November 2024



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Managing Director – Primus Partners

Dear readers,

Welcome to the November edition of Moving the Needle. In this issue, we explore the growing trend in India's garment sector, delve into the promising world of carbon credits – an essential element in combating climate change, and highlight how Green Aviation Infrastructure is leading the charge in sustainable operations within the aviation industry. As AI continues to drive innovation, we shed light on the value of targeted AI partnerships, while also exploring the exciting intersection of health and nutrition through Food as Medicine and Medicine as Exception in today's healthcare ecosystem.

We provide an overview of the rising debt concerns across global markets, India's ascension as an emerging global education hub, where new policies and opportunities are reshaping the landscape for both students and institutions. Additionally, we cover NATE's bold leap towards self-reliant aerospace testing in India—an important milestone in the country's ambitions to cement itself as a leader in this 'space'.

We are proud to introduce a new segment titled MD Speaks, where Primus' newest Managing Director, who leads the Agriculture & Sustainability practice, helps decode COP29. His insights offer a compelling perspective on the evolving role of sustainability in global policy and industry practice. As always, we hope these stories spark new ideas, inspire action, and fuel meaningful conversations.

Warm regards, Moving the Needle Team







Primus Outreach

#PolicySquare

To understand the more fundamental questions in policy making

#LeadersSpotlight

To highlight opinions of sector/segment leaders

#PrimusPodcast

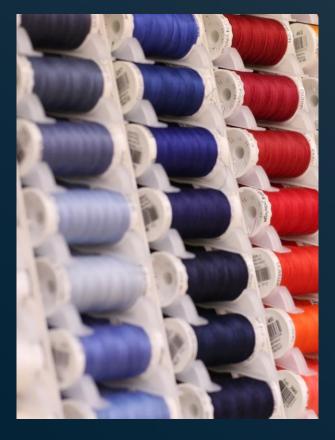
To bring together policymakers & thinkers in areas of critical importance



In this engaging dialogue, the Union Minister for Women and Child Development, Smt. Annpurna Devi and our very own Managing Director at Primus, Charu Malhotra, delve into crucial topics around women empowerment, juvenile justice, and the dynamic role of digital technology in advancing these fields. From groundbreaking government initiatives to the transformative power of digitization, this discussion sheds light on how technology is shaping women's rights, improving juvenile welfare, and making social justice systems more transparent and accessible.



Economy



Global Textile Market and India's Role

The global textile and apparel industry, valued at \$1.79 trillion in 2024, represents a significant part of the world economy, with projected growth at 2.81% CAGR through 2028. India, a leading textile producer, contributes 4-5% to this market. Leveraging its large production capacity and skilled labour, India's textile industry is set to grow at a 10% CAGR, aiming for a \$190 billion valuation by FY26 and \$350 billion by FY30.

India-Bangladesh Textile Interdependency

India and Bangladesh share a strong textile link, with India supplying intermediate materials, like

Transforming Short-Term Disruptions into Long-Term Gains in India's Garment Sector

cotton and yarn, to Bangladesh for apparel production. However, recent political instability in Bangladesh is disrupting this supply chain, affecting manufacturing and slowing trade. This presents short-term setbacks, especially in India's fibre exports to Bangladesh, yet also a long-term opportunity for India to build a self-sustaining supply chain by expanding its garment manufacturing capabilities, which could reduce reliance on external markets.

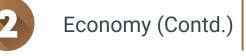
Seizing a \$2.4 Billion Opportunity

India can capitalise on this supply chain disruption by ramping up domestic production, investing in technology, and enhancing spinning and garmenting facilities. Developing sector-specific skills for graduates from Industrial Training Institutes (ITIs) will be essential for an efficient and industry-ready workforce. Improved training in sewing, quality control, and modern textile technologies would significantly reduce new hire training time and boost productivity.

Additionally, maintaining high-quality standards is critical to gaining global buyer trust. Establishing government-authorized testing labs that certify garment quality to standards like ISO 9001 will ensure quality and improve market competitiveness. This shift would position India as an attractive alternative to Bangladesh, potentially capturing 10-12% of its export orders—valued at approximately \$2.4 billion annually.

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Expanding Market Access and Employment

Scaling up Indian textile operations will generate employment, strengthen local economies, and boost domestic consumption. It will also allow India to enter new markets such as the European Union, Canada, Australia, and Japan, which currently depend on Bangladesh for apparel imports. The government can further support this by developing Trade Centers and Exhibition Hubs in major textile regions, creating platforms to showcase Indian products to international buyers and fostering trade partnerships.

Conclusion

India's robust textile heritage, expertise, and expanding capabilities provide an opportunity to reinforce its position in the global textile market. By developing self-reliant supply chains and capturing new market segments, India can transform current disruptions into long-term gains, drive sectoral growth, and attract global investment, solidifying its presence in the international apparel market.



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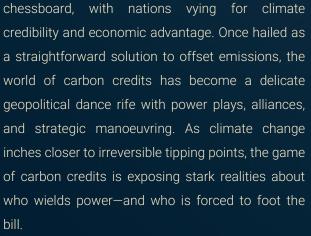
Carbon Credits: The High-Stakes Game of Climate Currency

The global stage of carbon credits is a complex chessboard, with nations vying for climate

Imagine the European Union, with its towering Emissions Trading System (ETS), leading the charge in the carbon markets. The EU's stringent policies on carbon credits, honed over decades, reflect a no-nonsense stance on climate action. Recently, the EU upped the ante, proposing tighter regulations to keep questionable credits out of the

system. The ETS caps emissions for European industries, forcing them to reduce emissions or buy credits. However, these credits aren't simply up for grabs; they must meet strict criteria, creating a fortress around the EU's carbon market. For companies and countries alike, the message is clear: there's no cutting corners regarding EU carbon.

