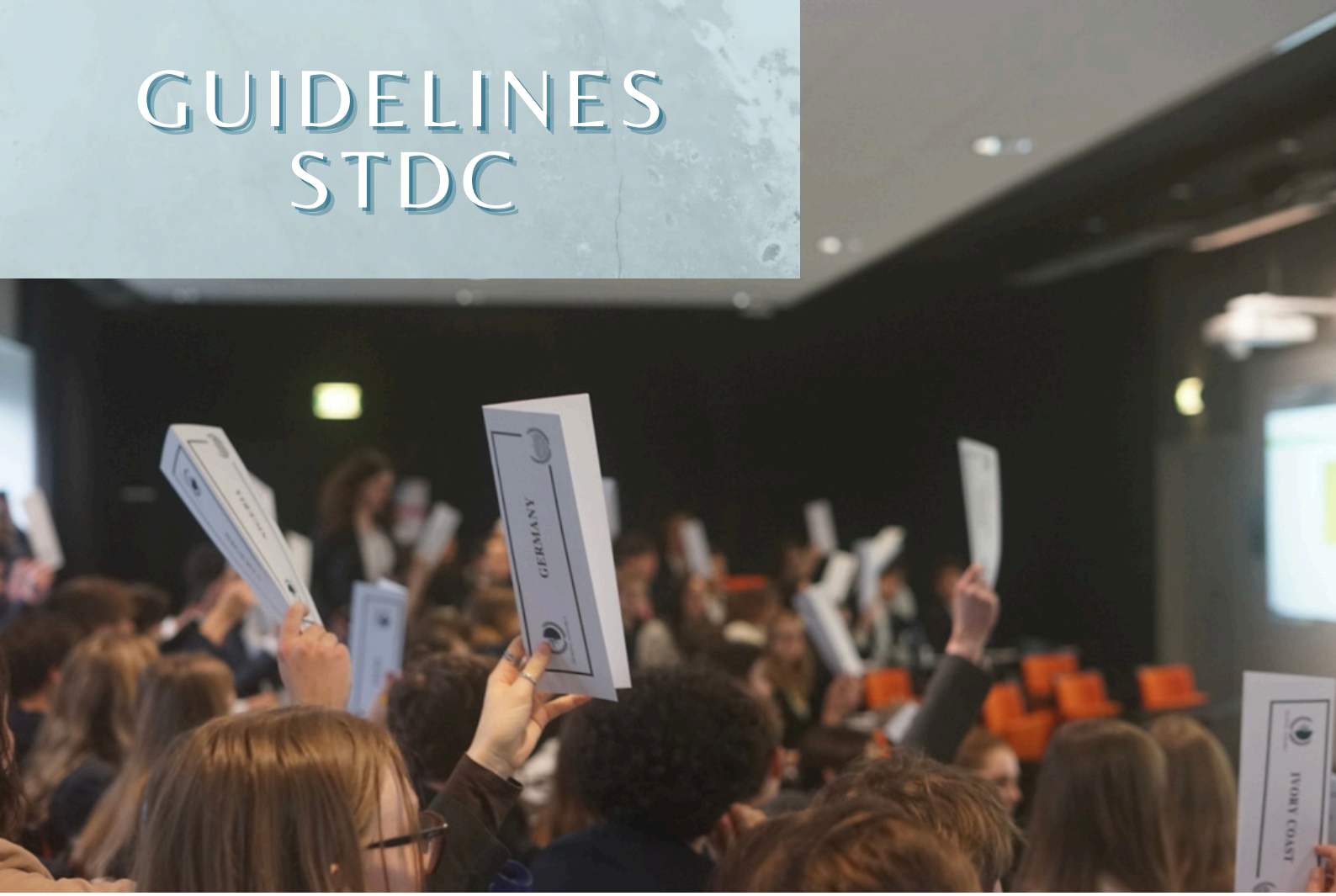
GUIDELINES STDC



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STDC

Présentation du Comité : Commission on Science and Technology for Development

The Commission on Science and Technology for Development (CSTD) is a functional commission of the United Nations Economic and Social Council (ECOSOC) that provides policy advice on science, technology, and innovation for development. Established in 1992 and serviced by UNCTAD, the Commission is based in Geneva and comprises 43 Member States elected on a rotating basis.

The CSTD's mandate is founded on the idea that scientific and technological progress is essential for sustainable development and must be made accessible to all countries. It serves as a global forum where governments and experts examine how emerging technologies can reduce inequalities, strengthen productive capacities, and support the implementation of the 2030 Agenda for Sustainable Development.

A key area of the Commission's work is monitoring and guiding progress on the outcomes of the World Summit on the Information Society (WSIS), with a focus on building inclusive and people-centered information societies. It also addresses issues such as digital transformation, technology transfer, innovation policy, and capacity-building in developing countries.

Through its annual sessions and policy recommendations to ECOSOC and the General Assembly, the CSTD helps shape global governance on science and technology, ensuring that innovation contributes to inclusive growth and sustainable development worldwide.

RESUME

Topic 1 : How can countries use new technologies to protect the environment without increasing global inequalities ?

