

# Blockchain solution for Traceability and Sustainability in the cotton value chain



Sub-Group 4 – Capacity Building  
Conducts Pilots, Training and Awareness raising for traceability and transparency of sustainable value chains

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25 | 03 | 2020, Virtual meeting #4 Sub-group 4



**UN / CEFAC**

## Agenda - Virtual Meeting 25.03.2020

### 1. Information concept

- Business and Technical Requirements in the ToRs
- Value Chain and Data Model
- User Stories , Mockup and Look like (depending on time constraints)

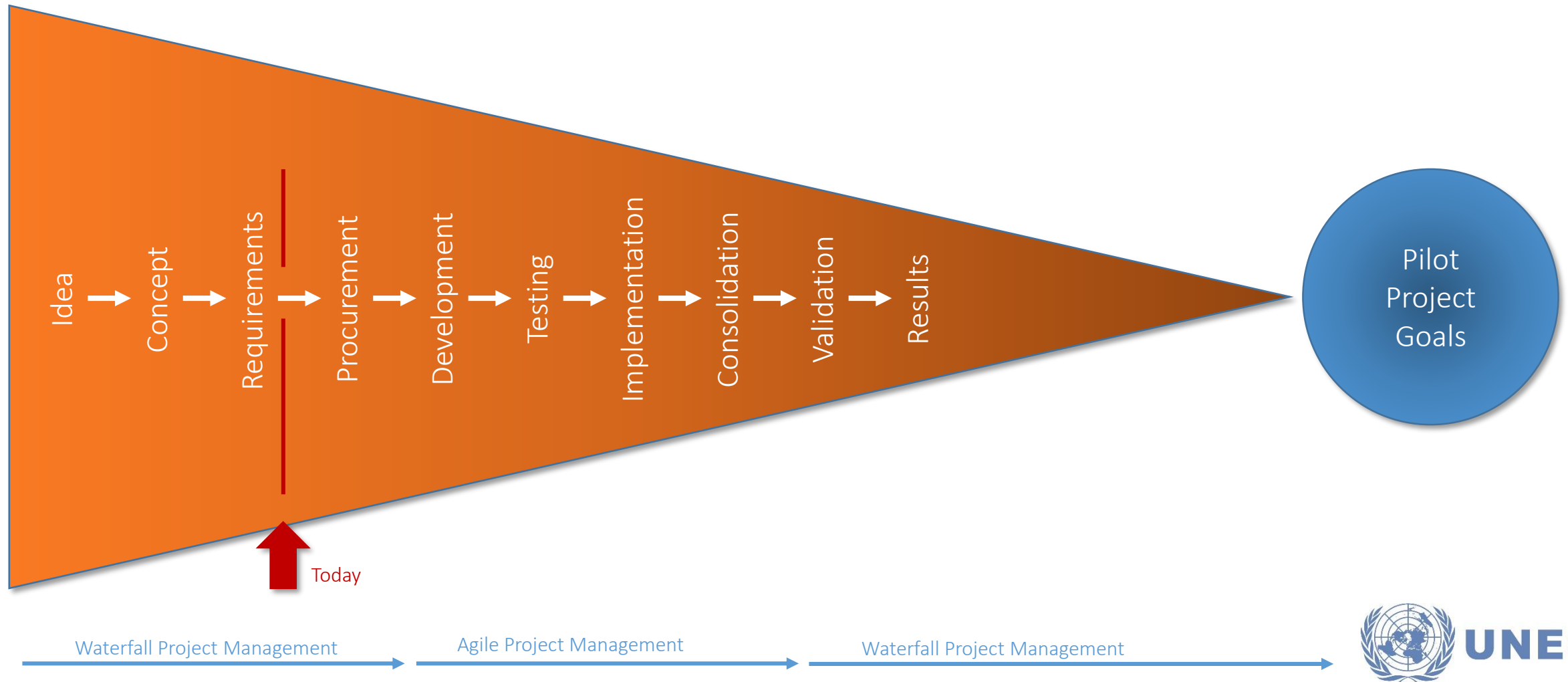
### 2. Detailed project plan

- Scope and Targets
- Stakeholders
- Organization and Timeline
- Work-breakdown Structure and Responsibility Assignment Matrix

