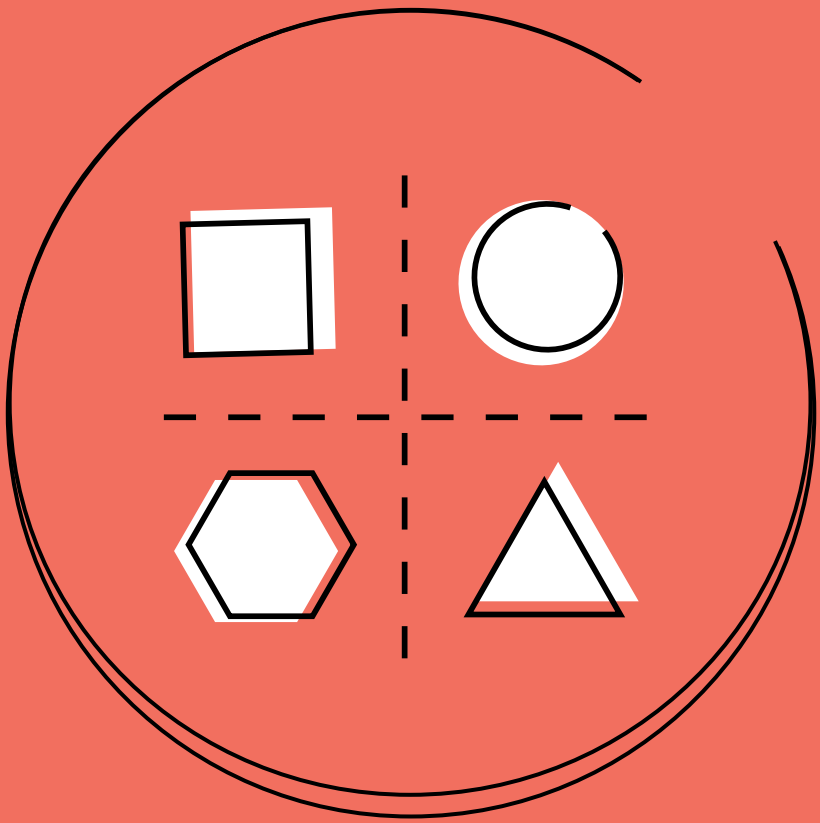
PATHS TOWARDS A CIRCULAR SOCIETY

The Potential of Social Design
for Social Transformation



social design lab

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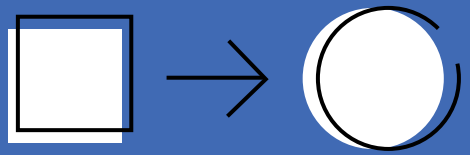
Position paper on the concept of „Circular Society“
by the **social design lab** of the Hans Sauer Foundation

Content

1

The Linear System in Crisis: The Need for Transformation.



1 The Need for Change

In the current social and economic model, most use of resources and products follows a linear pattern, namely **"take, make, waste."** Consequently, the majority of resources such as natural raw materials or processed products are incinerated or end up in a waste disposal site instead of being consistently recycled and reused. At the same time, global material consumption has increased eightfold in the past 100 years [1] and is expected to rise by a further 17% by 2050 [2]. The consequences of this increased resource scarcity, climate change, as well as water, air, and soil pollution, just to name a few [3]. Other direct or indirect consequences of linear (economic) structures and ways of thinking and acting are the externalization of environmental effects and exploitation along globalized production lines.

There is now a widespread consensus in science and politics: We need to transition to a more sustainable economy and lifestyle, i.e., a **socio-ecological transformation** [2][4][5]. This necessity for change raises questions about how to realize such a transformation and about the potential of circular economy approaches for achieving said transformation.

In its thematic focus on a **"Circular Society"**, the Hans Sauer Foundation addresses the question of how to substantially change the prevailing structures and practices of linearity. The scope of this question goes beyond necessary changes in, for example, the area of products, their manufacturing and established ways of disposal. Special attention is also placed on participatory approaches for establishing social practices that center around and enable circularity as well as new ways of societal thinking and acting; beyond dividing lines of sectors and functionality and the socio-cultural patterns that have emerged in the "linear age."

