Digital Solutions and Challenges in the Agricultural Sector

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The agricultural sector faces multiple challenges. Climate change inducing extreme weather conditions and human-made disasters are two major aspects impacting agricultural production.

Additionally, income in the agricultural production sector is often lower than in other sectors and does not compensate for the long working hours and hard labour. This makes the sector less attractive for young people and the sector is facing a rapid over-aging issue, especially among smallholders.

Technical solutions for traceability must also accommodate for the less tech-savvy farmers/users. Hence, traceability tools used in the agricultural sector include blockchain technology, but also simpler tools such as MS-Excel or SMS based solutions.

SOLUTION PROVIDERS

OPTEL Group
Blockchain solutions

Krishi Shwapno
(B2B & B2C Blockchain and SMS solutions)

Climate Edge
(SMS solution)

giz **GIZ Thailand** MS-Excel driven approach

SOLUTION USERS

Demeter

Krishi Shwapno Farmers

Smart Farming

WorldFish

giz Farmers cooperating with projects implemented by **GIZ** in Thailand

BENEFITS

- Improving efficiency, performance, operations and transactions of various businesses along the supply chain.

- Enhancing traceability on food safety issues to ensure higher quality and decrease losses from counterfeiting. It also increases compliance and trust of consumers.

- SMS solutions reach thousands of farmers in remote areas, makes information easily available and accessible and is cost effective for providers.

- Enhancing traceability and visibility of product origin to traders, retail markets and consumers.

- Higher yields for farmers and a more sustainable production due to real time information sharing on relevant parameters.

- Promote accountability of farmers and facilitates the development of trust between all stakeholders.

- Less tech savvy smallholders can be easily trained in the use of Excel- or SMS based solutions and potentially upskilled towards the use of complex blockchain solution.

CHALLENGES

- Lack of data and poor quality of data.

- Lack of awareness among producers on available services and digital solutions.

- Low budget allocation of private companies for ESG projects.

- Little external support, e.g. from government.

- Smallholders have low or no budget to cover the cost of traceability services.

- Convince suppliers to use the services and engage with new technologies.

- Lack of digital literacy leading to the difficulty in understanding the tools in short time.

RECOMMENDATIONS

- Raise awareness of the benefits of using digital solutions among businesses and farmers.

- Improve global governance efforts to regulate and digitalise agricultural supply chain processes for higher transparency and sustainable use of resources.

- Promote public-private partnerships to strengthen private initiatives and to ensure equal access to technological solutions to all actors along the supply chain.

- More support from producer and trade associations or private sector and/or government initiatives for financial support and proper data collection.

- Digital solutions should have certain features that require little monitoring effort for providers and users.

- Solutions should be designed in a way that all actors involved in the application have a basic understanding of traceability and transparency in the supply chain.

- Improving the usability and user-friendliness of specific softwares and applications.

- Enable more local digital solutions and educate farmers on the use and benefits of traceability technologies.