Topic 2 : Regulating Digital Currencies Fairly

Topic 1 - How can countries use new technologies to protect the environment without increasing global inequalities ?

Introduction

The international community is facing a dual and interconnected challenge : accelerating environmental degradation and persistent global inequalities. Climate change, biodiversity loss, and pollution threaten sustainable development worldwide, while unequal access to technology risks deepening the divide between developed and developing countries. In this context, new technologies (such as artificial intelligence, renewable energy systems, digital finance, and environmental data platforms) are increasingly viewed as essential tools for environmental protection.

The Commission on Science and Technology for Development (CSTD), a functional commission of the United Nations Economic and Social Council, was established to examine how science, technology, and innovation can support inclusive and sustainable development. Serviced by the United Nations Economic and Social Council, the CSTD provides policy advice to the United Nations system, with a particular focus on the needs and priorities of developing countries.

While technological innovation offers significant opportunities to reduce emissions, improve resource efficiency, and monitor environmental change, it also raises critical concerns. Many green and digital technologies require advanced infrastructure, skilled labor, and financial resources that remain unevenly distributed across regions. Without appropriate international cooperation, capacity-building, and technology transfer, environmental innovation may reinforce existing inequalities and create new forms of technological dependency.

The CSTD therefore plays a central role in ensuring that environmental technologies contribute to the 2030 Agenda for Sustainable Development, particularly by aligning climate action with inclusive economic growth and social equity. The Commission must address how countries can adopt and deploy new technologies in ways that are environmentally effective, economically accessible, and socially inclusive.

This topic invites delegates to examine how global governance, international partnerships, and inclusive innovation policies can ensure that the green and digital transitions benefit all countries, rather than a privileged few

New Technologies as Tools for Environmental Protection

Digital Technologies for Monitoring and Climate Action

New technologies such as satellites, artificial intelligence, and big data play a growing role in environmental protection. They allow governments to monitor deforestation, ocean pollution, carbon emissions, and extreme weather events in real time. For example, satellite imagery can detect illegal logging or mining, while AI models can predict climate-related disasters and improve early warning systems. These tools strengthen environmental governance by making data more accurate and transparent. However, their effectiveness depends on access to data infrastructure and technical expertise, which remains uneven across countries.

Some examples of interesting use of new technologies :

FlyPix AI

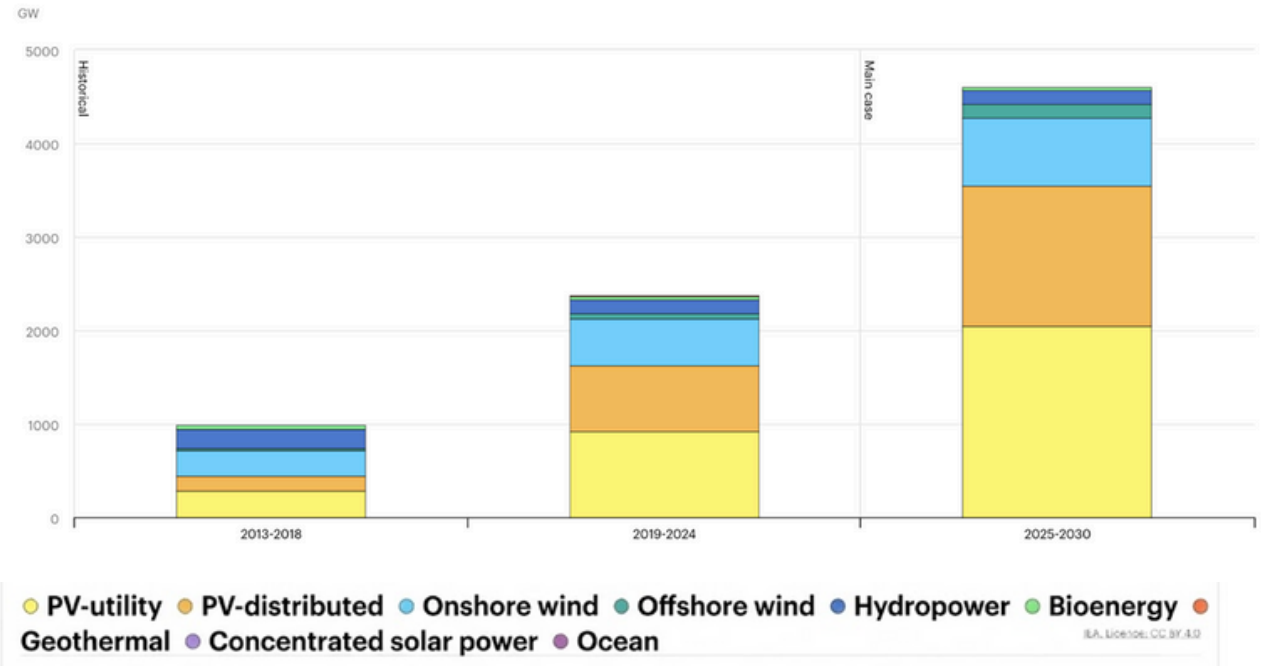
MORFO

[**FlyPix AI** : A software that analyzes satellite and drone imagery to detect environmental hazards. It can automatically spot illegal logging, chemical spills in oceans, or early signs of forest fires, allowing governments to react before the damage is irreversible.

