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Blockchain for Sustainable Development

Promising use cases for the 2030 Agenda

ECONOMIC

SOCIAL

ENVIRONMENTAL



Supply Chains

- Added value**
 - Tamper proof certification of information
 - Efficiency gains due to real-time traceability
 - Inclusion of producer in the value chain
- SDG relevance**
 - Increased income of producers
 - Increased responsibility of multinationals
 - Transparency in terms of externalities, e.g., overfishing, deforestation
- Challenges**
 - End point vulnerabilities regarding quality of data
 - Scalability of DLT platforms



Financial Services

- Added value**
 - Bypassing of trusted third parties and inclusion in global economy
 - Lower transaction costs
 - More efficient cash assistance
- SDG relevance**
 - Empower the unbanked, esp. women
 - Alternative sources of liquidity for SMEs
 - Reduction of transaction fees for remittances below 3 per cent
- Challenges**
 - Cryptocurrencies circumvent current governance frameworks
 - Volatility of digital assets
 - Low smartphone/internet penetration



Energy Markets

- Added value**
 - Increased resilience thanks to decentralized grids
 - Incentivizing renewable energies
 - Innovative financing models
- SDG relevance**
 - Energy access for remote communities
 - Inclusive peer-to-peer economy and new sources of revenue
 - Green energy production
- Challenges**
 - Legacy regulation favouring centralized grid governance
 - Lack of interoperability and internet access



Trade Facilitation

- Added value**
 - Ensured integrity of information
 - Reduced time and costs for clearing goods for import and export at customs
- SDG relevance**
 - Increases trust in and thus facilitates exports from developing countries
- Challenges**
 - End point vulnerability regarding quality of data
 - Coordination of a wide range of actors



Taxation

- Added value**
 - Automation of tax collection
 - Increased transparency for both taxpayer and regulator
 - Limits tax fraud and evasion
- SDG relevance**
 - Strengthen domestic resource mobilization
 - Develop effective and trusted institutions
- Challenges**
 - Need for viable accounting standards
 - Buy in from businesses to commit data to a shared pool



Social Impact Bonds

- Added value**
 - Lower transaction costs for impact measurement and pay-out
 - Widened segment of investors
 - Possibility of fast deployment at scale
- SDG relevance**
 - Mobilizes additional financial resources
- Challenges**
 - Need for accurate and hard to manipulate impact data
 - Safeguards and do-no-harm-aspects
 - Impact attribution problem



Digital Identity

- Added value**
 - Privacy and data minimization through self sovereign data management
 - Access to rights and public services
 - Reduction of identity fraud
- SDG relevance**
 - Empower individuals, and especially women, to access public services and lift themselves out of poverty
 - Prevention of human trafficking
- Challenges**
 - Digital literacy and internet access
 - Conflicting laws and regulations
 - Early stage: Low adoption and low governmental acceptance



Education Credentials

- Added value**
 - Store education credentials securely and accessibly, preventing fraud
 - Bundling of education achievements
 - Capture lifelong learning activities
- SDG relevance**
 - Strengthen trust in educational institutions
 - Incentivize lifelong learning
 - Resilience of education credentials
- Challenges**
 - Dependence on secure and tamper proof digital identities
 - Buy in by respective institutions



Data Market Places

- Added value**
 - Enhanced privacy and user empowerment through self-sovereign-data management
 - Ability to commercialize one's own data
- SDG relevance**
 - Increased domestic R&D and innovation in developing countries
 - Promote sustainable employment
- Challenges**
 - Erodes incentive to offer services free of charge in digital economy
 - High tech expertise and investment required by regulatory bodies



Journalism

- Added value**
 - Novel financing models enabling independent journalism
 - New content publishing channels resilient to censorship
- SDG relevance**
 - Access to information
 - Stronger institutions
- Challenges**
 - Lawful takedown of content not feasible on immutable ledger
 - Early stage: Novel financing models need proof of concept



Land Registry

- Added value**
 - Safe storage and verification of ownership
 - Anti-corruption through decentralization
- SDG relevance**
 - Increase trust in institutions through more transparency
 - Prevent seizing of land
 - Enforcement of women's land rights
- Challenges**
 - Requires governmental bodies to relinquish some aspects of centralized control over registries
 - Data quality issues



Public Procurement

- Added value**
 - Increased transparency leads to more efficient spending of public money
 - "Timestamping" assures bidders that competitor's bids have not been altered
- SDG relevance**
 - Reduces corruption and bribery
 - Develops accountable and trusted institutions
- Challenges**
 - Data quality issues
 - End point vulnerabilities



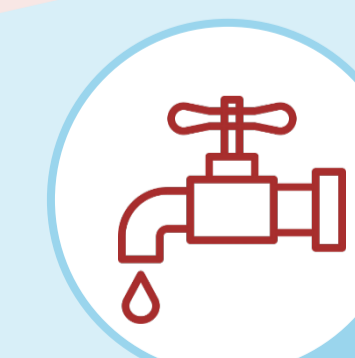
Parametric Insurance

- Added value**
 - Bypassing middlemen and reducing possibility of fraud
 - Automated claims validation and payments
- SDG relevance**
 - Insurance schemes become more accessible and affordable
 - Increases resilience of vulnerable households to extreme events
- Challenges**
 - Limits to sensor data
 - Data protection concerns
 - Challenge of marketing insurance to farmers



Climate Accountability

- Added value**
 - Reduced climate certification fraud
 - Administrative easing of international standard setting and enforcement
- SDG relevance**
 - Climate marketplace efficiency and international interoperability
 - Better incentive targeting towards green production/ transportation methods
- Challenges**
 - Limits to measurement / limited data accuracy



Water Management

- Added value**
 - Sensor data based incentive disbursements
 - Automated enforcement of transboundary water treaties
- SDG relevance**
 - Compliance to multilateral water treaties
 - Efficiency gains through automated water governance
- Challenges**
 - Limits to sensor data / fraud