### 3. Next Steps

Pilot #1 - Implementing a blockchain technology for traceability and due diligence in the cotton value chain in support of a circular economy

## Project Execution Approach: progressive definition of needs and goals achievement



## Business and Technical Requirements in the ToRs

### 1.7 Requirements

- |                             |  |
|-----------------------------|--|
| 1.7.1 Business Concept      | → Value Chain and Data Model               |
| 1.7.2 Technological Partner | → Categories                               |
| 1.7.3 Blockchain Solution   | → List of general requirements             |
| 1.7.4 IT Security           | → Cloud and Data Security                  |
| 1.7.5 Core Elements         | → Partners, B2B transactions, Traceability |



GO THROUGH  
ToRS  
DOCUMENT

## Business and Technical Requirements in the ToRs

### 1.8 List of Deliverables

Deliverable	Due date
M1 - IT Security (on Premise and Cloud)	01.07.20 – 31
M2 - Software and linked licenses (if any)	01.07.20 - 31
M3 - Infrastructure	01.07.20
D1 - Review of business concept (Health Check)	15.07
D2 - Technical concept description (User Stories, as per Agile approach)	31
D3 - Implementation (software and infrastructure)	
D4 – Testing with users (UAT)	
D5 - Go Live and Hypercare	
D6 - Operational IT Support for daily business	
D7 – Training and Tech Docs (train the trainer Learning Provider)	
D8 – Maintenance	
D9 - Optional (not explicitly mentioned, necessary to include)	



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## The Cotton value Chain “User Stories”

**User stories:** explain the process in a lean way by giving clear input to the development phase and supporting a faster implementation and checking during the validation period

**Who:** piloting partners (working group) will be asked to define the user stories at operational level

### EXAMPLE

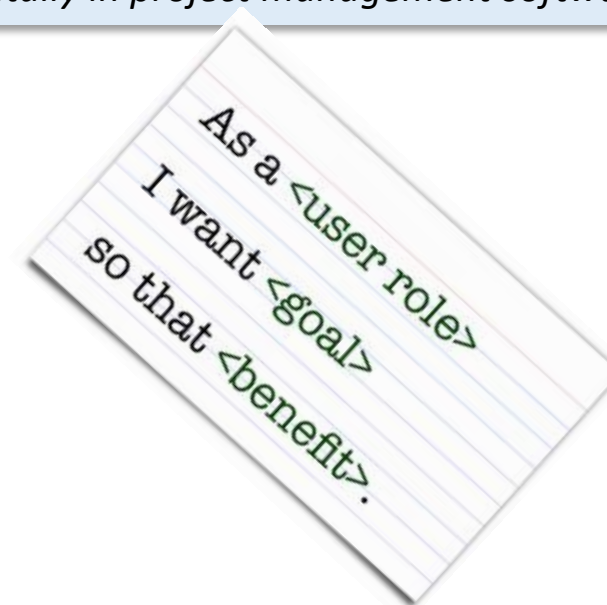
As a < **Fabric Producer** >

I want < **to identify the certified origin of the fibres to make a disclosure communication to my clients** >

So that < **they can make public disclosure of the supply chain and increase brand trustworthiness** >

### WHY USER STORY

*In software development and product management, a **user story** is an informal, natural language description of one or more features of a software system. User stories are often written from the perspective of an end user or user of a system. They are often recorded on index cards, on Post-it notes, or digitally in project management software*



