

## Diving Into the Water Bodies Census

### Editor's Note

Almost half the General Election is over. The fate of 285 Lok Sabha seats is locked in EVMs. The country waits for a new government but at The Infravision Foundation, it is business as usual. When the dust of campaigning settles, governance will take over again. There is much to be done if the new government wants to fulfill the aspirations of 1.4 billion people. And as the manifestos of most parties show, infrastructure will be very much on the agenda.



TIF CEO Jagan Shah speaks at the meeting

Findings from The Infravision Foundation's analysis of the first water bodies census will inform the second census by the Government. This was one of the major decisions to emerge after The Infravision Foundation (TIF) presented its findings to the Ministry of Jal Shakti on April 18. Among those who attended were Debashree Mukherjee, Secretary of the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, officials from the National Water Mission, the National Institute of Hydrology, the Central Water Commission, the National Water Informatics Centre, the Ministry of Agriculture and Family Welfare, the Department of Land Resources, and the National Informatics Centre, as well as representatives of the ATE Chandra Foundation.

### Event Alert



- TIF and India Habitat Centre will be hosting the first InfraKatha, a series of conversations by multi-disciplinary experts who are creating and analysing the infrastructure of the future. The inaugural edition is on May 29, 2024, at 7 pm, at India Habitat Centre, New Delhi. Celebrated author Devdutt Pattanaik will be in conversation with TIF founder and managing trustee Vinayak Chatterjee on Mythology and Infrastructure.
- TIF will conduct the first two capacity building workshops in collaboration with the World Bank in Delhi in June. The Municipal Finance Champions Labs will address the issues of land value capture in public transport and wastewater treatment.



## Welcome Aboard



**Akhilesh Tilotia** joins TIF as Distinguished Fellow. With 20 years of experience in public policy and entrepreneurship, he is currently Head of Research at the National Investment and Infrastructure Fund. He is an alumnus of IIM Ahmedabad; an Advisor to the Drone Federation of India; alumni lead of the IIMA Public Policy Special Interest Group; and has served as independent director on several boards. He is also the author of two books on the Indian economy and administration, *The Making of India* (2015) and *Through the Looking Glass* (2021).



**Vrinda Singh** joins TIF as Research Associate. Armed with a dual master's degree—one in Political Science from Calcutta University and another in Public Policy and Governance from Tata Institute of Social Sciences (TISS), specializing in urbanisation—she embodies a profound commitment to understanding and addressing nuances of urban policy. Welcome and good to see her hard at work.

## Work Update

- TIF reports on High Speed Rail and Safe Highways are in the process of being finalised.
- The InfraShakti Awards on NDTV are expected to happen in July, once the General Election is over and a new government is in place.
- TIF has won a bid and will be working on a project with the International Centre for Research in Agroforestry on amendment of state building codes to promote Trees Outside Forests (TOF)-based products in the construction sector. The TOF initiative is being run by the Ministry of Environment, Forest and Climate Change with support from USAID.

## Centre for Urban Infrastructure and Management

TIF has begun work on shaping an urban centre which will link infrastructure, people and outcomes. Discussions are on in full swing to transform cities into engines of growth and generate fresh thinking about urban India. In bridging the gap between policy and implementation, the Centre intends to ensure that cities can raise their contribution to GDP from the current 60 per cent.

## Pushing Semiconductors

TIF Founder and Managing Trustee Vinayak Chatterjee wrote about India's much-needed digital push in Business Standard. As he pointed out, semiconductor is a \$750 billion global industry set to double in the next 6-7 years, and India is purposefully striving to develop its own capabilities. Currently India imports 100 per cent of its semiconductors which leaves it vulnerable to geopolitical impact on the supply chain. What is working in favour of India is its abundant, technically oriented talent, access to green energy and a growing specialty chemicals manufacturing ecosystem.

### Digital infra: Pushing chips hard

At the Business Standard Manthan on March 27, 2024, Ashwini Vaishnaw, minister of information technology, telecom and railways, made some hard-hitting points:

(i) Semiconductor is a \$750 billion global industry set to double in the next 6-7 years, and India is purposefully striving to develop its own capabilities.

(ii) What is working in favour of India is its abundant technically oriented talent, access to green energy and a growing specialty chemicals manufacturing ecosystem.

(iii) India is aiming to capture a significant share of the full value chain — from conceptualising a new chip, to designing and validating it, and then taking it to final fabrication.