MORFO: A startup that uses drones to replant forests. First, their drones scan the land to analyze the soil. Then, they shoot "seed capsules" (containing seeds and nutrients) into the ground at high speed. A single drone can plant thousands of trees a day in areas humans cannot reach

Green Energy Technologies and Sustainable Development

Renewable energy technologies—such as solar, wind, and smart energy grids—are central to reducing global emissions and limiting climate change. For many developing countries, green energy offers an opportunity to bypass fossil-fuel dependency and achieve energy security. Decentralized technologies, like off-grid solar systems, can also bring electricity to remote and underserved areas. Nevertheless, the production of green technologies often relies on rare minerals and complex supply chains dominated by developed countries, raising concerns about new forms of resource dependency



RENEWABLE ELECTRICITY CAPACITY GROWTH BY TECHNOLOGY SEGMENT, MAIN CASE, 2013-2030

Digital Innovation and Sustainable Economic Models

Technological innovation can support environmentally sustainable economic systems through green fintech, digital carbon markets, and circular economy platforms. Digital payment systems and blockchain technologies can improve transparency in environmental financing and ensure that climate funds are used efficiently. At the same time, innovation-driven green growth can create new jobs and industries. The challenge for the international community is to ensure that these economic benefits are shared equitably and do not remain concentrated in technologically advanced economies.

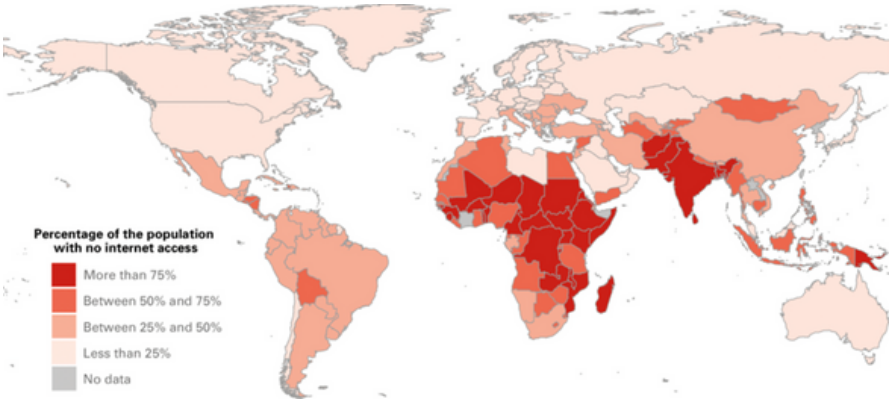
Green fintech = the use of technology to channel money into environmental projects. (finance verte en francais)

Digital Carbon Market = A marketplace where companies trade "Carbon Credits" (permits to emit CO2)

The Risk of Widening Global Inequalities

The Digital Divide and Unequal Access to Technology

One of the main risks of relying on technology for environmental protection is the persistence of the digital divide. Many developing countries lack reliable internet access, electricity, data centers, and skilled human capital. As a result, they may be excluded from decision-making processes that depend on digital tools and data analysis. This inequality risks creating a two-speed environmental transition, where some countries advance rapidly while others fall further behind.



One recent example : the CBAM (Carbon Border Adjustment Mechanism) which has begun the 1st of January 2026

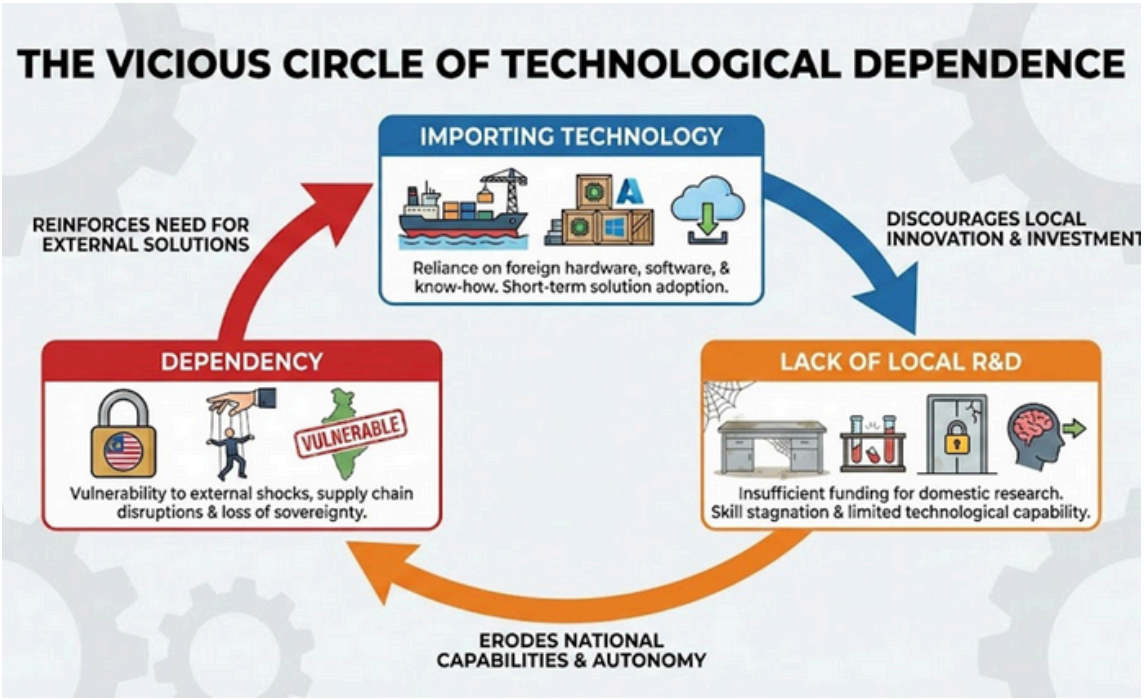
Introduced by the EU, the CBAM is a tax on imports (like steel or cement) that come from countries with dirty environmental standards.