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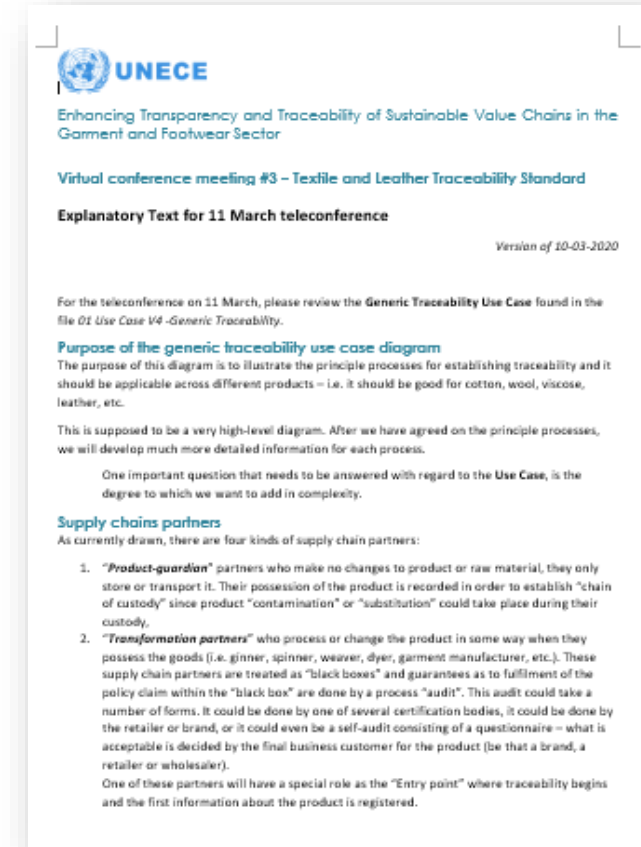
## The Value Chain and Data Model from Sub-Group 2 & 3 (Textile & Leather) - status

### Done ✓

- Discussion on the principle processes for traceability and level of complexity to achieve
- Presentation of the Business Process Analysis Activity
- Presentation of the Generic Traceability Use Case Diagram

### Work in Progress

- A high-level generic approach for traceability to identify common data model for traceability and transparency throughout the SC
- + Looking at the linkage between the products & sustainability criteria
- A detailed supply chain analysis for individual product types starting with (organic) cotton



**Explanatory note** Business  
Process Analysis Activity and the  
Generic Traceability Model

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Sole focus: Traceability and proof of source	Assess the impact on bureaucracy reduction
Smart Contracts and off-chain systems	<b>Cost-benefit analysis</b> of traceability via blockchain
Development of open source UI interfaces	Viability of the deployment of traceability technology
<b>Ethereum Virtual Machine</b>	Inclusion of a training concept for the assigned staff to work with the technology
Include intermediaries e.g. the logistics	<b>Essential supply-chain, with a wide enough sample to draw viable conclusions</b>
Track the product at the entry point or exit point of these steps	Narrow down the scope as much as possible
Trace the basic steps of the process	<b>The important thing is that we start tracking something and we can add more stages as the pilot progresses</b>

**Cotton field to Brands/Retailers**

**Key actors**  
from farmers/cooperative, through suppliers, producers, brands/retailers and as well auditing and certification bodies

**B2B Transactions**  
Compliance claims via Certifications

**Blockchain characteristics**  
Hybrid solution, open-source technology allowing permissioned but does not exclude permissionless in a later stage



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### OUT OF SCOPE

- Financial transactions Trade finance and other financial matters
- Advanced and detailed steps of the supply chain process
- Processing activities e.g. consumption, disposal and post-consumption
- Customs processes and regulations from different countries
- Proprietary Software

### EXPERTS HIGHLIGHTS

- Focus on traceability
- Granularity of traceability
- Certification uploading
- Sustainable production and sustainable processing
- Certification layer and traceability layer

- Products' characteristics for fiber integrity and traceability
- Circular economy: consumer simulation
  - Performance parameters definition
- Scalable and flexible solution (i.e. mass markets)


### REQUIREMENTS FOR SUCCESS

*(Pilot project document)*

1. Limited complexity
2. Defined expert core team
3. Short and clear communication
4. Agile development
5. Building on an what exists
6. Open-source

### TARGETS / KPIs DEFINED BY THE EXPERTS

1. End-to-end traceability of a Cotton Value Chain and prove full transparency according with OECD Due Diligence principle
2. Scalability of the pilot to the Textile sector and any sustainability claim
3. Multi-claim solution (social, health, security, environment, animal welfare)
4. Alignment of piloting partners
5. Single focused pilot
6. Technology effectiveness and reliability
7. Good understanding of the modelling on a blockchain
8. Test scenarios and hypotheses roll out
9. Good understanding of on-the-ground operating environments
10. Data collection points clearly identified



