Blockchain for Agriculture

A solution looking for a problem?
There is more than enough food produced today to feed everyone in the world, yet close to 800 million are chronically hungry.

A third of farmland is degraded, up to 75 percent of crop genetic diversity has been lost and 22 percent of animal breeds are at risk.

One in nine people on the planet still suffer from hunger

Every year, the world loses or waste about a third of the food it produces

Women make up almost half the agricultural labour force in developing countries, but they own less land and lack access to resources.

Average age of farmers is increasing
Role of ICT in agriculture

ICTs assist with implementing regulatory policies, frameworks and ways to monitor progress.

ICTs bridge the gap between agricultural researchers, extension agents and farmers thereby enhancing agricultural, production.

ICTs improve access to climate-smart solutions as well as appropriate knowledge to use them.

ICTs provide actionable information to communities and governments on disaster prevention, in real-time, while also providing advice on risk-mitigation techniques.

Source: FAO-ITU
E-agriculture Strategy Guide
My wife and I recently got married and decided that neither of us would change our last names. Some people disagree with this approach, commonly critiquing with "what will you do with your children's last names?? How will they know they're a family?!" My solution: the blockchain
Blockchain initiatives in the UN

- Distribute food assistance to refugees
- Stores education records of children on a distributed ledger
- To increase the efficiency of aid transfers
- To reduce the cost of remittances
- Help empower women and girls
Addressing key building blocks

- Infrastructure
- Interoperability
- Reliable Data
- Data sharing/privacy
- Policies & Regulations

Digital Literacy
Gender-Digital Divide
Data Analytics
Capacity Development
ROI
KYC! [agriculture]

https://digitalprinciples.org/
Can blockchain improve governance of land tenure?

Current land administration challenges:

- 70% of the world’s population does not have access to affordable land administration services
- Land sector is ranked 3rd most corrupt
- Property often represents people's greatest assets – challenges with digital
- Recreating land records after war or natural disasters is a challenge
Asia-Pacific is the fastest growing market for food traceability. [Globally $14.1B by 2020]

Specialized food requirements – halal, organic, etc.,

Quality maintenances as well as incentivize producers for quality products & respect geographic indicators etc.,

Farm-to-fork traceability – discourage unethical practices (ex: IUU fisheries, forced labor)
Blockchain for agricultural insurance

- Agriculture insurance is complex

- Micro insurance/credits, credit ratings
  - Smart contracts, reliable Oracles (ex: weather stations)

- With ecosystem of sensors, IoTs and connected networks, the payout time could be greatly reduced

- Will this lead to reduced cost of insurance for small-holder farmers?
Knowledge Products


http://www.fao.org/3/a-i6972e.pdf

http://www.fao.org/3/a-i5477e.pdf

http://www.fao.org/3/a-i6733e.pdf

Bangkok, Thailand

Nanjing, China
Thank you

Digital technologies are creating opportunities to improve how we produce, distribute and manage food and feed people, creating a major driver for economic growth and an accelerator for innovation and change.

José Graziano da Silva
Director-General, FAO

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