



HYPERLEDGER
Trade Finance
SPECIAL INTEREST GROUP



Blockchain in the Food Sector From Story-Telling to Fact-Telling



Apio
Humanity first

Alessandro Chelli

21/01/1992

- CEO and Co-Founder of *Apio*
- Computer Science Engineering Graduation at «Università Politecnica delle Marche»
- At the age 22 y.o. with Lorenzo Di Bernardino, Alex Benfaremo and Matteo Di Sabatino, we opened Apio to offer strong innovative & digital know-how to Companies;
- Apio is a young company founded in 2014, pioneer of the Internet of Things in Italy. Today Apio defines itself as a Venture Builder that builds innovative solutions and products by exploiting the strong know-how acquired on the Internet of Things, Blockchain and A.I. to renew companies' businesses. Its customers include the largest Italian and European companies such as Acea, Samp, VarGroup, Enea, A2A and Indra;
- Apio collaborates with Var Group on Blockchain projects. We provide solution for Food & Fashion Market. In 2019 we was the first IBM Food Trust certified partner worldwide.



Venture Builder

Know How

Internet of Things: collecting data and information from the sensors / actuators field for their processing in Cloud;

Artificial Intelligence: actions driven by the data through the use of data mining and machine learning techniques;

Blockchain: creation of private networks, smart-contract, tokens and communication interfaces with network blockchain.

Cloud: development micro-service Cloud, SaaS and RESTful API oriented, for maximum scalability and performance