Next Step:  
Quantitative  
identification of  
some KPIs

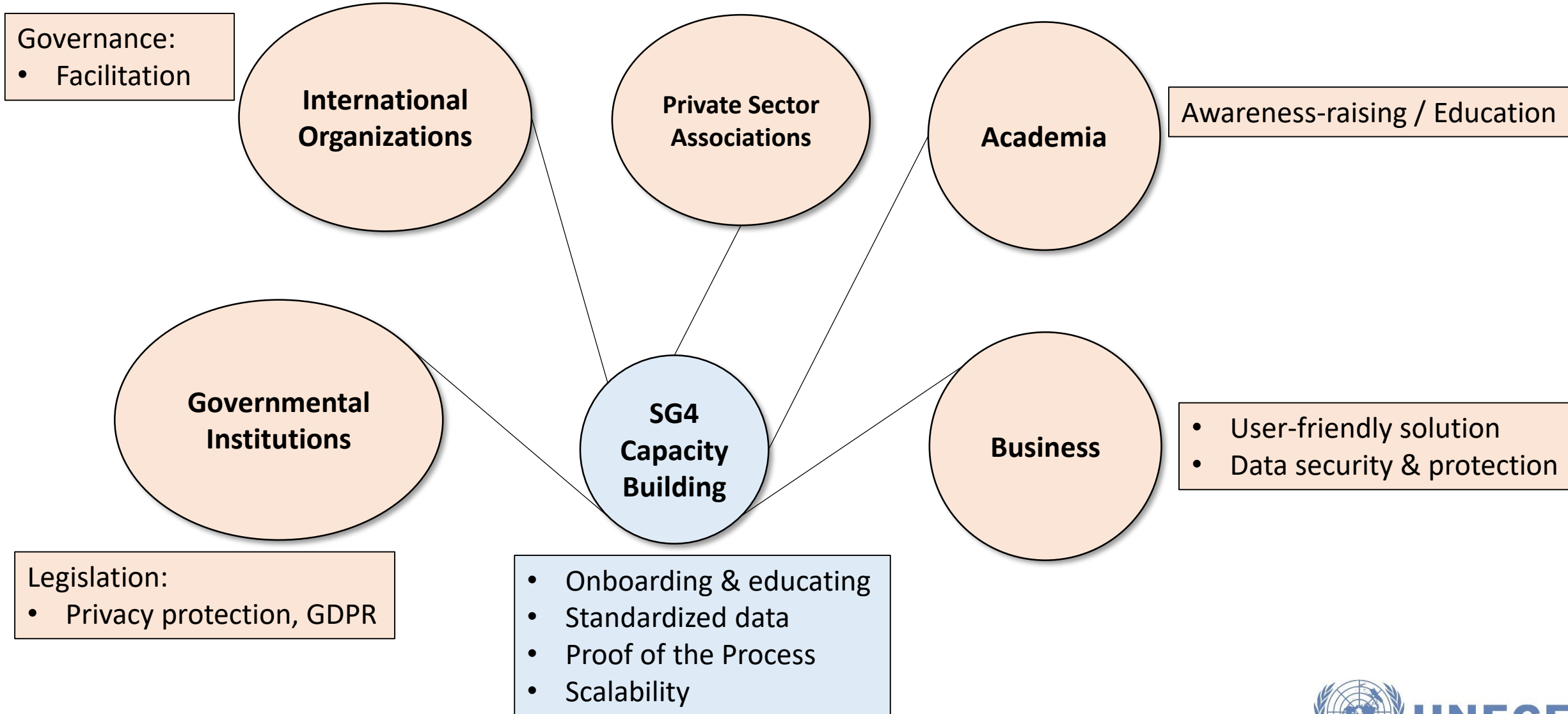
### + SELECTION OF HYPOTHESES (USER STORIES) TO BE TESTED

In addition to above KPIs, a selection of hypotheses (User Stories) to be tested at the operational level, f.i.:

- **H1** The solution identifies incorrect sustainability claims
- **H2** The solution provides high visibility to all supply chain stakeholders with the traceability system developed
- **H3** The solution enables easy access and participation
- **H4** The solution can be operated by value chain actors without relying on external assistance
- **H5** The solution reduces administration processing time
- **H6** The origin of goods can be tracked across all tiers and end-to-end process definition
- **H7** Volume reconciliation is achievable from the farm to gin segment and to later segments
- **H8** Users will gain knowledge about the different permission steps to be used in a permissioned blockchain