On the other hand with its patchwork of state-led initiatives, the United States is playing catch-up, moving with caution and internal debate. States like California have forged ahead with ambitious capand-trade systems while federal policies lag.⁴ As American corporations hunger for a slice of the green economy, they find themselves navigating a market that is neither as cohesive nor as demanding as Europe's.⁵





Geopolitics



The recent Inflation Reduction Act hints at a turning point, but without a unified federal carbon market, the U.S. risks losing influence in the global carbon credit arena, where other players are pushing for higher standards.⁶

China, in its characteristically quiet but formidable manner, has steadily constructed its own emissions trading system, now the largest in the world.7 However, while China's market is vast, its standards have been criticised for leniency. Companies operating within China can purchase credits at relatively low costs compared to Europe, allowing them a less expensive route to compliance. Critics argue that this undermines the spirit of carbon credits-making it more about optics than actual reductions. Still, with the leverage of its vast manufacturing sector, China has positioned itself as an indispensable player in the carbon market, keenly aware that as other economies scramble for lower carbon footprints, it can turn its credit system into a form of quiet influence, drawing in partners who may prioritise affordability over stringent climate action.⁸

Meanwhile, developing nations watch these moves with a wary eye. Countries rich in forests, like Brazil and Indonesia, find themselves in the uncomfortable position of protecting carbon sinks that the rest of the world depends on while seeing relatively little in return.⁹ In 2021, Brazil pushed hard at the COP26 summit for recognition and compensation for its forests' role as carbon reservoirs. Now, they're back on the global stage, negotiating what they consider fair terms—insisting that if they are to be the world's "lungs," they should be compensated accordingly. Yet, as wealthier nations delay direct climate finance, Brazil and others must decide how much of their natural resources they're willing to pledge without guaranteed returns.¹⁰





And then, there's the often-overlooked question of the credits themselves. In Africa, nations rich in renewable energy potential-like Kenya and South Africa-face a bitter irony: they are encouraged to keep emissions low to generate credits, which wealthier countries and corporations can buy. Critics call it a modern form of green colonialism, where developing countries are effectively selling off their future carbon budgets to allow the developed world to meet its targets. These countries are being nudged to prioritise carbonsaving projects over industrial growth, a trade-off implications with long-term for economic sovereignty.¹¹

At the heart of this geopolitical tug-of-war is a stark reality: carbon credits have become more than just a tool for emissions reduction. They are now a form of currency, a lever for influence, and a means of control. The big players are angling to shape the rules, define the standards, and determine who gets access—and at what cost. As climate pledges grow more ambitious, the world is waking up to the fact that carbon credits are not merely market commodities but pieces in a larger power game, where the stakes are planetary, but the rules are all too human.¹²



 $^{2}\,https://www.bloomberg.com/news/articles/2023-10-02/how-eu-s-carbon-border-adjustment-mechanism-works-and-what-the-critics-say and the second s$

¹ https://eur-lex.europa.eu/EN/legal-content/summary/eu-emissions-trading-system.html

³ https://www.economist.com/europe/2024/04/25/carbon-emissions-are-dropping-fast-in-europe

⁴ https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program

⁵ https://www.reuters.com/sustainability/climate-energy/us-unveils-policy-boost-carbon-offset-market-integrity-2024-05-28/

⁶ https://www.forbes.com/sites/energyinnovation/2022/04/18/chinas-emissions-trading-system-will-be-the-worlds-biggest-climate-policy-heres-what-comes-next/

⁷ https://essd.copernicus.org/articles/15/5301/2023/

⁸ https://ccci.berkeley.edu/news/2021/07/china-launches-world-s-largest-carbon-market

⁹ https://cebds.org/wp-content/uploads/2023/06/CEBDS.Repositioning-Brazil-towards-Regulation-of-Article-6-of-the-Paris-Agreement_2021_EN.pdf

¹⁰ https://unfccc.int/process-and-meetings/the-paris-agreement/the-glasgow-climate-pact/cop26-outcomes-market-mechanisms-and-non-market-approaches-article-6

¹¹ https://www.theguardian.com/world/2023/apr/23/un-indigenous-peoples-forum-climate-strategy-warning

¹² https://unfccc.int/sites/default/files/resource/sb2023_08.pdf



Infrastructure

The aviation industry is witnessing a significant transformation in response to global climate challenges. For Indian aviation, implementing sustainable infrastructure has become crucial as the sector expands. This paper focuses on three key areas for green infrastructure implementation: electrification of ground operations, energy-efficient terminal management, and clean energy integration, with particular emphasis on operational feasibility and environmental impact.

The aviation sector faces sustainability challenges in managing its environmental footprint. Major Indian airports are taking initial steps toward sustainability, with Cochin International Airport leading as the world's first fully solar-powered airport since 2015. The aviation sector must align with global sustainability standards while meeting growing air travel demands. Key challenges include managing high energy consumption in terminal operations, reducing ground vehicle emissions, and optimising resource-intensive operations.

Key Infrastructure Transformation Areas

Ground Operations: The transition to electric ground support equipment (E-GSE) presents a significant opportunity to reduce operational emissions. This includes electrifying baggage tractors, belt loaders, and pushback tugs. Smart fleet management systems enable optimal vehicle utilisation and charging schedules while reducing maintenance requirements and operational costs. Green Aviation Infrastructure: Implementing Sustainable Airport Operations



Terminal Operations: Modern airport terminals can achieve significant energy efficiency through smart building management systems. LED lighting systems with occupancy sensors and daylight harvesting capabilities provide substantial energy savings. Smart HVAC systems with zone-based controls and heat recovery mechanisms optimise climate control. Building automation systems enable real-time monitoring and adjustment of all terminal operations.