EU Stance: "We are preventing carbon leakage."

Global South Stance (India/Brazil): "This is a disguised trade barrier meant to punish developing nations who cannot afford expensive green tech yet."

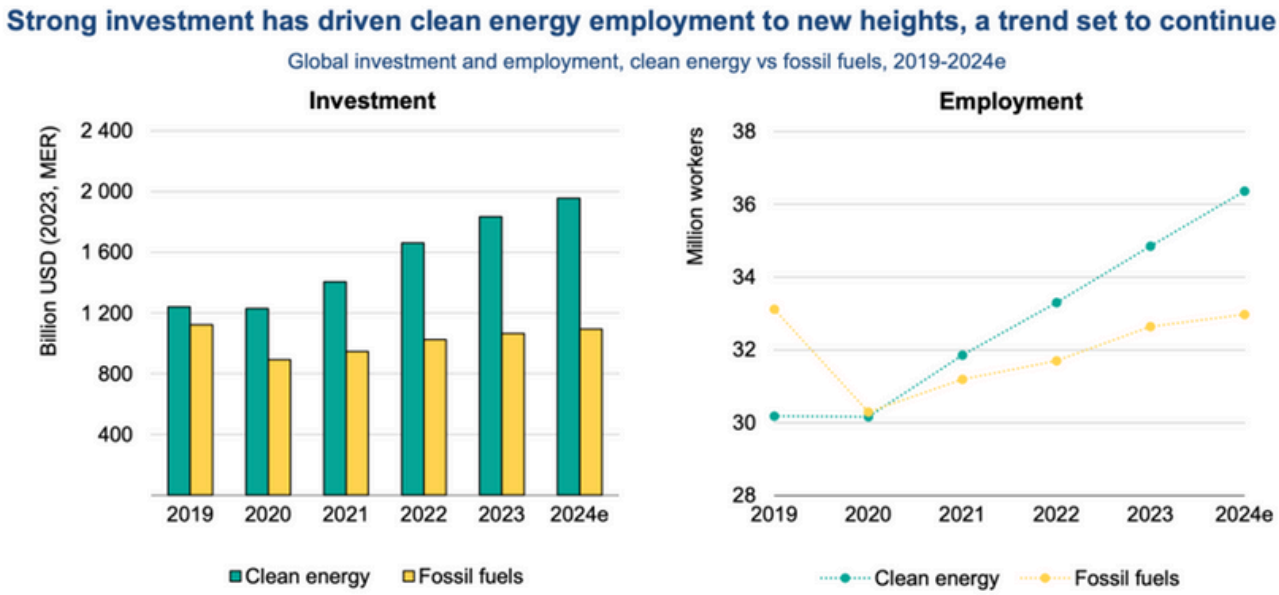
Technological Dependency and Loss of Sovereignty

Environmental technologies are often developed and patented by private companies or institutions based in developed countries. This can create technological dependency, where developing states must import expensive solutions without having control over their design or adaptation. Such dependency can limit national sovereignty and reduce the ability of governments to design policies suited to local environmental and social realities. The CSTD must therefore address how innovation can be shared without reinforcing unequal power relations



Social Inequalities and Uneven Domestic Impacts

Even within countries, environmental technologies can increase inequality if not managed carefully. Automation, digitalization, and green transitions may disadvantage certain workers or communities, especially in regions dependent on fossil fuel industries. If environmental policies are perceived as unfair or imposed from above, they may face political resistance. Ensuring a just transition is essential to maintaining social cohesion and long-term environmental commitment.



The Role of International Cooperation and the CSTD

Technology Transfer and Capacity-Building

International cooperation is essential to ensure that environmental technologies benefit all countries. Technology transfer mechanisms, training programs, and knowledge-sharing initiatives can help developing countries build local expertise and adapt technologies to their specific needs. Rather than simply exporting technology, partnerships should focus on long-term capacity-building, allowing countries to become innovators rather than passive consumers.

