



Unlocking the Potential of Blockchain for Agriculture

A webinar by

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Why Blockchain and Open data



EUROPEAN DATA PORTAL

<https://www.europeandataportal.eu/>

Members of a blockchain share the administration of the network.

In other words, a single, centrally organised administrator (aka the intermediary) is no longer needed.

All members must save and continuously update a full copy of the blockchain database. This strong redundancy, in combination with cryptography and shared decision making (called decentralised consent), leads to a democratic system that offers transparency and traceability, protection from manipulation, data integrity and security, as well as network reliability to its members.

Blockchain networks can be completely open for everyone to join with a full permit to read and write on the blockchain (called a **public, permissionless blockchain**).

In many cases, it makes sense to at least include authentication of members (**public, permissioned**)

or even to keep the network exclusive for a limited number of members (**private blockchain**, i.e. cooperating companies or government organisations). This is usually necessary if sensitive or private data will be saved on the network.

Win-Win? Could Blockchain and Open Data work together?

It is possible to simply save a hash value of a certain data set and include that in the blockchain.

This could also be thought of as a unique fingerprint of the data.

This way the blockchain size is controllable as hash values are very small.

The integrity of the data can always be proven through the immutability of blockchain entries.

In fact, one of the few known initiatives on Open Data and Blockchain by the [City of Vienna](#) does just that: citizens and public offices can validate and keep track of changes in data sets by comparing them with hash values on a public, permissioned blockchain. This way the veracity of data is ensured and “fake”-News can be kept at bay.

At the same time, Open Data with its strong focus on “openness” seems like the perfect application for Blockchain as a lot of privacy concerns, that usually bother Blockchain use cases, are non-issues.

Furthermore, Blockchain and Open Data share similar principles such as the promotion of transparency, equality in information knowledge and access, as well as the reorganisation of data exchange between a number of parties.



Decentralisation

- No central instance, no intermediaries
- A network of equals
- All decisions are consensually



Transparency

- Every member owns a similar copy of all data
- Transparency and tracability are guaranteed
- Network and data integrity as well as reliability are guaranteed

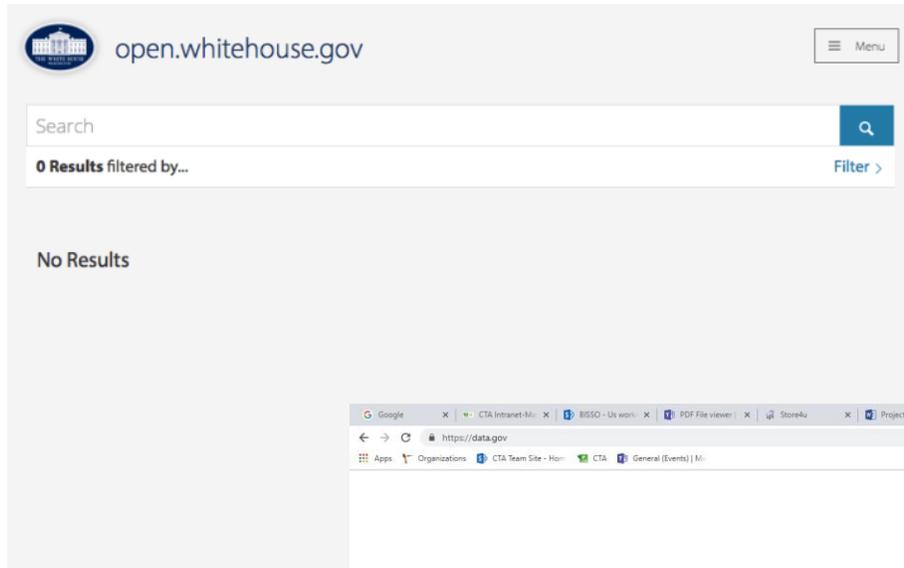


Fraud Protection

- Data elements are stored in a block-like structure
- Each block contains a hash value* over its data
- Each block contains the hash value of the preceding block
- Data manipulation is impossible

*Hash values are like unique fingerprints of data.

Decentralisation



Due to a lapse in government funding all Data.gov websites will be unavailable until further notice.

Updates regarding government operating status and resumption of normal operations can be found at [USA.gov](https://www.usa.gov)

[dataset.json.gz](https://data.gov/dataset.json.gz) (2.6GB) contains a monthly snapshot of the Data.gov catalog metadata in [JSONL](https://www.json.org/) format.