Operations Renewable Energy: Airports can implement comprehensive renewable energy systems through rooftop and ground-mounted solar installations supported by battery storage

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systems. The success of Cochin International Airport demonstrates how airports can leverage their extensive land and rooftop areas for solar power generation.

Conclusion

Expected benefits from green aviation infrastructure implementation include reduced operational costs, enhanced energy security, environmental performance, improved and global strengthened competitive position in aviation. Airport operators should prioritise conducting comprehensive sustainability assessments across their facilities and operations for successful implementation. This should be followed by developing phase-wise implementation

plans that align with both operational requirements and financial capabilities. Success will depend heavily on building strong partnerships for technology adoption and knowledge sharing among airports, technology providers, and industry experts. Equally important is the creation of robust monitoring and reporting systems to track progress and demonstrate value from sustainability investments. Finally, airports must invest in training personnel to effectively operate and maintain new sustainable technologies and systems. Through these coordinated efforts, Indian airports can lead the aviation sector's transition to a sustainable future while maintaining operational excellence and supporting the country's growing air travel needs.



Targeted AI Partnerships:

Technology

Empowering Industry-Specific Solutions for India's Growing Digital Landscape



Recent partnerships in AI are shifting the focus toward developing industry-specific large language models (LLMs), which bring significant benefits to India and the world. These collaborations aim to create AI that understands sectors' specific needs like finance, customer service, and manufacturing. This targeted approach is set to increase the efficiency and impact of AI solutions, making them more accessible and relevant for businesses of all sizes, including small and medium enterprises (SMEs), which form the backbone of many economies, especially India's.

India's AI market is projected to grow at a rapid 25-35% compound annual growth rate (CAGR) over the next few years, which aligns with global trends. Our country already sees a high AI adoption rate, with 59% of Indian enterprises using AI in some form. This uptake highlights the readiness among Indian businesses to incorporate AI, driven by the need to reduce costs and streamline operations. These new, specialised LLMs are expected to support this trend by making AI more directly applicable to industry-specific challenges, allowing businesses to scale their AI capabilities quickly and affordably.

Globally, the AI market is immense, with projections estimating a value of \$621 billion in 2024, expanding to over \$2.7 trillion by 2032. Asia-Pacific, led by countries like India and China, is expected to have one of the highest growth rates due to increasing investments and supportive government policies. Initiatives like India's National AI strategy and "AI for AII" mission aim to bridge the digital



divide and ensure that even rural and small businesses can access advanced AI tools. As a result, industry-specific AI solutions tailored to the local business landscape could have a transformative impact, promoting digital equity while strengthening India's role as a global tech leader.

Industry-specific AI can significantly boost productivity and reduce operational costs in realworld applications. For example, in manufacturing, AI could optimise supply chains and automate quality control, while in customer service, it could provide faster and more accurate responses, enhancing customer satisfaction. For India's rapidly digitalising economy, such tools could improve business outcomes across sectors, helping companies manage increasing competition and adapt to a more tech-oriented customer base.

Furthermore, India is already home to one of the largest pools of AI talent globally, with a highly skilled workforce ready to lead AI development and deployment. These collaborations also encourage job creation, as AI-driven solutions often require specialised maintenance, updates and customer support, creating new roles and opportunities within the technology sector.

These collaborations on industry-specific AI are building a framework for more efficient, specialised and accessible AI globally. For India, in particular, this offers a path to economic growth, job creation and digital inclusivity, reinforcing the country's position as a critical player in the AI ecosystem.



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Aerospace & Defence

NATE: A Bold Leap Towards Self-Reliant Aerospace Testing in India



India's Defence Ministry is advancing its aerospace capabilities with a bold proposal: the National Aerospace Testing Establishment (NATE). This consolidated body is poised to handle the complete spectrum of testing for aircraft, helicopters, drones, and airborne weapons. In a sector where agility and precision are critical, NATE is set to drive India's aerospace ambitions with efficiency, unified protocols, and industry collaboration.

Why NATE and Why Now?

India's aerospace and defence sector has seen an unprecedented increase in R&D funding over the past decade, especially under the government's self-reliance vision (Atmanirbhar Bharat). However, the complexity of testing protocols for new and evolving technologies has highlighted significant operational bottlenecks. Today, each phase of aerospace testing—from structural integrity to flight capability—often takes months due to dispersed, overlapping processes managed by multiple entities. This lag has proven costly as globally, aerospace testing facilities in countries like the U.S. and France streamline similar processes in significantly less time.

NATE seeks to bridge this gap by becoming a single-window system and the Indian Air Force is leading the initiative by leveraging its existing establishments such as Aircraft and Systems Testing Establishment (ASTE) and the Air Force Test Pilots School (AFTPS). This unified approach would cut time-to-market for new technologies by a huge margin, offering a competitive advantage as India races to modernize its defence forces with indigenous systems.





Aerospace & Defence (Contd.)

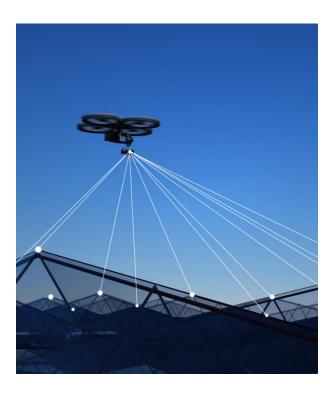
Fostering Innovation through Public-Private Collaboration

For NATE to succeed, fostering close collaboration with private players and research institutes will be vital. By establishing partnerships with entities like Defence Public Sector Undertakings (DPSUs) and key private players, NATE could function as a collaborative innovation hub. Such partnerships could reduce costs for smaller players while creating a robust feedback loop that accelerates design improvements. Additionally, NATE could pioneer an open data-sharing model on test outcomes, a strategy employed by NASA that has driven rapid advancements in aviation safety and technology across the private sector.

