

# Blockchain Workshop/Conference

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## Agriculture, fisheries and food

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UN / CEFACT



# Content

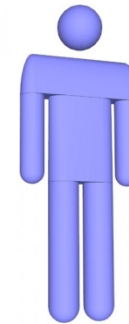
- Intro integrity, traceability - compliance
- Framework for traceability
- Opportunities with blockchain



# Food integrity



Product  
characteristic



Processor  
characteristic



Activity  
Processing

Information  
analogue / digital

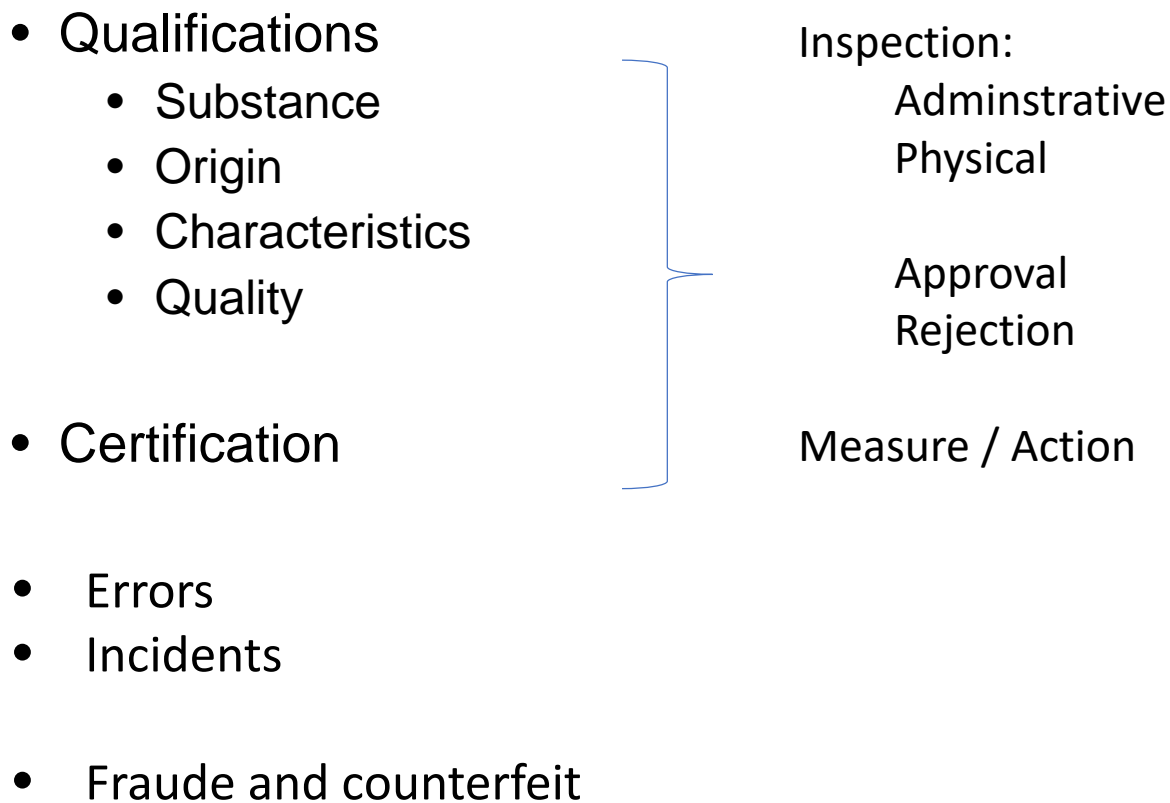