The Hans Sauer Foundation approaches the subject area at various levels and in different formats: The Hans Sauer Award 2019 entitled "Designing Circular Society" and the following year's competition "Designing Circularity in the Built Environment" honor innovative solutions that promote concepts and actions centered around circularity in various areas. Additionally, since February 2020, the Hans Sauer Foundation has offered a funding program focusing on the connection of circularity and education. The **social design lab** (see page 35), established by the foundation in 2018 and generously supported by the IKEA Foundation, acts at the operative level and as agency and **laboratory for social change processes**. The lab develops new processes, formats, projects, and events. The main focus is on methods of participatory design whose application follows a special process and impact model aimed at transforming social systems.

The social design lab also works on projects related to the concept of circular society, from experimental real-life projects to theoretical and conceptual approaches and research.

This **position paper** first outlines the potential as well as problems and shortcomings of the concept of a circular economy. Second, it establishes the thesis that the transition towards more circularity is better conceptualized and realized through the societally broader approach of a circular society. This is linked to the thesis that new forms of knowledge production and participatory development of solutions offer particularly promising approaches for such a transition. The approach of social design, as it is reflected in the work of the social design lab, will serve as an example of this.

1 References

[1] Krausmann, Fridolin; Gingrich, Simone; Eisenmenger, Nina; Erb, Karl-Heinz; Haberl, Helmut; Fischer-Kowalski, Marina (2009): Growth in global materials use. GDP and population during the 20th century. In: Ecological economics: Jg. 68 (10), S. 2696-2705.

[2] United Nations Environment Programme (UNEP) (2011): Towards a Green Economy. Pathways to Sustainable Development and Poverty Eradication, Sustainable Development. Verfügbar über: https://www.unenvironment.org/explore-topics/green-economy (Letzter Zugriff: 09.03.2020)

[3] Ellen MacArthur Foundation (2013): Towards the Circular Economy. Economic and business rationale for accelerated Transition. Verfügbar über: https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf (Letzter Zugriff: 09.03.2020)

[4] Geissdoerfer, Martin; Savaget, Paulo; Bocken, Nancy M.P.; Hultink, Erik J. (2017): The Circular Economy – A new sustainability paradigm? In: Journal of Cleaner Production: Jg. 143 S. 757–768.

[5] Lessenich, Stephan (2016): Neben uns die Sintflut. Die Externalisierungsgesellschaft und ihr Preis. Berlin: Hanser.

2

The Circular Economy: A Promising But Insufficient Sustainability Strategy.

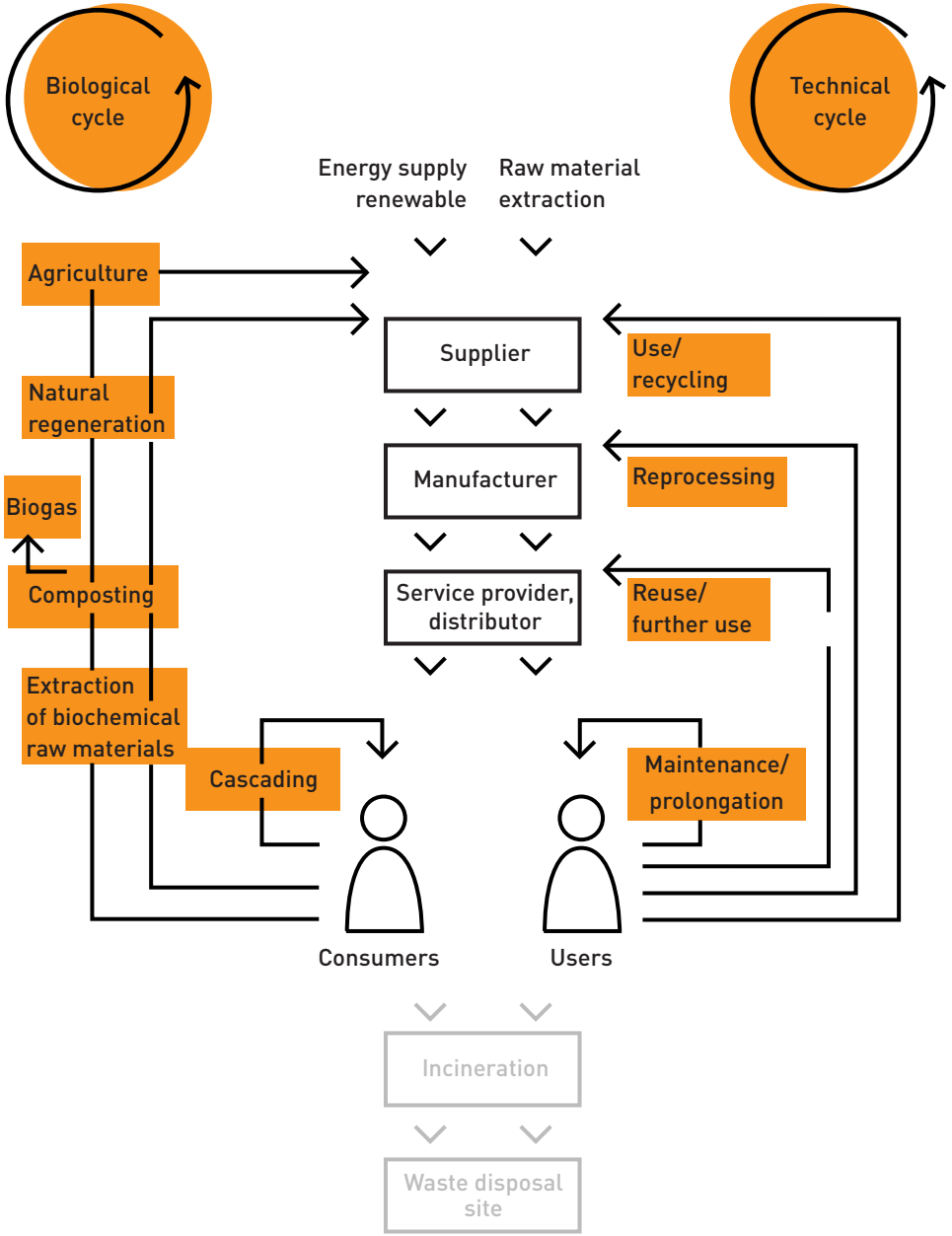
2 Potentials of the Circular Economy as A Sustainability Strategy

