Interreg
North-West Europe

Co-funded by
the European Union

ECHT

1. Background

The Green Deal transition towards a climate-neutral, resource-preserving and non-toxic Circular Economy (CE) creates new challenges for businesses. The EU Textiles Strategy aims to tackle the high waste generation and the low recycling rates and negative environmental and social impacts throughout the whole life-cycle. Textile apparel will become one of the first product group subjected to Sustainable Product Policies (Ecodesign incl. Digital Product Passport). These policies imply value chain actors having access to detailed product information incl. material compositions: Trustworthy traceability of chemicals along supply chains is one central enabler for a non-toxic, resource-efficient and climate neutral Circular Economy. Knowledge of material composition allows (eco-)design, informed procurement and purchasing decisions, improved recycling processes, thus minimise risks for health and environment from chemicals during the use phase and after the end of life. Volatility, complexity and established supply chain structures, however, make it difficult for companies to work together and trace the chemicals in their products.

ECHT aims to help the industry establish chemicals traceability for a circular economy by enabling the digital product passport.

ECHT develops and implements the first traceability strategy with 3 action plans for actors of textile (1) apparel and (2) flooring value chains as well as for (3) policymakers at different levels. The action plans will draw from the learnings of innovative training schemes (capacity building). Results from the trainings and the insights gained in developing, testing and disseminating practical solutions are upscaled into a Knowledge Platform to support SME´s of the textile and other sectors ˝beyond pure compliance˝ towards innovative business models.
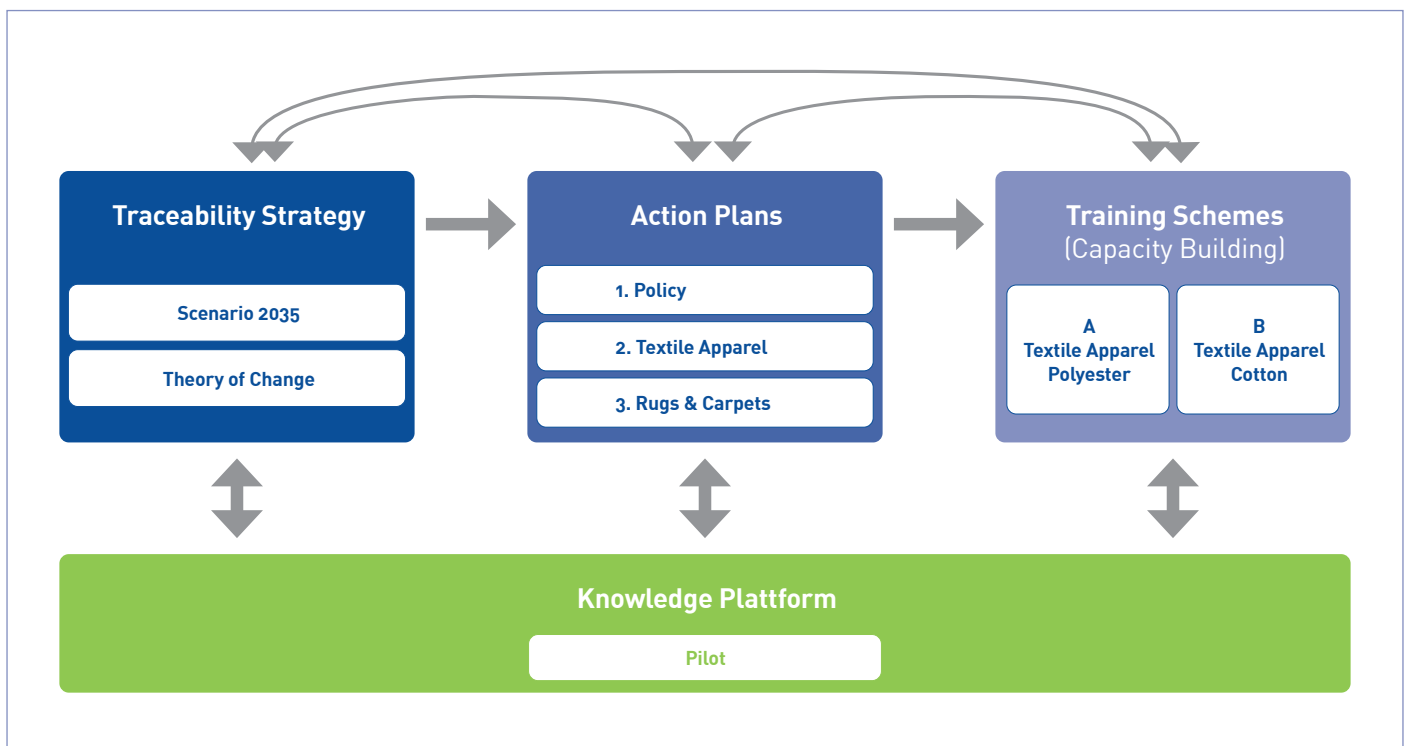