Information exchange



# Food safety

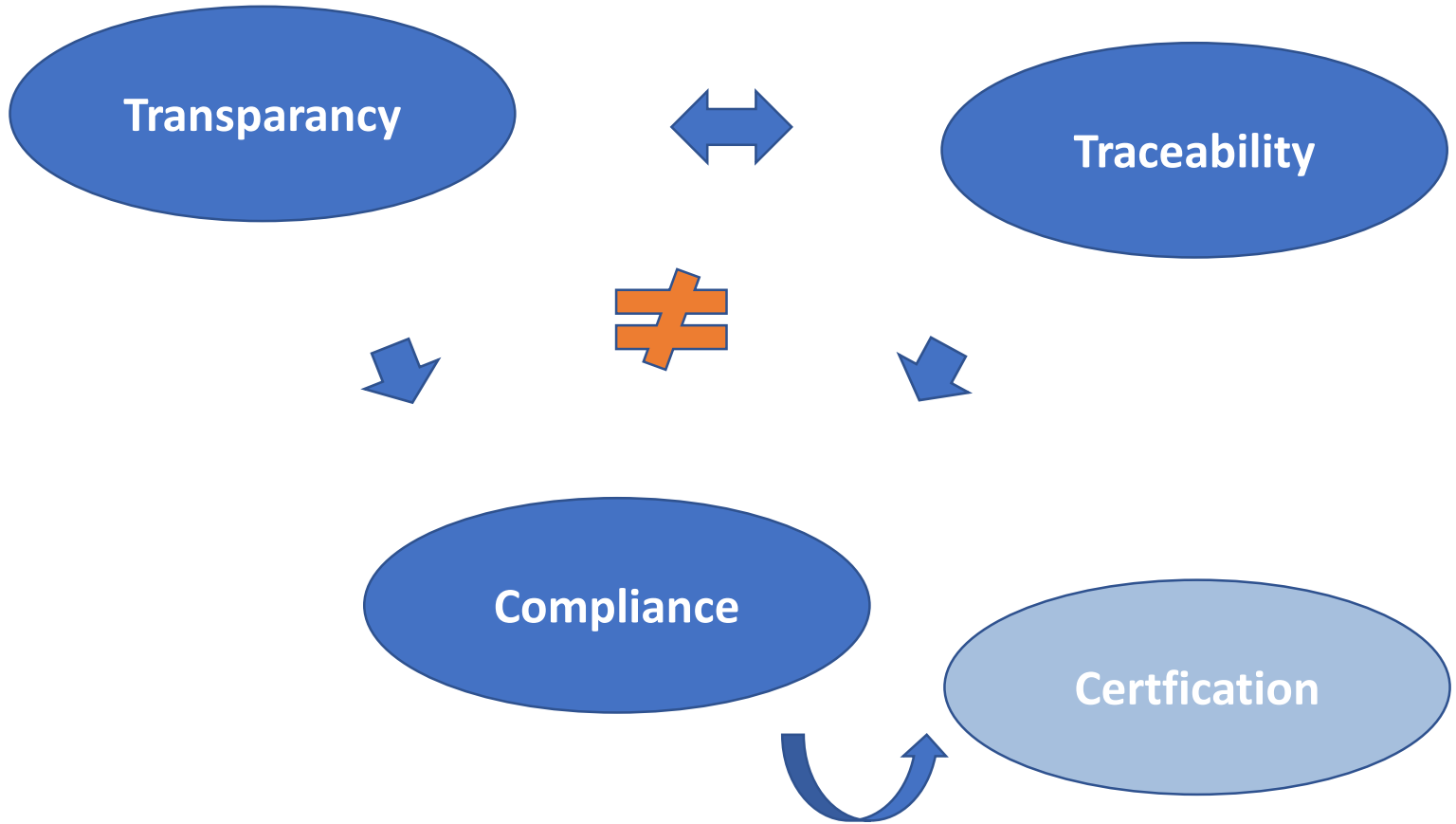
- Product characteristics
  - Animal and plant health (sanitary issues)
  - Environment
  - Proces and hygiene
  - Legal requirements
  
  - Business requirements
  - Private certification labels
- 
- 

# Food integrity

- Qualifications
    - Substance
    - Origin
    - Characteristics
    - Quality
  - Certification
  - Errors
  - Incidents
  - Fraude and counterfeit
- Inspection:  
Adminstrative  
Physical
- Approval  
Rejection
- Measure / Action
- 

