GREENTECH

ADB

AQTA
AZƏRBAYCAN RESPUBLİKASININ QİDA TƏHLÜKƏSİZLİYİ AGENTLİYİ

CASE STUDY

GREENTECH

Azerbaijan

99x

Tracified

GREENTECH is a project funded and supervised by the Asian Development Bank (ADB) and managed by the Azerbaijan Food Safety Agency (AFSA). This is a part of a project where Tracified has piloted a food™ traceability solution in Azerbaijan at a National Level.

This project gives concern to a multiple of crops with a focus on export and the main objective of this is to ensure food safety. The project has been implemented with a vision of extending it to the Asian region.

GreenTech is a modern greenhouse complex designed and built to cultivate vegetables in Azerbaijan. With the use of advanced and modern technology, the conditions and equipment used in the greenhouse are well maintained for the successful growth of vegetables; predominatly tomatoes.

The GreenTech company has given special attention to increase the production output and productivity of the greenhouses since the date of the starting of its activity. At present, the area, belonging to the enterprise, has expanded to 350.000 sq meters.
A warehouse complex including mechanisms to regulate temperature with all the highest standards has been built on an area of 400 sq meters, in order to carry out storage and processing of the collected products.

The seedling complex, built in the year 2013, in an area of around 10000 sq meters, has now expanded to an area of 30000 sq meters, thrice the size of the initial land extent.

The Priva automated system provides strategies for irrigation and acclimatization, in order to produce healthy products with low human labour and minimum energy consumption.

Problem

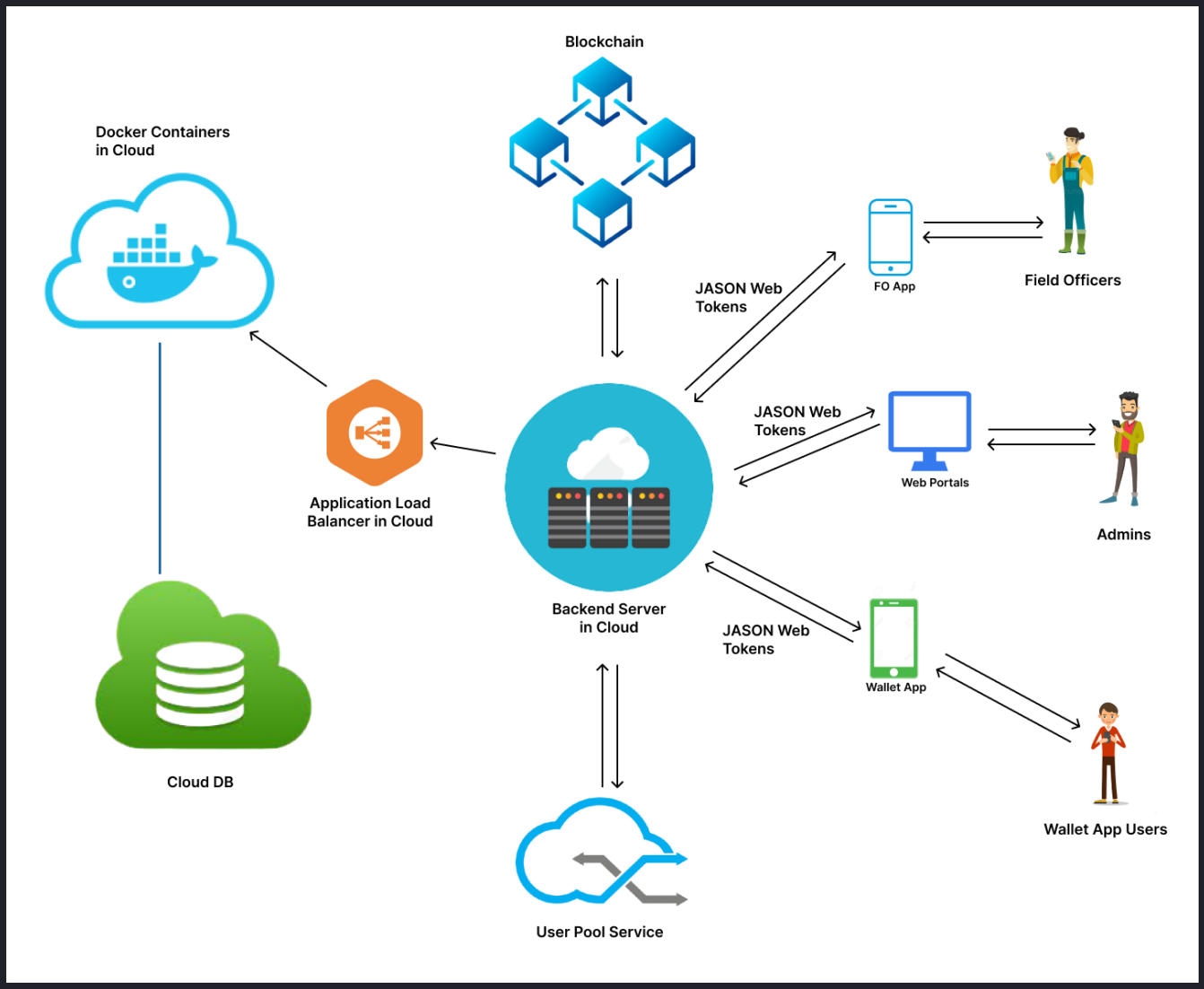
Greentech wanted to provide supply chain transparency, in order to ensure that the products they produce pertain to the maximum standards of quality, to their customers. With the increase of the size of their greenhouses and warehouses, they want to implement better solutions to gather data during the early stages of the supply chain, through means of automated IoT devices and equipment.