VARGROUP
Inspiring innovation



ENEA



indra
minsoit



Sixtema
TINEXTA GROUP



SAMP



DENSO
Crafting the Core



acea



enel



a2a



CPL
CONCORDIA
Group



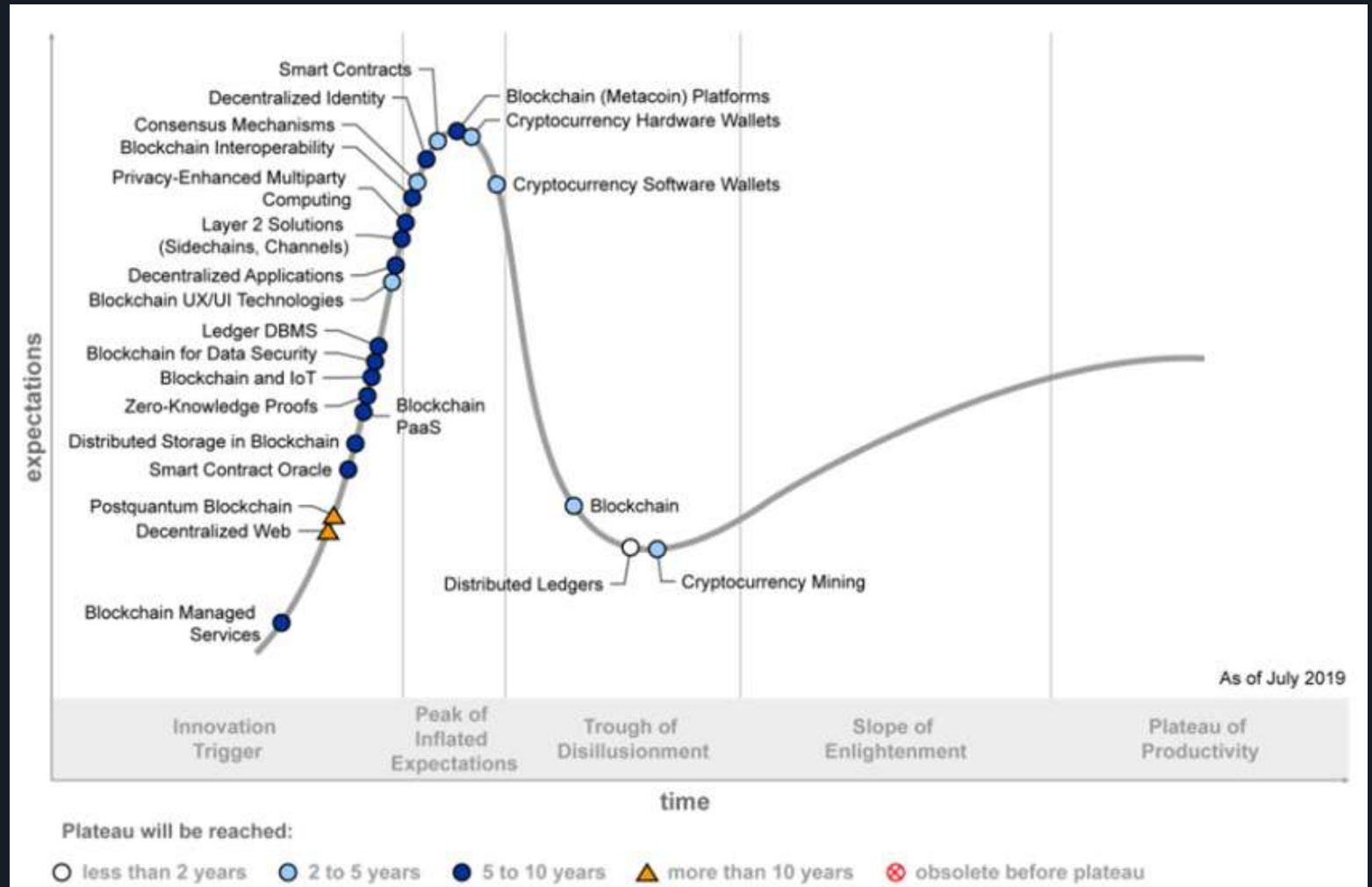
DE CECCO
dal 1886

Presentation Breakdown

- Blockchain Hype Cycle
- When to use the Blockchain
- Useful Resources
- Food & Blockchain. Why it matters
- Trusty
- Use Case #1. Small Food Producer
- Use Case #2. Long Supply Chain
- Use Case #3. High Quality Food Producer

Blockchain Hype Cycle

Technology is Ready
and in the next year
will be deployed a
large scale



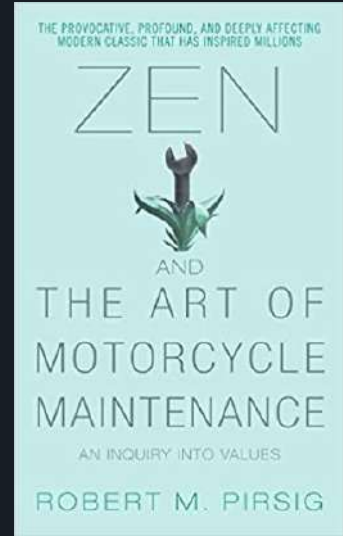
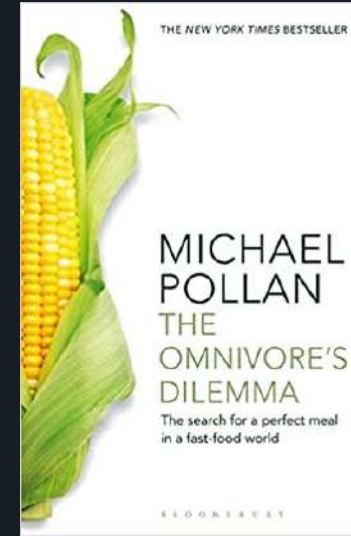
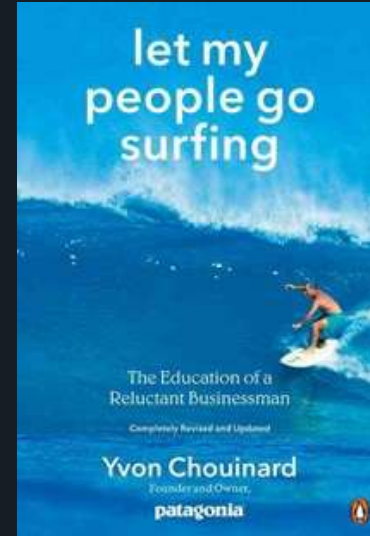
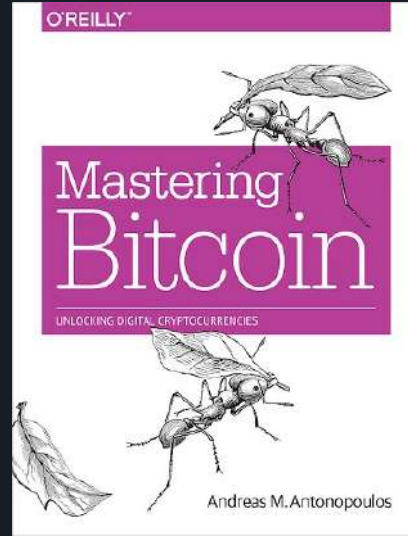
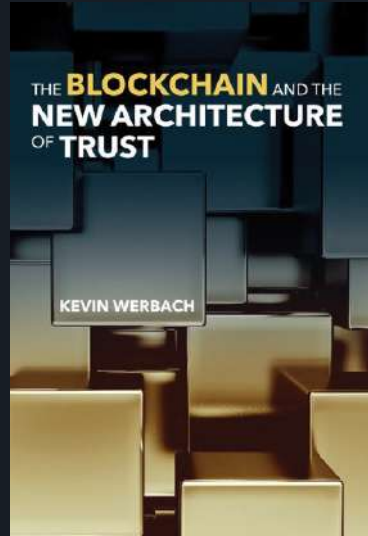
When to use Blockchain/DLT