# 3 aspects related to information about food

- Transparency
  - Privacy
  - Competition
  - Sensitive data
  - Open data / shared data
- Traceability
  - Tracking boxes (transport , logistics)
  - Recording events
  - Retreiving information
  - Product and proces specifications / documentation
- Compliance
  - Industry / retail demands
  - Regulations
  - Certification



# Characteristics of food

- Complex supply chain
- Many small producers, traders and processors
- Bulk products
- m:n relations between products and between parties
- The suppliers are unknown for the processor or trader





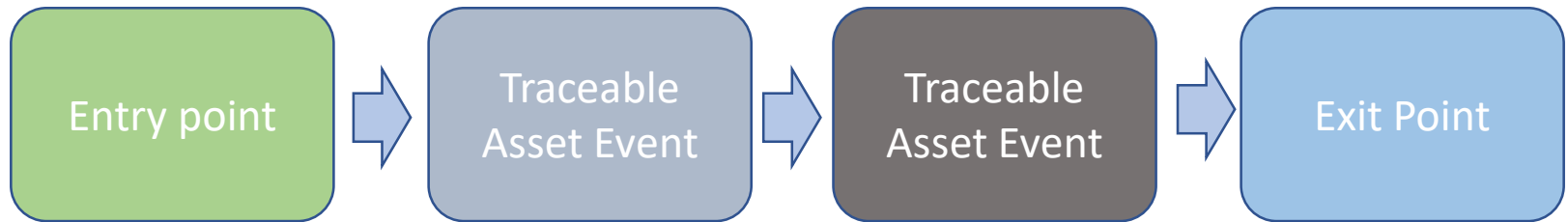
# Traceability information entities

- Identification
  - Product
  - Party
  - Location
  - Transport
  - Proces
- Events
  - what, when, why, where, who
- Registration
- Sharing data (ownership, access rights)

# Business agreements and regulations

- General Food Law (EU) :  
Requirements: Each producer reports in 24 h about his supplier en buyer.
- Little about How To Report
- Business agreements are much more demanding then regulations.

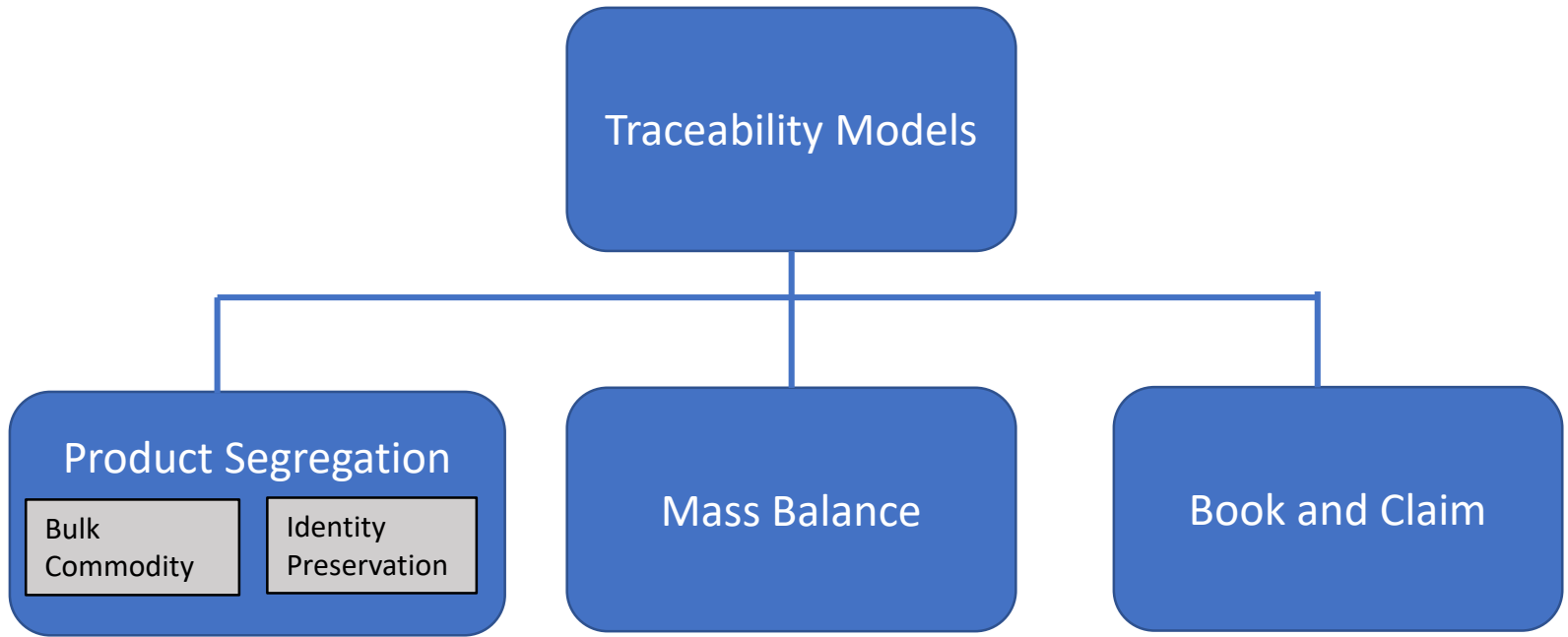
# Traceability chain (network)