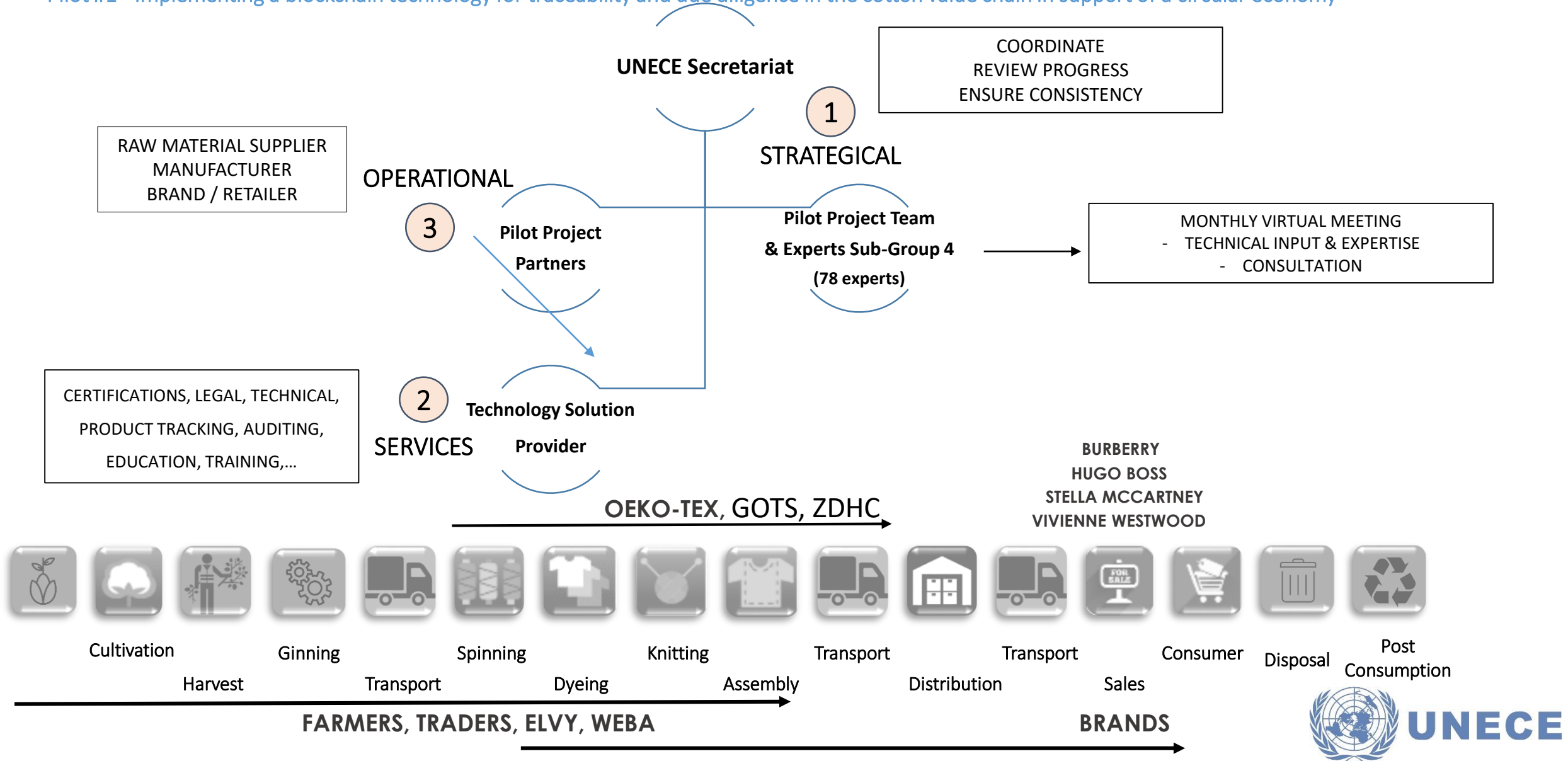
## 2. Detailed Project Plan: Stakeholders: Roles & Expectations

Pilot #1 - Implementing a blockchain technology for traceability and due diligence in the cotton value chain in support of a circular economy

