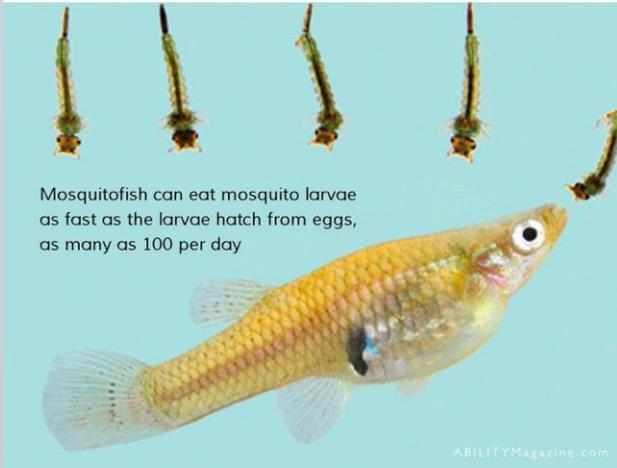


**Gambusia**



Mosquitofish can eat mosquito larvae as fast as the larvae hatch from eggs, as many as 100 per day

ABILITYMagazine.com

- The western mosquitofish (*Gambusia affinis*) is a North American freshwater fish, also known commonly, if ambiguously, as simply mosquitofish or by its [generic](#) name, *Gambusia*, or by the common name gambezi.
- Its sister species, the eastern mosquitofish (*Gambusia holbrooki*) is also referred to by these names..
- The eastern mosquitofish is native to the eastern and southern United States from [Florida](#) to [Pennsylvania](#) and inland to [Alabama](#) and [Tennessee](#), while the western mosquitofish has a larger distribution throughout the United States.
- The name "mosquitofish" was given because the fish eats [mosquito](#) larvae, and has been used more than any other fishes for the biological control of mosquitoes.
- Gambusia typically eat zooplankton, [beetles](#), [mayflies](#), [caddisflies](#), [mites](#), and other [invertebrates](#); mosquito larvae make up only a small portion of their diet.
- Mosquitofish were introduced directly into ecosystems in many parts of the world as a [biocontrol](#) to lower mosquito populations which in turn negatively affected many other species in each distinct bioregion.

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- **Mosquitofish in Australia** are classified as a noxious pest and may have exacerbated the mosquito problem in many areas by out-competing native invertebrate predators of mosquito larvae.
- In 1928, *Gambusia* was first introduced in India during British rule.
- Later, various governmental organizations, such as the ICMR, the National Institute of Malaria Research (NIMR), local municipal corporations, the Fisheries Department, and the Health Department, alongside other private organisations in India, took over as part of their efforts to combat malaria.
- The idea of this scheme was that the newly introduced species would prey on or compete with mosquito larvae, reducing the latter's population.
- Wildlife biologists and conservationists consider mosquitofish to be among the hundred most detrimental invasive alien species.
- Aside from their resilience, these fish also have voracious feeding habits and have demonstrated aggressive behaviour in habitats to which they are introduced.
- In Australia, introduced mosquito fish have led to the local extinction of the red finned blue eye (*Scaturiginichthys vermeilipinnis*), an endemic fish species. They have also been observed preying on the eggs and larvae of native fish and frogs.
- The World Health Organisation stopped recommending *Gambusia* as a mosquito control agent in 1982.
- In 2018, the National Biodiversity Authority of the Government of India also designated *G. affinis* and *G. holbrooki* as invasive alien species.
- But both government and non-governmental organizations in India have continued to introduce these species for mosquito control.

The Hindu

### Mpemba effect



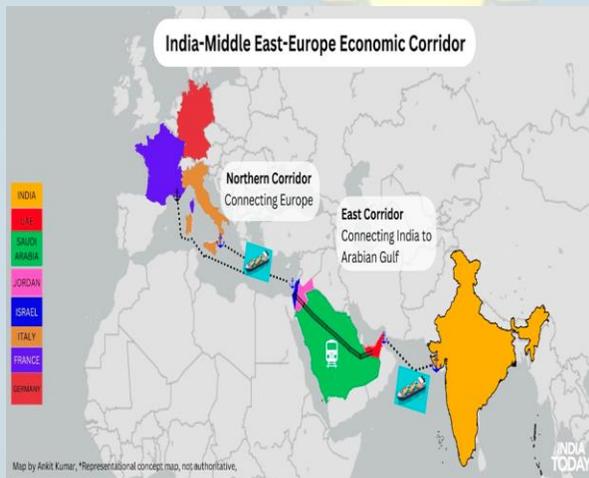
- The Mpemba effect, named after Tanzanian student Erasto Mpemba,

who brought attention to this counterintuitive phenomenon in 1969, makes for curious observation.