- Share information securely, with identity and timestamp (**Timestamping & Identity**);
- Share and Sell Assets securely and transparently without particular central Authority (**Token**);
- Automate flow between different parties (**Smart Contracts**)

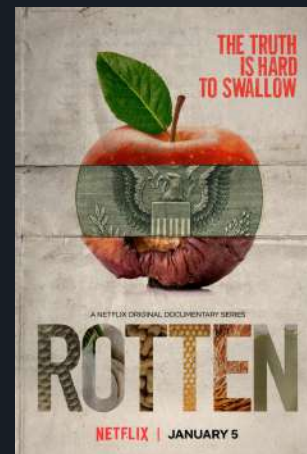


Useful Resources

Books



TVs





Food & Blockchain

Why it matters

Mobile Generations

Lost in the Supermarket

Choices



Information Problem



HYPERLEDGER
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 **trusty**
a true story

by



Apio
Humanity first

Our Solutions

The easiest and most secure way to share information alongside the supply-chain and creating Customer Engagement

ITALY
21/09/2017



Grapes

ITALY
21/10/2017



Harvest

FRANCE
21/11/2017



Fermentation

FRANCE
21/11/2018



Aging

FRANCE
01/12/2018

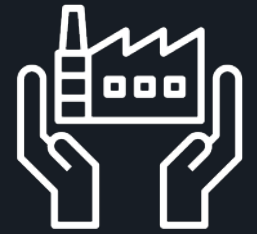


Bottling

USA
02/01/2018



Retail



Food Producers



Consumer

Partners



Features



QR-CODE and
Web Page
generator for
Food Products



Notarization
through
Blockchain/DLT
Technology (es.
IBM Food Trust)



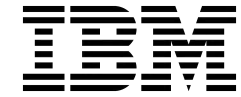
Integration
with ERP
systems



Offline
Analytics and
Customer
Insights



In partnership with



Small Food Producers



Colli del Garda Gourmet



- Demonstrate the quality of the Italian Prosciutto and others pork products;
- Show without filters the production process;
- Integrate the supply-chain with international standards (GS1 EPCIS);
- Create Customers Engagement (with supplier and end-users)



Supply-Chain



Farm
La Cavallara



Slaughterhouse
Opas S.r.l.



Seasoning
La Casa del Prosciutto



Producers
Agnetti



Consumer

Final Considerations

- Every suppliers insert data through Web Application;
- ERP and Enterprise Softwares automate also the Data-Entry process;
- Several Declaration written in Blockchain/DLT creates trust among suppliers and customers.
- In the future, the declarations mixed up with the invoices will be shared with the certicators to accelerate the certifications process.





