Activity Cycle

An Introduction

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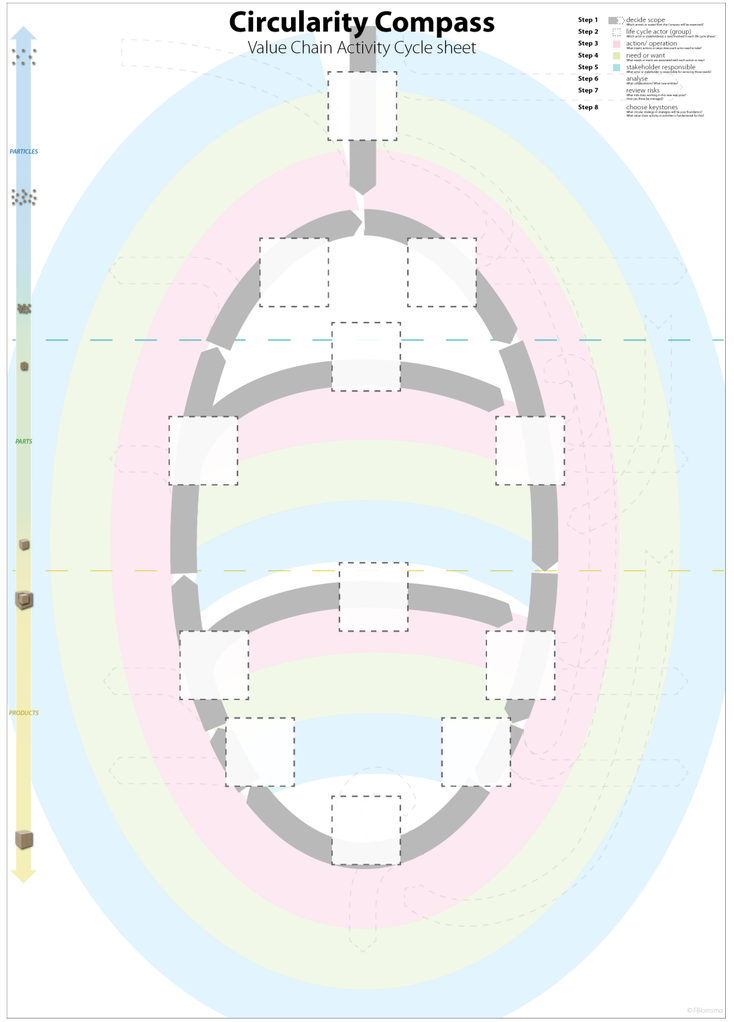
Activity Cycle | Purpose

- After having explored the potentials of circular solutions and decided for a strategy, the Activity Cycle is a tool to **explore what activities actually need to be done**.
- Also, the Activity Cycle helps you to unravel and master the complex task to **break down the strategies into activities along the value chain** and discover, whom you can or have to work with to get things done.
- The Activity Cycle allows us **to identify the new roles and responsibilities of different stakeholders**, that are operating in the new circular value chain.

Activity Cycle | Structure

- The Activity Cycle is based on the characteristics of the Circularity Compass and allows us to illustrate and work along the resource flow of a circular (product) system along its life cycle.
- The Activity Cycle also provides coloured space to capture details along the value chain regarding specific actions, regarding actors or stakeholders as well as their needs.



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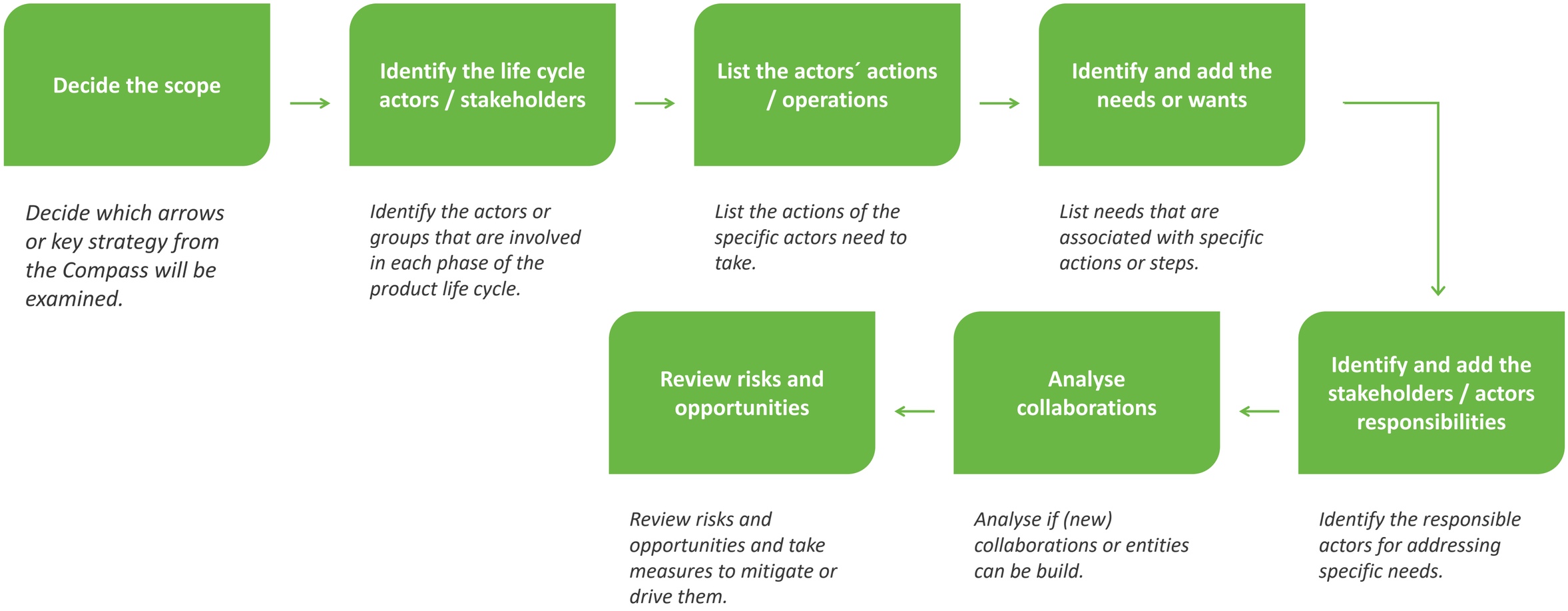
Activity Cycle | Step-by-step process



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Activity Cycle | Step-by-step process