The concept of circular economy can be traced back to different schools of thought and sets forth an approach for far-reaching changes within an economic system. Circular economy connects material flows (raw materials, biomass, water, energy, etc.) and all cycles are closed. Products and materials are designed and constructed in such a way that they can be repurposed at the end of their life cycle or can be reintegrated into **technical or biological cycles** (see graphic p.10). One important factor is a **design which is geared to longevity** and focuses, among other things, on reparability, dismantability, modularity, and emotional ties to products and things. In addition, a circular economy only uses those resources and energy sources that do not have a harmful effect on health and nature. In this way, a circular economy is to contribute to the conservation of resources and waste avoidance by means of effective and regenerative recirculation. Extended use and life spans as well as new services, help to **"decelerate" production and consumption**. [1][2][3][4]

In recent years, the concept of circular economy has gained popularity in politics, business, and science at national as well as international level [3]. The European Commission [5][6], various national governments (e.g., the Netherlands, Japan, and Germany), consulting firms (e.g., Accenture, Deloitte, McKinsey) and think tanks (e.g., the Ellen MacArthur Foundation) examine and promulgate circular economy approaches as a viable sustainability strategy for individual economic sectors and product groups as well as entire national economies or the global economy as a whole [7].

In addition to minimizing or completely avoiding negative environmental consequences, the circular economy approach emphasizes **economic potential**, e.g., through the creation of innovative business models and synergy effects (e.g., industrial symbiosis). Change is realized predominantly through technical innovations and system adaptations in the framework of largely stable socio-political continuity [8].

2 The Biological and the Technical Cycle



Hans Sauer Foundation according to [9] and [10].

The Primary Role Model: Nature

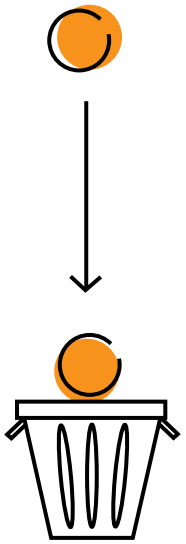
There is no waste in nature. On the contrary, substances go through a cycle and form the basis for new life at the end of their life cycle. In a diverse ecosystem, the waste from one species is the food of another species in a diverse ecosystem.