Traceability Strategy
- Scenario 2035
- Theory of Change

Action Plans
- 1. Policy
- 2. Textile Apparel
- 3. Rugs & Carpets

Training Schemes (Capacity Building)
- A Textile Apparel Polyester
- B Textile Apparel Cotton

Knowledge Plattform
- Pilot

Fig. 1) Overall concept of the project ECHT

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2. Scenario technique by Geschka as an instrument to develop the traceability strategy

To develop a traceability strategy a clear vision on the preferred future state and the corresponding influencing factors is necessary. The apparel ecosystem shows a great variety of components, hampering a clear understanding what influencing factors create impact, form short-term to long-term, and which actors along the value chains need to provide which behavioural (change) contributions in this respect. However, a future picture of the influencing factors must be coherent and free of contradictions. For this reason, the ECHT project uses Geschka's „scenario technique" as a methodological basis. The aim of the scenario process is to find a common understanding of the challenges and to develop solution strategies and concrete action steps.
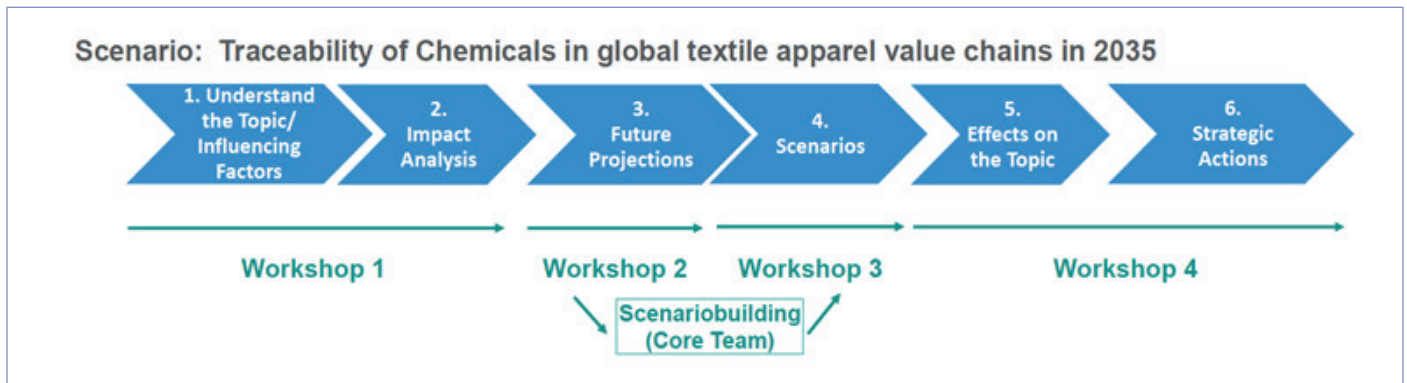

Fig. 2) Process for strategy development in the project ECHT

The starting point is the joint definition of a topic and the associated development of a common understanding of the problem. To this end, Darmstadt University of Applied Sciences organised a kick-off workshop in which interested participants from the apparel supply chain and related areas first defined the thematic and temporal boundaries of the system and analysed influencing factors with regard to the traceability of chemicals in apparel. The insights gained from these analyses form the basis for the further work in the scenario process.