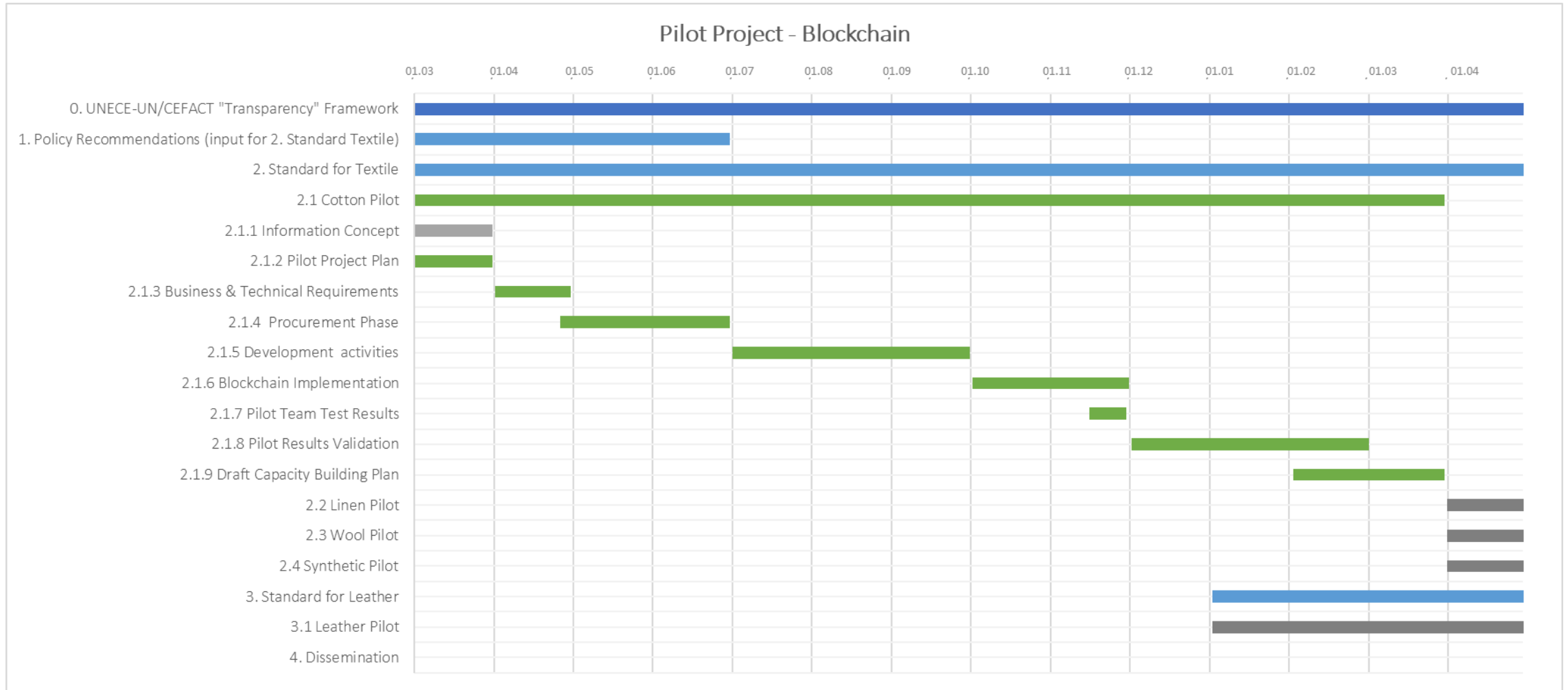


## 2. Detailed Project Plan: Organization

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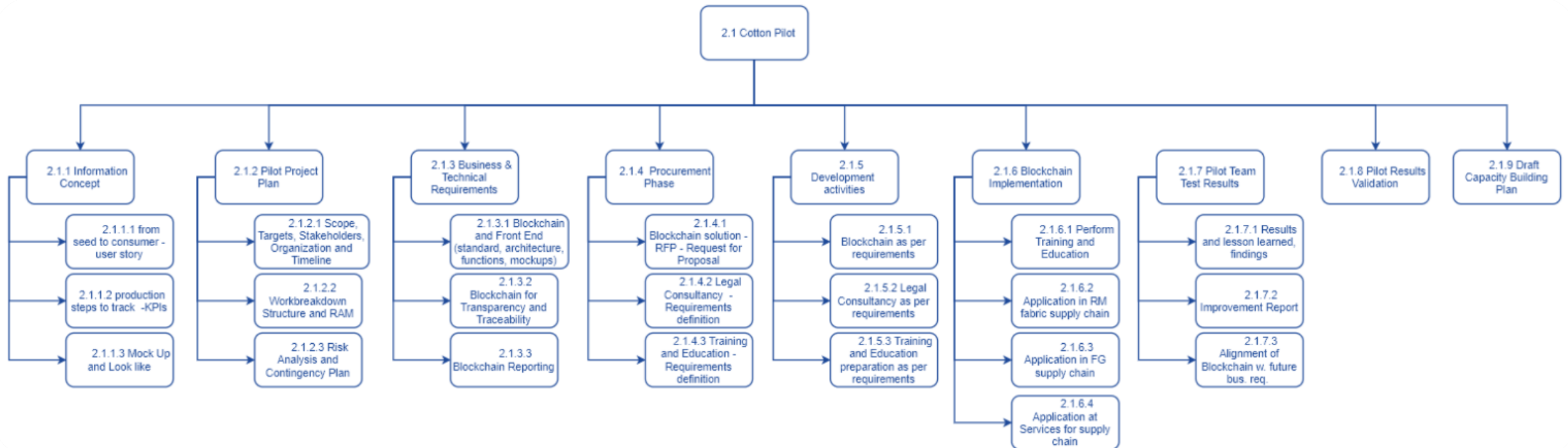
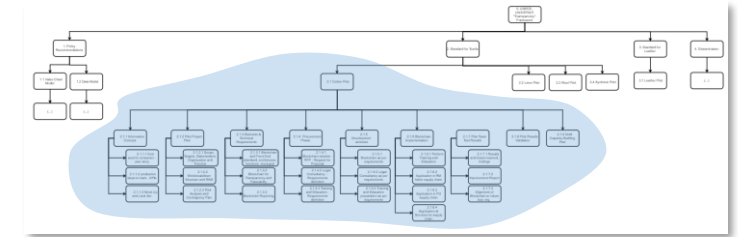


### Pilot #1 - Implementing a blockchain technology for traceability and due diligence in the cotton value chain in support of a circular economy



# 2. Detailed Project Plan: Work-breakdown Structure

Pilot #1 - Implementing a blockchain technology for traceability and due diligence in the cotton value chain in support of a circular economy



## 2. Detailed Project Plan: Work-breakdown Structure and Responsibility Assignment Matrix

Pilot #1 - Implementing a blockchain technology for traceability and due diligence in the cotton value chain in support of a circular economy

Pilot Project - Blockchain	Start Date	End Date	Duration	Responsible
<b>0. UNECE-UN/CEFACT "Transparency" Framework</b>	01/01/2019	31/12/2021	1095	UNECE SECRETARIAT
<b>1. Policy Recommendations (input for 2. Standard Textile)</b>	02/01/2019	30/06/2020	545	SUBGROUP 1