Industrial Symbiosis in Kalundborg, Denmark

The industry in the Danish coastal city of Kalundborg, has established numerous cycles. An industrial symbiosis combines the logic of natural ecosystems with that of the classical economic system. The by-products and residual products of one company are used as resources by another company. Kalundborg began developing this process more than 40 years ago. Today, a stably functioning circular economic system creates jobs and brings economic and environmental benefits to numerous businesses, including smaller ones, as well as to the local population. [11]

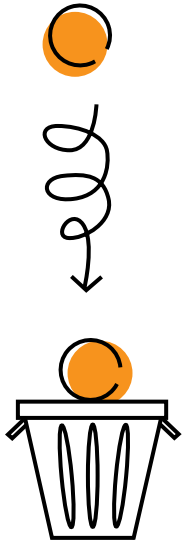
2 From a Linear to A Circular Economy

LInear Economy



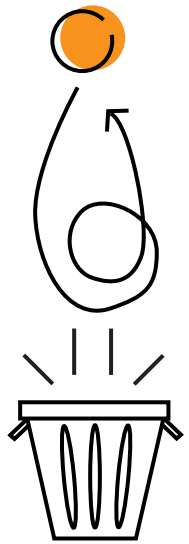
According to the motto "take, make, waste," a linear economy uses or consumes raw materials and products to ultimately dispose of them as waste.

Recycling Industry



In Germany, the first legislature to initiate a circular economy was passed in 1996 and focused primarily on improving waste management and recycling. Recycling temporarily reintegrates valuable materials into a cycle. However, the high recycling rate is deceptive. In fact, a large portion of materials is not recycled but incinerated. Traditional waste incineration is highly damaging to the environment.

Circular Economy



Following nature's example, a circular economy connects material flows (raw materials, biomass, water, waste, energy, etc.) and cycles are closed. There is no waste whatsoever.