Solution

Tracified has implemented a traceability solution secured with a public blockchain . Tracified executed a Radio Frequency Identification (RFID) mechanism for batch tracking whereby digital data encoded in RFID tags will be captured by RFID readers. Scanning QR codes and Bar codes of each and every lot and line of Tomatoes was a tedious task that was overcome by the use of the RFID tags.

Each plot and line of tomatoes in the greenhouse, are fixed with RFID encoded tags and those could be read by the RFID readers located at the farms. It can also be read using handheld RFID readers.

Tracified Architecture



Customization of Tracified Platform for the Solution

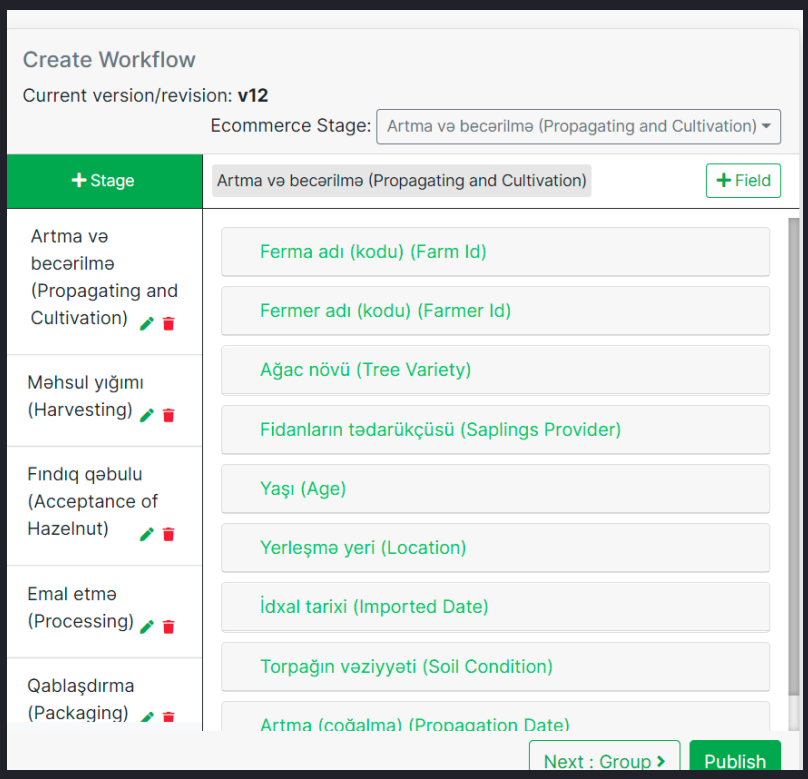
Tracified comprises of specific web portals and mobile applications for viewing and entering data whenever and wherever it is required.