Transparency

Google x CTA Intra x BISSO - L x PDF File x Store4u x Project L x Initiative x pdfservic x Inbox (3 x Brits in B x Official C x moyee c x BlockCh x Moyee C x screensh x

https://blockchain.fairchain.org

Apps Organizations CTA Team Site - Hom CTA General (Events) | Mir

BLOCKCHAIN (BÈTA) FAIRCHAIN COFFEE HARVEST TIMELINE

FairChain takes transparency to the next level. Since 2017, the FairChain farmers have been paid through BlockChain, unique in the coffee industry. Every piece of data in the coffee chain, from harvest to payment, is stored digitally in the BlockChain. Transparent for everyone. This data is locked by a cryptographic key. In other words, the data can not be tampered with, resulting in a fair and complete registration of the chain. The Impact is therefore fixed! Go FairChain!

Currently we are building the next blocks: washing, hulling, roasting, transport, sales
So stay tuned!

WHAT AM I LOOKING AT?

Farmer	Cherry collection	Location	Market price per kg	Market price	FairChain price
KEYRU A/GERO A/SERBO	45kg		11 BIRR per kg	495 BIRR	594 BIRR
ALI HUSEN AHMED	64kg		11 BIRR per kg	704 BIRR	844 BIRR
SHERIF A/GARO A/BORA	33kg	Sultu			

Total kg coffee cherry: 371.625⁵⁰ kg
Total market price: 4.086.695⁰⁶ BIRR
Total premium price: 4.900.383⁴⁰ BIRR

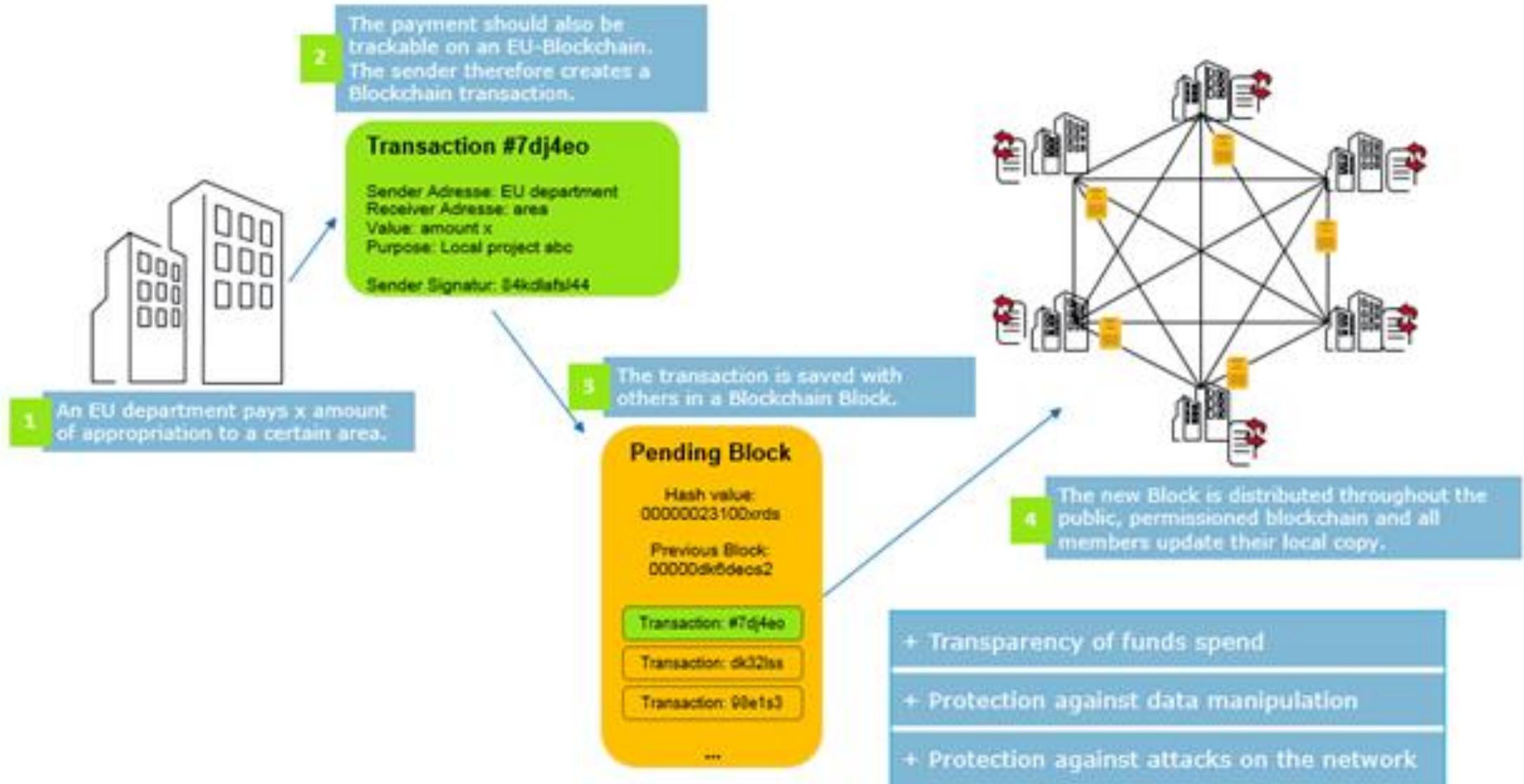
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Show all

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Preventing fraud

Example: European Regional Development Funds spending could be tracked on an EU-Blockchain to increase transparency and send a strong signal against corruption



Payment for collecting open data #OpenLitterMap

#OpenLitterMap

English

Litter is Everywhere

Cigarette Butts, Plastic Bottles, Broken Glass...

