



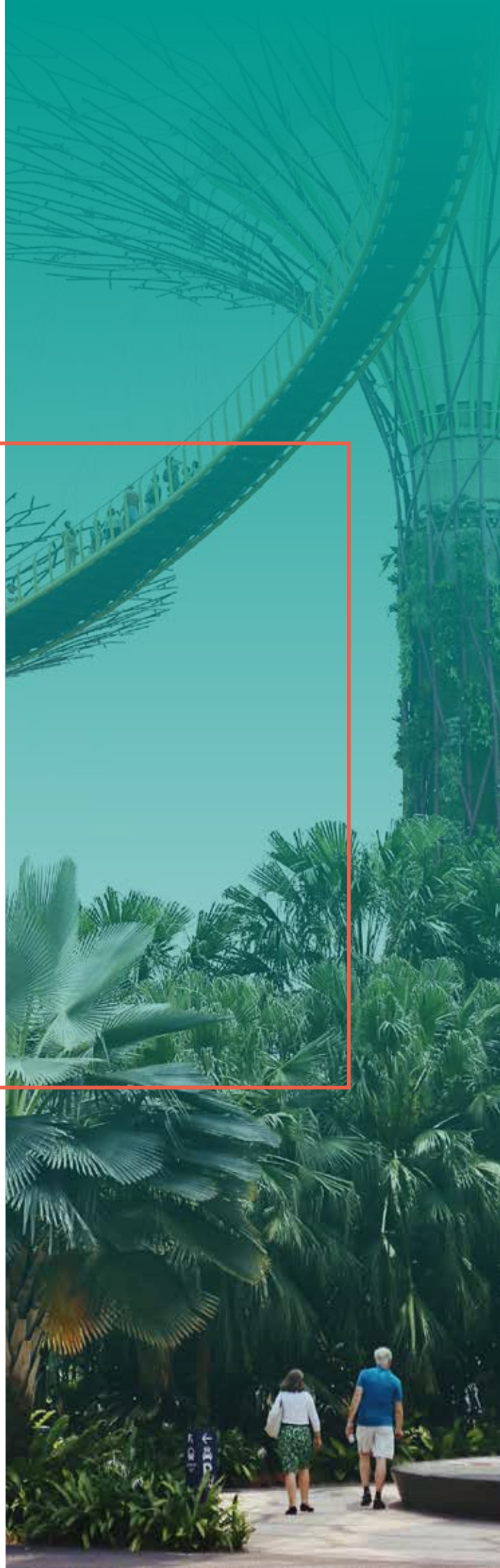
circular economy TRANSITION

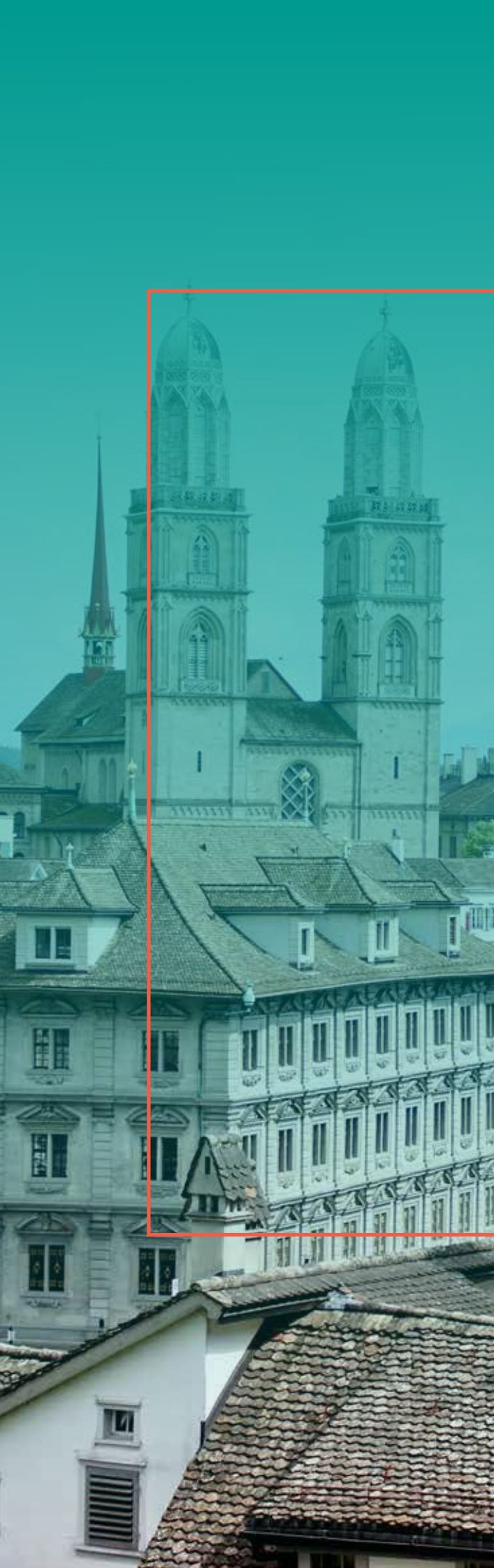
TOMORROW'S
ECONOMY
IS CIRCULAR

A More Resilient Society Thanks to the Circular Economy

The exploitation of natural resources and climate change are destroying natural habitats. As a result, the likelihood of natural disasters and humanitarian crises is increasing. We observe that our capacity to react in such situations is limited. We must put a rapid end to wasting resources.