Vision for the Future: A Technology-First Testing Ecosystem

India's future defence landscape will increasingly rely on Al-powered drones, hypersonic missiles, and autonomous systems, all of which require new testing methodologies. NATE has the potential to become a trailblazer by adopting advanced tools such as digital twins, AI, and simulation-based testing. Digital twins—virtual replicas of physical systems—could reduce physical testing time by allowing virtual assessments and adjustments before physical testing begins. AI algorithms could also predict system weaknesses, enabling preemptive adjustments and refining prototypes in record time. As aerospace becomes increasingly data-centric, NATE could establish data-sharing frameworks with universities and think tanks to build a future-ready workforce skilled in the latest testing technologies.

NATE is more than just an administrative reorganization, it represents India's vision for a selfreliant, technologically advanced aerospace ecosystem that serves both defence and commercial aviation. By reducing costs, enhancing efficiency, and fostering collaboration, NATE is set to elevate India's global aerospace standing. Through this initiative, India moves closer to a defence ecosystem where innovation, agility, and cutting-edge technology form the backbone of national security and economic growth. NATE is our gateway to establishing India as a major global player in aerospace testing and innovation.



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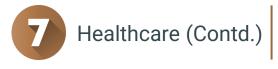
Food as Medicine and Medicine as Exception: A Paradigm Shift in Health Care

Healthcare



The concept of "food as medicine" is gaining traction in health care, reflecting a growing recognition of the role diet plays in maintaining and enhancing health. This approach contrasts with traditional medicine, which often addresses health issues reactively. Integrating dietary modifications with conventional medical practices can lead to improved health outcomes.

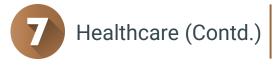
Historically, civilisations such as the Greeks, Romans, Chinese, and Indians recognised the therapeutic potential of food. Hippocrates, the "father of medicine," famously said, "Let food be thy medicine and medicine be thy food." Modern science is reviving this concept, with increasing evidence supporting the role of diet in preventing and managing chronic diseases. According to a WHO report,13 non-communicable diseases kill 41 million people each year, which is around 74% of all deaths globally. Recent advancements in nutritional science have provided substantial evidence supporting the role of diet in preventing and managing chronic diseases like heart disease, diabetes, and cancer. For example, PREDIMED¹⁴ study the found that the Mediterranean diet, rich in fruits, vegetables, whole grains, nuts, and olive oil, is linked to reduced rates of cardiovascular disease. Similarly, research demonstrates that diets high in fibre and low in refined sugars, as well as plant-based diets,15 improve glycaemic control in individuals with type 2 diabetes. Certain food items, such as broccoli,16 contain bioactive compounds like sulforaphane, which may reduce cancer risk.



Additionally, the discovery of "personalised nutrition" has advanced the concept of food as medicine. Personalised nutrition involves tailoring dietary recommendations to an individual's genetic profile, lifestyle, and health conditions. Studies have shown that personalised nutritional recommendations¹⁷ can improve blood sugar control, underscoring the limitations of a one-size-fits-all approach.

A growing movement in health care emphasises the integration of food as medicine, particularly through the concept of "functional foods"-those that offer health benefits beyond basic nutrition. For example, probiotics¹⁸ found in fermented foods like yoghurt and kefir support gut health, prevent diarrhoea, and may enhance immune function, while omega-3 fatty acids¹⁹ from fatty fish and flaxseeds have anti-inflammatory properties that improve heart health and cognitive function. As conventional medicine largely focuses on reactive treatments and managing symptoms-especially in chronic conditions like hypertension, diabetes, and heart disease-there is a shift toward preventive measures through lifestyle medicine. This approach encourages dietary and lifestyle changes to address the root causes of chronic diseases. However, implementing this holistic approach challenges, overcoming requires including educating patients on nutrition, fostering interdisciplinary collaboration, and tailoring dietary interventions to individual needs. Ultimately, the combination of food as medicine with conventional treatments holds the potential to improve long-term health outcomes.





Point of View

The concept of "food as medicine" marks a crucial shift in how we approach health. Government initiatives such as POSHAN Abhiyaan, the Eat Right India movement, and the Union Budget 2024-2025 rightly emphasise the role of nutrition in well-being. The true strength of this paradigm lies in its challenge to the reactive nature of conventional medicine. Instead of waiting for illness to strike, we must prioritise food and lifestyle changes as the first line of defence. The growing focus on lifestyle medicine encourages patients and providers to work together to prevent diseases before requiring pharmaceutical intervention.

The shift towards viewing food as medicine represents an evolution in health care. By embracing both food as medicine and conventional treatments, healthcare systems can provide a more comprehensive approach to well-being.



This preventive model promises to reduce the burden of chronic diseases but also encourages viewing medicine as an exception rather than the norm—a last resort when preventive, dietary, and lifestyle measures are insufficient.