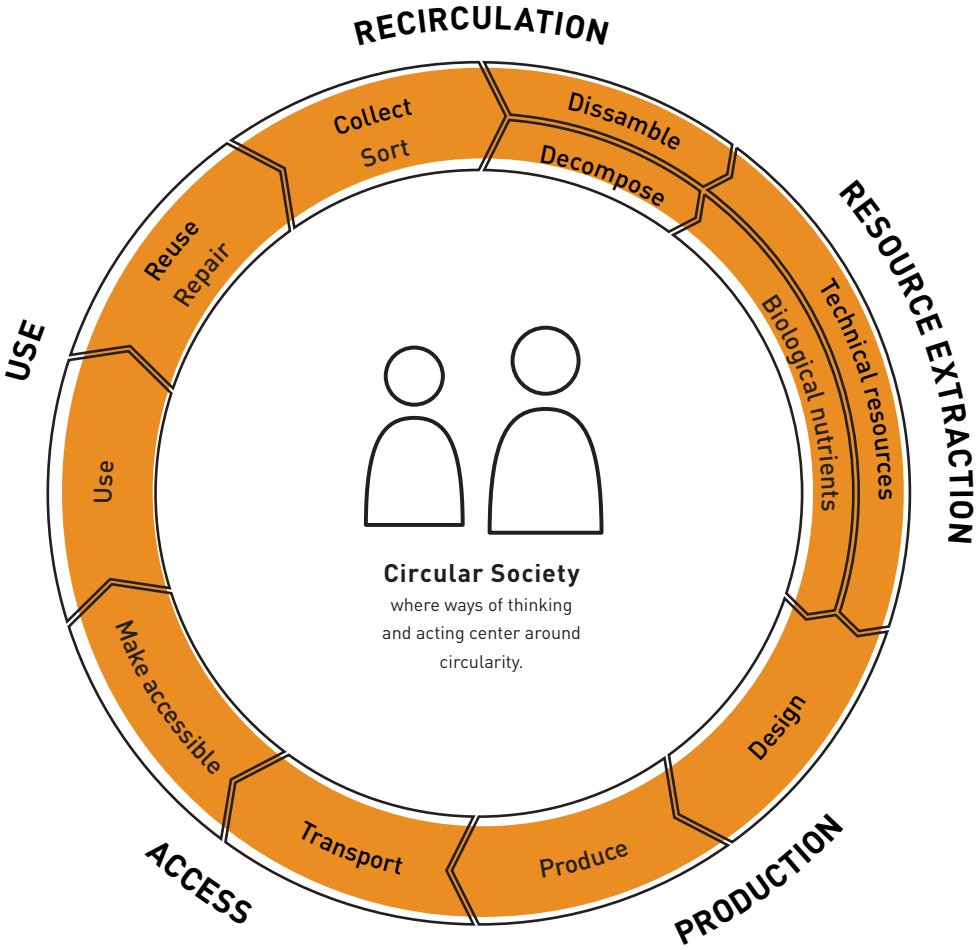
2 A Mypoic Concept of Circularity

Despite the increasing relevance of circular concepts, their global prevalence is marginal, at best: The annual Circularity Gap Report [12] estimates the "gap" to be closed for achieving full circularity at over 90 %, i.e., the linear, consumptive use of resources continues to be the globally predominant pattern. Furthermore, not all successfully implemented circular economy approaches deliver the desired results, one example are **rebound effects**, a well-known phenomenon in the field of resource management [1][8][13].

Circular economy, as a model exclusively centered around market and economy, provides no solution to profound problems such as the **externalization of ecological and social costs**, nor does it address the general **suitability of competition-oriented models** for a circular future.

Circular economy focuses on economic value creation and technical innovations and, consequently, neglects other sectors and social fields of action. In this regard the concept is in continuity with other **strategies for greening existing forms of economy**, such as the green economy or the blue economy.

However, thinking and acting along linear patterns of production and consumption is a society-wide phenomenon whose transformation requires far more than technical or product-oriented approaches: It requires the **re-design of social practices, societal structures, and cultural patterns** along the various **steps of value creation,** starting with raw material extraction all the way to recycling and further use.



Hans Sauer Foundation [14]

Linearity not only dominates the production and value chains in our economy it is also **deeply inscribed in existing societal rules, standards, laws, organizational forms, infrastructures, and value systems** that have emerged in the "linear age." For example:

Pricing and Industry Regulation
Economic industries involved in manufacturing and production are usually highly profitable, while industries involved in resource recovery are often far less so. Take the construction industry, where the reuse of building components is largely underfunded. Due to market-based pricing and highly efficient manufacturing methods, new components are often cheaper than the labor-intensive recovery and refurbishment of used components that are in principle still functional. Furthermore, the well-developed structures, logics and processes within the industry make it difficult to establish integrative circular approaches. [15][16]

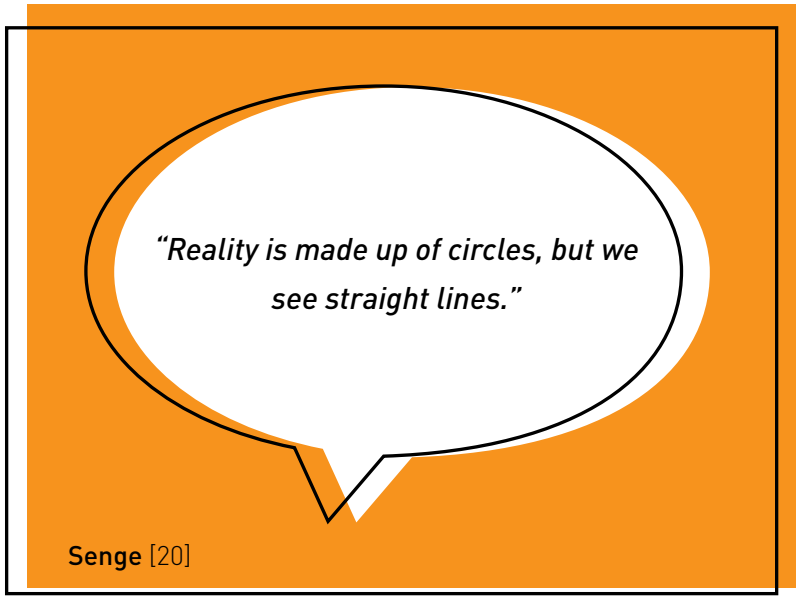
Hierarchy of Knowledge
Society values knowledge differently: "Productive" knowledge, i.e., knowledge about manufacturing processes and their efficiency is deemed more valuable and yields higher financial returns in the linear system than, for example, knowledge about the renewal of things and materials. Knowledge about repair, maintenance, and reuse of resources and products underwent a continuous devaluation during the formation of the Western consumer and throw-away society in the 20th century and was increasingly lost in the course of this process [17]; in many relevant disciplines, such topics are not part of the curriculum. In many design and architecture courses, for example, the use of sustainable materials and the reuse of existing materials plays a marginal role, at best.