The circular economy reduces dependencies and risks in global supply chains, promotes regional value creation and creates jobs in Switzerland.





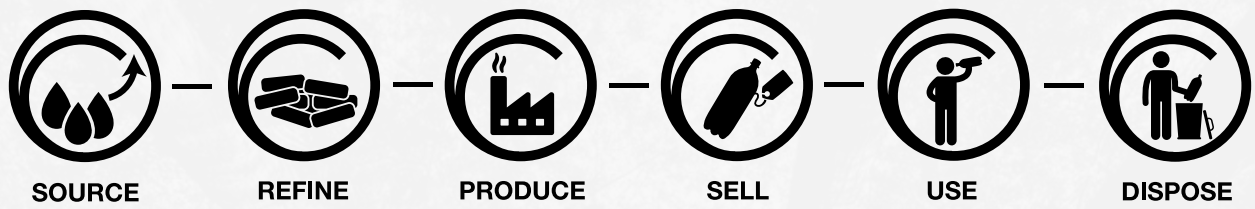
The Circular Economy Strengthens Business Resilience

Through narrowing (multipurpose tools for maximized use), slowing (durable and repairable goods), closing (reused components and recycled materials), and regenerating (renewable materials and energy), dependencies on global markets are reduced and risks are minimized without compromising social (consumer) needs.