Earn **Littercoin** by Mapping and Producing Open Data on plastic pollution anywhere.

dataset.json.gz
Canceled

https://www.citylab.com/transportation/2018/09/a-blockchain-based-startup-wants-to-pay-you-to-map/570652/

Will geo-tag for Bitcoin! // Kim Hong-Ji/Reuters

Like Uber, but for Cartographers

LAURA BLISS SEP 19, 2018

Streetcred, a blockchain-powered open-source mapping startup, will pay you to map. (And then give the data away for free.)

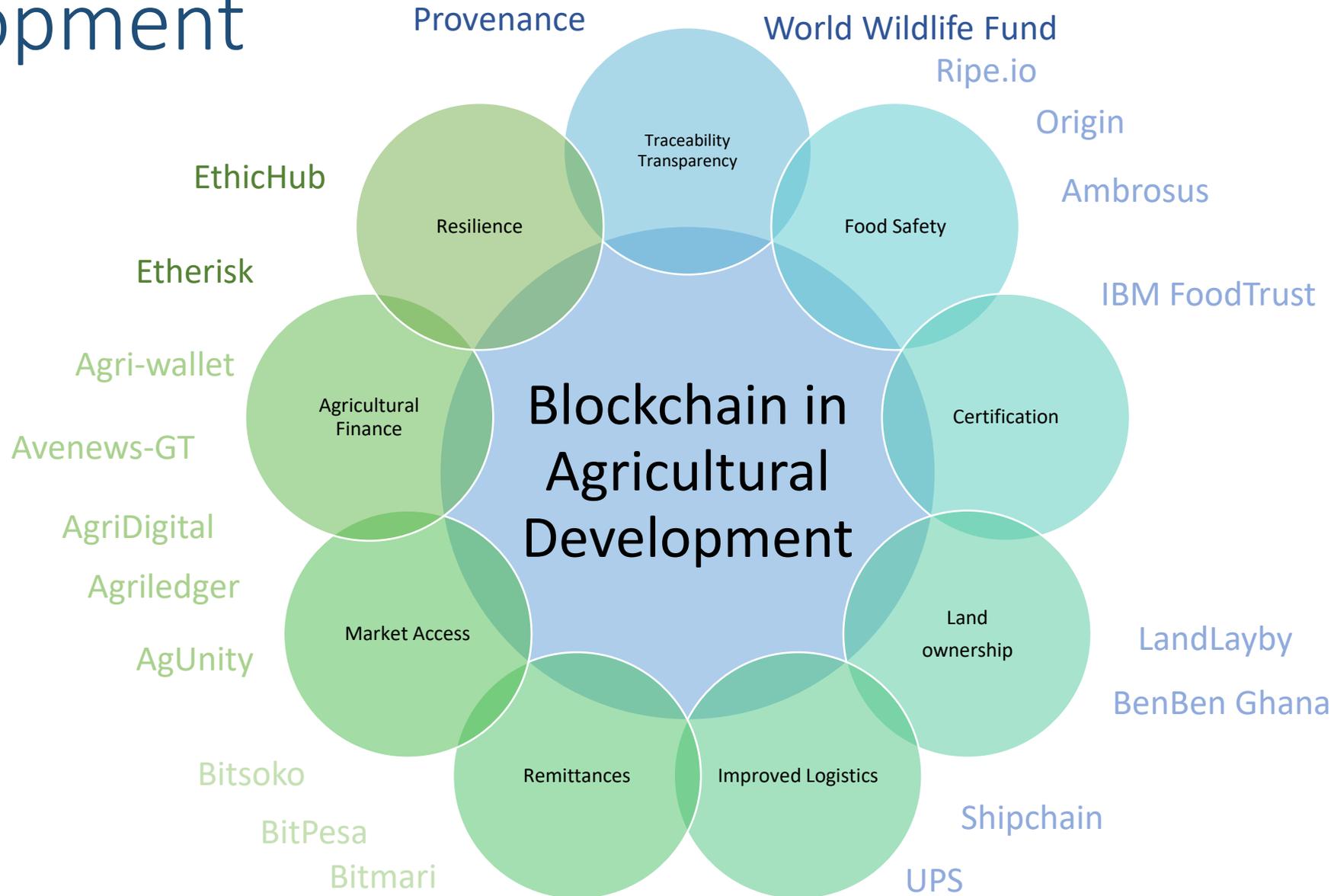
SHARE TWEET

Earlier this summer, with little advance notice, Google Maps enacted a substantial price hike for developers that use its services—as much as 1,400 percent for certain search products. Companies that were once able to embed Google’s geographic search tools on their websites more or less for free now had to pay hundreds, if not thousands of dollars of month to keep the service.