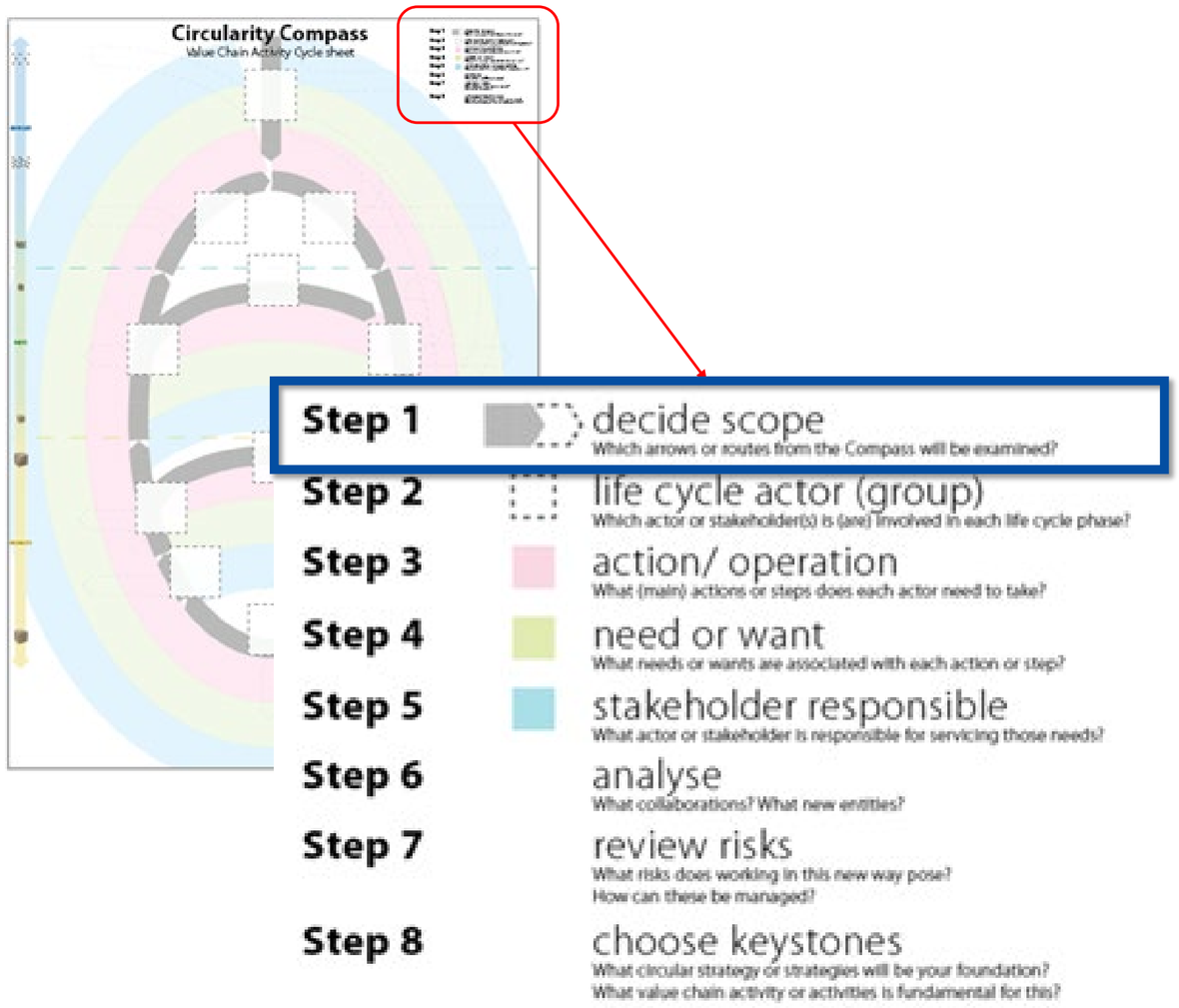
Step 1

Decide the scope (I)

Your circular solution very likely consists of a set of strategies (see Circular Strategy Scanner), to substitute a material, to set up a recycling flow and/or to set up a take-back system.

This is a complex task and the Activity Cycle helps you break down the task into real actions. However, it would be very messy if you tried to break down all the activities for all the strategies at once. The result might be that you barely touch upon the surface.

For example, ‘install a take back system‘ is not an activity you can act upon alone.



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Activity Cycle | Step-by-step process

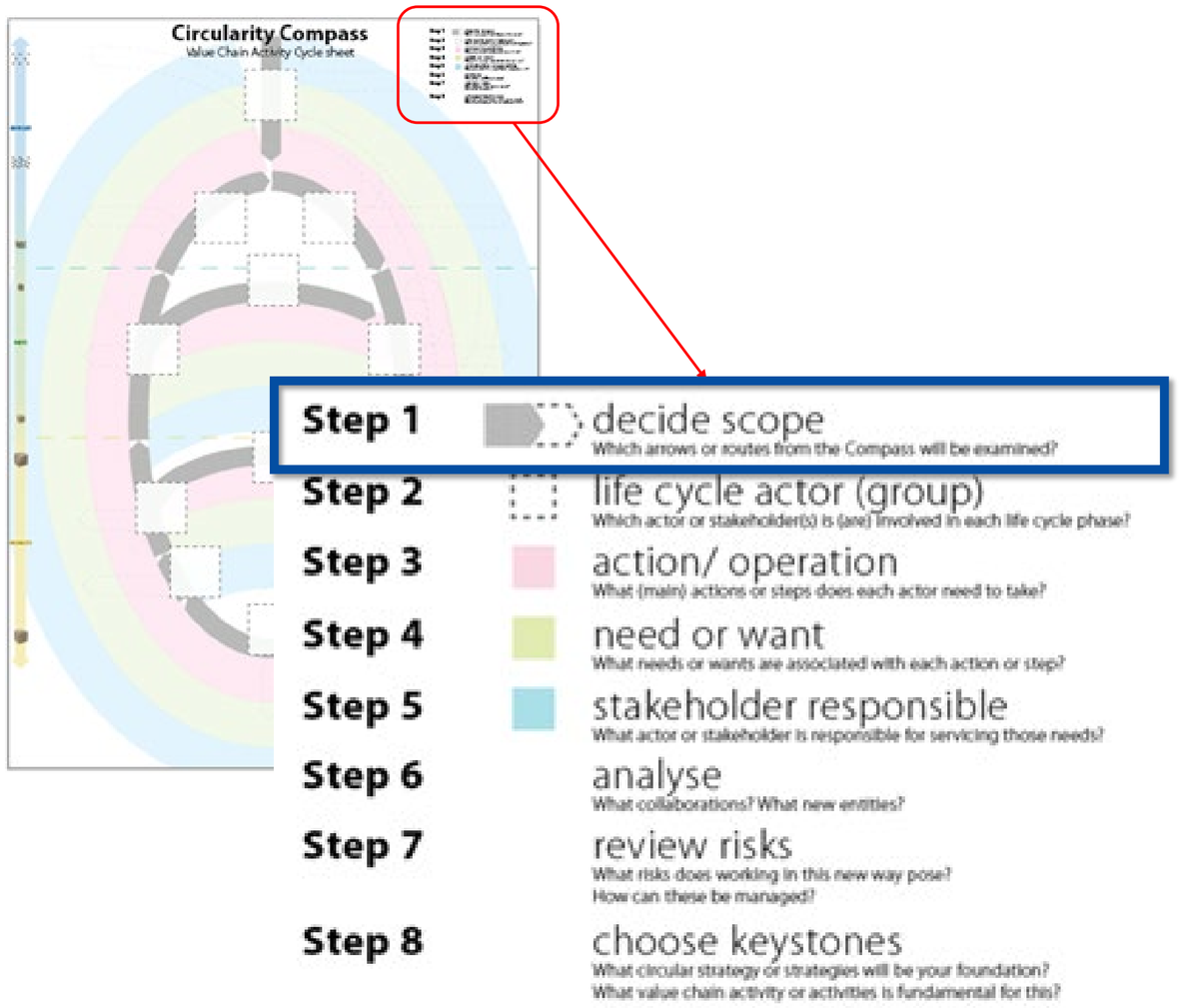
Step 1

Decide the scope (II)

Therefore, to use the Activity Cycle you first decide on the initial focus. Which strategy or which specific activity do you want to examine first?

You could for example start with what you consider the key activity of your strategy, which might be for example, ‘set up a take back system‘.

Now quickly and roughly draw the resource flow of this part of the solution on the arrows in the Circularity Compass in the Activity Cycle.



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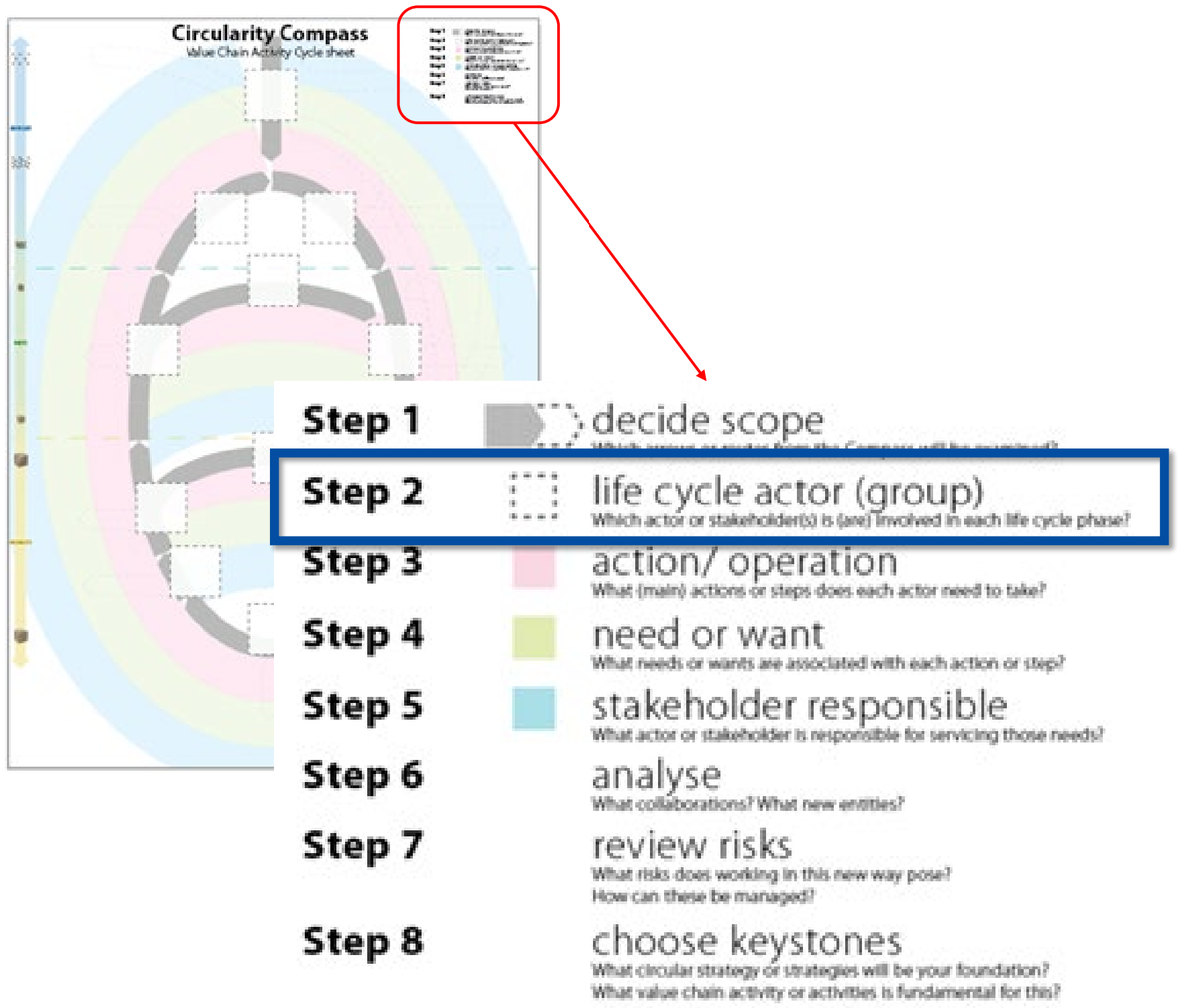
Step 2