² https://www.bloomberg.com/news/articles/2023-10-02/how-eu-s-carbon-border-adjustment-mechanism-works-and-what-the-critics-say

⁶ https://www.forbes.com/sites/energyinnovation/2022/04/18/chinas-emissions-trading-system-will-be-the-worlds-biggest-climate-policy-heres-what-comes-next/

12 https://unfccc.int/sites/default/files/resource/sb2023_08.pdf

¹ https://eur-lex.europa.eu/EN/legal-content/summary/eu-emissions-trading-system.html

³ https://www.economist.com/europe/2024/04/25/carbon-emissions-are-dropping-fast-in-europe

⁴ https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program

⁵ https://www.reuters.com/sustainability/climate-energy/us-unveils-policy-boost-carbon-offset-market-integrity-2024-05-28/

⁷ https://essd.copernicus.org/articles/15/5301/2023/

⁸ https://ccci.berkeley.edu/news/2021/07/china-launches-world-s-largest-carbon-market

⁹ https://cebds.org/wp-content/uploads/2023/06/CEBDS.Repositioning-Brazil-towards-Regulation-of-Article-6-of-the-Paris-Agreement_2021_EN.pdf

¹⁰ https://unfccc.int/process-and-meetings/the-paris-agreement/the-glasgow-climate-pact/cop26-outcomes-market-mechanisms-and-non-market-approaches-article-6

¹¹ https://www.theguardian.com/world/2023/apr/23/un-indigenous-peoples-forum-climate-strategy-warning



Financial Services

Overview of Rising Debt Concerns



The sharp rise in credit card usage and defaults, coupled with the growth of other unsecured loans, is becoming a growing concern for the Indian economy. According to the Reserve Bank of India (RBI), outstanding credit card debt surged to ₹2.7 lakh crore by June 2024, a dramatic increase from ₹87,686 crore in March 2019. This translates to a compound annual growth rate (CAGR) of 24% over five years, underscoring the rapid expansion of credit card usage and corresponding debt in India.

Factors Driving Debt Accumulation

This credit card debt explosion is being fueled by a mix of factors, including easy access to credit, the rise of Buy Now, Pay Later (BNPL) schemes, and the e-commerce boom. Young individuals may be particularly vulnerable to such schemes. Financial analysts observe a concerning trend of young borrowers maxing out their credit cards and slipping into non-performing asset (NPA) status, often without even attempting to revive their loans. Meanwhile, other forms of unsecured debt are also on the rise, further exacerbating the issue.

Regulatory Responses

The RBI has expressed alarm over the swift growth of unsecured loans, which have outpaced corporate lending. Smaller loans under ₹10,000 have been aggressively marketed by banks and non-banking financial companies (NBFCs), leading to a sharp rise in net credit losses in this segment. It was noted that net credit losses in credit cards are running at around 5-6%, with some lenders reporting losses as high as 7.5%.



Financial Services (Contd.)

In response, the RBI raised risk weights on unsecured consumer credit and bank loans to NBFCs, a move that is starting to show positive effects. Macquarie's Unsecured Retail Index reports that credit growth slowed to 15% following the RBI's intervention in November 2023. Personal loan growth dropped from 36% in June 2023 to just 3% in June 2024, and credit card originations fell by 30% year-on-year, reflecting lenders' more cautious approach.

The RBI also consolidated guidelines for banks and NBFCs involved in credit card issuance. These guidelines aim to ensure that card operations align with best customer practices, emphasising the need for a proper credit risk assessment particularly for customers with no independent financial means—and for transparent interest rates and charges. Measures to avoid wrongful billing and ensure responsible outsourcing to agents are also highlighted.

Economic Implications of Growing Debt

Rising credit without corresponding investment can have significant negative implications for the economy. Excessive spending fueled by easy credit can lead to increased non-performing assets (NPAs), reduced profitability for financial institutions, and economic instability. A sudden increase in consumer debt can make the economy more vulnerable to economic shocks, and reduced savings can limit the ability of individuals and businesses to weather downturns.

Navigating the Shift

This situation reflects a fundamental shift in India's economy from savings-driven to consumptiondriven behaviour. While the appeal of easy credit is certainly attractive, it is important to acknowledge the risks associated with accumulating excessive debt. Financial education must be prioritised to enhance consumer literacy on credit, starting early in life through school programs and continuing at key life stages.

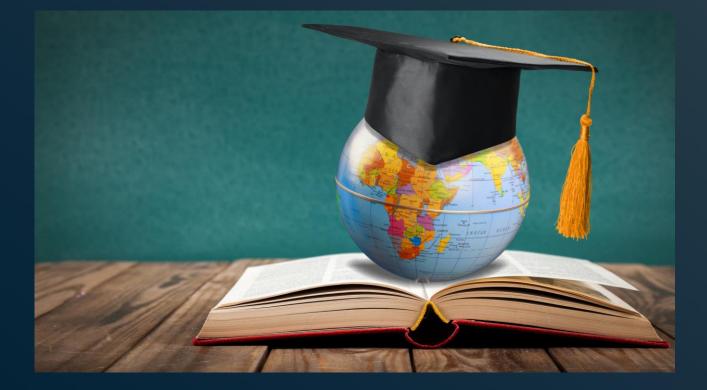
Regulatory bodies and industry players play a critical role in promoting financial awareness by funding educational programs, conducting public campaigns, and providing tools for consumers to understand credit risks and options.

Additionally, the government must ensure that credit market players offer transparent and standardised information, allowing consumers to compare options and access their credit reports. This push should complement regulatory frameworks to promote responsible borrowing behaviour and foster a competitive, efficient credit market while reducing the risks of poor financial decisions.



9 Impact

Global Mobility of International Students: Trends, Insights, and India's Position as an Emerging Education Hub



Historically, humankind has been migrating to places that provide better livelihood options. As the civilisations got established, wealth creation opportunities (through jobs or businesses) started influencing more for attaining better living standards. At the core of all these, education and skill have become the key ingredient impacting the choice of professions. Subsequently, students started moving from one nation to another in search of better educational opportunities to secure their future.