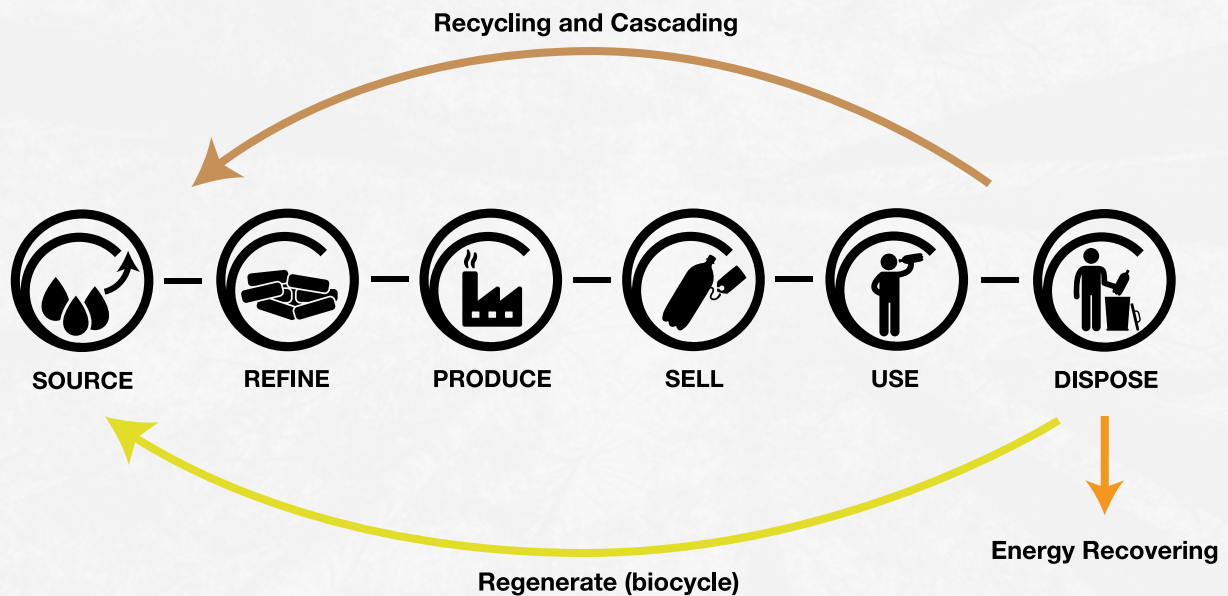
The relocation of value creation chains in Switzerland and Europe offers opportunities to develop a more decentralised production. This ensures that the population has access to reliable and high-quality products, even in times of crisis.

In addition, a significant part of the value creation remains in the country. This transformation helps regional companies to secure local employees with safe working conditions and enables them to create new jobs. In this way, even greater use is made of the existing strengths of the Swiss economy, such as its highly qualified workers and its strong potential for innovation.

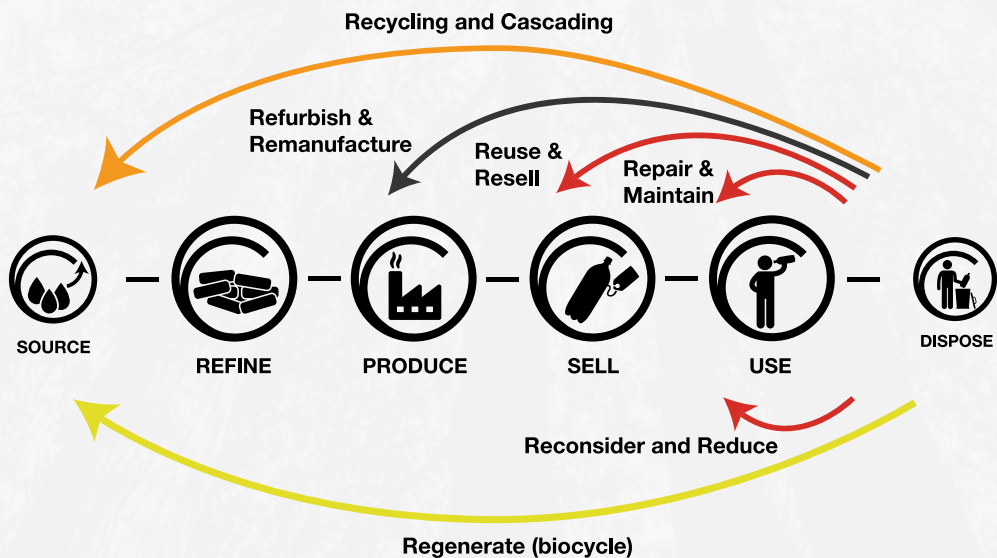
From a Linear Economy...



To an Economy of Recycling and Energy Recovery...



To a Circular Economy



Framework Conditions to be Developed for the Circular Economy

The transition to a circular economy requires the establishment of a legal and institutional framework both at the federal and regional level. The aim here is to give a clear signal that allows the various players to engage in this transition and to innovate product design, circular business models, the management of products after their first use, etc. The aim is to create the conditions for the development of a circular economy. Currently, many initiatives are being taken at the political level, which is a positive and encouraging development.