Global Governance and Inclusive Innovation Policies

The CSTD plays a key role in shaping global discussions on science, technology, and innovation governance. It can promote inclusive frameworks that balance intellectual property rights with development needs and environmental urgency. By advising ECOSOC (Economic and Social Council), the Commission helps ensure that global technological governance aligns with the Sustainable Development Goals and avoids creating new structural inequalities.
(ECOSOC is the third most important body of the UN and main intergovernmental platform for sustainable development with its main focus on economic, social and environmental issues)

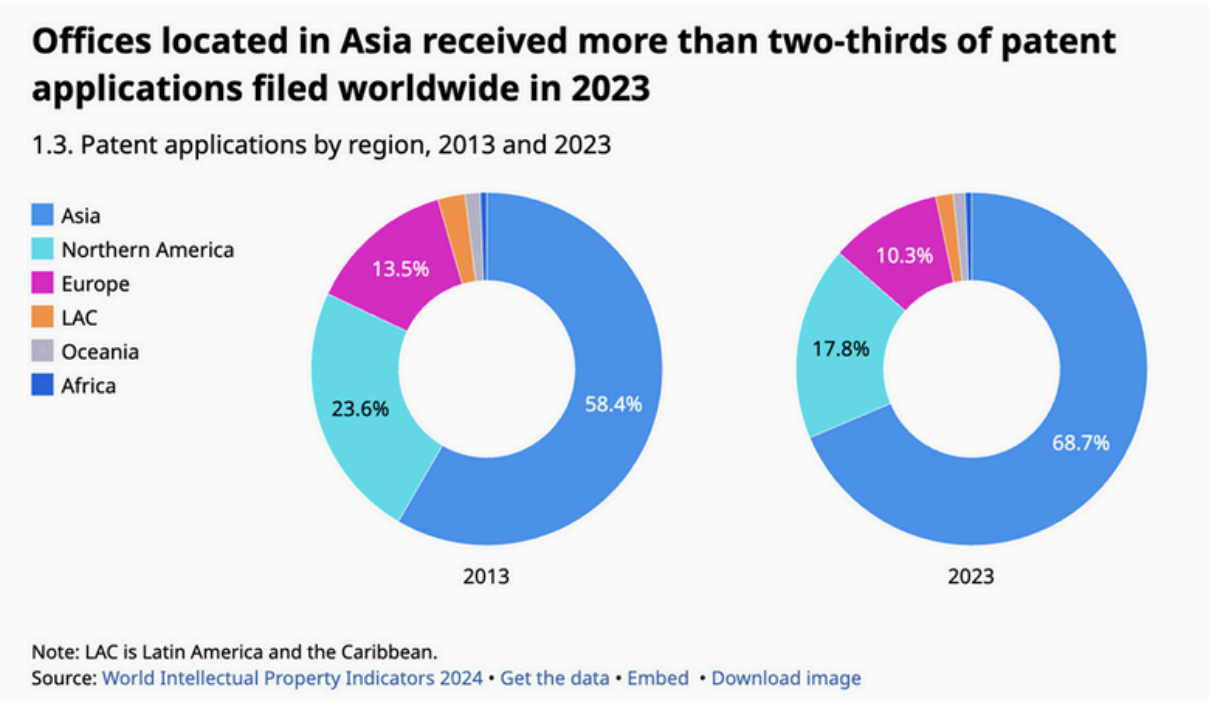
A major risk :

The Conflict: The "New Oil" War (Critical Minerals) Green tech requires Lithium, Cobalt, and Rare Earths. China currently controls 90% of the processing of these rare earth elements.

- The West's Goal: "Friend-shoring" (moving supply chains to friendly countries) to break dependence on China.
- The Risk: A new "Scramble for Africa" where great powers exploit African mines for green minerals without developing the local economy.

South–South Cooperation and Multi-Stakeholder Partnerships

Beyond traditional North–South cooperation, South–South and triangular cooperation offer alternative pathways for sharing environmentally friendly technologies. Countries facing similar challenges can exchange knowledge and best practices in more equal partnerships. In addition, cooperation with the private sector, academia, and civil society can mobilize innovation while ensuring accountability and social responsibility.



At the end of the day, The Groups looks like this:

- The "Green Protectionists" (EU, Canada) : Want strict global standards (like CBAM) and high-tech monitoring. They prioritize climate urgency over economic sovereignty.
- The "Resource Nationalists" (DRC, Chile, Indonesia) : Rich in critical minerals (Lithium/Cobalt). They refuse to just export raw materials; they want factories built in their countries.
- The "Development First" Bloc (India, Brazil, African Group) : Argue that "Green Tech" is too expensive. They demand free technology transfer and oppose trade barriers like CBAM.

Key Questions

A) As the production of renewable energy technologies relies heavily on rare minerals (often found in the Global South but processed in the Global North), how can regulations ensure that the extraction of these resources does not replicate colonial-style exploitation or environmental degradation in source countries ?

B) What mechanisms can the CSTD implement to ensure developing nations move from being passive consumers of imported green tech to active manufacturers and innovators, thereby avoiding long-term "technological dependency" ?

C) How can the CSTD ensure that AI models used for climate prediction are trained on diverse global data sets so they do not fail to predict disasters in under-represented regions (the "data gap") ?

D) How can nations support workforces in fossil-fuel-dependent regions who face job losses due to automation and the green energy shift?