Solution: **Blockchain** Industry: **Consumer Products**

International
Visibility

Colli del Garda

How blockchain helps food stay healthy, high-quality and delicious

...measure its customers of the consistent quality of its cured meat
...owned company Colli del Garda joined with IBM Business
... and Apio S.r.L. to launch a blockchain solution





M
MANCINI
PASTIFICIO
AGRICOLO

 **trusty**
a true story

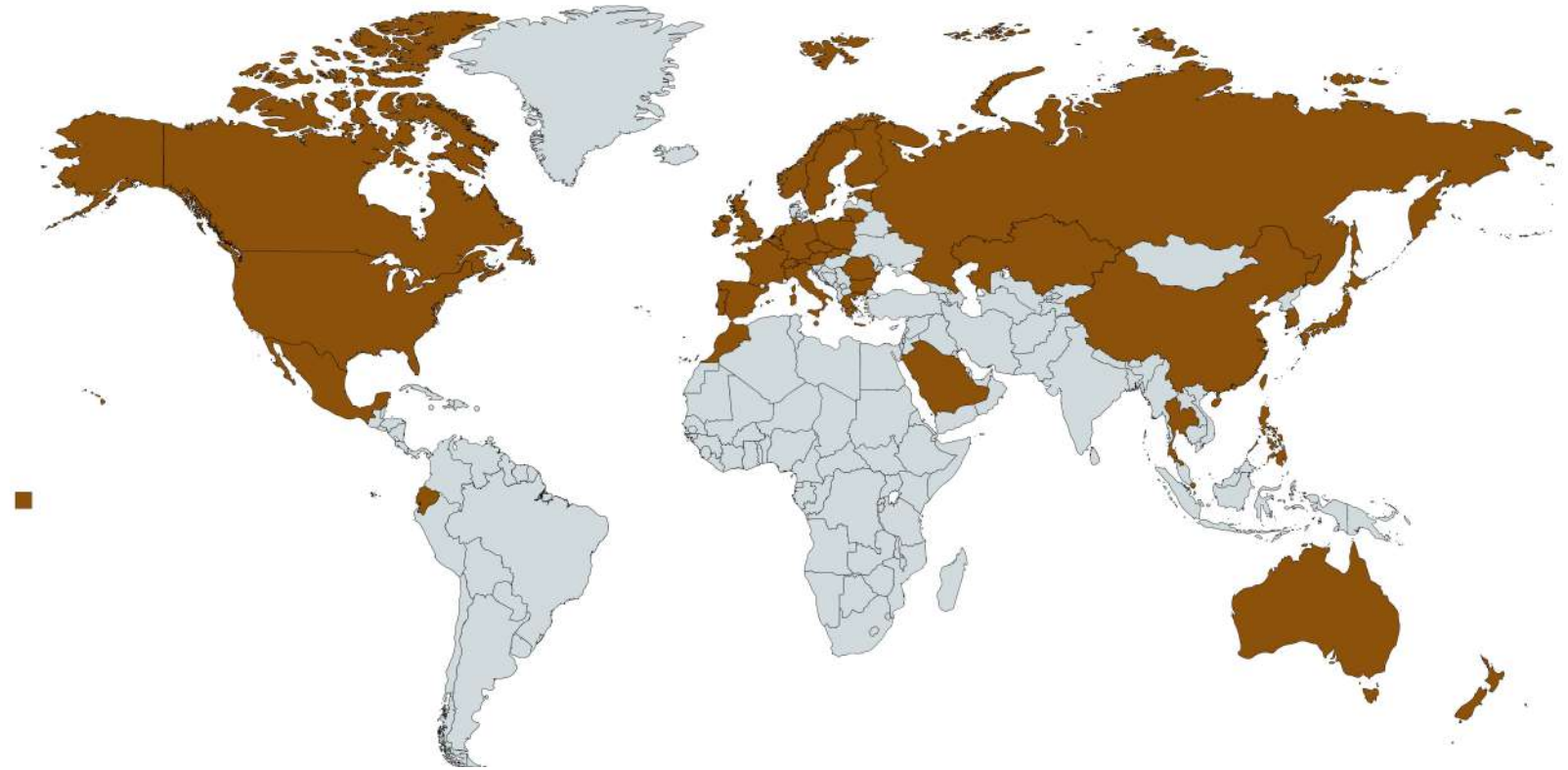
Premium Quality Food Producer

by  **Apio**
Humanity first



 Mancini customers

There is a farm
that produces
pasta in the
middle of a wheat
field.