However, it remains to be ensured that these developments cover all the many possibilities offered by the circular economy, including the principles and activities described below. Furthermore, the circular economy is a framework to support existing agendas and policy initiatives, for example, climate change or biodiversity measures, or broader frameworks such as the Agenda 2030 (Sustainable Development Goals).

Finally, greater awareness among political and economic decision-makers and the general public seems necessary to explain and highlight all the opportunities offered by the circular economy and to create a positive and dynamic movement.



The **4 Blocks** of the Circular Economy:

Principles - Activities - Mindset and Business Models help companies to establish roadmaps a transition to the circular economy



Principles



Activities



Business Models



Mindset

“CE” Building blocks

Basic Dimensions of the Circular Economy

To develop a common understanding of the circular economy in practice, an understanding supported by examples of business strategies implemented by international leaders and Swiss pioneers.

1

The Principles

Principle 1

Use of Substances that are Non-toxic to Humans and the Environment - Design of Safe Materials and Products

Uncontaminated material streams increase the collection and redistribution efficiency while maintaining the quality of technical materials and overall material productivity, and allow biological nutrients to safely re-enter the biosphere.



Principle 2

Choice of Circular Materials and Ease of Disassembly

The choice of circular materials is crucial in order to facilitate end-of-life sorting, separation, next use of products, and secondary raw materials.



Principle 3

Cascading Use of Materials

Cascading (or reutilizing) involves using materials and components for different uses after their end of life and through different value cycles, as well as extracting the stored energy and the “coherence” of the materials over time. Cascading avoids the use of virgin materials and their associated costs (labour, energy, materials) and externalities.



Principle 4

Planned Reverse Logistics Systems that Collect and Recover Value from Materials and Products

Enabling the closing of material loops: The aim is to design the end-of-life management of products, components and materials from the outset in order to avoid loss of value as far as possible.



Principle 5

Modular Design and Easy Disassembly

Through better design, this principle aims to facilitate the refurbishment and remanufacturing of products in order to maintain the circulation of technical components and materials in the economy.



Principle 6

Longevity, Easy Maintenance and Repair

This principle aims to keep products, components and materials in use as long as possible. Through circular design and long life cycles products retain their economic value.



Principle 7

Energy Efficiency and Renewable Energies

The energy required to power the Circular Economy should be renewable in order to reduce resource dependency and increase the resilience of the system as a whole. Energy efficiency is also important, especially for products with an energy-intensive use phase.



Principle 8

Management of Environmental Impacts

This principle requires minimising the environmental impact linked to economic activity in order to ensure the implementation of a sustainable circular economy (greenhouse gas emissions, loss of biodiversity, soil degradation, water pollution, etc.).



Principle 9

Social Equity

Beyond the biological and technological spheres, the human sphere must be taken into consideration. The circular economy is designed to meet the societal needs of all and seeks to build more egalitarian societies. It is the result of a just transition.



