task before academic institutions is straightforward: shape research for measurable value, welcome industry questions, and show evidence of success. Do that, and research becomes a national supply chain, not wishful thinking.

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- India will not meet its growth ambitions on public grants alone. The countries that turned science into industry did one thing well: they matched firm outlays to campus strengths and kept that link steady for years.
- The policy question is clear. How do we move private research outlays from episodic Corporate Social Responsibility to a predictable pipeline that buys lab time, funds doctoral cohorts, and books pilot lines?
- Leading tech firms run innovation budgets at industrial scale. In 2024, Meta's research outlay reached about $44 billion, near a third of revenue.
- Alphabet, Amazon, Apple, IBM, and Microsoft also reported multibillion-dollar programmes. In the U.S., enterprises booked roughly $692 billion of domestic research against about $14 trillion in net sales in 2022, a ratio near 5%.

Fact

- China’s Huawei reported an R&D expenditure at 179.7 billion yuan in 2024, equal to 20.8% of revenue. More than half of Huawei’s workforce is in R&D roles. Build Your Dreams , a Chinese multinational auto company, invested 54.2 billion yuan in 2024 on R&D against roughly 777 billion yuan of revenue, an intensity of nearly 7%.

- These examples demonstrate one trait. Corporate research works with campuses through joint centres, shared lines, long-horizon consortia and open talent pipelines. India should scale this on Indian terms.

- The goal is self-reliance with open doors to global science while anchoring discovery to India’s needs.

- Private research outlays need size, predictability, and structured linkages with higher education institutions (HEIs).

Fact

- **Today, India's GERD sits near 0.65% of GDP, with enterprises funding about two-fifths. Advanced economies show a higher firm share. Yet India has bright spots.**
- **Tata Motors reported revenue of about ₹4.38 lakh crore in FY24 and R&D outlay of ₹29,398 crore, an intensity of 6.7%. Sun Pharma invested 6.7% of global revenues in R&D in FY24. Dr. Reddy's spent ₹22.9 billion, about 8.2% of sales.**
- **Bharat Electronics dedicated 6.24% of turnover to R&D in FY24, an important signal in a strategic sector. Reliance Industries recorded over ₹4,100 crore of R&D expenditure in FY2024-25.**
- **India has the labs, talent, and markets. The task before the industry is clear: set transparent targets, match grants that buy real lab time, and collaborate better.**

Steady rise in electricity-related fatality rates in India

Most accidents in 2025 occurred due to accidental contact with live wires

DATA POINT

Cheta Sheth,
Vardhan Gupta
Sreekumar Nhalur

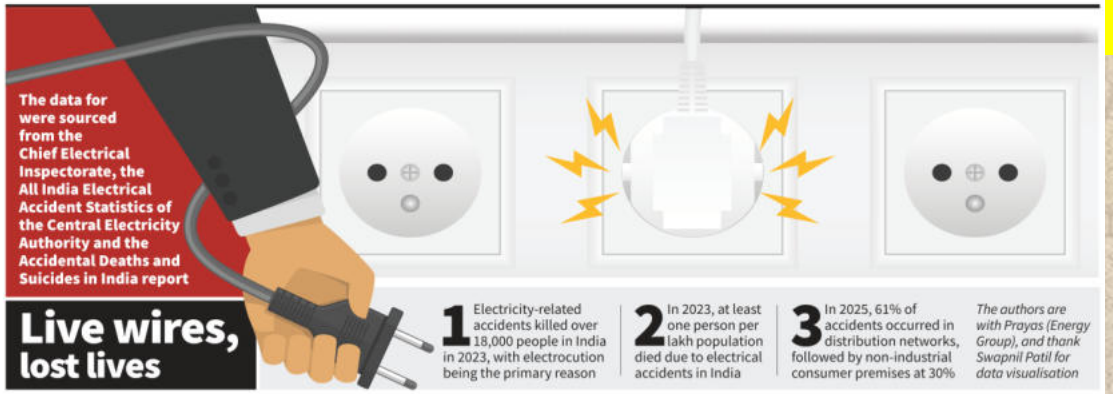
Electricity-related accidents killed over 18,000 people in India in 2023. Electrocution is the primary reason followed by lightning and electrical fire **(Chart 1)**. Over the years, electrical fatality rate – the number of deaths per lakh population – has risen **(Chart 2).** In 2023, at least one person per lakh population died due to electrical accidents in India. In Japan, Australia, New Zealand, the U.K. and the U.S., the electrical fatality rate was between 0.01 and 0.04.

Among States, the four-year average electrical fatality rate varied widely, ranging from as low as 0.2 in some States to as high as 2.6 in others **(Map 3).**

Until 2013, the Accidental Deaths and Suicides in India report showed the break-up of electrical deaths in more than 50 megacities. In 2013, around 13% of the total electrical deaths in India occurred in megacities **(Table 4)**. These cities also had a higher proportion of deaths due to electrical fires (-25%) and a comparatively smaller share of deaths from shocks (-11%).