- The effect is that hot water can freeze faster than cold water in similar conditions.

The Hindu

### IMEC and west Asia geopolitics



The Yemen conflict has seen an alarming erosion in the shipping industry's confidence in the Suez Canal continuing to be the backbone of east west trade.

Critics of IMEC say the Arab Street would simply not allow any major trade link between Saudi Arabia and Israel many years after the Gaza war ends.

Connecting Al Haditha in Saudi to Haifa in Israel is at the core of IMEC but it was always going to be challenging.

Rail projects such as Etihad Rail and the GCC Railway (Gulf Railway), one of whose routes is proposed to terminate at Al Haditha, are already underway in the United Arab Emirates and Saudi Arabia independently, which would dovetail with IMEC that targets ports such as Fujairah and Jebel Ali.

Hydrogen and containerization Besides trade, electricity and digital cables, IMEC is proposed to carry hydrogen pipelines.

As the world moves towards decarbonization, hydrogen produced from fossil fuel-based processes such as methane reforming will continue to be the transition fuel until electrolysis or other "green" processes become practical.

Hydrogen sourced from fossil fuels would keep Gulf nations in business in the hydrogen economy too with the corridor serving that purpose.

For India, however, the containerization through rail and road in IMEC is a big draw. Containerization radically quickens trade, and reduces port costs.

India's National Logistics Policy, unveiled in 2022, seeks to lower

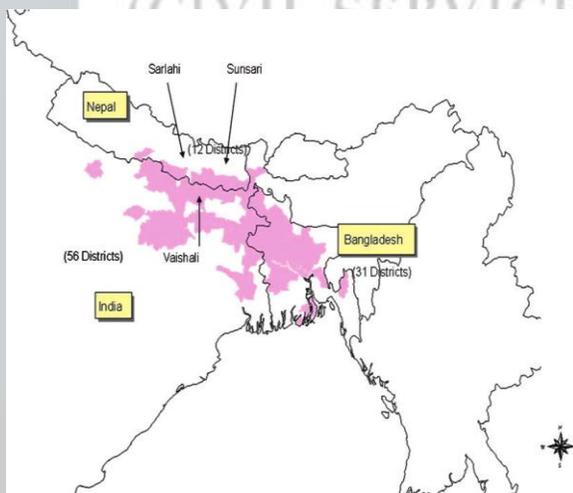
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logistics costs to global levels by 2030.

- Beefing up containerization would be a key pathway towards achieving that goal. In India, some 70% of containers move by road but optimum splits should be 30% road, 30% rail and the rest, coastal and inland shipping.
- The dedicated rail freight corridors that link to two IMEC ports of Mundra and the Jawaharlal Nehru Port Trust (JNPT) will play into IMEC logic.
- But these rail projects skirt southern India, by and large. Containers in the south typically find their way to the Colombo transshipment container terminal via Chennai, Tuticorin/Thoothukudi and so on.
- The Hindu

- There was a rise in anti-India sentiment in the mid-1970s over issues ranging from boundary disputes and insurgency to the sharing of water.
- The instability continued for a few decades until Sheikh Hasina came to power in 1996 and scripted a new chapter in bilateral ties with a treaty on the sharing of Ganga waters.
- Since then, India and Bangladesh have built cooperation in trade, energy, infrastructure, connectivity and defence.
- Bilateral trade between India and Bangladesh has grown steadily over the last decade.
- Bangladesh has emerged as India's largest trade partner in South Asia, with bilateral trade reaching \$18 billion in 2021-2022 from \$10.8 billion in 2020-2021.

### India and Bangladesh



- “Major development partner” of Bangladesh, India is funding several infrastructure and connectivity projects.
- Last year when they inaugurated the Akhaura Agartala rail link that connects Bangladesh and the northeast through Tripura.
- The link has given India access to Chattogram and Mongla ports in

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Bangladesh for the movement of cargo.