Tracified Web Portals

Tracified Admin Portal - The portal through which administrative functionalities such as adding new users, viewing reports, adding new artifacts, master data and items can be done.

Tracified Insights Portal - for extended business insights (showcasing the traceability data added for the items by the Field Officers)

Tracified Configs Portal - to configure the workflow of the supply chain

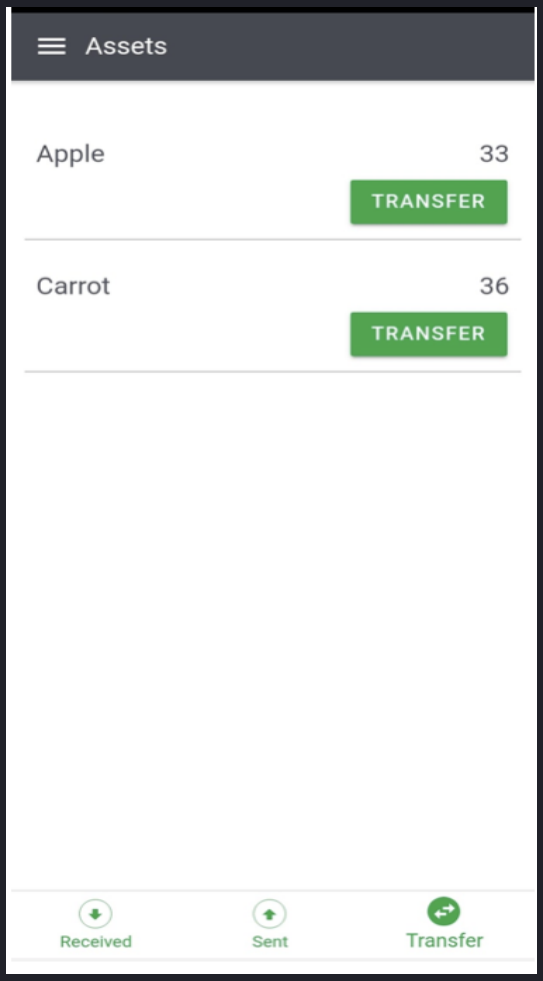


Tracified Mobile Applications

Tracified Field Officer Application - used to enter traceability data to the system.

Tracified Consumer Application - used by consumers in order to view the traceability data during each and every stage of the supply chain process, to view the origin, safety, sustainability, and communities supported, and to rate products.

Tracified Wallet Application - used specifically for Blockchain related asset transactions. It can also perform a change of custody and accept or reject change of custody requests.