E) What specific frameworks can be established to foster South-South technology sharing, allowing developing nations to trade solutions that are more adapted to their specific climates and economic realities than those from the Global North

Topic 2 - Regulating Digital Currencies Fairly

Important definitions to understand what will follow :

Liquidity: How quickly you can turn an asset into cash. Cash is "liquid." A house is "illiquid" (takes months to sell). Crypto is often used because it is highly liquid compared to other assets in developing nations.

Capital Flight: When investors or citizens panic and move all their money out of a country (e.g., selling Nigerian Naira to buy US Dollar Stablecoins). This crashes the local currency and economy.

Regulatory Arbitrage: The practice of companies moving to a country with weak laws (e.g., the Bahamas or Seychelles) to avoid strict regulations in the US or EU. It's "shopping for the rules you like."

Macro-Financial Framework: The "big picture" of a country's economy : how banks, inflation, debt, and currency stability all interact.

Introduction : The Digitization of Value

The global financial system is undergoing a transformation as profound as the abandonment of the gold standard. The digitization of money—manifested in cryptocurrencies, stablecoins, and Central Bank Digital Currencies (CBDCs)—promises to revolutionize the movement of value. For the 1.7 billion adults worldwide who remain unbanked, digital currencies offer the tantalizing prospect of financial inclusion : cheaper, faster, and more accessible than traditional banking.

However, this innovation introduces severe systemic risks. For the International Monetary Fund (IMF), the guardian of global financial stability, the unregulated proliferation of digital assets threatens "Cryptoization"—the displacement of local currencies by digital assets—which could erode monetary sovereignty in developing economies. Furthermore, the anonymity of crypto assets facilitates illicit financial flows, tax evasion, and ransomware payments. Regulating this sector is therefore not merely a technical compliance exercise but a fundamental geopolitical challenge: how to harness the efficiency of digital finance without destabilizing the sovereign state or exacerbating the digital divide.

The Macro-Financial Framework: Sovereignty vs. Innovation

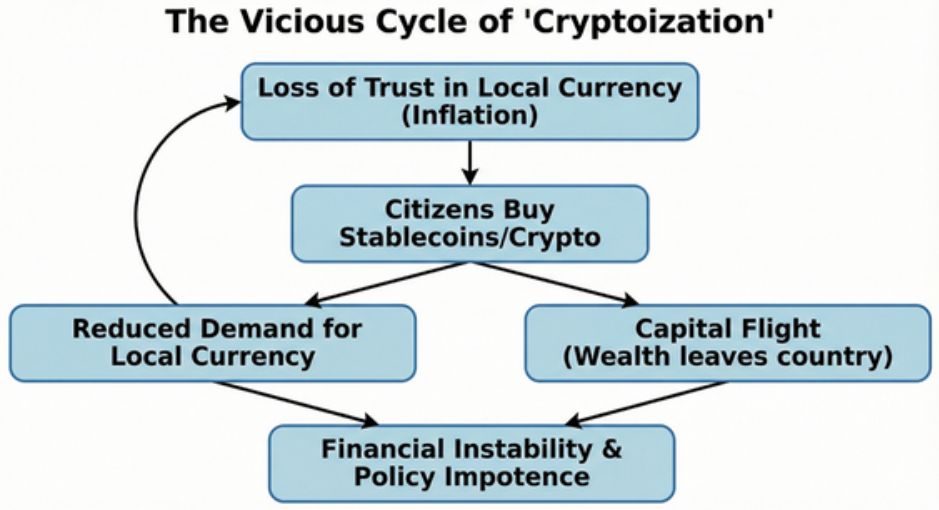
The IMF was established in 1944 at Bretton Woods to manage a system of fixed exchange rates and ensure balance of payments stability. Today, it must manage the stability of a decentralized, borderless digital economy.

The Threat of "Cryptoization"

For emerging markets and developing economies (EMDEs), the primary threat identified by the IMF is "Cryptoization" (or digital dollarization). This phenomenon occurs when residents, losing faith in their volatile domestic currency and inflation-prone banking system, flock to crypto assets—particularly stablecoins pegged to the US Dollar—as a store of value and medium of exchange.

Mechanism of Risk:

- Loss of Monetary Policy: If the domestic economy largely operates in foreign stablecoins, the central bank loses its ability to influence the economy. Raising or lowering interest rates becomes ineffective if no one is borrowing or lending in the local currency.
- Financial Stability: Crypto assets are highly volatile. A crash in the crypto market can spill over into the real economy if banks or households hold significant crypto exposures.
- Capital Flight: Crypto assets act as a conduit for bypassing capital flow management measures (capital controls). In times of crisis, citizens can move wealth out of the country instantaneously, draining foreign reserves and precipitating a balance of payments crisis.



Cryptocurrencies in Emerging Markets: "Cryptoization" and Capital Flight

To understand the regulatory challenge, one must examine why adoption is so high in the Global South. It is not driven by speculation alone, but by necessity.

Case Study: El Salvador's Bitcoin Experiment

In September 2021, El Salvador became the first nation to adopt Bitcoin as legal tender, alongside the US Dollar. President Nayib Bukele promoted this as a strategy to bank the unbanked (70% of the population) and save on remittance fees, which account for nearly 24% of the country's GDP.