According to the Chief Electrical Inspectorate, in 2025, 61% of accidents occurred in distribution networks, followed by non-industrial consumer premises at 30% **(Chart 5)**. Given that most accidents occurred at the distribution level, we examined data from select distribution companies (DISCOMs). DISCOMs reported that more than 90% of the victims were general public **(Table 6)**.

Most accidents in 2025 occurred due to accidental contact with live wire (35%) and neglect in safety measures or lack of supervision (15%). This shows poor attention to safety by the DISCOMs and low awareness among the public.



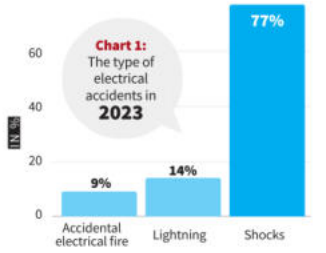
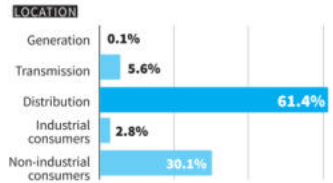


Table 4: The absolute number and share of electrical deaths in mega-cities (2013)

Particulars	Population (in lakhs)	Shocks	Fire*	Total
Megacities [Population > 10 lakh]	1,607	1,074	414	1,488
All India	12,288	10,218	1,690	11,908
Megacities as % of total	12.9%	10.5%	24.5%	12.5%

*Electrical fire



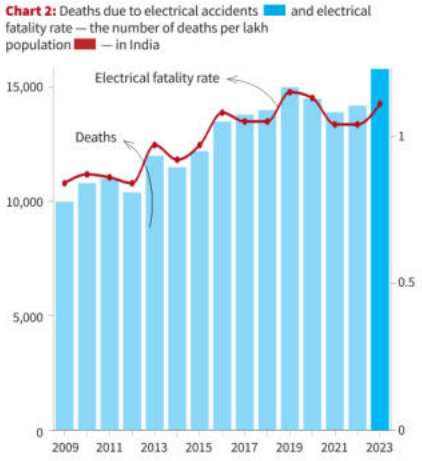
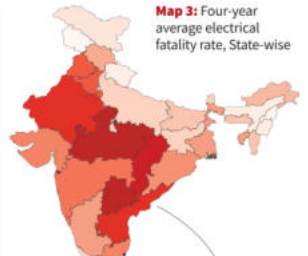
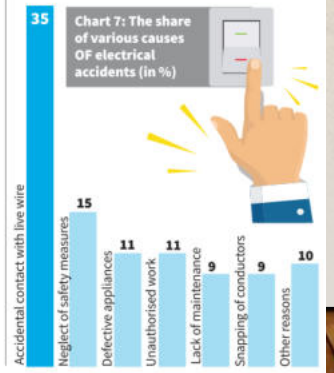


Chart 6: Number of victims who were staff and part of the general public in select DISCOMs

States	DISCOM/ contract staff	Consumers/ public	Total	Consumers/ public (%)
Gujarat	19	377	396	95%
Karnataka	13	242	255	95%
Kerala	19	222	241	92%
Rajasthan	54	832	866	94%
Maharashtra	42	826	868	95%
Andhra Pradesh (one DISCOM)	9	135	144	94%
Telangana (one DISCOM)	12	276	288	96%



In the map. the darker the colour, the higher the four-year average electrical fatality rate



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Content.

- Electricity-related accidents killed over 18,000 people in India in 2023. Electrocution is the primary reason followed by lightning and electrical fire
- Over the years, electrical fatality rate — the number of deaths per lakh population — has risen.
- In 2023, at least one person per lakh population died due to electrical accidents in India. In Japan, Australia, New Zealand, the U.K. and the U.S., the electrical fatality rate was between 0.01 and 0.04.
- Among States, the four-year average electrical fatality rate varied widely, ranging from as low as 0.2 in some States to as high as 2.6 in others.
- Until 2013, the Accidental Deaths and Suicides in India report showed the break-up of electrical deaths in more than 50 megacities.