THIS DOCUMENT DESCRIBES THE PROCEEDINGS AND RESULTS OF THE FIRST WORKSHOP AND THE SCENARIO PROCESS PART I

3. Proceedings and results of the first workshop

Workshop Specific
Date: 18.03.2024
Time: 9:00 – 16:30 h
Location: Frankfurt Airport Conference Center
Organiser: Darmstadt University of Applied Sciences

14 representatives of the textile value chains and related stakeholders from 10 organisations and 7 countries as well as 5 members of the university team took part in this full day workshop. After an initial welcoming phase in which the participants got to know each other and an overall introduction to the project itself, the organising team gave three inputs: Prof. Martin Führ illustrated the regulatory framework relevant to the subject at hand. Based on this, Rebecca Niebler outlined the actual problem impuls from a socioecological and global perspective. Finally, elaborating on ways to tackle this wicked problem, Martina Schwarz-Geschka explained the scenario technique and the reasoning behind this approach.

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3.1. Defining the system

In order to establish a conceptual basis upon which the project ECHT can become effective, the specific system in question as well as key terminology needed to be defined to avoid misunderstanding and allow for focused actions.

The university team prepared an initial draft of such a definition, which was then discussed and elaborated in the plenum. Eventually the following definitions shall serve as the cornerstones of this project:

RESULT:

Traceability of Chemicals in global textile apparel value chains as prerequisite for a non-toxic, resource-preserving, climate-neutral circular economy in 2035

Which textile value chains are we talking about?	What is chemicals traceability?	Ability
„Textiles" relevant for this project are cotton and polyester apparel (e.g. shirts, trousers).	"Traceability" in this context means the possibility to trace back which chemicals are present in which component of an article (or were also used in the process).	„Ability" (to trace) in the context of this project refers to knowledge and capacity regarding how to set up structures, processes and implement technologies to trace chemicals. It does not comprise specific tools or technologies themselves.
Value chains describe as many steps as possible from virgin material to consumer and beyond (e.g. repair, reuse, recycling).	In its most comprehensive form, traceability describes the concept of passing on information on material composition down to substances level throughout the entire value chain as full material declaration.	

Table 1) Scope and system definition in the project ECHT

The following illustration, which is based on the discussions during the workshop and previous work done by the organising university team, outlines the system and relevant steps in the value chains.
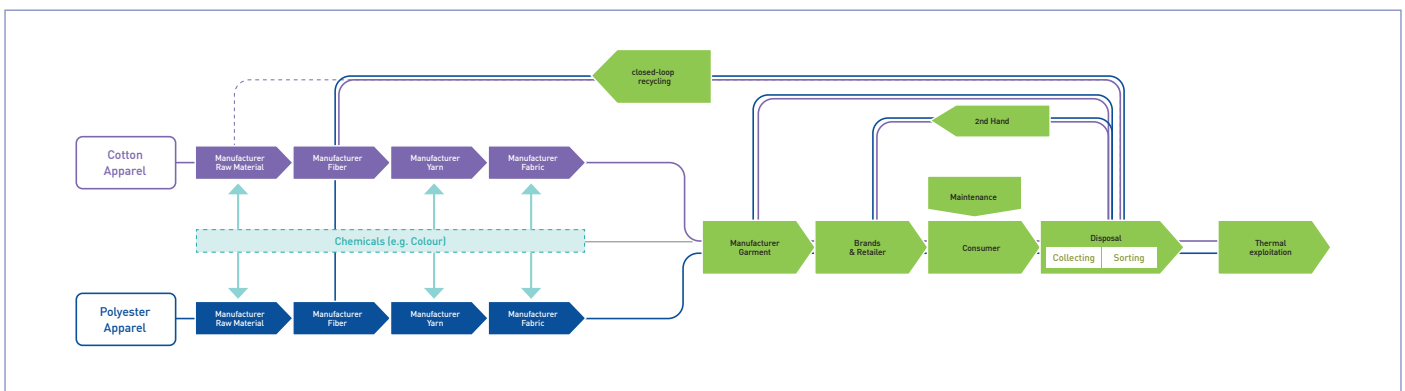

Fig. 3) ECHT System-Map (for high resolution figure, see Appedix 1)

3.2. Influencing Factors

In line with the scenario technique developed by Geschka, participants then identified relevant factors that influence the system as defined above. These first ideas were collected and discussed in the plenum and led to 16 influencing factors (see Appendix 2). In a subsequent work phase the participants described these influencing factors in more detail to facilitate later discussion and a shared understanding.