Small business owners flipped out.

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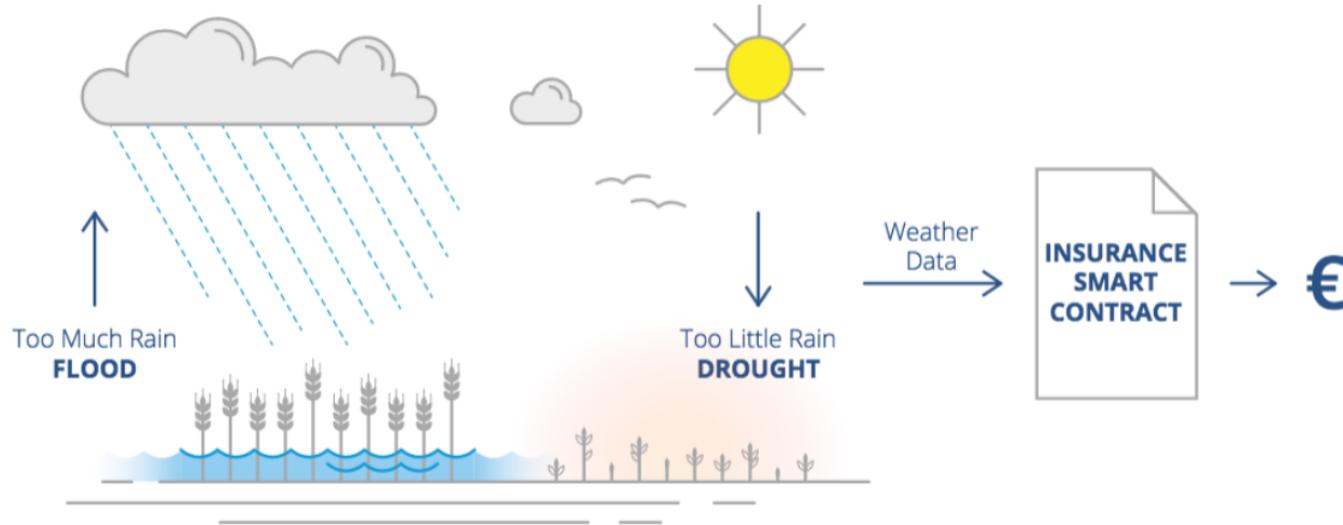
Blockchain for agriculture and social development