Identify life cycle actors

Identify the life cycle actor(s) or stakeholder(s) that are involved in each phase of the product life ccle. Add their names in the relevant squares. Take care of all the internal actors and actors from other entities.

Do not forget about not so obvious actors/ stakeholders. External actors like public authorities, policy makers, trade associations, research institutes or investors/creditors often also play a major role in supporting innovations like this.



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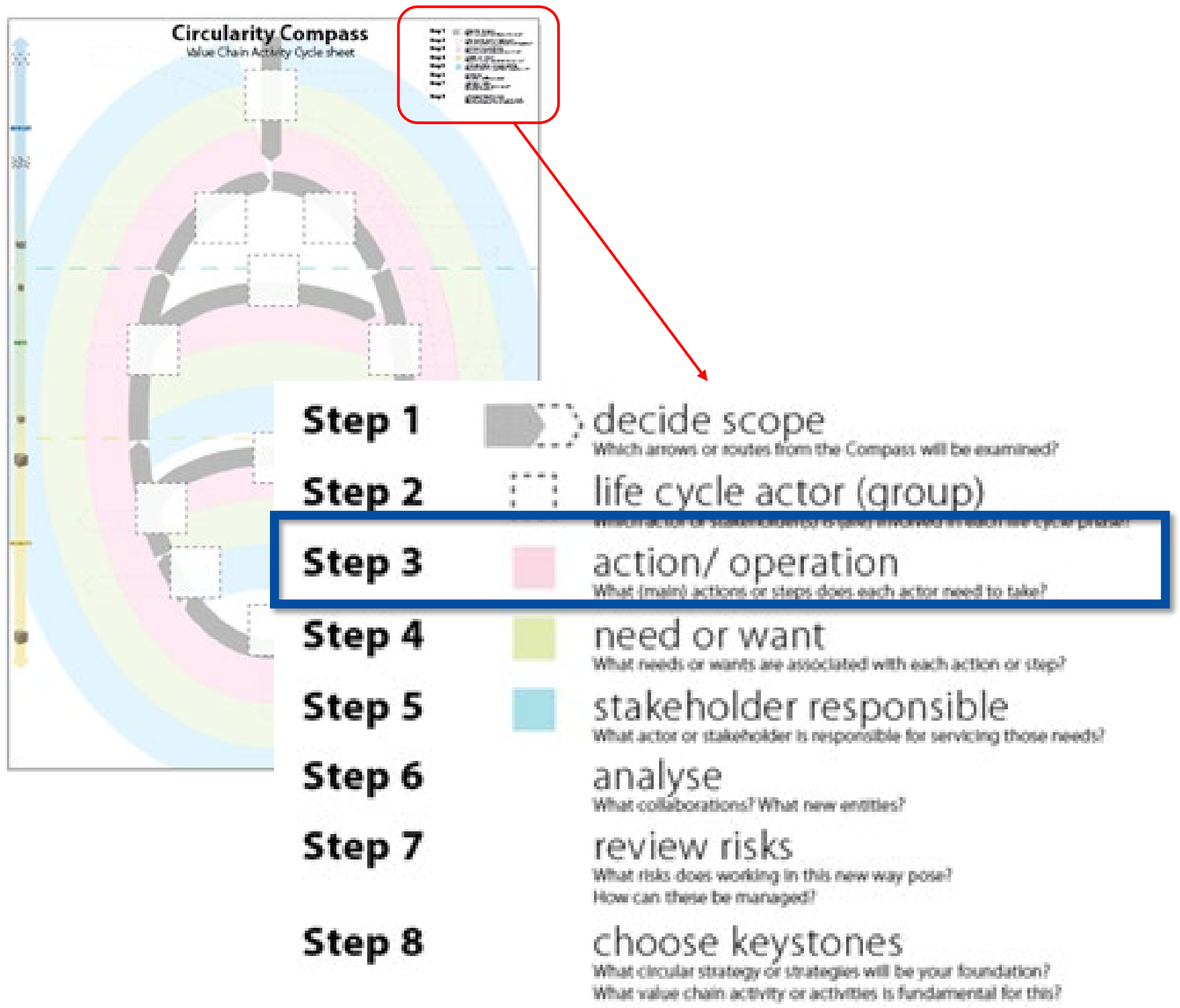
Activity Cycle | Step-by-step process

Step 3

List the actors´ actions

List the actions or steps in the pink band, each specific actor or stakeholder needs to take to implement the new way of working. They may need to be involved in identifying waste, providing finance, managing customers, extending the product life cycle or implementing specific circular strategies such as recycling.



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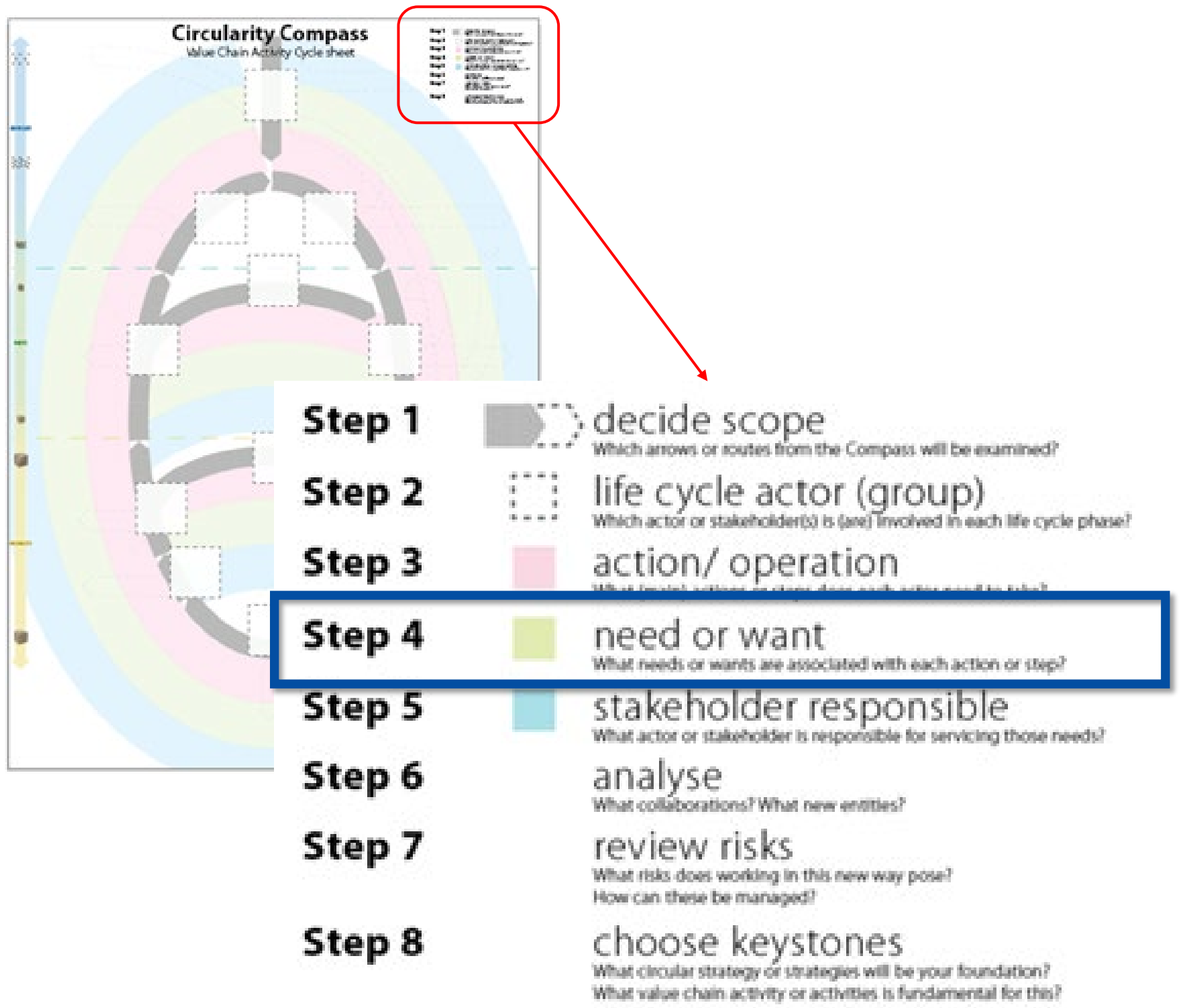
Activity Cycle | Step-by-step process