(iv) India's moves in this regard are also aimed at bolstering its economic security.

His remarks came at a time when the action is indeed hotting up in the global marketplace.

The US Commerce Department is in the process of structuring a \$39 billion grants facility for chipmaking. It is understood that the US will award grants totalling \$11.6 billion to Taiwan Semiconductor Manufacturing Company (TSMC) to assist the world's top chipmaker expand its manufacturing footprint in America. Other companies lining up for US grants are Intel, Secure Enclave, Global Foundries, Microchip Tech, RAE Systems, and a few others. Similar moves are being made by Japan, and the EU.

In India, the government has approved the establishment of semiconductor units as part of the "Development of Semiconductors and Display Manufacturing Ecosystems in India" policy, notified on December 21, 2021, with a total outlay of ₹76,000 crore. This policy aims to make India self-reliant, and to position it as a global hub for electronic system design and manufacturing. To attract investments in this field, the central government will provide financial support of 50 per cent of the project cost. Specifically, the policy will incentivise the setting up of semiconductor "fabs" (fabrication units), display fabs, and facilities for compound semiconductors, silicon photonics, sensors, and assembly and testing. In addition, state

governments are seen chipping in too. For example, beyond the 50 per cent central government support, the Gujarat government has also committed 20 per cent capital support to the Tata project.

Projects such as Tata's are already underway as part of this policy. Micron's assembly and testing facility in Gujarat's Sanand began construction in September 2023. Tata Electronics, partnering with Taiwan's Powerchip Semiconductor Manufacturing Corp (PSMC), is getting ready to set up a semiconductor fab in Gujarat's Dholera with an investment of ₹91,000 crore. The second project spearheaded by Tata Semiconductor Assembly and Test (TSAT) Pvt Ltd, will establish an assembly packaging and testing facility in Assam's Morigaon with an investment of ₹27,000 crore. Lastly, CG Power, in collaboration with

Renesas Electronics Corporation and Stars Microelectronics, will set up an assembly and testing facility in Gujarat's Sanand with an investment of ₹7,600 crore. The Tata-PSMC proposal is the only "fab" that the government has approved as of now. It is also reliably learnt that some other world leaders are in active discussions with the government to finalise their entry strategies for India, including location and identification of local partners.

In the context of technology and electronics, "chips" and "semiconductors" are closely related but not the same. A semiconductor is a material that has electrical conductivity between that of a conductor and an insulator. A "chip", on the other hand, typically refers to an integrated circuit (IC) or microchip, which is a small semiconductor wafer on which thousands or millions of tiny electronic components like transistors, capacitors, and resistors are fabricated. These components are interconnected to perform a specific function, such as processing data in a computer or controlling electronic devices. Chips are highly complex products to manufacture. The critical stage of fabrication takes place in specialised facilities known as semiconductor fabrication plants or "fabs", where processes like photolithography, etching, doping, and metallisation are employed to create the chip's physical structure on silicon wafers.

This is a unique industry where the annual investment in R&D is often as much as capital invested. The need for deep technical knowhow and competitive costs have resulted in an extremely specialised global supply chain with very few players. Semiconductors provide the essential functionality for electronic devices to process, store and transmit data. They are integrated circuits made from silicon by packing billions of electronic components in a few square millimetres. Chips are critical to all electronics around us — from smartphones to servers, modern cars, machinery and automation, critical infrastructure and even defence systems.

Despite India's growing contribution to end-user demand (particularly driven by the booming smartphone market, which reached \$140 billion in FY22), the country remains a passive consumer, vulnerable to geopolitical tensions that could disrupt the supply chain. For instance, the Covid-19 chip shortage and US sanctions on Huawei highlighted India's dependency on external suppliers, exposing it to risks of supply chain disruptions. Currently, India imports 100 per cent of its semiconductors. Projections indicate that import figures could surge to \$110 billion by 2030, underlining the critical need to localise the semiconductor supply chain to align with the vision of a self-reliant India in this area of critical and high-tech electronics manufacturing.

The Government of India has clearly taken a series of decisive measures. Starting in 2019, it awarded "infrastructure status" to semiconductor fabrication facilities. This was the first time a manufacturing facility had been included in the official definition of infrastructure. The process of disbursing the capital subsidy marked the next logical step. Considering the criticality of this industry, the global, technical and investment challenges, the government might find it appropriate to increase the size of the Capital Subsidy Fund to cater to the interest being shown by potential entrants.