AgUnity | Fair contracts



Etherisc | Insurance and finance



Build decentralized insurance applications



Make the purchase and sale of insurance more efficient



Enable lower operational costs



Increase transparency and fairness of insurance

EthicHub | Social impact finance



The solution

A new model for value transfer

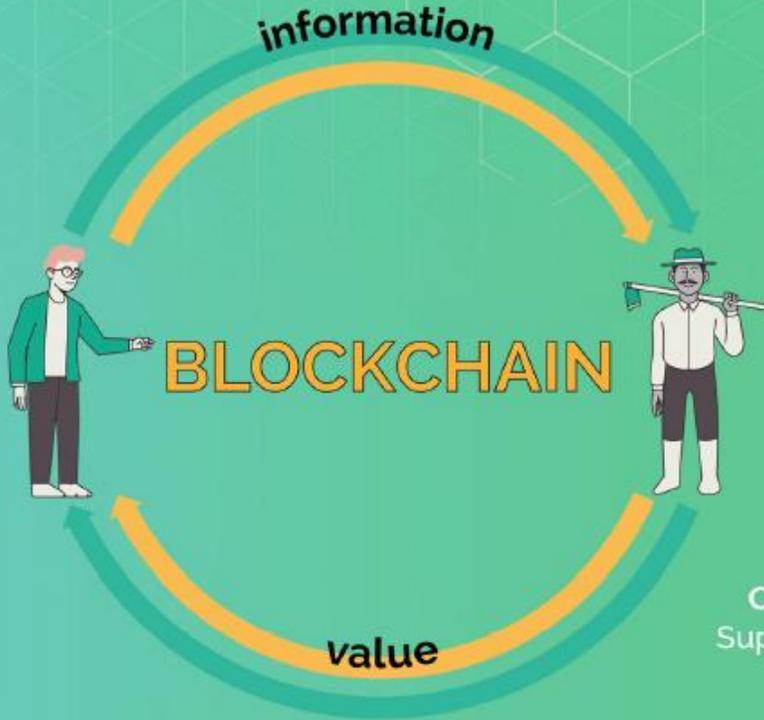
Investors

Access to global investment opportunities

~300%

Increase in interest on savings

Direct insight into the positive impact of each investment



Borrowers

Access to global funding possibilities

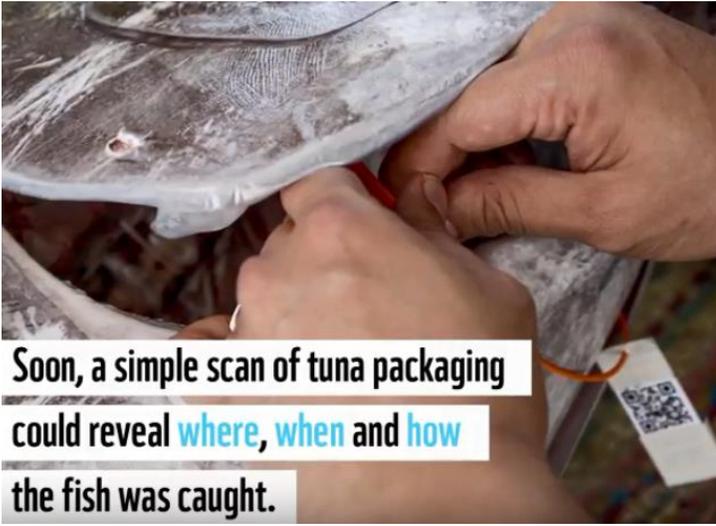
75-80%

Lower interest rates for loans

One intermediary (local node)
Support to integrate in a cooperative
Bridge to the digital world

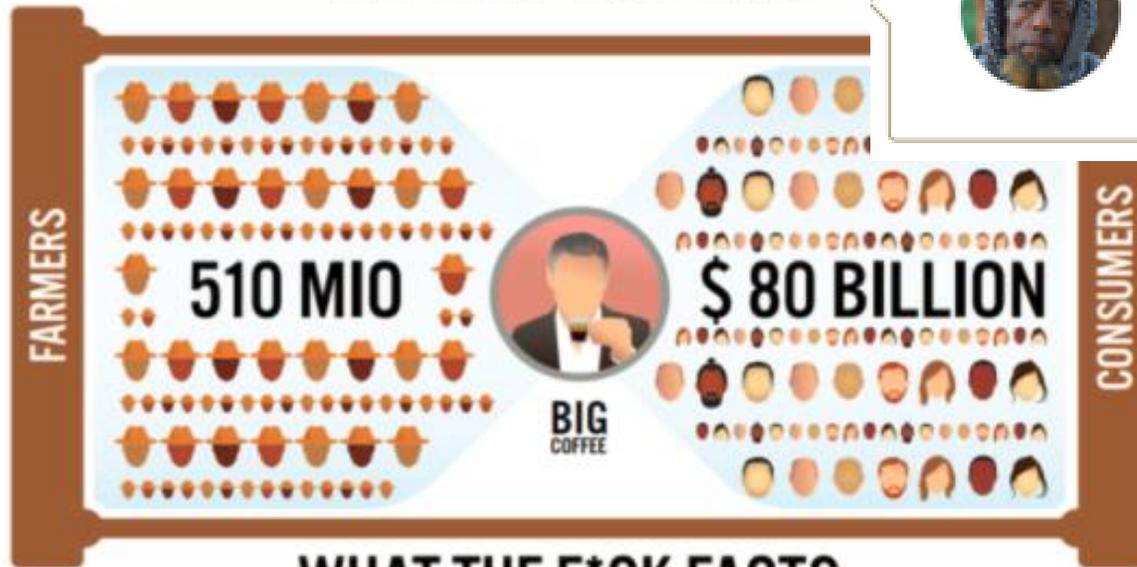
Blockchain enables international value transfer, builds trust and eliminates p2p risk through smart contracts.