Step 4

Identify the needs or wants

Use the green band to put down the identified needs or wants that are associated with specific actions or steps. Think of a ‘need’ as the support the actor requires to complete the action successfully.

Is there information needed or a contract? Does the actor need someone to transport the product to his facility in time? Is a specific software required? More staff or just a phone call?



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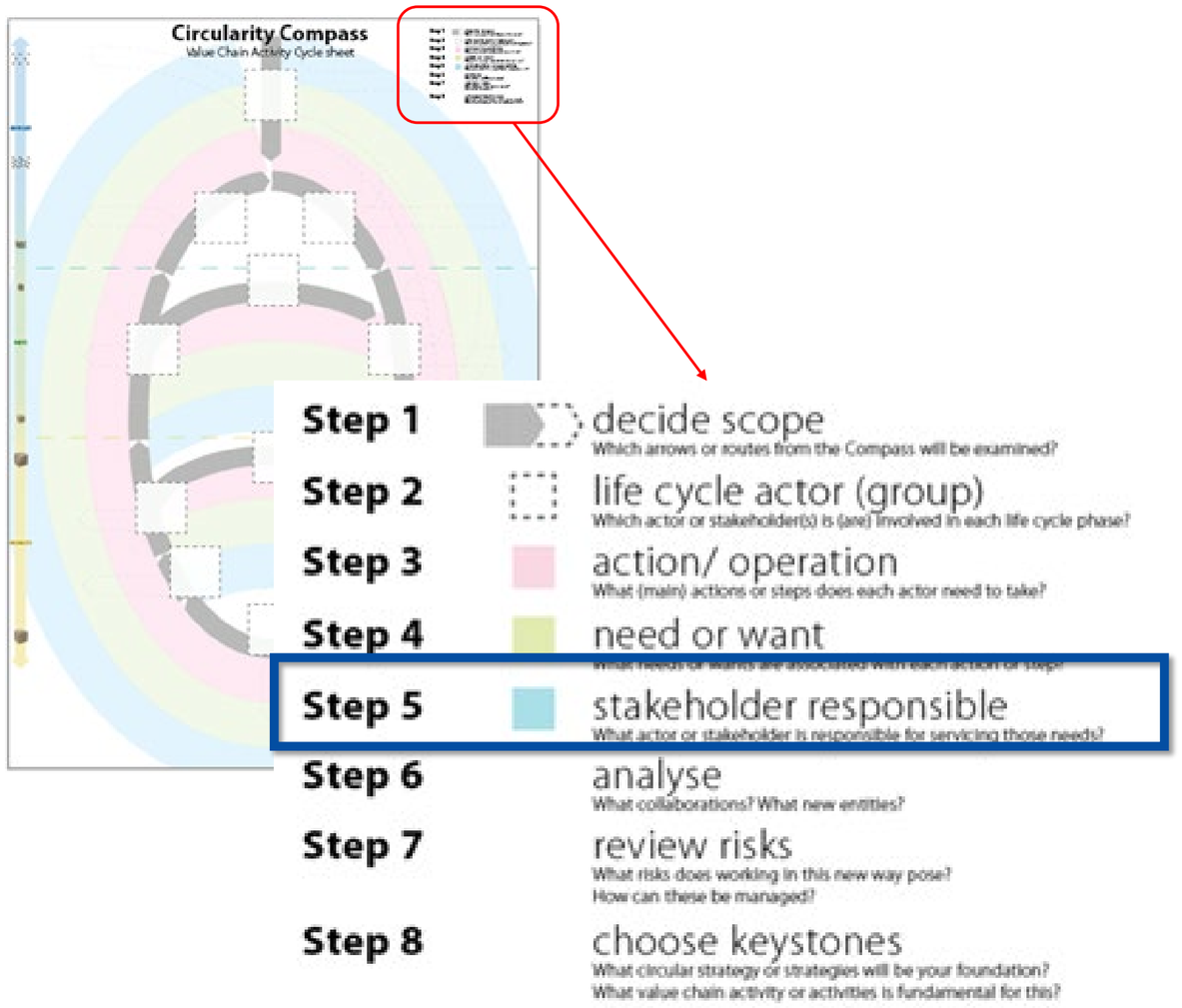
Activity Cycle | Step-by-step process

Step 5

Identify actors´ responsibilities

In the blue band, identify the actors or stakeholders who are responsible for addressing specific needs. The actors can be internal to your organisation, an external stakeholder, a group or a combination of everything.

Be specific! Nothing gets done if nobody is responsible.



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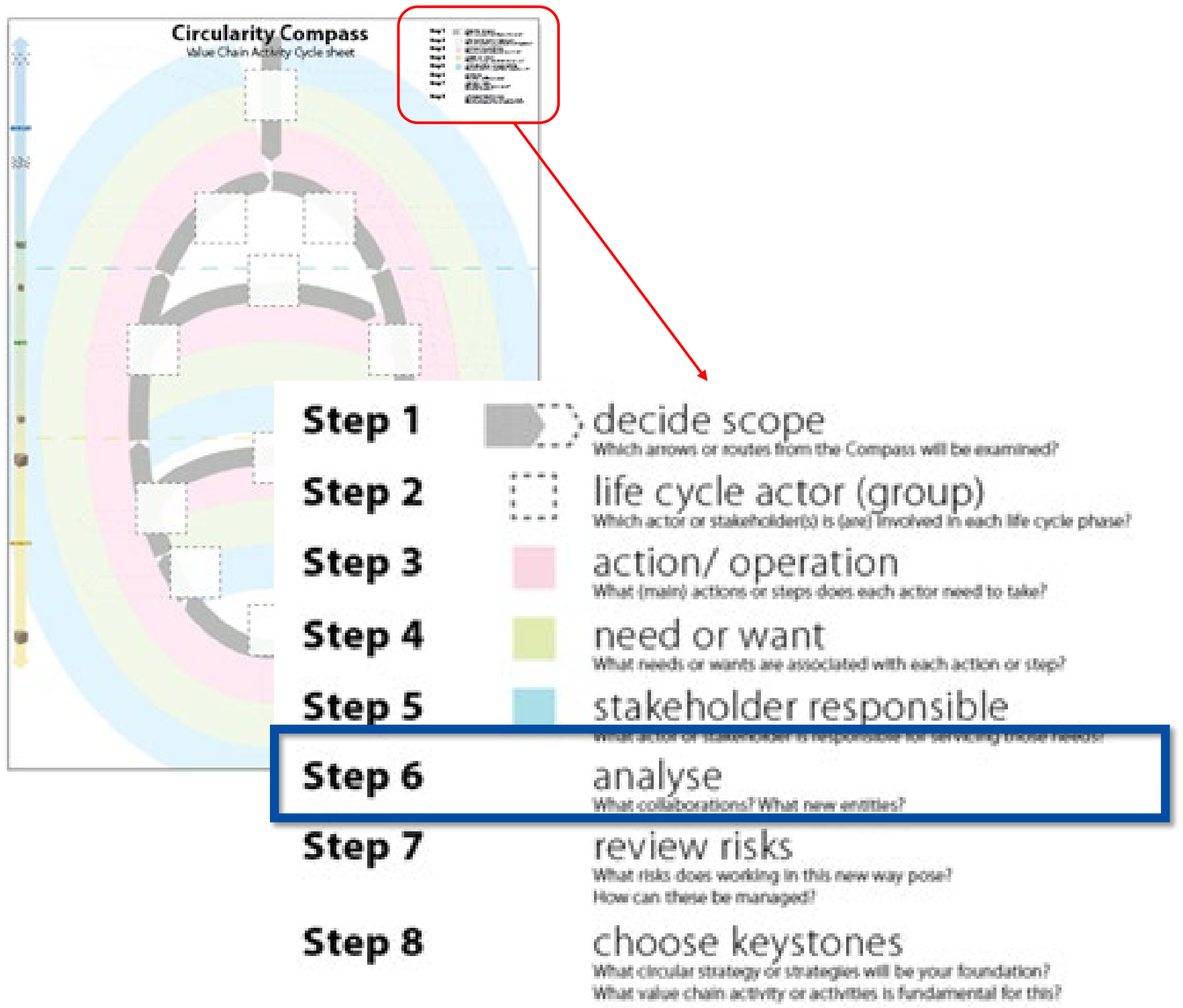
Step 6