If we observe closely, the landscape of higher education in global scenarios is ever-evolving and quickly changing. The mobility of students from one to another country is so crucial that it is emerging as a key driver for educational, economic and diplomatic collaboration between nations.

After careful analysis of recent data on the global mobility of foreign students, we can say that while taking a decision to select a country for higher education, factors like regional vicinity, policies related to immigration, cost of living and quality of education play a vital role.



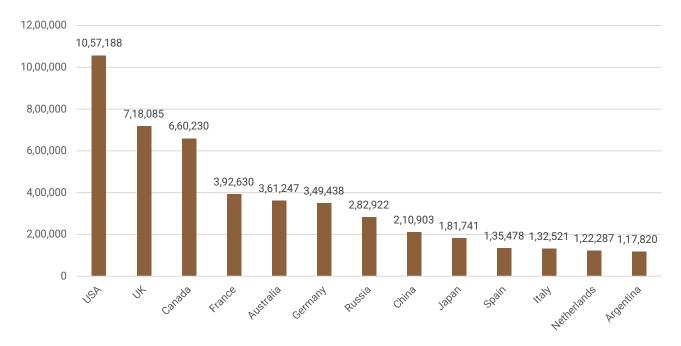


Table 1: Inbound students in select countries

Who is coming from where and why?

Being the two largest countries, China and India continue to dominate as the largest exporters of international students globally. India shows a strong presence in traditional English-speaking countries (USA, UK, Australia, Canada, etc.) and Germany. China is a major source country in almost every top destination (USA, UK, Australia, and Germany). The G7 countries are dominating here as well, led by the USA, which hosts the most international students after the UK and Canada.

 The USA has more students from China and India, whereas the UK has a diverse pool of students from China, India, Nigeria, and Pakistan.

- Canada is attracting more Indian students than Chinese students, and lenient immigration and post-study work policies have boosted its attractiveness, particularly for Indian students.
- France, Russia, and Argentina exhibit strong regional student inflows, driven by cultural and historical ties.
- Meanwhile, China and Japan are emerging as regional education hubs, supported by growing investments in higher education.
- Germany's appeal has risen due to its tuitionfree universities and robust English-language programs, drawing more international students.
- Russia attracts students mainly from Kazakhstan and Turkmenistan.



- France has a strong representation from North African countries (Morocco, Algeria). Australia continues to draw students from China, India, and Southeast Asia (Vietnam, Indonesia).
- Spain, Italy, and the Netherlands attract many students, primarily from neighbouring European countries like France, Italy and Germany. Netherlands attracts students from Germany, Italy, and Romania due to proximity and quality English education.
- China is attracting students from South Korea, Thailand, and Pakistan.
- Japan attracts mainly Chinese and Southeast Asian students (Vietnam, Nepal).

Where is India and how is it performing?

There has been a steady increase in foreign student enrolment which dipped in 2020-21 due to Covid-19 and travel restrictions. Male students consistently outnumber female students at both undergraduate and postgraduate levels, highlighting potential cultural, financial, and/or academic barriers. Even though India has international students from about 170 countries, over 50% come from just 5 countries, with the remaining 50% spread across 165 nations. The United States is the largest noncontributor, regional indicating а broader international appeal.



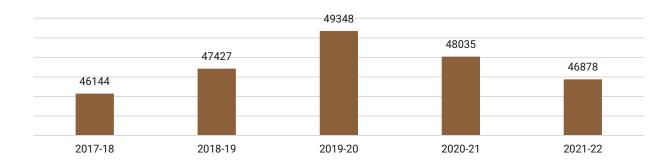
Over 90% of international students in India come from the 13 states. Southern states like Karnataka, Tamil Nadu, Andhra Pradesh, and Telangana have a strong presence due to technological and higher education opportunities. However, 37% of students come to the northern part of the country due to well-established universities and a diverse range of programs.



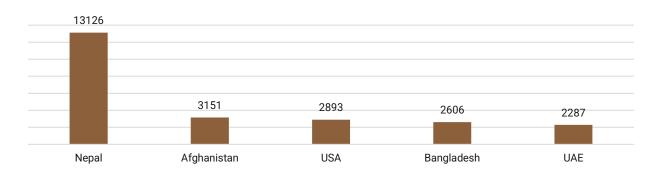
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Indian States with Over 1,000 Foreign Students Enrolled in Higher Education

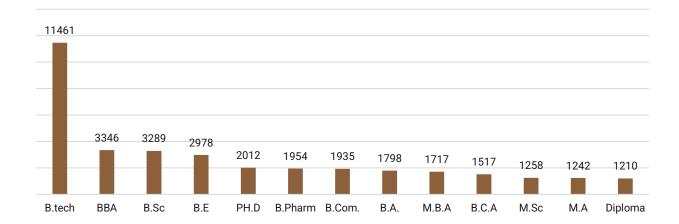
Five-Year Trend of Foreign Student Enrollment in Indian Higher Education



Foreign Student Enrollment in India: Top 5 Countries of Origin







Top 13 Academic Programs in India with Over 1,000 Foreign Student Enrolments

B. Tech leads with over 24% of international students, while programs like BBA, B.Sc., and B.E. attract 4% to 7% of the students. Thirteen programs account for 76% of international enrolments, with 74.8% in undergraduate courses and 15.8% in postgraduate studies.



The way forward

India has made progress in attracting international students but faces challenges, including a gender gap in enrolment, with male students outnumbering females. Nepal and Afghanistan are key contributors, but diversification of student sources is needed. To strengthen its appeal, India could enhance marketing in underrepresented regions, ease visa regulations, and expand post-study work opportunities. Improving student facilities, increasing English-language programs, and fostering international partnerships will further support India's growth as a global education hub.