WWF | Tracking and tracing



Moyee Coffee | Fair Prices

FARMER PROBLEMS



WHAT THE F*CK FACTS



2012

2013

2014

2015

2016



2017

20/21

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SHERIF A/GARO A/BORA

Cherry collection

33kg

Location

Sultu

Market price per kg

Market price

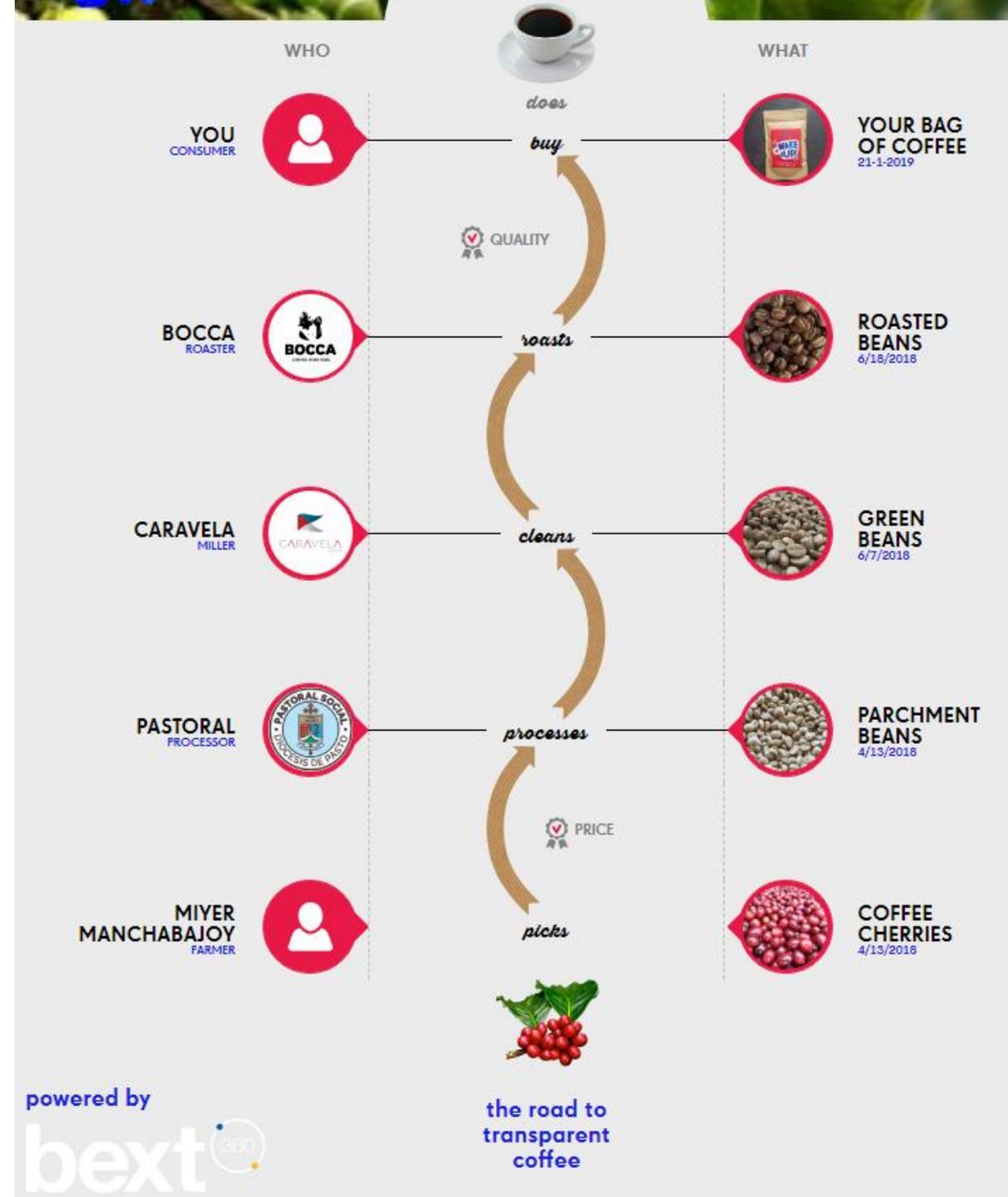
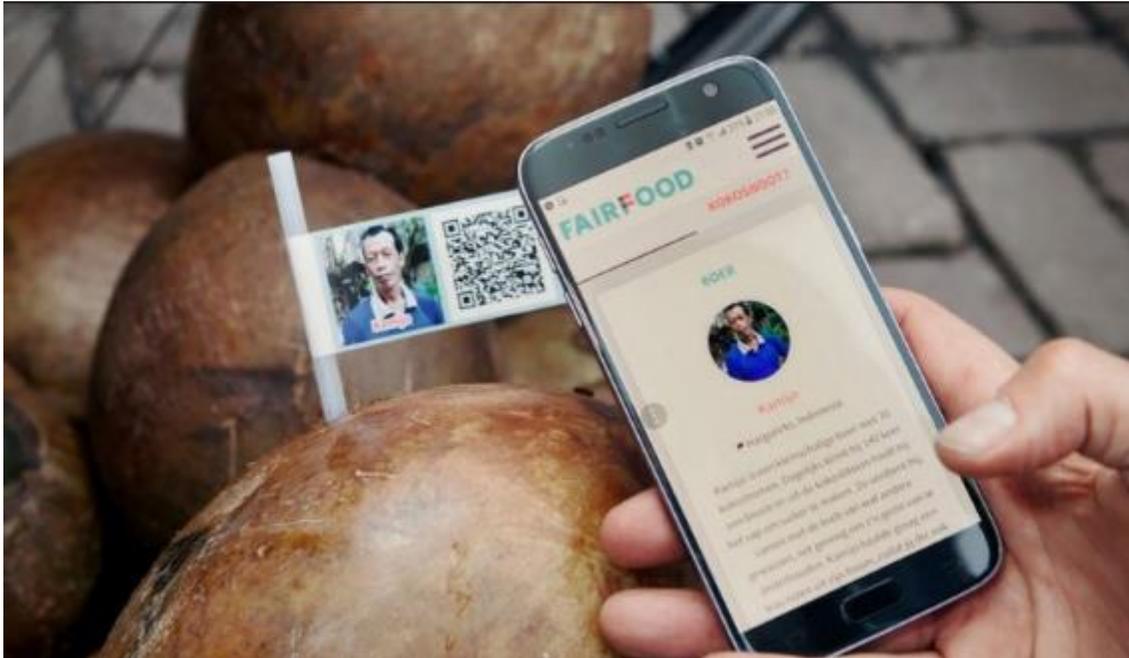
FairChain price