Analyse potential collaborations

Explore potential collaboration opportunities. The following guiding questions could help:

1. Current resources: What resources are currently available to support the new circular value chain, what are the gaps and which collaborations could help?
2. Current shortfalls: What are areas where knowledge and capabilities are not currently available but could be created given sufficient time and financial resources?
3. Possible collaborations: What potential collaborations may be possible, either with existing or new stakeholders outside of the current value chain or via creation of new stakeholder entities?



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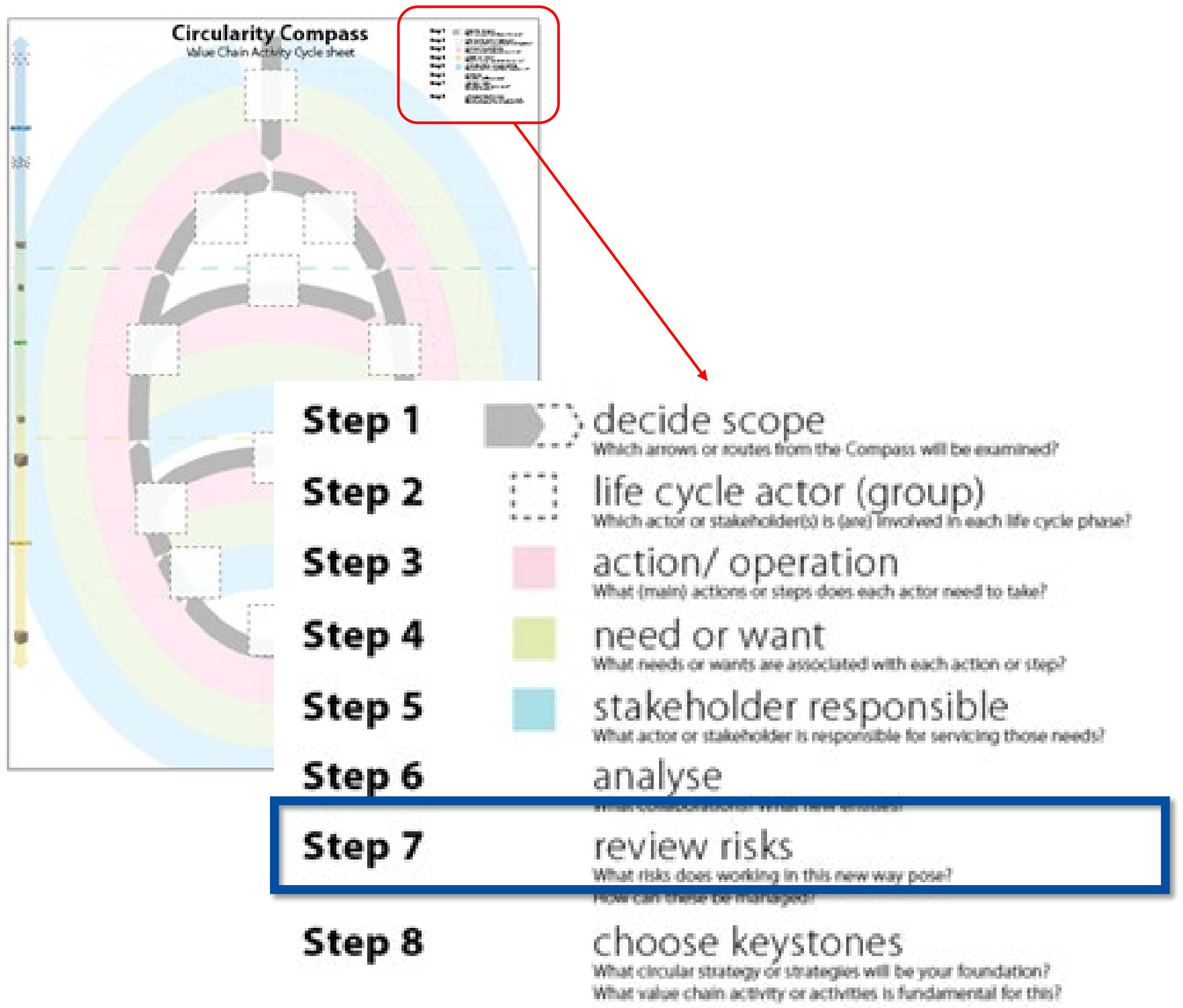
Step 7

Review risks and opportunities

Consider, what risks does working in this new way pose? How can those risks be managed?

Also, what drivers can you identify that help your cause and how can you address or strengthen them?



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Activity Cycle | Step-by-step process

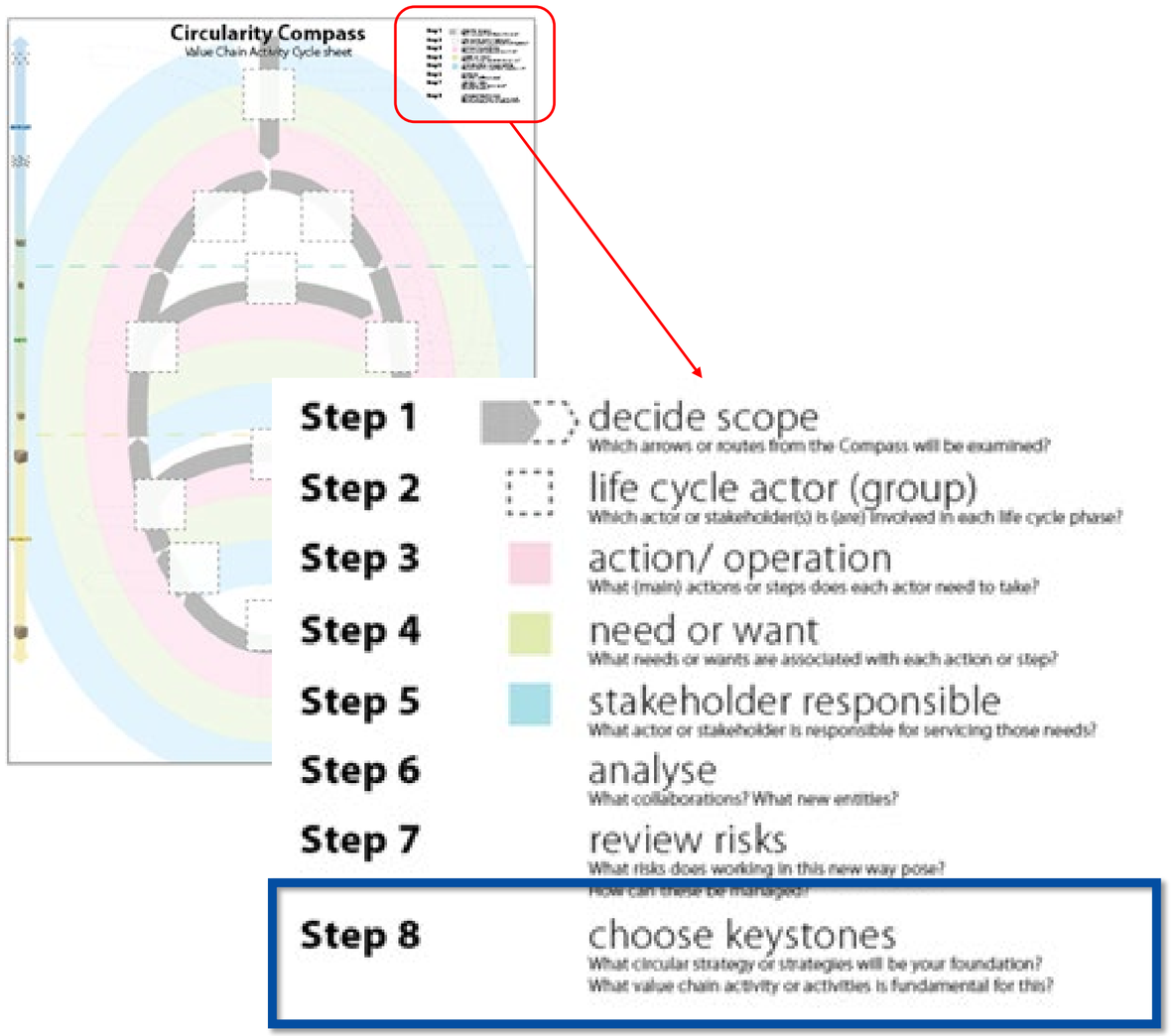
Step 8

To wrap it up

Think of yourself as some kind of conductor of the activity orchestra. To conduct the change, you need to understand the roles of the different stakeholders and put yourself in their shoes.