Values

In the past, economic growth brought Western societies far-reaching social progress and material prosperity. The underlying assumption of the growth paradigm is that of cheaply available natural resources and labor, which to this day forms the foundation of the linear pattern of "take, use, waste" [18]. Despite the knowledge about the limits of our planet, the finiteness of natural resources and increasing socio-ecological crises, this paradigm is still deeply rooted in politics as well as in the everyday life of many and its critical reflection is often insufficient [19].

Social aspects such as participation, global social justice and quality of life are not sufficiently taken into account within a conceptual framework that focuses exclusively on economic viability and profitability.

A shift toward substantially circular practices requires more than an ecological modernization of production, distribution, and consumption. What is needed are not only changed material and energy flows, infrastructures, and business models, but new knowledge and new educational content, new forms of organization and cooperation, new norms and standards, changed values, and much more. Fully exploiting the transformative potential of circularity, understanding and addressing the necessary socio-cultural change seems to require adding a **social dimension** to the concept of circular economy.



2 References

[1] Buch, Rajesh; O'Neill, Dan; Lubenow, Cassandra; DeFilippis, Mara; Dalrymple, Michael (2018): Collaboration for Regional Sustainable Circular Economy Innovation. In: Marques, Joan und Satinder, Dhiman (Hrsg.) Handbook of Engaged Sustainability. Cham: Springer International Publishing. S. 703–727.

[2] Ellen MacArthur Foundation (2013): Towards the Circular Economy. Economic and business rationale for accelerated Transition. Verfügbar über: https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf (Letzter Zugriff: 09.03.2020)

[3] Geissdoerfer, Martin; Savaget, Paulo; Bocken, Nancy M.P.; Hultink, Erik J. (2017): The Circular Economy – A new sustainability paradigm? In: Journal of Cleaner Production: Jg. 143 S. 757–768.

[4] Jaeger-Erben, Melanie; Hofmann, Florian (2019): Kreislaufwirtschaft – Ein Ausweg aus der sozial-ökologischen Krise? Schriftenreihe Nachhaltigkeit: Eine Veröffentlichung der Hessischen Landeszentrale für politische Bildung. Wiesbaden.

[5] European Commission (2016): Closing the loop: New circular economy package. Brüssel.

[6] European Commission (2019): The European Green Deal. Brüssel.

[7] Prendeville, Sharon; Cherim, Emma; Bocken, Nancy M.P. (2018): Circular cities: mapping six cities in transition. Environmental innovation and societal transitions, 26, S. 171-194.

[8] Zwiers, Jakob; Jaeger-Erben, Melanie; Hofmann, Florian (2020): Circular literacy. A knowledge-based approach to the circular economy. In: Culture and Organization: Jg. 272 (4) S. 1-21.

[9] Ellen MacArthur Foundation; SUN; McKinsey Center for Business and Environment (o. J.) Infographic: Circular Economy System Diagramm. Verfügbar über: https://www.ellenmacarthurfoundation.org/circular-economy/concept/infographic (Letzter Zugriff: 09.03.2020)

[10] Institute of Design Research Vienna (IDRV) (2019): Qualitätsstandards für Circular Design: Gestaltungskriterien für eine nachhaltige Entwicklung. Verfügbar über: http://www.designaustria.at/system/assets/5506/original/qfcd_19_web.pdf (Letzter Zugriff: 09.03.2020)

[11] Dahl Sönnichsen, Sönnich; Clement, Jesper (2018) Kalundborg Symbiosis for the "Win win Gothenburg Sustainability award 2018". Verfügbar über: http://www.symbiosis.dk/en/systems-make-it-possible-people-make-it-happen/ (Letzter Zugriff: 09.03.2020)

[12] Wit, Marc; Verstraeten-Jochemsen, Jacco; Hoogzaad Jelmer; Kubbinga Ben (2019): The Circularity Gap Report. Closing the Circularity Gap in a 9% World. Amsterdam: Circle Economy.

[13] Braungart, Michael; McDonough, William (2016): Cradle to Cradle. Einfach intelligent produzieren. Ungekürzte Taschenbuchausgabe, 4. Auflage. München [u.a.]: Piper.

