

Understanding Cryptocurrency Policy for the People:

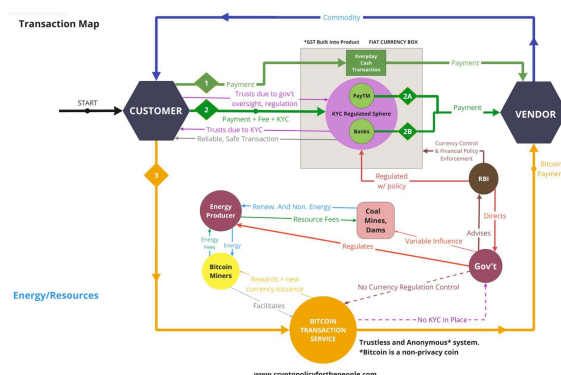
Ramifications and Implications of Cryptocurrency in Public Policy, Environment, and Taxation; a View from India and Other Developing Nations

Executive Summary

Introduction

Cryptocurrencies like Bitcoin have become mainstream topics, yet most people struggle with abstract concepts, necessitating clearer explanations.

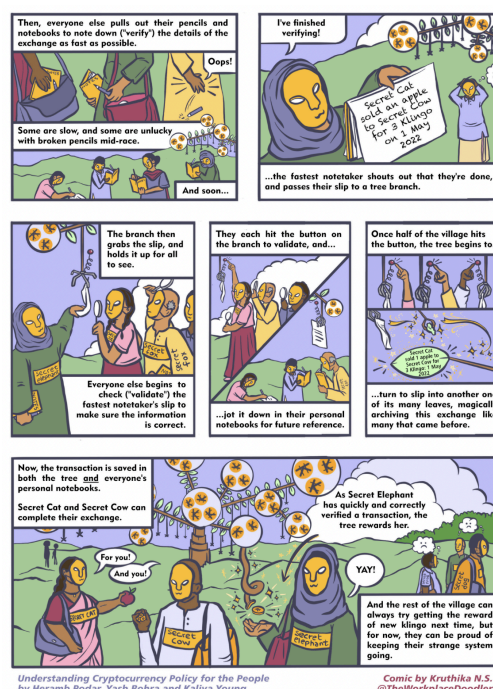
Our Value Network Mapping (VNM) illustrates how cryptocurrencies function as alternative payment options, comparing fiat systems like cash and digital payment platforms with decentralised cryptocurrencies like Bitcoin. It demonstrates how cryptocurrencies bypass traditional banking systems, avoiding intermediaries and enabling direct peer-to-peer exchanges.



What is Bitcoin? What is a Cryptocurrency?

Cryptocurrencies are decentralised digital assets that operate independently of centralised authorities like governments or banks.

- Using the "village metaphor," we illustrate blockchain technology as a system where everyone in the community collectively maintains transparent ledger, much like villagers recording transactions in their personal books to prevent fraud and ensure accountability.
- Mining, cryptographic hashing, and pseudo-anonymity are central to cryptocurrencies' functionality.
- Unlike fiat currencies, cryptocurrencies' supply is often capped (e.g., Bitcoin's 21 million limit), ensuring scarcity and resisting inflation.



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- Despite their promise, cryptocurrencies face challenges like scalability, adoption and misconceptions about anonymity.
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Economics

Money derives its value from collective trust because everyone wants it and is fundamentally a form of debt; cryptocurrencies extend this framework by using decentralised networks rather than central banks.

Cryptocurrencies challenge traditional banking by enabling direct transactions without intermediaries, reducing fees and delays.

CBDCs represent a government-backed response to cryptocurrency's rise, blending digital

convenience with regulatory oversight. A CBDC is the virtual form of a country's fiat currency. It is a piece of code given the same monetary value as a fiat paper note.

The volatility of cryptocurrencies currently limits their use as stable currencies, positioning them more as speculative assets.

Trust and regulatory clarity remain essential for cryptocurrencies to integrate with or replace traditional economic systems.