The MD Speaks

Decoding COP29 with M. Ramakrishnan, Managing Director – Primus Partners

Ramakrishnan M is a Managing Director at Primus Partners, and leads the Agriculture and Sustainability Practice. He helps companies define their sustainability goals, manage their net-zero progress, and comply with relevant regulatory guidelines. In the Agriculture domain, he advises the government on relevant initiatives to improve farmer income, while maintaining harmony with the environment. He has been closely associated with Agritech and Sustainability domains

He has been closely associated with Agritech and Sustainability domains for 7+ years. He has helped farmers get access to credit, increase their income, improve soil health, and reduce usage of chemicals and water on fields. He has used AI and deep tech to reduce food loss across the supply chain.

His strong network in the start-up ecosystem (especially EV and other climate-tech start-ups) gives him a ringside view of investor interests as well as technological innovations, when it comes to sustainability and carbon reduction. Prior to his start-up days, he worked for 16 years in a mix of consulting and analytics roles. He started his career at PwC. He completed his MBA from MDI Gurgaon, and completed his B.E (Mechanical Engineering) from DCE.

1. What is COP

The Conference of the Parties (COP) is the central decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC), a landmark treaty established in 1992 during the Rio Earth Summit. This framework was designed to stabilise greenhouse gas concentrations in the atmosphere at levels that would prevent dangerous human interference with the climate system.²⁰ COP meetings convene representatives from nearly 200 nations annually to negotiate vital agreements and assess the progress made in global climate action.

1. Why Should We Care About COP?

Let us look at some climate-related statistics to highlight the urgency of these discussions:

2023 was the hottest year on record, with temperatures1.45°C above pre-industrial and greenhouse gas concentrations at an all-time high.²¹

- Greenhouse gas concentrations (CO2, methane, and nitrous oxide) reached all-time highs in 2022 and continued to rise in 2023.²²
- Ocean heat levels are at their highest in 65 years of monitoring.²³
- Global sea levels hit a record high, with the past decade seeing double the rate of sea-level rise compared to previous years.²⁴
- Antarctic sea ice hit a historic low in February, shrinking by 1 million km² below the previous record.
- Glacier loss in 2022-2023 was the worst on record, with Switzerland alone losing 10% of its glacier volume in just two years.²⁶
- These alarming statistics about climate change highlight the urgency of action.
- In this context, the **Conference of the Parties (COP)** becomes critical.



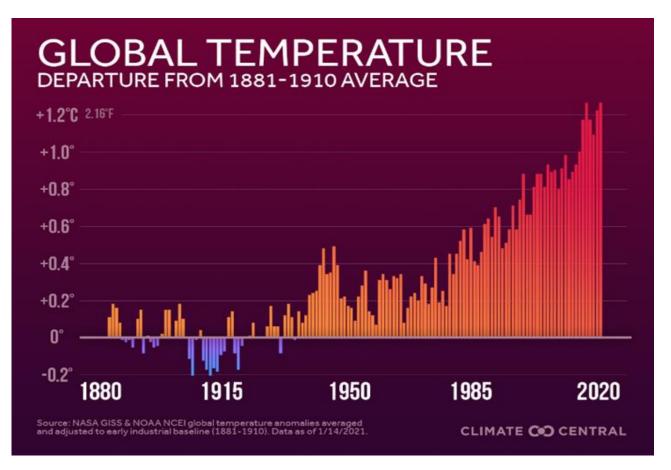




Source: Al image generated via Adobe Firefly. The Conference of the Parties (COP) comprises nations that have ratified the UN Framework Convention on Climate Change (UNFCCC) and has been convening almost annually since its establishment in 1992.



COP encourages nations to collaborate, ensures climate action is both proactive and coordinated, and holds the countries accountable for their commitment to climate change



Source: Al image generated via Adobe Firefly. The Conference of the Parties (COP) comprises nations that have ratified the UN Framework Convention on Climate Change (UNFCCC) and has been convening almost annually since its establishment in 1992.

3. How COP Decisions Impact You: Connecting Global Policies to Local Lives

It can be easy to view the COP as a distant political event, with discussions and negotiations taking place far away from the realities of daily life. However, the outcomes of the COP shape national policies and regulations, which affect how we live, work, and consume.

²⁰ Malassi, J. L. (2016). The contribution of developing countries in the global effort to tackle climate change: Analysis of the transition from the Kyoto protocol to the Paris agreement. https://core.ac.uk/download/196550414.pdf

²¹ https://wmo.int/media/news/wmo-confirms-2023-smashes-global-temperature-record

²² https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases

²³ https://link.springer.com/article/10.1007/s00376-023-2385-2

²⁴ https://earthobservatory.nasa.gov/images/150192/tracking-30-years-of-sea-level-rise

 $^{^{25}\,\}underline{https://www.nasa.gov/earth/antarctic-sea-ice-near-historic-lows-arctic-ice-continues-decline/$

²⁶ https://www.reuters.com/world/europe/swiss-glaciers-lose-10-volume-worst-two-years-record-2023-09-28/