Before you go to the stakeholders, understand what you must ask from them.

After you went through the process, articulate your critical assumptions about your focal strategy. Those assumptions are the link to possible experimentation.



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How to use the tool – case example

Find inspiration on real life case examples how the tools can help to develop circular solutions on the following pages. These include some examples developed by the project team and some developed by training participants during the delivery of Circularity Thinking training courses.

Disclaimer: none of the companies mentioned in any of our case examples made their own use of the Circularity Thinking tools. We applied the tools in hindsight and based on available information of the companies. We only show how the Circularity Thinking tools can be applied on company cases to support the circular innovation process.

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Case example | Interface

Introduction to the process

For Interface, the overall strategy is Rethink and Reconfigure with a focus on the value generation architecture, i.e. what activities can happen that can add further value to the existing processes in the PRE, DURING and POST phases for making carpets.

In the PRE phase, with the stakeholder as the internal company staff, who need to be convinced that it makes sense to demanufacture and recycle the carpets, as a value add, to get their buy in and full support.

In the DURING phase, in an experimental phase, an energy inventory for the use stage is to be undertaken, and a focus group of users is identified for this, to gather behaviour data.

In the POST phase, the magnitude of the environmental impact is checked, to see how much energy can be saved (reduce value loss), e.g. burning or landfilling.

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Case example | Interface

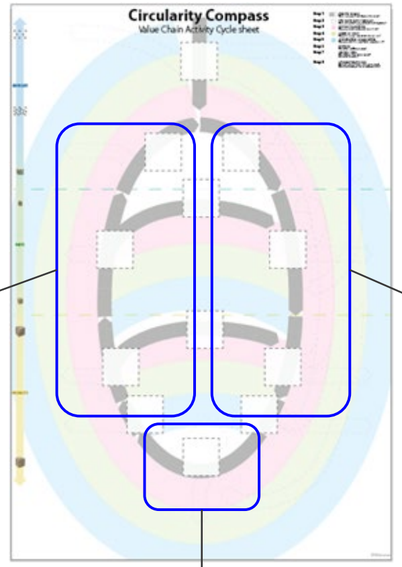
Overall strategy: Rethink and reconfigure > value generation architecture

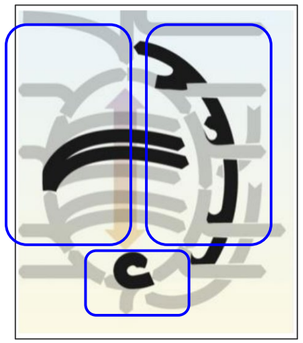
Understand and evaluate the magnitude and significance of environmental impacts

Emissions to each media (air, water, land) of specific chemicals

EPA Chemical Hazard Evaluation Team

Impact Assessors





Internal company staff

Focus Group users

Provide justification for demanufacturing and recycling of carpets

Provide quantitative estimates of differences in mass, energy, environmental impact

Academic and industrial community

Do an energy inventory of use stage

Ammonolysis analysis with Dupont LCA data

University graduate students

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Case example | Interface

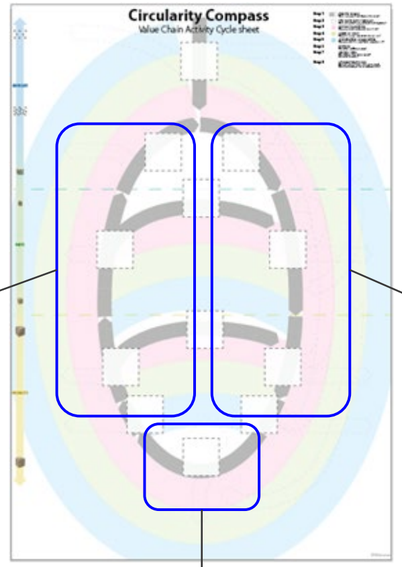
Looking into risks, drivers, and collaborations.

High environmental exposure found

Drive to reduce mass and energy usage

ISO 14000 Environmental Management Organisation

Impact Assessors



Internal company staff

Time consuming, resource intensive

Trend of product improvement, development

Work with internal and external experts

Focus Group Users

High variability in usage across users

ISO 14000 rising demand, requirements

Work with fashion houses to influence user

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Case example | Mud Jeans

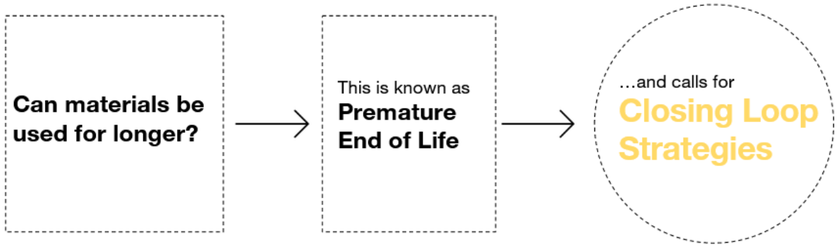
Introduction to the process

The overall strategy is Rethink & reconfigure: life-long products with a focus on upcycling (Take Back) for the jeans from the users.

In the PRE phase, to take back, the staff needs to be trained to handle the re-used jeans. Here, the manufacturing team is called on for the training, and new training materials need to be developed for this purpose. E.g. on water usage, as identified in the B5W earlier.

In the DURING phase, the customers are surveyed if they are willing to bring back the jeans, and what incentives would work for them.

In the POST phase, the cost-benefit analysis needs to happen for insourcing or outsourcing, for the new sorting partner.



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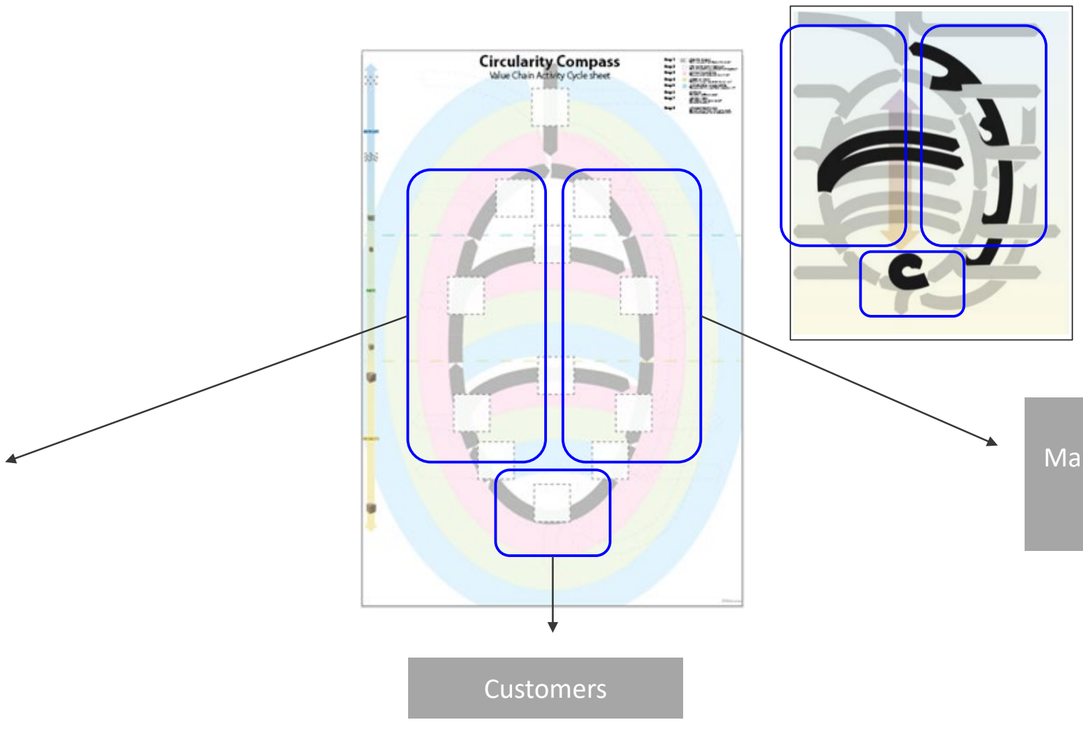
Case example | MUD Jeans