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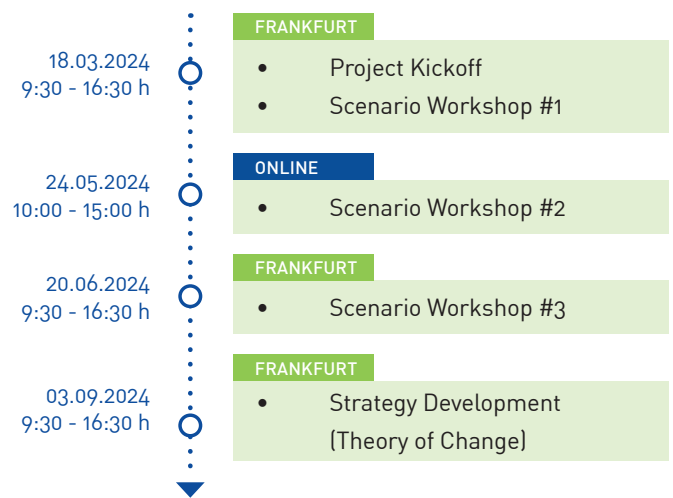
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3.3. Impact Analysis

As a last step of this process, a two-dimensional matrix was developed to indicate the strengths of influence of each factor towards another. In a voting process participants rated every possible combination of two influencing factors from 0 (=no influence) up to 3 (=very high influence) in both directions (influencing factor A on B and vice versa). This strength of influence could be both negative (increasing/fostering the factor it was influencing) or positive (decreasing/hindering the factor it was influencing). This process includes in times extensive discussion, since individual perspectives and knowledge need to be considered and reflected. During the workshop itself, only 12 of these impact-relationships could be rated due to time constrains. The participants will complete the rest of them individually asynchronously using the Excel filed attached to this report. Further interested stakeholders are invited to engage in this exercise as well.

4. Timeline and dates

To complete the scenario process, the university will conduct two workshops in Mai and June which will be followed-up by a fourth workshop that aims at developing a specific strategy (Theory of Change) that shall guide the way towards the scenario developed. Parallely, a number of other processes will take place in line with the overall project plan.

18.03.2024
9:30 - 16:30 h

FRANKFURT
- Project Kickoff
- Scenario Workshop #1

24.05.2024
10:00 - 15:00 h

ONLINE
- Scenario Workshop #2

20.06.2024
9:30 - 16:30 h

FRANKFURT
- Scenario Workshop #3

03.09.2024
9:30 - 16:30 h

FRANKFURT
- Strategy Development (Theory of Change)

5. Tasks & Assignments

We kindly ask the entire consortium of ECHT, including those, who were not able to attend the workshop, to support this project by attending to the following tasks **until April 19th**:

a.) Review and comment this short report

Have a careful look at this short report and comment on aspects you consider worth noting or addressing (e.g. if you have another opinion or want to add something). We will then publish this report on our project website.