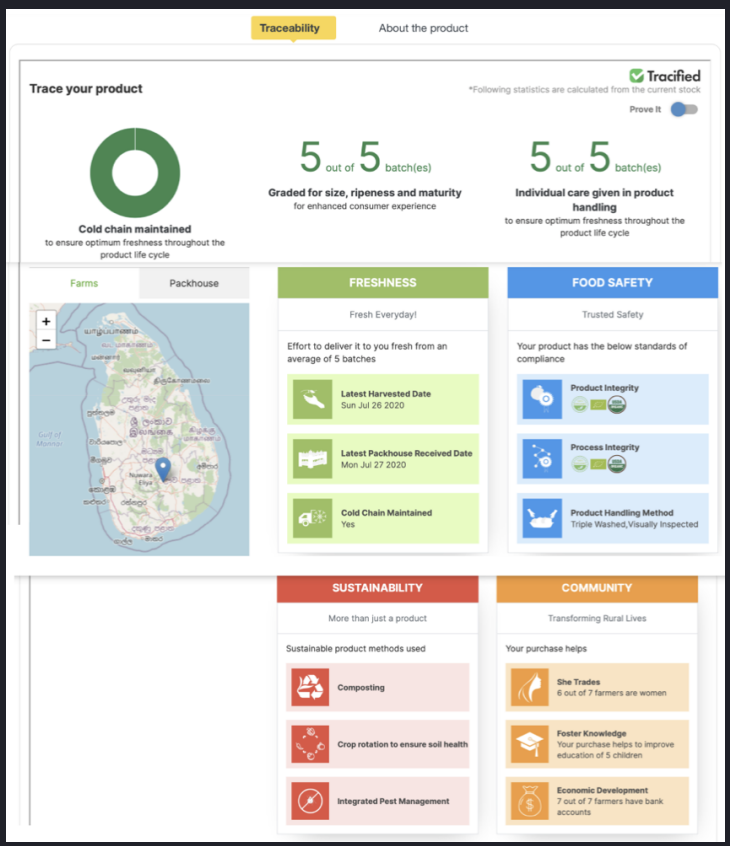
Four quadrants of Traceability

Freshness: This Dimension reflects the quality related to freshness of the product.

Safety: The Dimension that reflects certificates, standards, and processes owned by the business to entrust the safety of the food consumed by the consumers.

Sustainability: This Dimension informs customers that a business delivers more value to society than just a product. Sustainability badges are awarded to a business based on the good practices followed during the production process.

Community: The Dimension that reflects how the purchase of a customer nurtures the community as a whole.



Tracified Reports

Tracified has its own report generation functionality implemented within the system itself. Reports that have been created through the in-built report generator are produced to the AFSA or to the Exporter and those include;

- Reports in terms of quantity of production.
- Reports in terms of quality of production.
- Reports in terms of efficiency of production.
- Reports of ratings and feedback.
- Reports of recalled products.

EFFICIENCY OF PRODUCTION

Tracified
Trust Through Traceability

2021

Report - Time Duration from Collecting to Packing
29/04/2021 - 29/05/2021

Processing Center	Time Duration	Duration	
		Collecting	Packing
Farm 001	30 days	2009/ 01/ 02	2009/ 02/ 02
Farm 001	20 days	2013/ 06/ 02	2013/ 06/ 02
Farm 001	31 days	2011/ 01/ 02	2011/ 01/ 02
Farm 123	22 days	2012/ 01/ 04	2012/ 01/ 04
Farm 123	30 days	2011/ 05/ 09	2011/ 05/ 09
Farm 001	30 days	2008/ 01/ 02	2008/ 01/ 02
Farm 001	30 days	2004/ 06/ 12	2004/ 06/ 12
Farm 123	30 days	2002/ 01/ 02	2002/ 01/ 02
Farm 001	30 days	2015/ 01/ 02	2015/ 01/ 02
Farm 123	30 days	2016/ 01/ 04	2016/ 01/ 04
Farm 123	30 days	2003/ 06/ 02	2003/ 06/ 02
Farm 001	30 days	2017/ 01/ 02	2017/ 01/ 02
Farm 123	30 days	2013/ 01/ 08	2013/ 01/ 08
Farm 123	31 days	2008/ 06/ 02	2008/ 06/ 02

Exporter Name

29 May 2021, 08.54 AM

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How it Works

Tracified implemented a blockchain based system to automate the workflows of the supply chain in a way data could be fetched into the system through various ways, such as data being fetched manually, automatically and even through integration with existing ERPs. Methods of manuall entering of data include the Tracified Field Officer App and automatic data input mechanisms, such as IoT devices and smart sensors.

Since GreenTech is associated with 6 large greenhouses where different varieties of tomatoes will be grown and managed, Tracified will be deploying a UHF RFID tagging mechanism, concerning one greenhouse, which will be having a dedicated tomato seedlings batch. Each tunnel of the greenhouse will get assigned with its own UHF RFID Tag and the users will be equipped with handheld RFID readers with the Tracified Field Officer App installed in them.

Conclusion

The objective of this project was to implement a technology solution that may allow the AFSA to gather insights into the scalability of the traceability pilot system across the entire value chain in the country. As the demand for ICT-based food safety and traceability solutions are growing, the ADB will expand this project to similar companies in Azerbaijan.