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Bio-fortified potatoes

Bio-fortified potatoes, with added iron content, will soon be available in Indian markets. What is a Biofortified Potato? A biofortified potato is a variety of potato that has been naturally improved through breeding techniques to contain higher levels of essential nutrients such as: Iron Zinc Anthocyanins (natural antioxidants) Vitamin C

How it is Developed?

Not genetically modified (non-GMO). Developed using conventional breeding and selection techniques. Scientists cross high-nutrient wild potato varieties with popular cultivars to improve nutritional quality without compromising yield, taste, or storability

Why Biofortified Potatoes Matter?

Tackle Malnutrition: Address "hidden hunger" micronutrient deficiencies common in India. Boost Farmer Income: Many are high-yielding, disease-resistant, and climate-resilient. Sustainable Nutrition: Can provide nutrients naturally through regular diets, especially to rural and tribal populations. Supports National Missions: Like Poshan Abhiyaan, National Biofortification Mission.

Harnessing AI to Boost Immunity

In a groundbreaking study published in Cell, a team of Harvard scientists has harnessed the power of artificial intelligence (AI) to design proteins that significantly enhance the immune system's ability to fight diseases, including cancer and viral infections. Importance of T Cells in Immunity T cells play a pivotal role in our immune response. When faced with a viral infection or cancer, the body needs to ramp up T cell production to mount an effective defence. However, activating the Notch signalling pathway, which is necessary for this process, has been a significant challenge until now. How AI is Revolutionizing Protein Design To tackle this challenge, the researchers developed a library of custom-designed soluble Notch agonists. They systematically tested these agonists for their ability to activate the Notch pathway and support T cell development and function. The use of AI-driven protein design technologies was a game-changer, allowing for rapid and efficient development of these activators.

What is Notch signalling?

Notch signalling is a cell-to-cell communication system that plays a crucial role in cellular differentiation and is essential for transforming immune progenitors into T cells.

How do T cells function in the immune system?

T cells are vital for the immune response, helping to identify and destroy infected or cancerous cells. What are Notch agonists? Notch agonists are molecules designed to activate the Notch signalling pathway, promoting T cell development and function.

What are the potential applications of this research?

This research could lead to advancements in immunotherapy, vaccine development, and immune cell regeneration. How does AI contribute to protein design? AI-driven protein design technologies allow for rapid and efficient development of proteins,

enabling researchers to create custom solutions for complex biological challenges.

The Hindu

Topic ⟶ India's repair culture, AI, and digital policy

India's Policy Shift Toward Repair Culture In May 2025, the Indian government accepted a proposal to introduce a Repairability Index for mobile phones and appliances. The index will rate products on ease of repair, spare part availability, and software support.

New e-waste policies include minimum payments to encourage formal recycling. These are steps toward recognising repair as a consumer right.

India's repair sector holds tacit knowledge skills not written or codified but passed on through practice and observation. Importance of Tacit Knowledge Tacit knowledge is not taught formally it is learned through mentorship, observation, and repetition. AI and digital systems struggle to replicate this context-sensitive knowledge.

These workers contribute indirectly to the training of AI systems, but remain unacknowledged. The Right to Repair movement is gaining ground globally (e.g., EU laws), and India launched its own framework in 2022.

Policy Blind Spots India produced 1.6 million tonnes of e-waste in 2021–22, making it the third-largest generator globally. The E-Waste (Management) Rules, 2022 focus on recycling, not repair.

PMKVY and other skilling programmes overlook the diagnostic and improvisational nature of repair work. NEP 2020 values Indian knowledge systems but lacks implementation for hands-on repair traditions.

Repair, Reuse & Circular Economy Repair is central to circular economy but remains undervalued. "Unmaking" disassembly and repurposing is seen as a research innovation revealing flaws and reuse potential

Informal repairers perform this "unmaking" daily, creating feedback loops and supporting sustainable consumption.

AI-Enabled Solutions for Repair Justice Despite India's investment in AI, modern devices are often built to be non-repairable. Only 23% of smartphones in Asia are considered easily repairable (iFixit 2023).

Design standards and procurement must embed repairability from the beginning. Use of Large Language Models (LLMs) and decision trees can help document and share repair knowledge without erasing local context.

Policy Recommendations Ministry of Electronics & IT: Include repairability in tech and procurement policies. Department of Consumer Affairs: Expand Right to Repair to include product classification. Ministry of Labour & Employment: Use platforms like e-Shram to formally recognise informal repairers.

Ministry of Skill Development: Tailor skilling to the non-standard nature of repair work.

Conclusion Supporting the repair ecosystem is not just technical—it is a cultural and ethical obligation. Recognising the embodied, experiential knowledge of repairers ensures sustainability, inclusion, and a just digital future. As philosopher Michael Polanyi said: "We know more than we can tell."