1

Use of non-toxic substances for humans and the environment



2

Choice of circular materials and ease of disassembly



3

Cascading use of materials



4

Planned reverse logistics systems



5

Modular design and easy disassembly



6

Durability, ease of maintenance and repair



7

Energy efficiency and renewable energies



8

Management of environmental impacts



9

Social equity



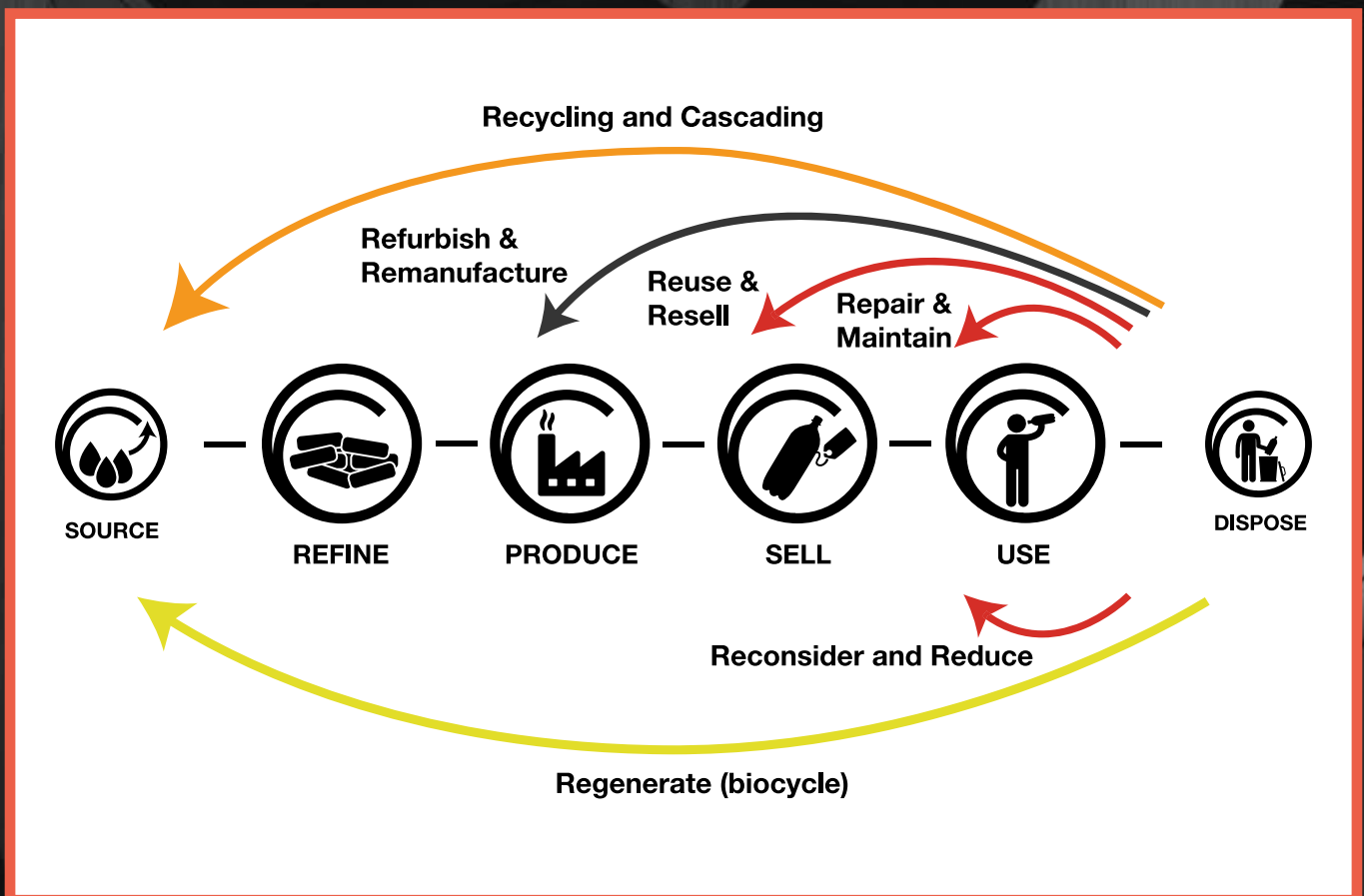
2

The Circular Economy Activities

The “R” activities:

All activities that aim to maintain the value and scope/purpose of infrastructure, buildings, equipment, vehicles, goods and other manufactured objects and their components at the highest level through reuse, repair and remanufacturing.