How COP Decisions Impact You	Businesses	Consumers
Health and Well-Being	Sectors like construction, agriculture, and outdoor labour-intensive industries would benefit from adaptation investments that reduce the impact of extreme heat. Heatwave preparedness, such as early warning systems, cool shelters, and workplace safety protocols, could improve worker productivity and reduce absenteeism caused by heat-related illnesses.	Improved heatwave resilience protects low- income populations and outdoor workers, ensuring that extreme weather conditions do not adversely affect their livelihoods. Reduced heat- related health issues also mean fewer hospitalisations, promoting overall well-being. Due to decreased pollution, consumers experience better air quality and fewer health issues, such as respiratory illnesses and allergies.
New Market Opportunities	COP fosters growth in new markets, especially in green technologies such as renewable energy, electric vehicles, and energy-efficient buildings.	As new markets emerge, consumers gain access to innovative products, such as electric cars and energy-efficient appliances.
Enhanced Business Resilience	With more adaptation funds, businesses could invest in climate-resilient infrastructure, especially in vulnerable sectors like agriculture, manufacturing, and construction.	Better water management systems, flood- resistant buildings, and more efficient supply chains will protect businesses from extreme weather events and reduce daily disruptions.
Opportunities for Green Jobs and Upskilling Opportunities	A surge in climate finance would likely lead to growth in sectors related to climate resilience, such as sustainable construction, disaster management, renewable energy, water conservation, and agriculture. Indian businesses might receive incentives or grants to train employees in new skills related to adaptation, such as renewable energy installation, disaster preparedness, and water- efficient technologies.	Creating green jobs, particularly in rural and semi-urban areas where adaptation needs are critical. Several upskilling opportunities for youth might also arise.
Climate resilient Agriculture	Indian agribusinesses could see opportunities to expand the production of climate-resilient seeds, farm machinery for efficient irrigation, and weather monitoring technologies.	Consumers, particularly in rural areas dependent on agriculture, benefit from more stable food supplies. Reduced crop losses due to climate impacts would help stabilise food prices and ensure food availability, even during adverse weather conditions.
Prices of commodities		In the short term, businesses might pass on some costs related to adaptation investments to consumers. For instance, building climate- resilient infrastructure or adopting new technologies could result in higher prices for goods and services. However, in the long term, adaptation measures can stabilise the supply chain and reduce the risk of climate-related disruptions, leading to more stable pricing for consumers, especially in essential sectors like food, water, and energy_
Energy Costs	The transition to renewable energy driven by COP leads to competitive pricing, encouraging companies to lower costs and pass savings to consumers.	Lower energy costs from renewable investments benefit consumers, reducing utility bills and increasing disposable income (specifically mentioning rooftop solar panels).
Corporate Social Responsibility (CSR)	Opportunities for investing more in community-level adaptation projects like rainwater harvesting, afforestation, or local disaster preparedness, which would not only help communities but also strengthen the business's relationship with local consumers and governments.	Investments in CSR will result in development of sectors like water management, infrastructure development, and energy systems, improving public services and resilience.
Green Products and Services offerings	Regulations encourage businesses to innovate, promote sustainability, and produce eco-friendly products, enhancing their market offerings.	Consumers enjoy diversification in green products and services, which allows them to make environmentally responsible choices in their daily lives.

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4. What to Expect from COP 29?

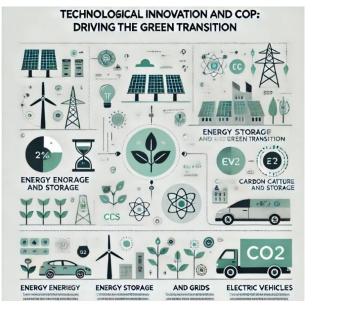
Critical Deliberations to Watch at COP 29:

1. Accelerating the Transition to Renewable Energy:

It is expected that COP 29 will promote the use of renewable energy sources and the phase-out of fossil fuels. Enhancing NDCs to keep global warming below 1.5°C will be promoted to countries.

2. Climate Finance and Loss and Damage:

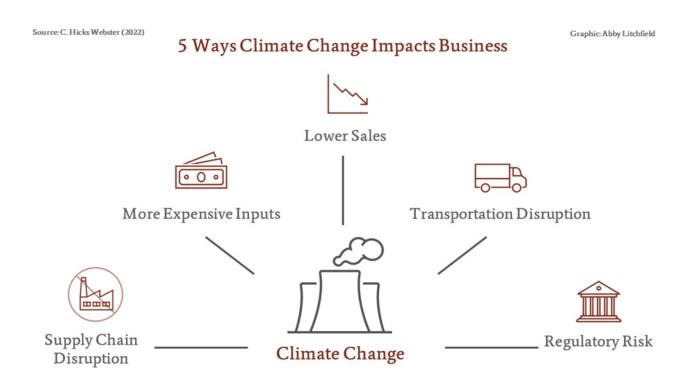
Securing fresh commitments towards climate finance is expected to be the main focus of COP 29, as demands for financial support from affected and vulnerable nations continue to rise.











India's Interest in the COP 29 Agenda

The COP29 Action Agenda is poised to impact India's climate change efforts across various sectors. Initiatives such as the Climate Finance Action Fund (CFAF) and the Baku Initiative for Climate Finance, India can push new funding sources for green energy and low-carbon technologies. The agenda's strong focus on renewable energy, mainly through commitments such as the Green Energy Zones, is expected to facilitate the expansion of India's solar and wind power capacity, supporting its target of achieving 500 GW of renewable energy by 2030.

Moreover, the Hydrogen Declaration is anticipated to bolster India's hydrogen sector, potentially positioning the nation as a global leader in green hydrogen production. In the agricultural realm, the Baku Harmoniya Climate Initiative will provide farmers with the tools and resources they need to adopt climate-resilient practices.

Editorial Team



Nilaya Varma Co-Founder & CEO



Devroop Dhar Managing Director



Ipsita Gauba Vice President



Sejal Mathur Assistant Vice President



Aman Sartaj Sr. Consultant



Ankush Sharma

Authors



Siddhi Parakh Sr. Consultant



Ramakrishnan M Managing Director



Pragya Priyadarshini Vice President



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info@primuspartners.in

(in)

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Primus Partners India

@partners_primus