Outcomes and Analysis :

- ***Adoption Failure** : Despite a government-issued "Chivo" wallet and a $30 signup bonus, active usage plummeted once the bonus was spent. A 2024 survey indicated that 92% of Salvadorans did not use Bitcoin for transactions.*
- ***IMF Friction** : The IMF has strongly urged El Salvador to strip Bitcoin of its legal tender status, citing fiscal risks and consumer protection concerns. This disagreement has stalled negotiations for a vital $1.4 billion loan facility.*

***Geopolitical Implication** : The experiment illustrates the limits of imposing a volatile asset as currency. It also highlights the tension between state sovereignty (El Salvador's right to choose its currency) and international financial norms (the IMF's stability mandate).*

Case Study : Nigeria – The Crypto Powerhouse

Nigeria presents a contrasting narrative. It has one of the highest rates of grassroots crypto adoption in the world, ranking second in the Chainalysis adoption index.

- **Drivers of Adoption**: Nigerians use crypto (specifically stablecoins like USDT) to hedge against the Naira's hyperinflation and to facilitate international trade, bypassing the Central Bank's strict foreign exchange controls.
- **The eNaira Failure:** To counter this, the Central Bank of Nigeria (CBN) launched the eNaira, a retail CBDC, in 2021. Adoption has been abysmal (less than 0.5% of the population). The primary reasons were a lack of trust in the government and stringent KYC requirements (Bank Verification Numbers) that excluded the very poor populations the CBDC was meant to serve.

Lesson: A digital currency cannot succeed without trust in the issuing institution. If the public perceives the CBDC as a tool for surveillance or control, they will prefer the decentralized alternative

Central Bank Digital Currencies (CBDCs): Design and Implications

In response to the rise of private cryptocurrencies, over 130 countries are exploring CBDCs—digital versions of sovereign currency issued and backed by the central bank. The design of a CBDC involves a critical geopolitical and ethical trade-off between Financial Inclusion and Data Privacy.

The Trade-off : Privacy vs. Inclusion

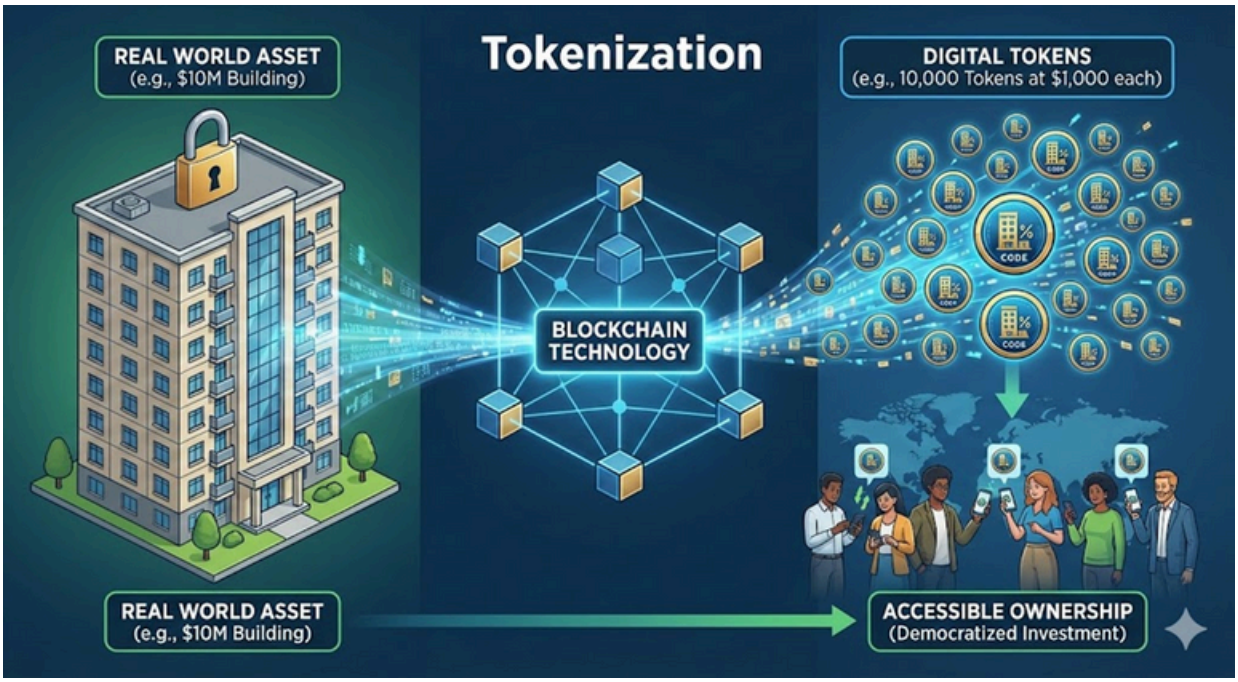
- **Inclusion** : To bank the unbanked, a CBDC must be accessible. This requires "tiered" KYC (Know Your Customer) standards, where small-value wallets can be opened with minimal identification (e.g., just a phone number), lowering the barrier to entry.
- **Privacy** : Unlike physical cash, a CBDC creates a permanent digital record of transactions. In authoritarian regimes, this capability could be used for total state surveillance and social control. The IMF advocates for "managed anonymity," where small transactions remain private to mimic cash, while large transactions are traceable to prevent money laundering

Success Story : Brazil's Pix and Drex

Brazil offers a model of successful state-led digital innovation that bridges the gap.