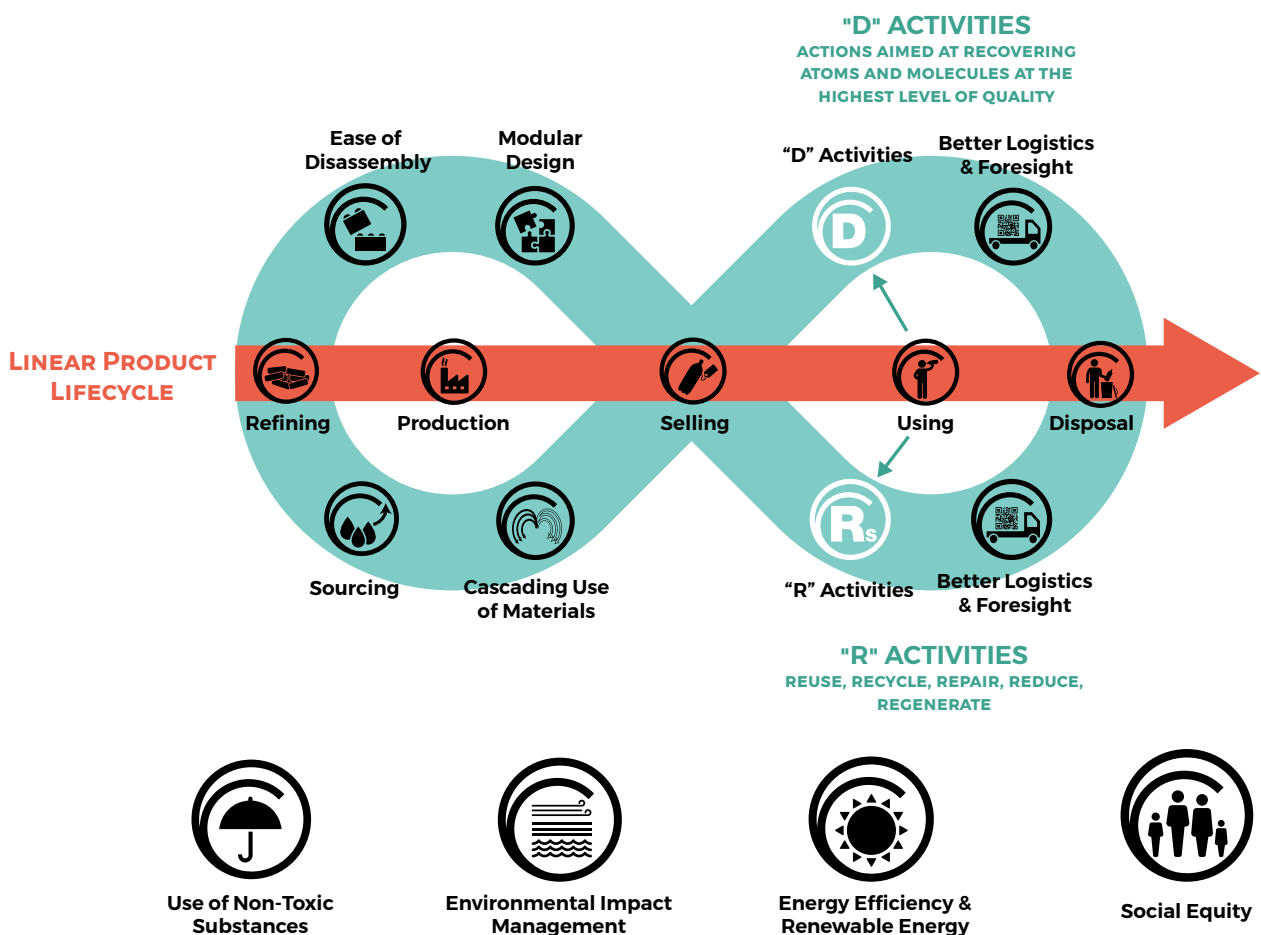
Source: The Circular Economy User Guide / Walter R. Stahel.



The “D” activities:

All the technologies and actions aimed at recovering atoms and molecules at the highest level of quality (purity and value).

Source: *The Circular Economy User Guide* / Walter R. Stahel.



For a transition from a cradle-to-grave to a cradle-to-cradle economy, all the elements are taken into account, and the value chain must work collaboratively: from the extraction or production of resources, transformation into materials, assembly of materials to make products, distribution, use, services for extending the life of objects and materials (“R” activities), to the end of life, which must, by design, make it possible to maintain the economic value and quality of materials during their life cycle.

However, at every life cycle stage, we must innovate and ensure that no unsafe substances come into contact with humans and nature, develop green energy solutions and reduce negative environmental impacts. Social equity across the entire value chain is also an important principle.