Overall strategy: Rethink and reconfigure: life-long products > upcycling (take back)



Decide between inhouse or outsource

Costs for inhouse of outsource activity

Financial and commercial partners

Train staff to re-use jeans

Develop training materials

Circular Design Team of Mud Jeans

Willing to bring back jeans

Find info on how many jeans to bring back

Recycling partner

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Case example | Mud Jeans

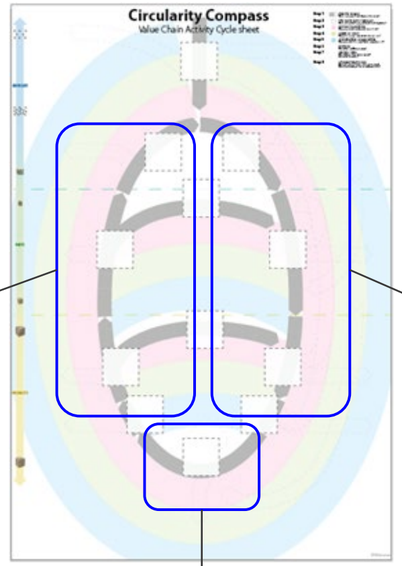
Looking into risks, drivers, and collaborations.

More costs than benefits in CBA review

Outsourcing drive overseas trending

Build key local partners who invest in tech

New Sorting Partner



Manufacturing Team

Increased costs of production with process

Cut costs of production

Work with specialised training company

Customers

Not enough volume to justify investment

Fashion trends for using recycled jeans

Work with fashion houses to influence user

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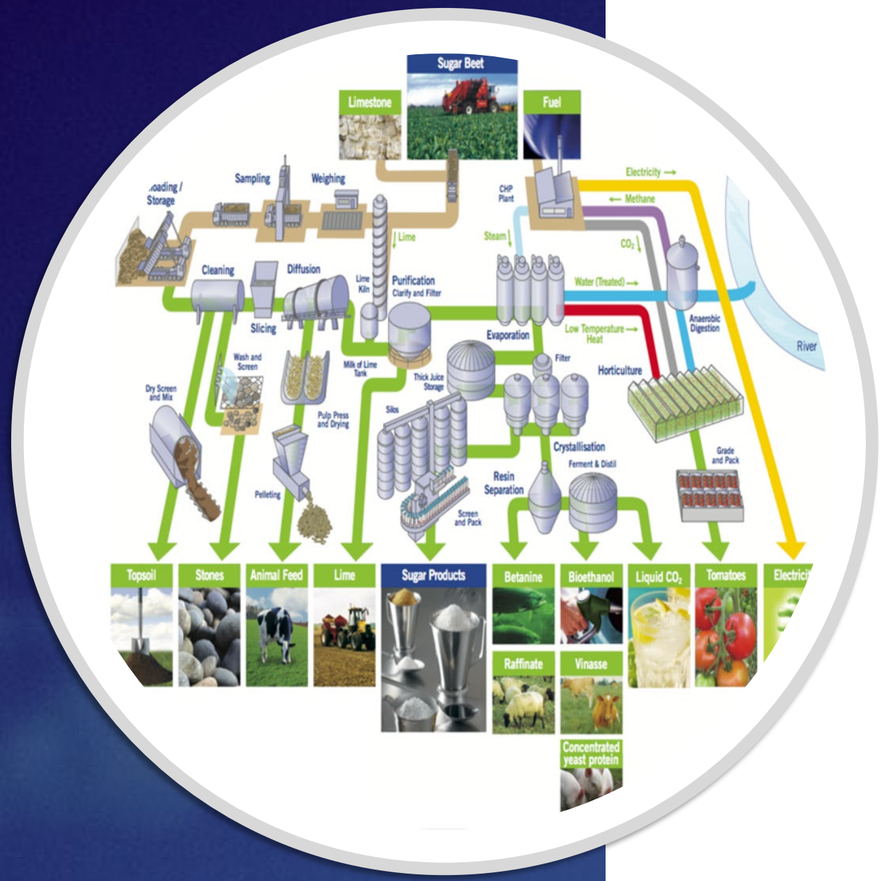
Case example | British Sugar



Introduction to the process

The overall strategy is to Restore, Reduce and Avoid Impact, with a focus on cascading. The circular approach here is using eco-design to turn waste into valuable products. In fact, the sugar-making process creates a range of co-products, and British Sugar turns these wastes into valuable resources by working across multiple industry sectors to operate responsibly.

For this strategy, they are all in the PRE phase. The farmers get clean sliced sugar beet and they work with the steam recipient team for their quality requirement.

For the pulp team, there is extraction and separation of the sugar beet, where clean, carbonated and filtered beet is needed.

Finally, for the end-consumer of clean sugar, the product is packaged and transported to the retailer through a logistics provider.

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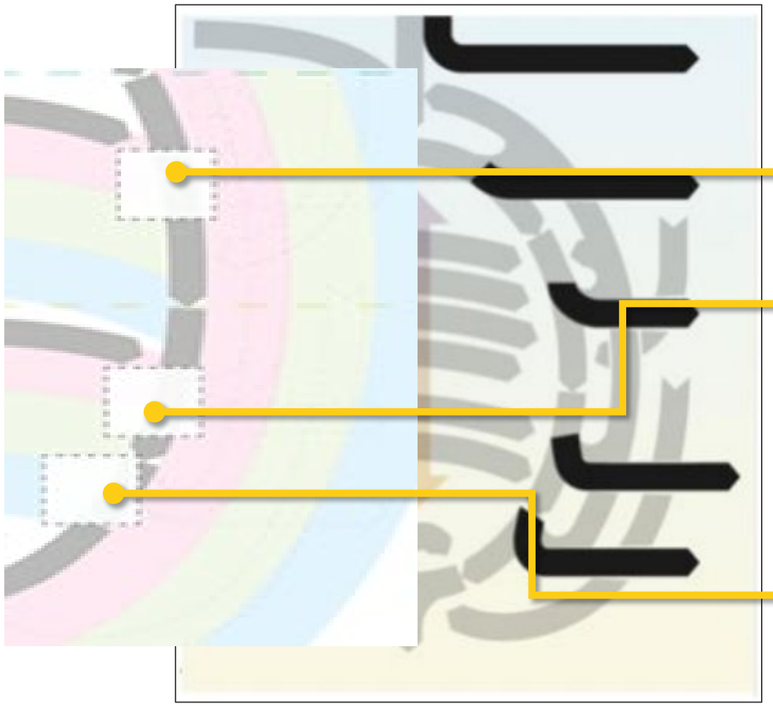
Case example | British Sugar

Overall strategy: Restore, Reduce and Avoid Impact > cascading



Sample, clean and slice the sugar beet

Sufficient raw sugar beet

Steam recipient team

Farmers

Extract and separate

Pulp Team

Clean, carbonated, filtered beet

Consumer

Steam recipient team

Package, transport and retail

Clean sugar for use

Logistics Provider

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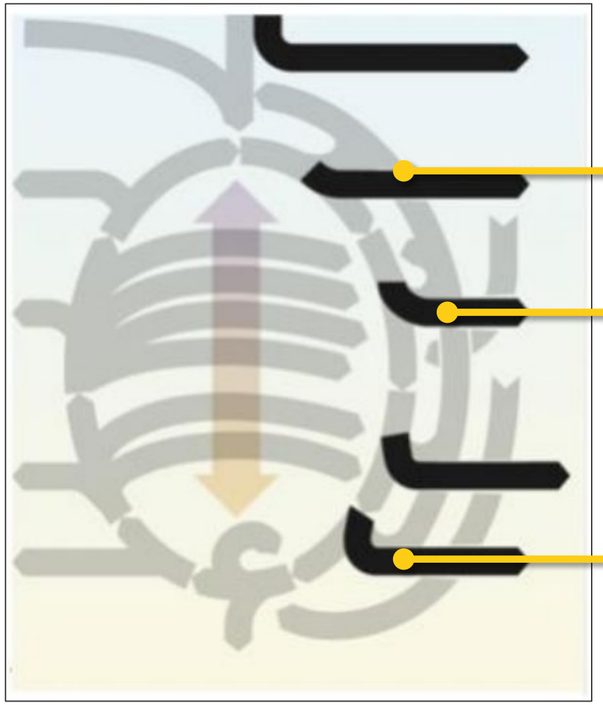
Case example | British Sugar

Looking into risks, drivers, and collaborations.