- It is likely to boost small scale industries and develop Assam and Tripura. In the energy sector, Bangladesh imports nearly 2,000 megawatts of electricity from India.
- The BIMSTEC Master Plan for Transport Connectivity focuses on connecting major transport projects in India, Bangladesh, Myanmar and Thailand, thereby establishing a shipping network.
- India's attention will primarily be directed towards the Matarbari Port, located about 100 km from Tripura, which Bangladesh is building.
- The port will establish a crucial industrial corridor linking Dhaka and the northeast part of India.

### What are the points of tension?

- The looming Teesta dispute will take centre stage in the agenda of the Hasinaled government.
- The issue revolves around the sharing of Teesta's waters, with Bangladesh seeking an equitable distribution. Another contentious matter is the Rohingya issue.
- The Hasina government aims for the peaceful repatriation of Rohingyas to Myanmar, but its talks with the

military junta have been unsuccessful so far.

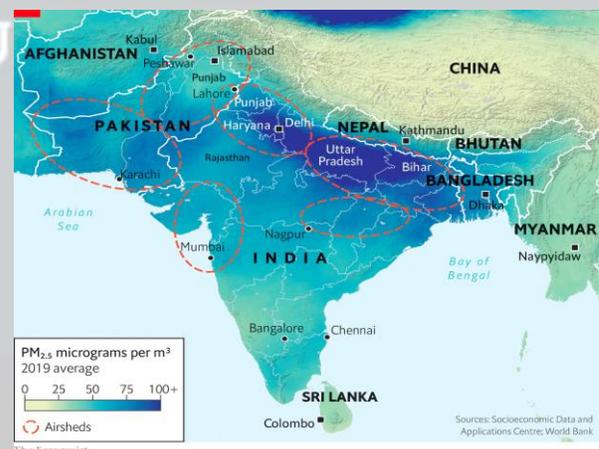
- Cross border terrorism and infiltration are additional threats to internal security.
- The rise of majoritarian forces adds another layer to the complex landscape.

### What about global ties?

- The U.S. has been vocal in its criticism of the Awami League government, exerting pressure on Sheikh Hasina over "democratic backsliding".
- Deepening relationship between Bangladesh and China, marked by the substantial Chinese investments in infrastructure in recent years. China built 12 highways, 21 bridges, and 27 power and energy projects in Bangladesh.

- The Hindu

### Air pollution and geopolitics



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- The air smells burnt in Lahore, a city in Pakistan's east that used to be famous for its gardens but has become infamous for its terrible air quality.
- Toxic smog has sickened tens of thousands of people in recent months.
- Lahore is in an air shed, an area where pollutants from industry, transportation and other human activities get trapped because of local weather and topography so they cannot disperse easily.
- Airsheds also contribute to cross border pollution. Under certain wind conditions, 30% of pollution in the Indian Capital New Delhi can come from Pakistan's Punjab province, where Lahore is the capital.
- Regional and international forums offer opportunities for candid discussions about air pollution, even if governments are not working together directly or publicly
- Airshed management needs a regional plan," he said.
- According to the World Bank, a regional airshed management policy would involve countries agreeing to set common air quality targets and measures that everyone can implement, meeting regularly to

share their experiences and, if possible, setting common air quality standard

### What is Air shed??

- An air shed is generally described as an area where the movement of air, and air pollutants, can be hindered by local geographical features such as mountains, and by weather conditions.
- Delineation of an airshed has three basic steps:
  - First, emission quantification to prepare a multi-pollutant emission inventory; second, analysis of meteorological data to evaluate variations and similarities at the local and regional levels; and third, performing air quality modelling to understand the pollution
- Studies by the Pew Research Center and Common Sense Media suggest constant connectivity through messaging apps can lead to increased digital distraction, potentially affecting cognitive abilities and focus among young individuals.
- Research heavily covered in the journal 'Computers in Human Behavior' highlights a potential link between heavy use of messaging apps like WhatsApp and shortened attention spans, which may impact

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intellectual engagement and learning. There's also a negative impact on memory.

- The Hindu



# SAURABH PANDEY

# CSE

(CIVIL SERVICES EXAMINATION)

## FROM BASICS TO UPSC BRILLIANCE