11 BIRR per kg

363 BIRR

435.6 BIRR

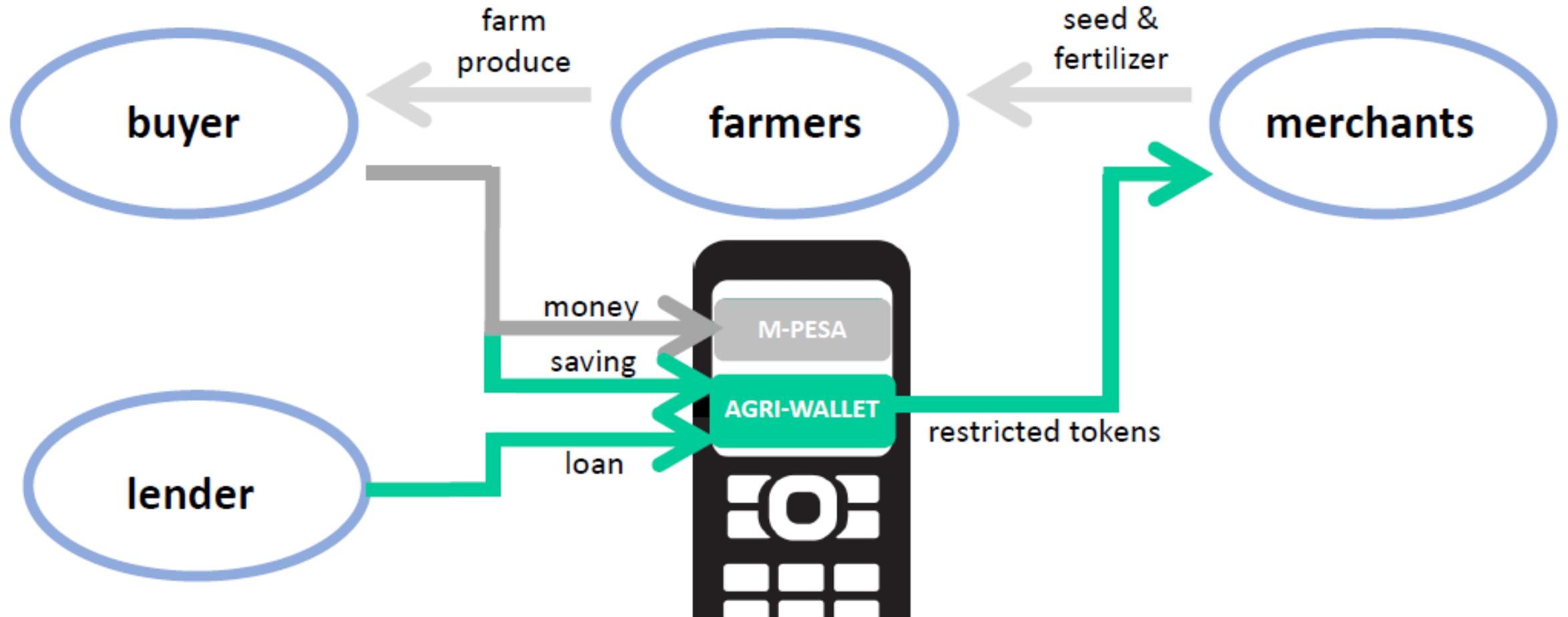
FairFood | Traceability



Land LayBy | Land ownership



Agri-wallet | Savings and creditstatus

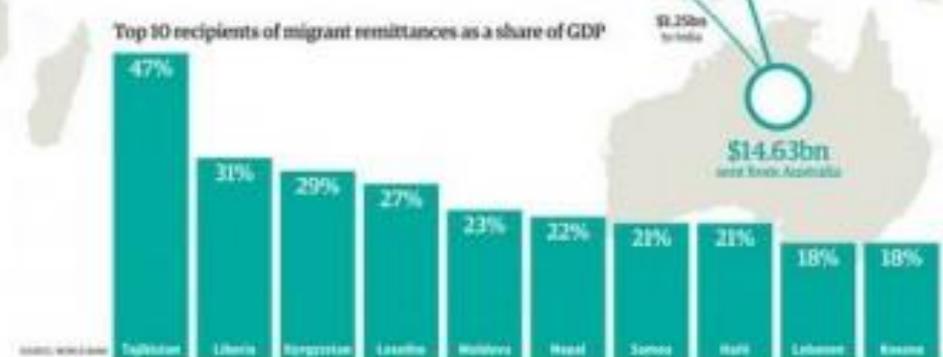
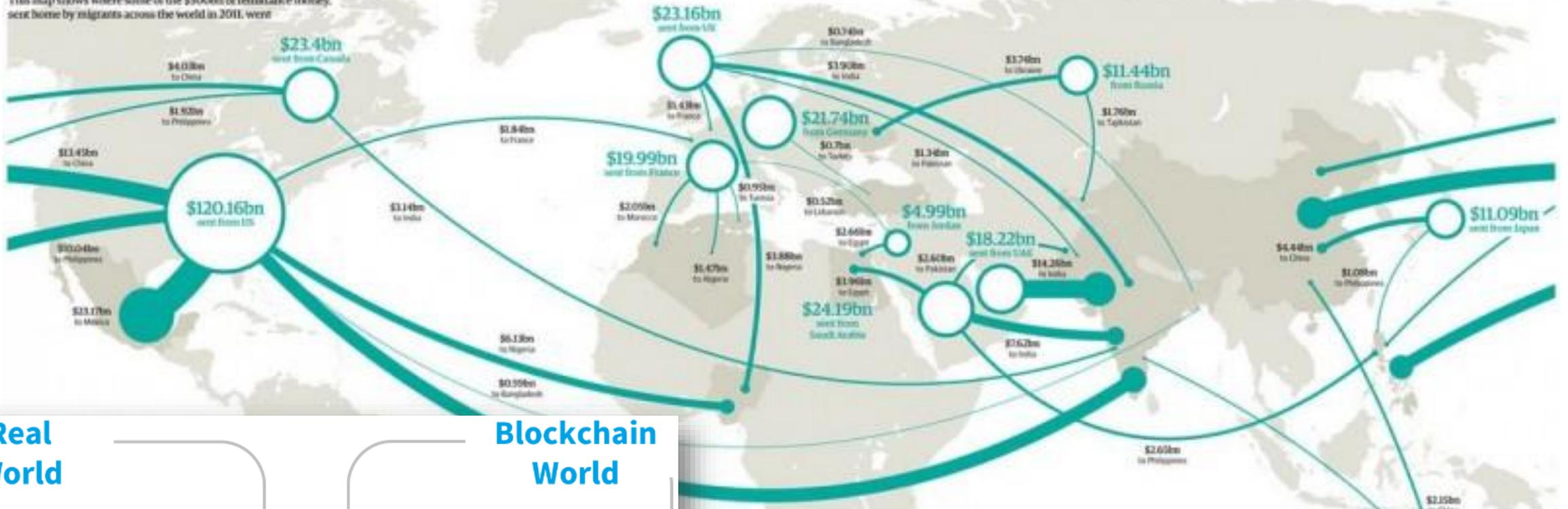


Riskebiz | Remittances/Tokenisation

Where the money goes

This map shows where some of the \$500bn of remittance money, sent home by migrants across the world in 2011, went

theguardian



Real World

A paper contract representing a claim on, or right to, some good, service, or asset in the real world...



Blockchain World

...is converted into a digital contract in the form of a token within a blockchain network.



Sources and additional information

- AgUnity | <http://agunity.com/>
- Etherisc | <https://etherisc.com/>
- EthicHub | <https://ethichub.com/>
- WWF | [http://www.wwf.org.nz/what we do/marine/blockchain tuna project/](http://www.wwf.org.nz/what-we-do/marine/blockchain-tuna-project/)
- Moyee | <https://www.moyeecoffee.com/blockchain-concept/>
- FairFood | <https://fairfood.nl/en/blockchain/>
- Land LayBy | <https://landlayby.io/>
- Agri-wallet | <https://agri-wallet.com/>
- CTA Blockchain Project | <https://www.cta.int/en/blockchain>