The Hindu

Indian Railways' Sairang railway extension and its relevance to the Act East Policy

Project Overview: Mizoram Railway Expansion Mizoram originally had only 1.5 km of metre-gauge railway track connecting Bairabi (Kolasib district) to Silchar in Assam. The gauge conversion project was sanctioned in 2000.

Extension from Bairabi to Sairang (51.38 km) began in 2008-09. Faced delays due to rough terrain, landslides, weather, manpower shortages, and transport challenges. Sairang railway station lies 18 km short of Mizoram's capital Aizawl

Strategic and Economic Significance Air travel is currently the fastest route out of Mizoram. The Aizawl-Silchar highway via Sairang takes at least 5 hours. Trains from Sairang (e.g., proposed Rajdhani Express) will reduce travel time to 1.5 hours and lower transport costs.

Expected benefits: Boost in tourism, trade, and goods transportation. Reduced truck dependency. The Sairang railhead is strategically important to the Act East Policy, enhancing: Connectivity with ASEAN nations, Diplomatic engagement, Security cooperation. Will aid goods transshipment from the India-funded Sittwe Port in Myanmar.

Key Connectivity Projects Dimapur-Zubza railway (Nagaland) – progressing well. Imphal-Moreh railway (Manipur) – delayed due to ethnic conflict. Asian Highway 1 – connecting Assam to Moreh via Nagaland and Manipur.

Challenges Across Borders Unrest in neighbouring countries is stalling cross-border connectivity: Myanmar's civil war (post 2021 coup) has halted land link plans. Collapse of Sheikh Hasina's govt in Bangladesh (2024) affected cooperation. Agartala-Akhaura railway project (linking Tripura to Kolkata via Bangladesh) is stalled. Kaladan Multi-Modal Transit Project (₹2,904 crore) in Myanmar delayed would have reduced Kolkata Mizoram distance by 1,000 km

New Stablecoin Law in Hong Kong

New Stablecoin Law in Hong Kong (Effective August 1, 2025) Stablecoins Ordinance to be enforced from August 1, 2025. Introduced by the Hong Kong Monetary Authority (HKMA). Key provision: Bans offering or promoting unlicensed fiat-referenced stablecoins (FRS) to retail investors

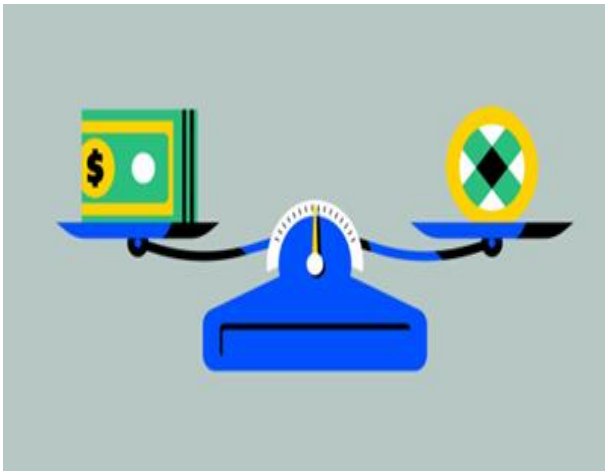
Only HKMA-licensed firms can legally issue stablecoins in Hong Kong.

What Are Stablecoins?

Cryptocurrencies designed to have stable value by being pegged to: Fiat currencies (e.g., USD, EUR). Commodities (e.g., gold). Other crypto assets or algorithms. Used for trading, value storage, and remittances.

5. Why Regulate Stablecoins?

Ensure consumer protection and market trust. Prevent fraudulent reserve claims. Stabilize financial systems by: Avoiding systemic risk. Preventing misuse in criminal activity.



High usage in inflation-hit countries (e.g., Argentina, Afghanistan) shows growing real world impact.

Volatility and Risks of Stablecoins Despite being "stable", they may: Lose peg during panic or system failure. Show price fluctuations (e.g., USDT fell to $0.92 in past).

FACTS ⟶ China and Russia began joint naval drills in the Sea of Japan on Sunday as they seek to reinforce their ties and counterbalance what they see as a U.S.-led global order. The "Joint Sea-2025" exercises kicked off in waters near the Russian port of Vladivostok and would last for three days,

FACTS ⟶ Krasheninnikov volcano is situated in Russia's Eastern Kamchatka Peninsula, inside the Kronotsky Nature Reserve. Occurred on 2–3 August 2025, just after a powerful 8.8-magnitude earthquake struck Kamchatka on July 29, possibly triggering the volcanic activity

FACT ⟶ Caci is a traditional ritual whip-fight dance indigenous to the Manggarai people of western Flores, East Nusa Tenggara INDONESIA.

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