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# **ISO, IEC, ITU, UNECE WEBINAR ON E-BUSINESS AND BLOCKCHAIN**

## **UNECE Cotton Value Chain pilot**

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# Garment value chain challenges

## A huge sector

- 80 billion garment **pieces**
- 3 trillion € annual **revenue**
- 60 to 75 million people (majority women) with direct **jobs**

## Global, complex, and opaque value chains

- 85% of companies have limited visibility into their **supplier certifications** (Bain & Company, 2020)
- Only 34% of companies **track and trace** their value chain and majority of these only reaches tier 1 i.e. immediate suppliers only (UNECE, 2019)
- 90% of the cotton marked as Egyptian cotton is not produced in Egypt (Cotton Egyptian Association, 2016)

## Environment, social and health risks

- **CO2 emissions** from textile similar to automobile industry (Ellen MacArthur, 2020)
- 9/10 girls in garment factories earning less than a **living wage** (ILO, 2019)
- 20% of cotton traded comes from regions that exploit **forced labor** (Financial Times, 2020)
- 8% of **dermatological diseases** caused by chemicals in clothing (Tessile & Salute 2018)



More than £1bn wiped off Boohoo value as it investigates Leicester factory  
Workers allegedly paid less than minimum wage and not wearing masks to protect against Covid-19

## Consumers

- Increasingly **demand sustainable products** that respect workers' rights, the environment and that are safe especially in the EU - as shown by their purchasing patterns and consumer surveys

## Civil Society

- Increasing number and strength of **NGOs**, standards organizations, and industry platforms demanding transparency, traceability, and decent work, e.g. Clean Clothes Campaign, Fashion Revolution Transparency Index, etc.

## Businesses

- **Limit negative publicity** coming from accidents and non compliance
- Respond to consumer demand – “**Sustainable Brand**”
- Must **contain costs and increase efficiencies** to remain competitive in particular during current global economic downturn
- **Business sector initiatives** such as the Fashion Pact, Social and Labor Convergence Program, and the Initiative for Compliance and Sustainability, among others
- **Legal and compliance obligations** across multiple jurisdiction



# The UNECE Framework Initiative



**+250** project experts



**+33** consultation meetings  
**+2000** participants



**+780** experts in the wide network



**+190,000** companies represented



Blockchain pilots **+50 partners**  
(brands-manufacturers, IGOs, standard setters, academia/start-ups)



**+30** countries

## Toolbox – Timeframe 2019-2022



**01. Policy Dialogue Platform & Recommendation**

*Adopted in April 2021*



**02. Traceability Standard & Implementation Guidelines**

*Adopted in April 2021*



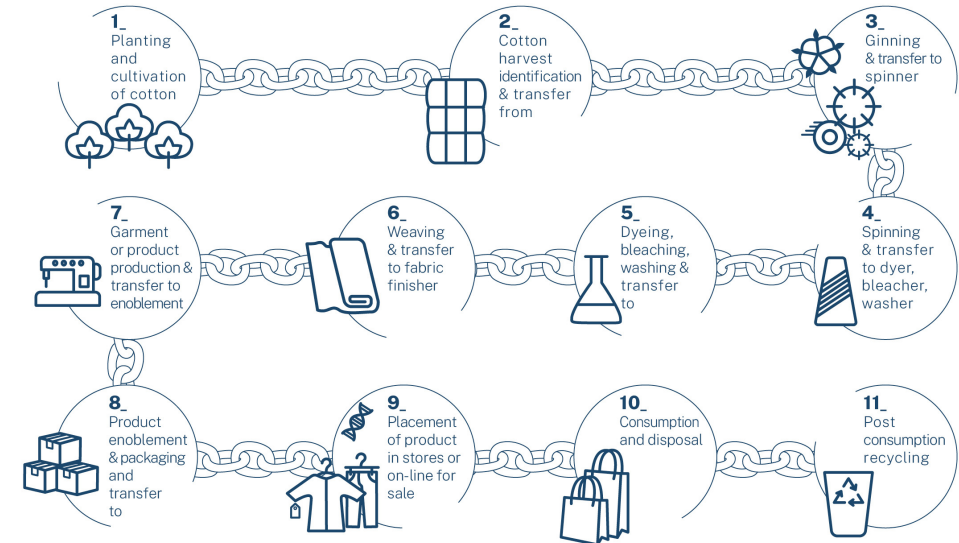
**03. Blockchain Pilots & Capacity Building**