<b>2. Standard for Textile</b>	01/07/2019	31/12/2021	914	SUBGROUP 4
2.1 Cotton Pilot	01/03/2020	31/03/2021	395	SUBGROUP 4
2.1.1 Information Concept	01/03/2020	31/03/2020	30	WORKING GROUP
2.1.2 Pilot Project Plan	01/03/2020	31/03/2020	30	UNECE SECRETARIAT; EXPERTS
2.1.3 Business & Technical Requirements	01/04/2020	30/04/2020	29	MIXED
2.1.4 Procurement Phase	26/04/2020	30/06/2020	65	UNECE SECRETARIAT
2.1.5 Development activities	01/07/2020	30/09/2020	91	EXTERNAL PROVIDERS
2.1.6 Blockchain Implementation	01/10/2020	30/11/2020	60	MIXED
2.1.7 Pilot Team Test Results	15/11/2020	29/11/2020	14	WORKING GROUP; EXPERTS
2.1.8 Pilot Results Validation	01/12/2020	02/03/2021	91	EXPERTS
2.1.9 Draft Capacity Building Plan	01/02/2021	31/03/2021	58	EXPERTS
2.2 Linen Pilot	01/04/2021	31/12/2021	274	
2.3 Wool Pilot	01/04/2021	31/12/2021	274	
2.4 Synthetic Pilot	01/04/2021	31/12/2021	274	
<b>3. Standard for Leather</b>	01/01/2021	31/12/2021	364	
3.1 Leather Pilot	01/01/2021	31/12/2021	364	
<b>4. Dissemination</b>	01/10/2021	31/12/2021	91	