Mancini Tractions:

Revenues 2019: 3,5M€+

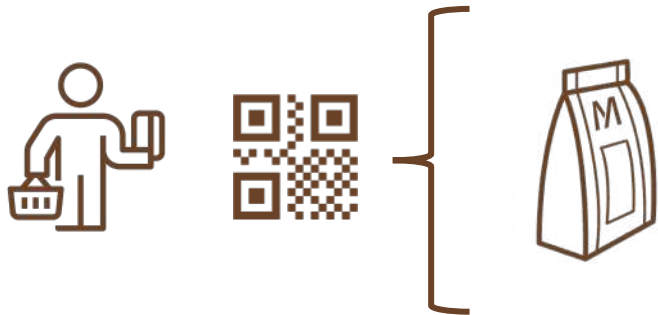
Employees: 30

Wheat Ha 2019: 477 (+25% - 2018)



Premium Food Producer (Mancini)

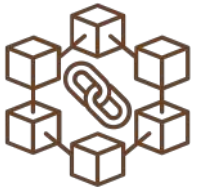
- Automated Data Entry (Mancini Pasta ERP Integration)
- Track & Trace of more than one hundred products and two hundred lot per month
- Automated Packaging Printing (with Lot Information) through Industry 4.0 Connected Printer.



Industry 4.0 integrated. Machine automatically prints QR-Code on Packaging



Transparency through Public Blockchain Technology



Custom **public page** in order to create Customer Engagement and share provenance and traceability





Penne



La nostra pasta viene prodotta con il grano duro coltivato direttamente dall'azienda. Gli unici ingredienti utilizzati sono la semola e l'acqua. Utilizziamo trafile circolari in bronzo ed essicchiamo la pasta a temperature inferiori a 44°C impiegando per la pasta corta circa 20 ore e per la pasta lunga circa 40 ore.

Le penne sono lunghe 50mm e larghe 10,2mm. Il tempo di cottura è di 7-9 minuti.

Tempo di Cottura

7-9 min

Lunghezza





In partnership with



**Fair & Trusty Trade
From Bean to Bar**



Cocoa Supply-Chain

«The story of chocolate is like an hour glass, where you have millions of small holders growing cocoa at the very beginning of the story, and at the end of the story you have millions of consumers eating chocolate. But right at the center of the hour glass are handful of extremely powerful companies. These companies are the Cocoa Traders»

Etelle Higonnet
Senior Advisor, Mighty Earth

N SERIES
ROTTEN



Ivory Coast

- Ivory Coast and Ghana produce over 60% of Cocoa Worldwide;
- In 2019 Ivory Coast produced almost 2.2M ton of Cocoa;
- In Ivory Coast there is almost 600k of growers and over 6M of people depend on Cocoa's Business;
- Collapse in prices takes Grower's income under 200\$/year

Consumer's Question

Who?
When?
Where?
What?
How much?




Who?
When?
Where?
What?
How much?



Who?
When?
Where?
What?
How much?



Who?
When?
Where?
What?
How much?



Who?
When?
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What?
How much?



Who?
When?
Where?
What?
How much?



Growers



Pisteurs



Cooperatives



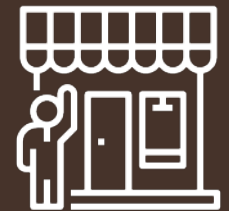
Exporter



Traders



Producers



Retailers

If the consumer doesn't know the history of the chocolate's bar, he cannot appreciate high quality products. Customers are willing to pay an extra cost in order to have Food with an Impact.