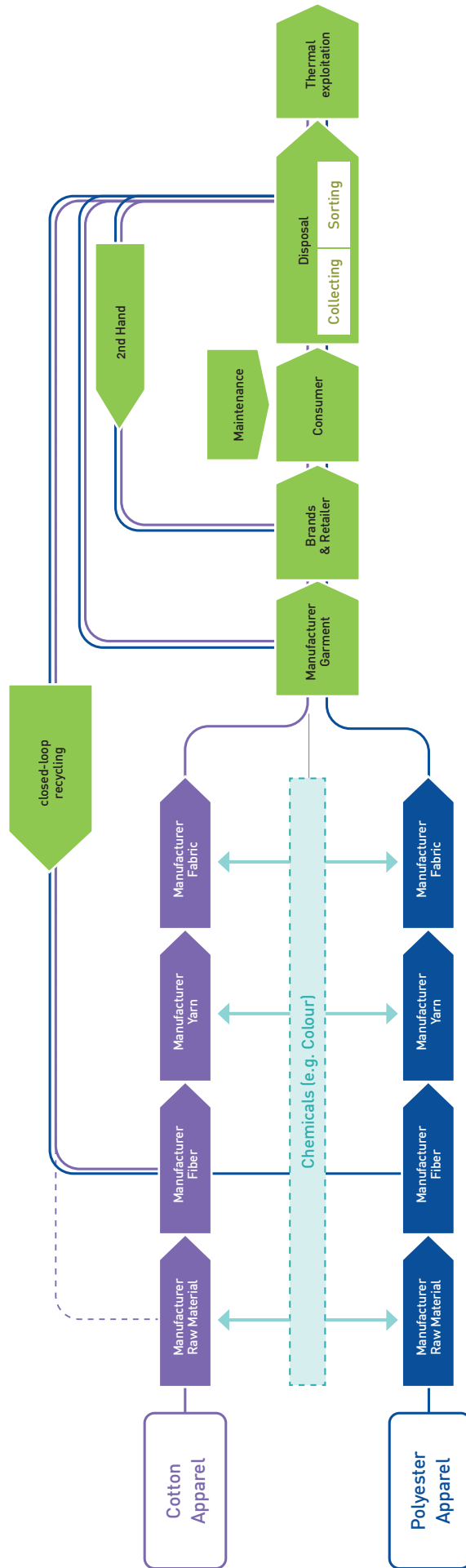Fig. 4) Impact Matrix

b.) Fill-out impact Matrix

Fill-out the Excel-Sheet as described above. Line by line the influencing factors in the vertical Y-axis have an influence on the ones on the horizontal X-axis. In the example given below, the "Regulatory Framework EU" has a very strong influence (3) on the "Degree of Standardisation". Feel free to discuss your ratings internally with your team.

For questions and remarks contact
▶ Jonas Rehn-Groenendijk | jonas.rehn@h-da.de
▶ Rebecca Niebler | rebecca.niebler@h-da.de

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Appendix 2 | Definition of Influencing Factors

No.	Name of influencing factor	Definition of influencing factor
1	**Regulatory framework EU for traceability of chemicals in textiles**	Describes the legal framework in the EU for the traceability of chemicals in textiles and includes laws, regulations and directives issued by government authorities. The regulations can affect the entire value chain.
2	**Regulatory framework global for traceability of chemicals in textiles**	Describes the global legal framework for the traceability of chemicals in textiles including laws, regulations and directives issued by government authorities and the degree of alignment with EU legislation. The regulations can affect the entire value chain.
3	**Standardisation on EU- and global level**	Describes the degree of standardisation of chemical traceability (on EU and global level), including information requirements and information formats.
4	**Enforcement pressure in the industry**	Describes the enforcement/realisation pressure by authorities onto the industry.
5	**Scientific Knowledge about chemical substances**	Describes the degree of scientific knowledge on chemical substances and the share of substances that can be assessed ("new" substances of concerns)
6	**Innovations in Detection methods**	Describes the development of new approaches to identifying specific chemical substances in a given material.
7	**Innovations in Traceability Technology**	Describes the development and successful dissemination of physical (e.g. scanners) and non-physical (software) elements of the technical infrastructure for sharing information along the entire value chains.
8	**Innovations textile technology**	Describes the development and successful dissemination of new approaches to the production of raw material, manufacturing and recycling processes (e.g. automated chemical detection) as well as product design (e.g. 3D printing)
9	**Consumer behaviour**	Describes consumers' understanding of chemical traceability and informed decision making according to circular economy standards (purchase, use and disposal)
10	**Critical public opinion**	Describes the extent to which public perception is critical regarding the management of chemical substances in the apparel industry. Critical public opinion is represented by the press, social media, NGOs, and consumers.
11	**Location factors (political, social, economical, ecological)**	Describes the political, social, cultural and ecological conditions and developments throughout the value chains and the related level of risk for the apparel sector.
12	**Mindset in the industry**	Describes the motivation of the industry to become active in terms of traceability as a sign of taking responsibility and acting accordingly.
13	**Traceability capacity in the supply chain**	Describes the level of knowledge, and availability of resources and manpower in the supply chain to collect, stock, manage, communicate, secure and complete the data about chemicals along the supply chain.
14	**Cooperation among peers on aspects of traceability**	Describes the intensity of cooperation between two or more (potential) competitors and if necessary a neutral party to reach a common ground to trace the chemicals in the apparel sector.
15	**Cooperation along value chain on aspects of traceability**	Describes the intensity of cooperation along the various value chain stakeholders (incl. the ability and willingness to be transparent and the perception of data protection aspects).
16	**Traceability related Business Models**	Describes to what extent new business models and value chain actors related to traceability of chemical substances are successfully introduced to the global market.

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