3 Business Models

The implementation of the principles of the circular economy implies profound changes in the way goods and services are designed, produced and distributed. It is a shift from a linear economy that aims at maximising the production and consumption of goods, to a circular economy that aims at creating the highest possible use values for the longest possible time - while minimising the consumption of resources and energy. In order to be economically viable, this shift requires to partially or completely substitute “selling a product” with “selling a service around a product, so that the producer can recover the residual value of the products after their first use and for subsequent uses.

The producer or supplier, thus, creates an offer consisting of a combination of tangible products of which they remain the owner and intangible services, which enables them to maximise the reliability, durability, purity and recyclability of the production. Partly based on the idea of economy of functionality, this change in logic affects all aspects of the companies' business models.

The circular economy associated with digitalisation opens up opportunities for the development of new and innovative business models and, thus, strengthens

the innovation potential of Switzerland. The digital transformation is accelerating in many areas. The circular economy associated with digital solutions is a catalyst for innovative and sustainable business models. Thanks to its high level of education, cutting-edge research and innovative economy, Switzerland has ideal conditions for the creation of circular digital innovations.



A Circular Economy Creates New Opportunities for Innovative Business Models

Digital fields of innovation such as artificial intelligence, the internet of things, blockchain or big data, create new possibilities in terms of product traceability and transparency. Similarly, smarter and better interconnected products enable manufacturers to monitor, analyse and optimise product performance in order to limit the environmental impacts during the use phase of the products. Digitalisation can help reduce resource waste and travel emissions, as well as create the digital infrastructure needed for circular business models. However, it's important to ensure that the development of digital technologies does not come at the expense of other sustainability objectives such as the reduction of greenhouse gas emissions or the quality of jobs.

Textile case study: Circular Economy Starts at the Design Stage!



A jacket produced 10'000 km away from Switzerland is made of materials that have undergone transformations (dyeing, waterproofing etc). The choice of materials upstream will define the type of cycle (biological or technical) and the possibilities of preserving the economic value of the materials at the end of the products' life cycle. The substances used in the production of the materials will also impact our environment during the use phase (for example, microfibres, micro-plastics and micro-pollutants enter our environment during washing).

Useful information for users for better maintenance, as well as after-sales services and provided addresses of repair shops, take-back and resale sites will help to extend the life of the products. The quality of materials and assemblies will have an impact on the life of the products and even on the different possible business models.

Finally, traceability throughout the value chain will facilitate the implementation of logistics, reversed at the end of the products' life cycle, as well as the transformation and treatment of materials to introduce them into the right cycle with the right technologies.

4 Mindset - A Systemic Approach - Promoting Diversity - Multiple Values

The pandemic has enabled many people to realise whether greatest needs are material or non-material. In this context, sustainable development themes such as health, nutrition, nature conservation and social bounding are becoming increasingly important for many people.

The circular economy shows the way towards more sustainable forms of production and consumption. re-use, re-pair, or business models based on the idea of sufficiency, service offerings, or sharing principles help society to put new values into practice.

As the circular economy demonstrates that quality takes precedence over quantity, the learnings from the pandemic can promote it as an economic perspective for healthier behaviour and lifestyles.



**The Circular Economy
Helps to Steer the
Societal Changes
Initiated by a Pandemic
Towards Greater
Sustainability.**

Roadmap

1

Towards a circular and inclusive economy

- Systemic approach
- 4 blocks
- Understanding your ecosystem
- Cradle to Cradle

2

Innovative business models

- Performance economy
- Economy of sharing and solidarity
- Circular economy and employment
- Dynamic market transformation

3

Eco design

- A driving force for innovation
- Materials, products, life cycles
- Impacts - water - soil - air - social
- Transition risk (PESTEL)

4

Closing the loops, flows

- Technical / biological loops
- Value chains
- Reverse logistics
- Traceability

5

Consumers - actors

- Social - societal transformation
- Shopping behaviour
- The jungle of labels
- Legal notice