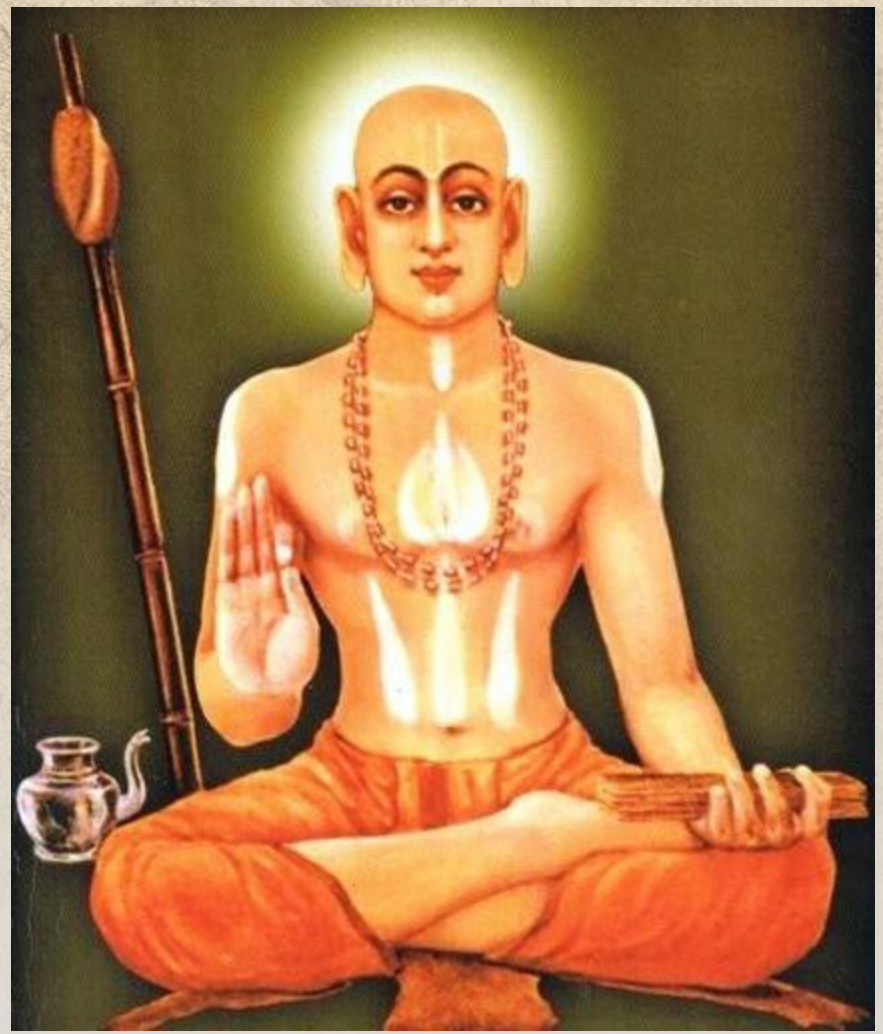
- In 2013, around 13% of the total electrical deaths in India occurred in megacities. These cities also had a higher proportion of deaths due to electrical fires (~25%) and a comparatively smaller share of deaths from shocks (~11%).

- According to the Chief Electrical Inspectorate, in 2025, 61% of accidents occurred in distribution networks, followed by non-industrial consumer premises at 30%.

- Given that most accidents occurred at the distribution level, we examined data from select distribution companies (DISCOMs). DISCOMs reported that more than 90% of the victims were general public .

- Most accidents in 2025 occurred due to accidental contact with live wire (35%) and neglect in safety measures or lack of supervision (15%). This shows poor attention to safety by the DISCOMs and low awareness among the public.

Madhvacharya



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- Madhvacharya (13th century CE) was a renowned Indian philosopher, theologian and founder of the Dvaita (dualism) school of Vedanta. He is revered as a major Vaishnava acharya and is traditionally regarded as an incarnation of Vayu, the Wind God.
- Born as Vāsudeva in Pajaka village near Udupi, Karnataka (1199–1278 CE or 1238–1317 CE, dates debated).
- Exceptional physical strength and intellect—nicknamed Bhima.
- Took Sannyasa as a teenager, initiated by Achyutapreksha, receiving the names Purna Prajna and later Ananda Tirtha.

Historical Context:

- **His Philosophy (Dvaita Vedanta):**

- **Madhvacharya's school, Tattvavāda, is based on realist dualism.**

- **These differences are natural, eternal and real, rejecting monism.**

God:

- **Vishnu/Narayana is the supreme independent reality (Svatantra Tattva).**
- **All souls and matter are dependent realities.**
- **Liberation (moksha) is possible only through Vishnu's grace.**

Contribution to Bhakti Movement:

- **Reinforced personal devotion to Vishnu and daily remembrance of God (Smarana).**
- **Rejected Advaita's non-dualism; debated Shankara and Ramanuja traditions.**

Authored 37 Sanskrit works, including commentaries on:

- **Bhagavad Gita**
- **Brahma Sutras (Madhva-bhashya & Anuvyakhyana)**
- **Principal Upanishads**
- **Bhagavata Purana (Tatparya-nirnaya)**
- **Founded the Udupi Krishna Mutt, establishing the famous Ashta Mathas tradition.**
- **Inspired later Dvaita scholars: Jayatirtha, Vyasatirtha, Raghavendra Tirtha.**

Dardanelles Strait


Taganrog Gulf
Ukraine
Sea of Azov
Crimean Peninsula
Russia
Romania
Kerch Strait
Caucasus Mts
Black Sea
Balkan Mts
Bulgaria
GEORGIA
Bosporus Strait
Turkey
Turkey
PONTIC Mts
Sea of Marmara
Aegean Sea
Dardanelles Strait

Thank You!