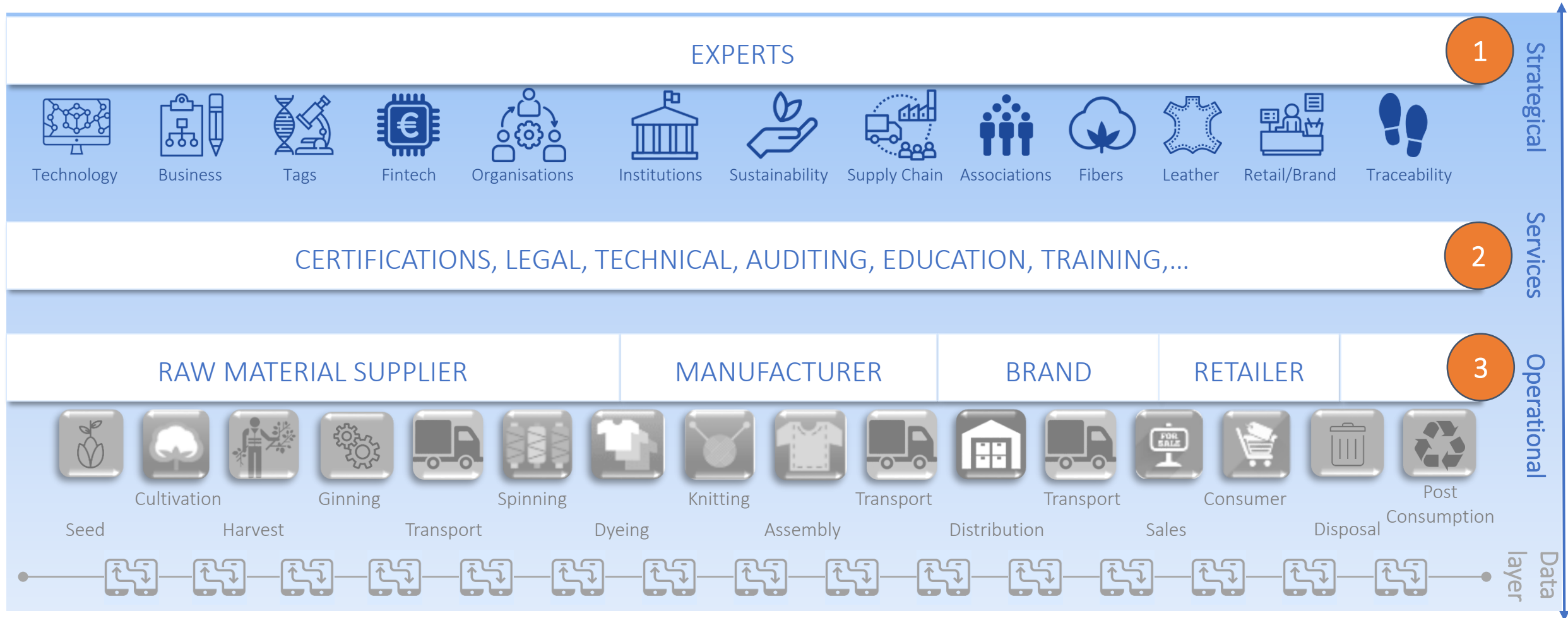
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<b>TENTATIVE TIMELINE: APRIL 2020</b>		
<b>08/04</b>	Consultation with operational partners: TORs feasibility along the value chain	<i>Teleconference</i>
<b>15/04</b>	Deadline for inputs Sub-Group 2: TORs feasibility along the value chain	<i>Via e-mail</i>
<b>22/04</b>	Final validation of the TORs with operational partners	<i>Teleconference</i>
<b>27-28/04</b>	<b>Virtual workshop</b> (in replacement of 35th UN/CEFACT Forum)	
<b>end April</b> (tbc)	Launch of the RFP	<i>Online</i>

## 2. Detailed Project Plan: Organization

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### Different Roles to contribute in the pilot project



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# Thank you for your kind contribution

For any follow up, please contact:

- Maria Teresa Pisani
- Olivia Chassot
- Heinz Zeller
- Andrea Redaelli