6

Promoting collective intelligence

- Methods
- The tools
- Types of governance
- The results

7

Laws and standards

- European Green Deal and roadmap
- The FOEN
- SDGs
- The different laws and regulations

8

Responsible purchasing

- Value chains vs. supply chains
- In-house vs. outsourcing
- Mutualisation
- Business models

9

Technology and digitalisation

- Digital technologies
- Intelligent products
- Blockchain
- Low tech and digital sobriety

10

Circular finance

- The new indicators
- ESG assessment
- Investment - start-ups
- The costs / financing of the transition

Recommendations

The circular economy for a resilient and climate-friendly Switzerland

For policy makers:

Directing Economic Recovery Towards a Climate-Friendly Circular Economy

In order to achieve Switzerland's climate objectives, our production and consumption patterns must become more sustainable. The circular economy makes this possible, as it protects natural resources, uses renewable energies and enhances value creation at the regional level. An economic policy that promotes the circular economy thus makes Switzerland more resilient, climate-friendly and resource-efficient.

Reducing Dependence on Global Supply Chains

In order to be able to relocate more productive activities to Switzerland, the legislative framework needs to be improved. Taxation should be shifted towards the consumption of natural resources in order to reduce labour costs. Better conditions are also needed for regenerative and decentralised food production, as well as for a resource efficient agriculture.

Extending the Life of Products

Minimum requirements in terms of reparability, availability of spare parts, but also extended warranties for certain product categories are necessary. At the same time, mandatory statements on product lifetime, reparability and life-cycle costs will complement the information provided to consumers.

Reinforcing Re-use

Some barriers need to be removed to increase the share of reusable materials as secondary raw materials for new products. For example, the extraction of secondary raw materials from waste should become easier than the final disposal of waste

Making the Promotion of Innovation and Digitalisation Sustainable

Research and development of technological solutions that enhance sustainability need to be intensified. Digitalisation and the circular economy must be considered together when promoting innovation. Appropriate support for start-ups and the integration of the circular economy into vocational and continuing education for different professions can be very effective in this respect.

Decision-Makers in the Administration:

Developing Plans and Strategies for a Circular Economy

Adapted to the municipal, cantonal or national context, master plans, strategies or roadmaps can reveal the high potential and opportunities associated with the circular economy and thus form a basis for strengthening the economic sector.

Integrating the Circular Economy into Public Procurement Policy

Strong demand for public sector goods and services drives and stimulates supply. An innovative public procurement policy could greatly promote the development of solutions that follow the principles of the circular economy. Taking into account the total cost of ownership linked to a purchase could help to reduce expenditure.

Making Infrastructure Available and Providing Incentives

Reusing products instead of throwing them away saves resources. The promotion of appropriate infrastructure and events for sharing, repair, resale and donation can be very effective in this regard. Principles of sustainable consumption at public events can also be promoted.

Economic Decision-Makers:

Making Sustainable, Modular, Repairable and Reusable Products

Innovative offers, for example related to the repair and maintenance of products, can generate new sources of revenue and build customer loyalty. Based on circular business models, these offers not only save resources, but also help to develop economic activities in Switzerland.

Focus on the Purchase of Components, Products and Services in Accordance with the Principles of the Circular Economy

When purchasing, it is often possible to prefer components and products made, for example, from secondary raw materials, or to favour suppliers who recycle offcuts, by-products and waste (material recovery). These approaches preserve natural resources and reduce the generation of waste.

Strengthening Collaboration with Suppliers and Competitors within Ecosystems

New forms of cooperation are essential to steer an economic sector towards a circular economy. Efficiency will be maximised if the know-how needed to implement resource-saving business models is developed in partnership. This strengthens the sector as a whole and at the same time favours individual companies.



circular economy TRANSITION

Initiators



Switzerland

sanu durabilitas

fondation pour le développement durable
stiftung für nachhaltige entwicklung



noora.buser@impacthub.net

nils.moussu@sanudurabilitas.ch

felix.staehli@impacthub.ch