The country now looks forward to confidently powering its digital infrastructure with a few more committed players, signifying that the chips are not down anymore!

The writer is an infrastructure expert. He is also the founder and managing trustee of The Infrastructure Foundation. With research inputs from Achintya Tewari and Vinod Singh.



INFRATALK  
VINAYAK CHATTERJEE

## Capturing Land Value

Chatterjee was also quoted in an ET Now article on the Government exploring policy mechanisms to capture the increase in land value resulting from road projects, including auctioning exits at greenfield expressways, as it looks to ramp up funding for creating infrastructure.

## Tracking Growth

In a detailed interview with ET Now on the new government's infra focus, Chatterjee said he envisages a prioritisation of Railways, from new tracks to modernisation of stations. For more, click on this link: <https://youtu.be/dl3ap63s5JU>

## Counting the Benefits

Former TIF COO Nitin Zamre wrote an enlightening article in Financial Express on the impact of Prime Minister Narendra Modi's Surya Ghar Yojana. While he was at TIF, Zamre piloted the Sooraj Se Rozgari study which was presented to the Prime Minister's Economic Advisory Council. While unpacking all the announcements from the Government, Zamre said it is an excellent opportunity to scale up the adoption of clean energy as well as create local entrepreneurs and jobs.

## Indio Rising Down Under

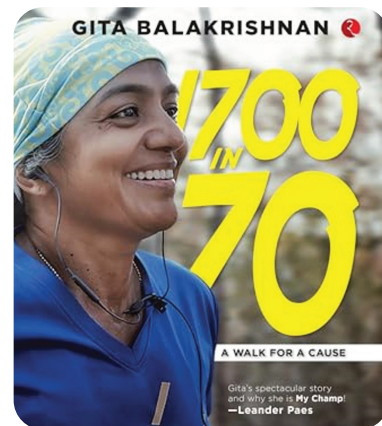
In a move towards fostering gender diversity and empowerment in the corporate world, the Confederation of Indian Industry (CII) and the Business Council of Australia (BCA) signed a memorandum of understanding (MoU) to establish the India-Australia Women's Leadership Forum. The forum aims to promote women leadership in the industry and strengthen bilateral ties between the two countries. TIF co-founder Rumjhum Chatterjee signed the MoU as head of the CII National Committee for Women Empowerment. Australia was represented by Business Council of Australia, CEO Bran Black.





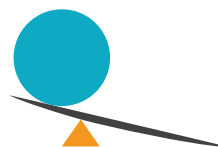
# TIF@Books

Gita Balakrishnan is an architect, trained at the School of Planning and Architecture. A remarkable woman, she was troubled by the absence of a design language in urban India. She decided to walk 1700 km in 70 days from Kolkata to Delhi. Balakrishnan encountered some fabulous individuals and institutions along the way including an anganwadi worker, a woman mason, a solar energy park in Rewa and a lifeline express in Jharkhand. Her walk taught her many things--highways in India are not at all friendly to pedestrians, architects have no connect with the people who execute their designs and those who live in them, and the local is losing out steadily to the global. More on her in a fascinating conversation on [theinfravisionfoundation.org](https://theinfravisionfoundation.org) and in her book, 1700 in 70 Days (Rupa).



# TIF@TCF

The Infravision Foundation features prominently in a video from The Convergence Foundation (TCF) which explains the concept of systems change, as a pivotal idea to catalyse development. The four point argument of systems change is simple: address root causes, have an impact at the population level, enable sustainability and ensure a shift in mindset. The video is part of TCF's first report on systems change. Here it is in full: <https://theconvergencefoundation.org/systemicimpact/>



THE  
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# Test Your Infra Power

1. Which State in India has the highest number of metros?
2. Which is the highest airport in India?
3. How many kilometres of roads is India adding annually?
4. What is the first permanent road connection between northern Assam and eastern Arunachal Pradesh?
5. Where was a deposit of 5.9 million tonnes (mt) of inferred lithium ore found in 2023?



1. UP, which has five metros that are operational, two that are being constructed and four that are being planned.
2. Kushok Bakula Rinpoche Airport is a public use airport located 2 km southwest of Leh, a town in the state of Jammu and Kashmir, at an elevation of 3,256 m (10,682 ft) above mean sea level.
3. 10,000 km
4. The Dhola-Sadiya Bridge, officially known as the Bhupen Hazarika Bridge.
5. In the Salal-Haimna areas of Reasi district, Jammu & Kashmir



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