- **Pix** : This instant payment system launched by the Central Bank achieved near-universal adoption, rendering many crypto payment use-cases obsolete by being free, instant, and interoperable. It proved that a state-backed system can compete with crypto if it offers superior utility.
- **Drex (Digital Real)** : Brazil is now piloting "Drex," a wholesale CBDC focused on asset tokenization (the process of substituting a sensitive data element with a non-sensitive equivalent, referred to as a token) (see picture) and smart contracts. Unlike retail CBDCs, it aims to improve the efficiency of the interbank market without disrupting the existing two-tier banking system

What is Real World Asset (RWA) Tokenization? Imagine a $10 million apartment building in New York. Currently, only a millionaire can buy it. Tokenization turns that building into 10,000 digital tokens on a blockchain, each worth $1,000.
Result: A student in Brazil can buy one token (one piece of the building) and earn rent from it.
Why it matters: It democratizes wealth, but regulators fear it makes it easier to launder money (like many NFT in 2020-2021).



Resilience: The Bahamian Sand Dollar

The Bahamas launched the "Sand Dollar," the world's first nationwide CBDC, in 2020. A key design feature is offline capability. In a region prone to hurricanes that destroy connectivity, the ability to transact digitally without the internet is a matter of survival and resilience, ensuring the currency remains usable during disasters.

Global Regulatory Frameworks and the Risk of Arbitrage

The decentralized nature of crypto assets creates a "balloon effect" : if one jurisdiction imposes strict regulations, the industry simply migrates to a jurisdiction with laxer rules (Regulatory Arbitrage). This necessitates global coordination.

The "Brussels Effect" : MiCA

The European Union’s Markets in Crypto-Assets (MiCA) regulation, fully applicable from 2024/2025, represents the first comprehensive regulatory framework for the sector. It establishes strict reserve requirements for stablecoin issuers to prevent runs (like the Terra/Luna collapse) and imposes liability on service providers for hacks or failures. Because the EU is a massive market, MiCA is setting a de facto global standard, forcing companies worldwide to upgrade their compliance to access European customers.

The Role of Global Standard Setters (FSB & FATF)

- **Financial Stability Board (FSB)**: Operates on the principle of "Same Activity, Same Risk, Same Regulation." It recommends that crypto entities performing bank-like functions must be regulated like banks.
- **FATF (Financial Action Task Force)**: Sets Anti-Money Laundering (AML) standards. Its "Travel Rule" requires crypto service providers to share sender/receiver data for transactions above a certain threshold.

- **The Fairness Critique:** A major criticism from the Global South is that these standards are designed by wealthy nations with robust regulatory capacity. Implementing complex AML/CFT systems is expensive. If developing nations cannot meet these high standards, they risk being "grey-listed" by the FATF, which increases their cost of borrowing and can lead to "de-risking"—where global banks cut off correspondent banking relationships, isolating the country from the global financial system.

Key Players and Regulatory Bodies

- **International Monetary Fund (IMF)** : The doctrinal authority on global financial stability. It focuses on the macro-economic risks of crypto (inflation, capital flows) and provides technical assistance to member states.
- **Financial Stability Board (FSB)** : An international body that monitors the global financial system and makes recommendations. It coordinates the regulatory work of national financial authorities and international standard-setting bodies.
- **Central Banks** : (e.g., Federal Reserve, ECB, People's Bank of China, Central Bank of Nigeria) – The sovereign issuers of currency who are actively defending their monopoly on money against private competitors.
- **Private Sector** : Includes Stablecoin issuers (Tether, Circle), Exchanges (Binance, Coinbase), and the DeFi ecosystem. They lobby for favorable regulations that recognize the unique nature of blockchain technology.
- **FATF (Financial Action Task Force)** : The global money laundering and terrorist financing watchdog. Its standards (Recommendations) are effectively binding for any country that wishes to be integrated into the global banking system

The groups :

- **The "Crypto-Hawks" (China, India, Egypt)** : Want to ban private crypto to protect their national currency. They prefer strict Central Bank Digital Currencies (CBDCs) for control.
- **The "Innovators" (UK, Switzerland, Singapore)** : Want to regulate crypto to attract business. They aim to be "crypto hubs" with clear laws.
- **The "Desperate Adopters" (El Salvador, Central African Republic)** : Adopt crypto to bypass the global banking system and attract foreign investment, often risking stability

Key Questions

A) Sovereignty vs. Innovation : Can developing nations embrace crypto assets to leapfrog traditional banking systems without losing control over their domestic monetary policy?

B) CBDC Design : How can Central Bank Digital Currencies be designed to guarantee privacy as a human right while satisfying state security requirements (AML/CFT)?

C).Global Standards : How can international regulations (like MiCA or FATF rules) be adapted so they do not disproportionately burden the financial sectors of the Global South?

D) The Future of Money : Should the IMF encourage the "tokenization" of finance (Real World Assets on blockchain), and if so, how can equitable access be ensured for developing economies?

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