Only a section of the supply chain  
Or covering the full supply chain?

What is the starting point and the end point?

# Traceability models



# Block Chain technology use case

- Track and Trace
  - Certification proces
  - Certificate usage
  - Sensors and IoT
  - Transport
  - Proces
  - Transactions
  - Workflow
- Compliance
- Event recording
- Improvements

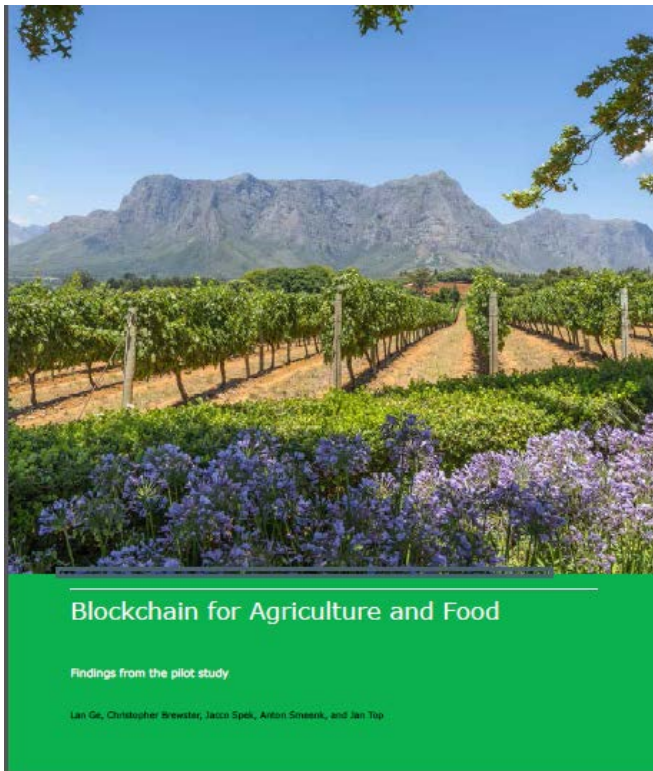
# BCT in agri food

- Permissioned, private blockchain
- Smart Contract
- Link with shared (open) linked data
- Data hubs
- Data rights (ownership, access)
- Roles on the blockchain
- Governance





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## Blockchain for Agriculture and Food

Findings from the pilot study

Lan Ge, Christopher Brewster, Jacco Spek, Anton Smeenk, and Jan Tip



**FAIRFOOD**

<https://fairfood.nl/blockchain/>





Thank you

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