Developing Countries

Cryptocurrencies offer potential solutions for financial exclusion, enabling international transactions without intermediaries.

Remittances, a vital lifeline for many developing nations, could be made cheaper and faster through cryptocurrencies by reducing intermediary fees and transaction delays. However, challenges such as inadequate infrastructure, limited internet access, and the inherent volatility of cryptocurrencies impede their adoption in underserved regions.

Additionally, reliance on digital wallets and identification systems often excludes unbanked populations who lack access to these prerequisites,

highlighting the need for parallel developments in digital literacy and inclusivity. The success of cryptocurrency solutions depends on creating systems that cater to the specific needs of these regions while addressing the underlying economic and technological barriers.

Addressing systemic economic issues and ensuring accessibility are prerequisites for cryptocurrencies' broader impact. Efforts by the government to substitute national institutions with cryptocurrencies actually draw resources from strengthening those institutions. El Salvador's Bitcoin experiment highlights the promise and pitfalls of national cryptocurrency adoption.

Environment

Consensus mechanisms like Proof of Work (PoW) are energy-intensive, contributing to significant environmental concerns. One-third of the global Bitcoin computing power shut down due to a single coal mine going down.

Alternatives like Proof of Stake (PoS) and hybrid models aim to reduce energy consumption without

compromising security. Cryptocurrencies might also create new businesses for cheap but dirty energy manufacturers. Ultimately, cheap power not green power, is king.

Cryptocurrency mining impacts e-waste generation and the semiconductor industry's supply chain. Cryptocurrency, at one point, represented 10% of

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TSMC sales. In 2021, at the peak of the pandemic, it only accounted for 1% of sales.

Comparative studies show cryptocurrencies' environmental footprint surpasses traditional transaction systems like VISA, with VISA processing approximately 24,000 transactions per second (tps), compared to Bitcoin's 7 tps and Ethereum's 15 tps.

Policymaking must balance innovation with sustainability, promoting greener energy sources and efficient protocols. A cryptocurrency system in place would have first to solve the preexisting institutional corruption to be effective, which is the source of most of these issues.

Government Policies

Governments grapple with regulating cryptocurrencies to mitigate risks like tax evasion, money laundering, and fraud.

Regulatory frameworks vary globally, with some nations like China implementing outright bans to maintain financial control, while others, such as Switzerland, embrace cryptocurrencies with structured regulatory systems to promote innovation. Countries like India tread cautiously, experimenting with CBDCs while imposing stringent restrictions on private cryptocurrencies. The European Union's MiCA framework exemplifies an attempt to harmonise regulations, balancing innovation with risk mitigation. Conversely, nations like El Salvador have fully embraced Bitcoin as a legal tender, showcasing a high-risk, high-reward approach.

Stablecoins bridge traditional fiat systems and cryptocurrencies by providing stability by pegging their value to tangible assets like the USD or gold. However, they carry risks such as liquidity crises during market instability, akin to bank-run scenarios, as seen in cases like Terra's collapse.

International cooperation, such as FATF guidelines, plays a crucial role in harmonising cryptocurrency regulations by addressing cross-border risks, ensuring compliance with anti-money laundering (AML) standards, and promoting transparency. FATF's recommendations focus on implementing "travel rules" for financial institutions to share transaction information and identify risks posed by anonymous transactions.

Policymakers must weigh cryptocurrencies' disruptive potential against the need for financial stability and security.

Conclusion

Cryptocurrencies represent an evolution in how value is created, transferred, and stored, challenging traditional economic structures and sparking global debate. They challenge existing financial systems, offering both opportunities and risks for individuals, businesses, and nations.

Effective regulation and technological innovation can harness their benefits while mitigating drawbacks.

Collaboration among stakeholders—governments, developers, and users—is essential for sustainable growth.

By understanding the nuances, **policymakers can lay the groundwork for a future where cryptocurrencies are integrated responsibly**, leveraging their benefits while mitigating risks, and fostering innovation, while not merely succumbing to technosolutionism.