Cleanliness level subpar with impurity

A clean input for a clean output

Experts for quality sampling

Farmers

Pulp Team

Consumer

Low yield in separation

Search for high yield for efficiency

University chemistry experts

Potential rise in retail price as costs rise

Increase demand for sugar around

Marketing agency: education of consumer

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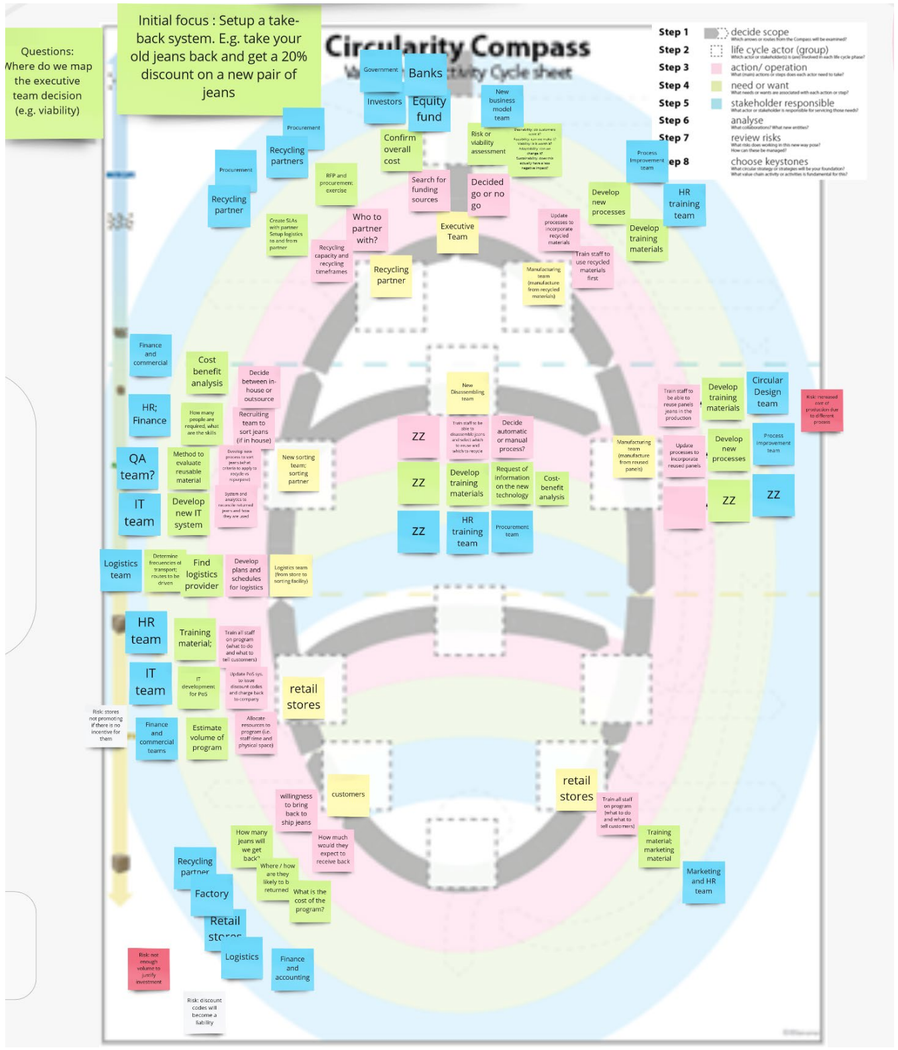
Examples how the Circularity Grid is used | Trainings examples

This is an example from a train-the-trainers workshop conducted in October 2021. The group was developing take-back jeans to recycle.



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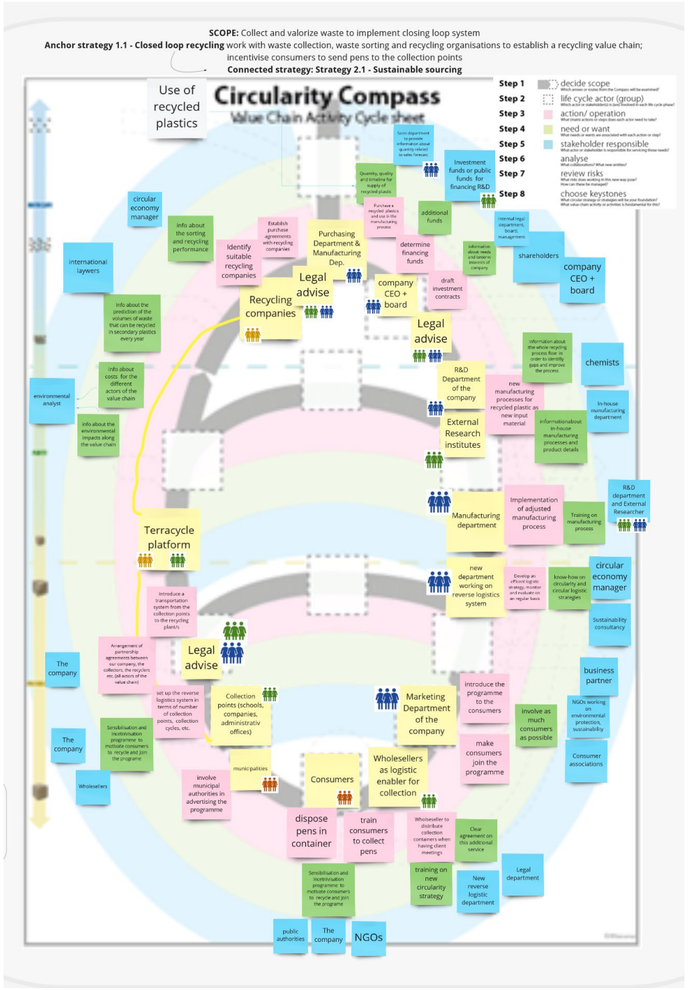
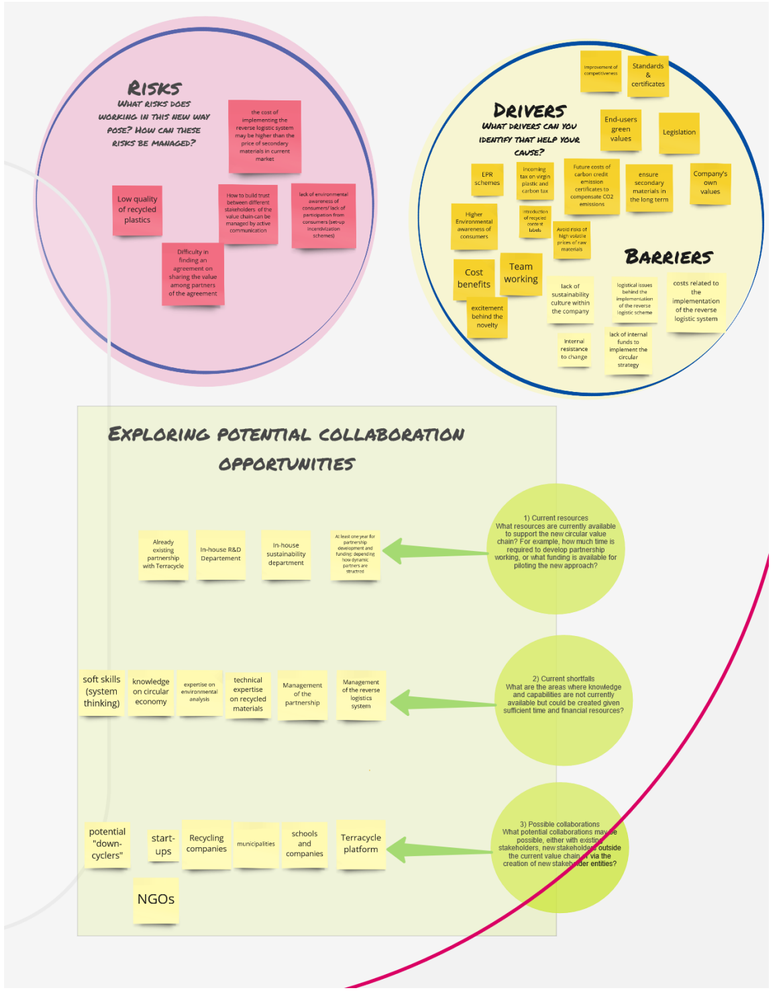
Examples how the Circularity Grid is used | Trainings examples

These graphics show the Activity Cycle, also done in a train-the-trainers in October 2022, conducted for a recyclable pen as well as the regarding collaboration, risks and drivers analysis.





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