FARMERS APP

Simplified Track & Trace is a Mobile Application that can be used by growers and cooperatives to track every single step in the process. The App uses Blockchain technology to notarize every declaration, the App lets actors of the supply chain share information and avoid dispute between parties.

SUPPORT FARMERS

The information can be used by the producers to share the story of chocolate From Bean to Bar. The information related to the growers and cooperative can be used also by the consumers to know the impact of their choices. The tracked cocoa can be sold with a mark-up that can be used to improve the Quality of Life of the Grower and their families



REDUCING THE INFORMATION GAP

BETWEEN FARMERS AND CONSUMERS

01

02

03

04

05

06

FARMERS

COOPERATIVES

AUDITORS

EXPORTERS

PRODUCERS

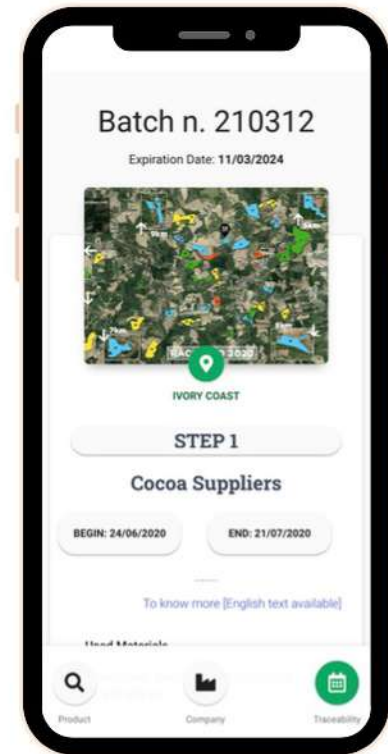
CONSUMERS



FARMERS APP



TRACK AND TRACE



CONSUMERS APP



FARMERS APP

01

DECENTRALIZED DIGITAL IDENTITY FOR FARMERS

Every Farmers and every cooperatives have a Digital Identity (Private Key that only Farmers or Coop Owns)

02

TRANSACTION VERIFICATIONS

Every Farmers certify their supplied cocoa quantity in an immutable way. Cooperatives verify the transactions and approve it.

03

PERSONAL TRANSACTION HISTORY

Every Farmers owns their transactions and can use it to report and prove the cocoa supplied.



TRUSTY PLATFORM

01

BLOCKCHAIN AGNOSTIC APPROACH

A platform that can operate with several blockchain starting from Enterprise Network to Public platform

02

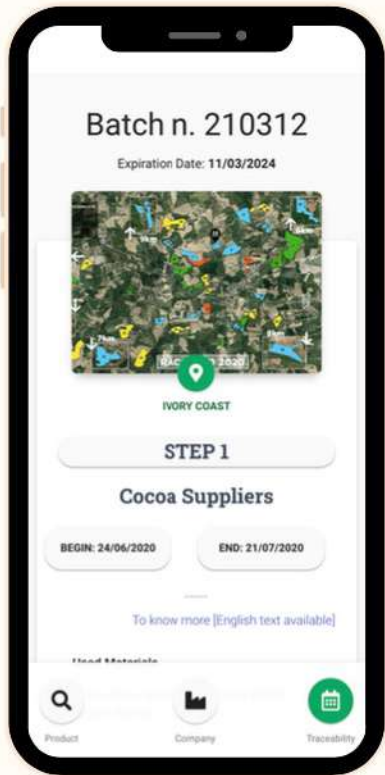
END TO END TRACEABILITY SOLUTIONS

With a digital food system, network participants can share data enabling full transparency.

03

COLLABORATIVE PLATFORM

Secure data-sharing between food chain actors eliminates the possibility for participants to move fraudulent foods unknowingly.



Provenance Informations



Supports Projects

SUPPORT



1

TRACEABILITY INFORMATIONS

Consumers can scan QR-Code to see provenance informations

2

SUPPORT COOPERATIVES

Consumers can support directly Cooperation and Sustainable Projects

3

FOLLOW IMPACT AND UPDATES

Consumers can follow impact and updates starting from the labels



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Thanks. Any Questions?

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