*Ongoing*



**04. Call to Action & Sustainability Pledge**

*Ongoing*



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# From Sept. 2019 to Sept. 2021

# Toolbox

## Policy



- Policy Recommendation No.46
- Call to Action
- Policy Brief – The blockchain technology for due diligence and sustainability in cotton VCs

## Standard



- Business Process Analysis for Leather & Textile
- Business Requirements Specification, Processes, Part I. Use cases, Part II

## Guidelines and Studies



- Mapping of policies, regulations and guidelines
- Mapping of Sector Ecosystem



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# Blockchain Pilots

Harnessing the potential of blockchain technology for sustainability and due diligence in cotton value chains

## Cotton Pilot

- 3 cotton cooperatives/farms
- 14 manufacturers/suppliers
- 2 brands
- 4 standard-setting bodies
- 2 academia-think tanks
- 1 DNA solution provider
- 2 IOs
- 1 Int. Finance institution

## Leather Pilot

- 2 farmers/traders
- 3 manufacturers
- 3 brands
- 2 certification bodies
- 5 industry associations
- 1 NGO
- 1 IO
- 1 chemical company

UNECE Traceability & Transparency Blockchain pilot



**Username:**

**Password:**  ☐ Show password

Login

## UNECE Pilot Leadership



<60 pilot partners  
End-to-end VC traceability



15 countries in  
Africa, Asia, Europe,  
North and South America

# Traceability and Transparency concept



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## TRACEABILITY LAYER

MATERIAL/PRODUCT VALUE CHAIN



TRACEABILITY  
MADE BY  
“ORIGIN”

Evidence: **Business Transactions (Ownership)** documents (e.g. Invoice, Shipping List, etc.)

SUPPORTED BY  
“SUSTAINABILITY  
CLAIMS”

Evidence: **Claims Standard Certificates** (e.g. Material Content, Chemicals, Environment, Social, etc.)

## TRANSPARENCY LAYER

BUSINESS VALUE CHAIN



TRANSPARENCY  
MADE BY  
“VALUE CHAIN  
PARTNER”  
IDENTIFICATION

Evidence: **Business Transaction** documents (e.g. Contract, Invoice, etc.)



# Cotton Value Chain: Supply Chain steps in-scope

Phases tracked and traced with supporting documentary evidence

Recycled  
Denim  
Jeans



Organic  
Cotton  
Shirt



# Selection of products and claims to be tested

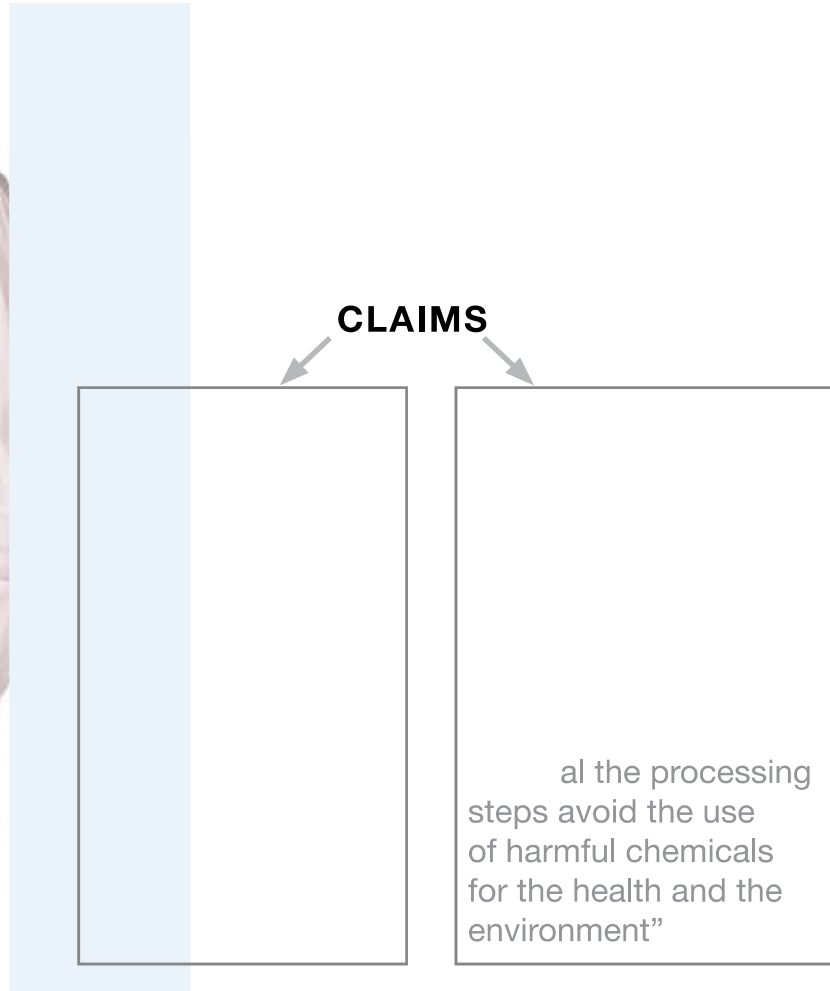


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# Selection of products and claims to be tested





