Beyond the hype: What are useful links between DLT and GSI for smallholder agriculture

Gideon Kruseman (CIMMYT)  
Coordinator Community of Practice on socio-economic data  
g.kruseman@cgiar.org
Overview of this session

• Intro into CGIAR Platform for Big Data in Agriculture
• Distributed ledger technology (DLT) for development
• Examples: VCs on the Blockchain
to solve agricultural development problems faster, better and at greater scale
The Platform aims at harnessing the capabilities of Big Data to accelerate and enhance the impact of international agricultural research for development.
Platform by name, Innovation Hub by nature
How is the platform organized

Organize: Support data generation and management, practices, enable FAIR data

Convene: Bring together big data practitioners, private sector, academia, (I)NGOs++ to produce innovative solutions

Inspire: Employ analytics and ICTs to deliver info to farmers, monitor ag and food security, and inform policy
Organize is about making data FAIR

- Technical metadata
- Standard file format
- Licensing and use agreements
- Basic structural metadata
- Standardization
- Common vocabularies
- Detailed structural metadata
- Licensing and use agreements
- Descriptive metadata
- Persistent identifiers
Convene is about partnerships and CoPs

- Yearly Big Data Convention
- Consortium for geo-spatial information
- Community of practice on ontologies
- Community of practice on crop-modeling
- Community of practice on data driven agronomy
- Community of practice on socio-economic data
- Livestock data for development CoP
Inspire is about leading by example
Community of practice on socio-economic data #CoP_SED

The objective is to make the high variety socio-economic big data accessible and interoperable to create more impact and measure it.

The Community of Practice is lead by Gideon Kruseman.
What does CoP do

• Making socio-economic data findable, accessible, interoperable and reusable

• Next generation use of Big Data
  • Blockchain coalition is developing use cases and pilots for the use of distributed ledger technology to enhance the impact of research for development
  • Do rigorous research on these use cases
DLT4D cases

• Traceability: Farm to fork
• Traceability: Input passport to enhance trust
• Institutions: the virtual cooperative and financial mediation
• Technology as a service: smart contracts
Traceability farm to fork: certification

- Organic grapes
- Palm oil and deforestation
Traceability farm to fork: consumer consciousness

- Smallholder niche market food commodities
- Coffee, rice, maize
Traceability farm to fork: responsible sourcing

• How can small holders be part of the sourcing of major food multinational corporations?
Traceability Input passport

• How to combat rampant counterfeit inputs in sub-Saharan Africa?
  • Seed Trust
  • Fall Armyworm initiative
Virtual institutions for trust

- Virtual cooperative: AGUNITY in Uganda
Technology as a service

• Scaling up mechanization for small holders
Rigorous science

- What works? What does not? and why?
- Business models
- Tech solutions
- Key components
- Governance structures
Welcome to the fourth industrial and agricultural revolution: the data driven society and economy

Thank you!

bigdata.cgiar.org