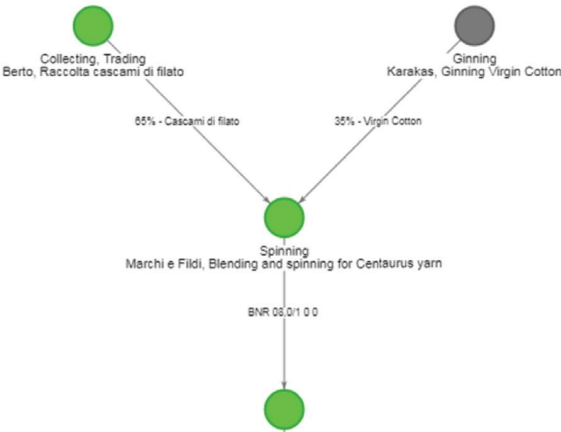
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# Use case – Chemical compliance

## CASE 1: RECYCLED DENIM – CLAIM USE OF CHEMICALS

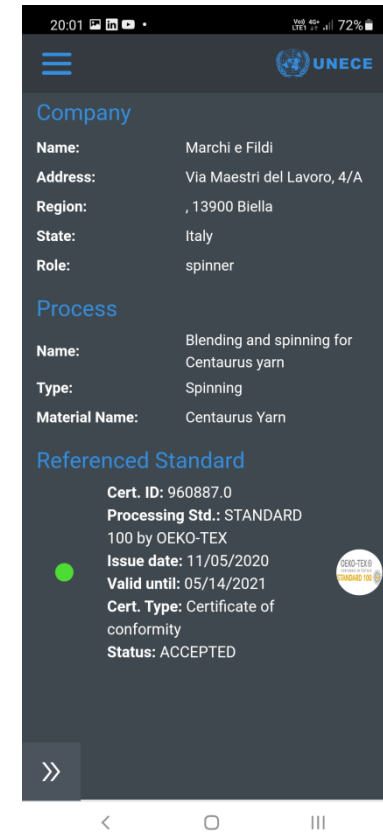
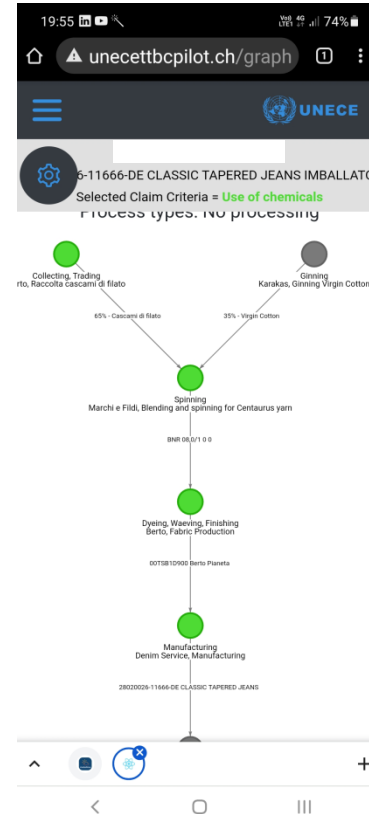
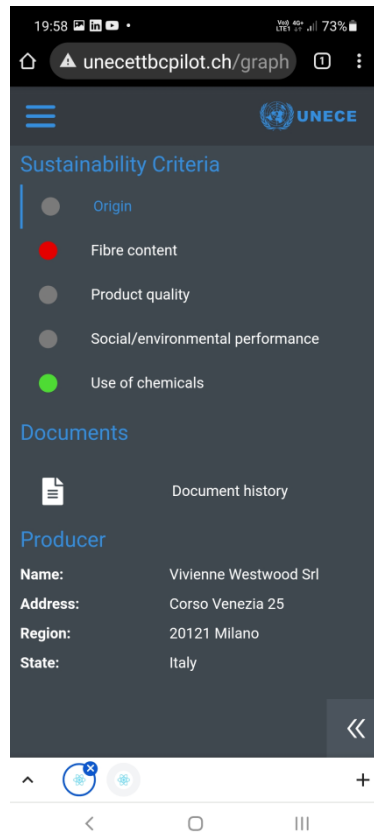
o-TEX Scope Certificate



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# Trustworthy data, confirmed evidences (green)

- For every claim, company's "nodes" of the supply chain indicates per sustainability criteria, a colour.
- When earlier claimed referenced standard(s) are not supported by certificate(s), the node will be displayed in red.
- When claimed referenced standard(s) is made evident by an issued certificates, the node will be displayed in green.





# Data collection and Blockchain Platform

## TT Matrix

	Who	Business Step	1. Planning and submission of claims	2. Claims assessment, identification & transfer from business to system	3. Mining & transaction to platform
General information applicable to all claims	Who	Value Chain Partner			
	Who	Business Role			
	Who	From (Seller Consignor)			
	Who	To (Buyer Consignee)			
DNA MARKER	Who	Business Location			
	Who	Material/Product Name			
Origin	Who	Material/Product ID			
	Who	Material/Product Link			
Composition	Who	Order Marker ID			
	Who	Application Fee			
	Who	Event Date and Time			
	Who	Validation Criteria			
	Who	Accountant type			
	Who	Provenance Standard			
	Who	Event Date and Time			
	Who	Validation Criteria			
	Who	Provenance Standard			
	Who	Event Date and Time			
	Who	Validation Criteria			
	Who	Accountant type			
	Who	Provenance Standard			
	Who	Event Date and Time			

## User Manual & Training



## TT Blockchain Platform

### New Traceability Events

Contract

Order

Shipment

Transformation

### New Certification/Verification

Company/Scope Certification

Transaction Certification

Material/DNA Certification

Self Assessment

## Traceability & Transparency

1

## Transactions

Contract – Order - Shipment

Confirmed by business partner

2

## Transformations

Input and Output Material

Disclosure levels

3

## Certifications/Assessments

Company/scope, transaction, DNA marker test

Self Certificate

Assessment Report

DNA application

Confirmed by certification body or verified by 2nd party



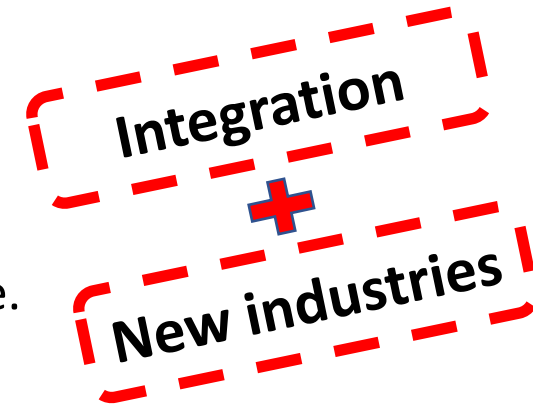


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# Next steps

- 1. API:**  
From a manual data entry to API programmatically integration.
- 2. Automated verification:**  
Certificates by third parties (certification bodies).
- 3. New industries:**  
From the **cotton industry** to leather, synthetic, wool & cashmere and cellulose.
- 4. Alignments:**  
Possible new data and code requirements from new industries. This alignment includes the blockchain platform.
- 5. Codes & Identifiers:**  
From draft to final, integration of the ITC (International Trade Center, sustainability standards/categories/criteria).
- 6. Production:**  
From a test blockchain environment to a productive and effective blockchain (costs).
  - Private chain = infrastructure costs (who pays ?)
  - Public chain = transaction costs (who pays ?)
- 7. Implementation:**  
guidelines and training material especially on API integration.



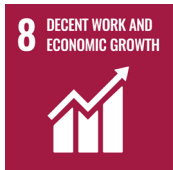
# Concluding remarks

## Enhancing Traceability and Transparency of Sustainable Value Chains in the Garment and Footwear Industry



THE  
SUSTAINABILITY  
PLEDGE

TRACK IT, TRACE IT, WEAR IT!



**Policy coherence**  
**Wide industry engagement**

**A standardised approach** for an  
interoperable international  
standard

+ Reliable product information  
+ Increased **accountability**  
+ **Risk-management**  
+ Responsible consumption and  
production

**Technology** (e.g. Blockchain)  
solutions facilitating **market access**  
for MSMEs and vulnerable groups



#TheSustainabilityPledge



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