[14] Hans Sauer Stiftung (2019): Hans Sauer Preis 2019: Designing Circular Society – In Kreisläufen denken. Verfügbar über: https://www.hanssauerstiftung.de/inhalt/uploads/3_BeschreibungPreisträger.pdf (Letzter Zugriff: 09.03.2020)

[15] Leising, Eline; Quist, Jaco; Bocken, Nancy M.P. (2018): Circular Economy in the building sector: Three cases and a collaboration tool. In: Journal of Cleaner production: Jg. 176 S. 976-989.

[16] Ruiz López, Luis A.; Ramón, Xavier R.; Domingo, Santiago G. (2019): The circular economy in the construction and demolition waste sector – a review and an integrative model approach. In: Journal of Cleaner Production: Jg. 248 S. 119-238.

[17] Krebs, Stefan; Schabacher, Gabriele; Weber, Heike (2018): Kulturen des Reparierens. Bielefeld: transcript Verlag.

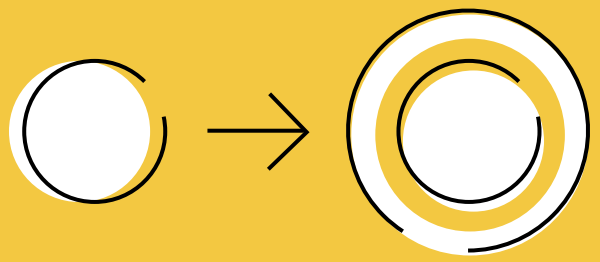
[18] Patel, Raj; Moore, Jason W. (2017): A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet. Oakland.

[19] Meadows, Donella; Randers, Jorgen; Meadows, Dennis (2004) A synopsis: Limits to growth: The 30-year update. Chelsea Green Publishing Company.

[20] Senge, Peter M. (2006): The fifth discipline: The art and practice of the learning organization. Überarbeitete Aufl. New York, London: Crown Business.

3

No Economy Without Society: The Idea of A Circular Society.



3 Circular Society: Development of an Idea

Circular economy approaches are ill equipped to address the societal changes needed to achieve full circularity of resources – as has been shown in the analysis above. Based on this analysis, the Hans Sauer Foundation considered the concept of **circular society** to be more adequate for grasping the far-reaching changes necessary in numerous areas of society if materials and products are to be managed in cycles in the future. The concept of a circular society reflects that **circularity** would have to become the essential **guiding principle, structuring principle, and principle of action** for numerous areas of society, similar to past concepts such as industrial society or consumer society, representing two social formations closely linked to the linear system of production and consumption.

The concept of a circular society also highlights the **potentials in the areas of social togetherness and cooperation** unlocked by a focus on circularity. This is because a circular society – to a much greater extent than the linear system – will depend on cooperation, participation, sharing of knowledge, transparency, accessibility, and solidarity. Similar considerations can be found elsewhere, such as in the research group "Obsolescence as a Challenge for Sustainability (OHA)." 2019 saw the first German publication on this topic: In their paper "Circular Economy – a way out of the socio-ecological crisis?" [1], Melanie Jaeger-Erben and Florian Hofmann examine the potential of circular economy concepts for a socio-ecological transformation. They consider the perspective of a circular economy to be short-sighted as it only focuses on business and technology, which is why they develop the "future scenario of a circular society" [2] in order to address concepts of social sustainability and social justice.

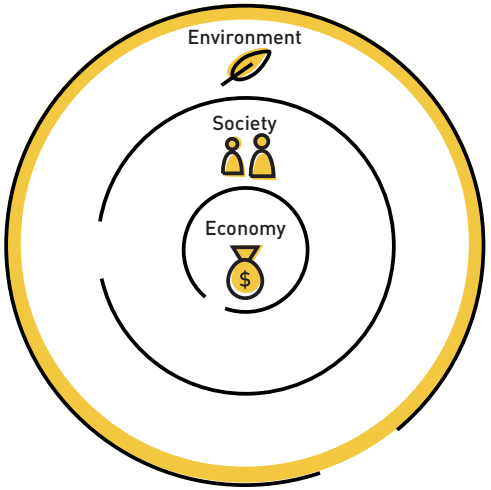
In the following, the **Hans Sauer Foundation and its social design lab** present their view on the idea of a circular society which aligns with the abovementioned works. Additionally, we argue that methods such as those of social design can support the social innovation and transformation processes that such a transition requires. Finally, we will present real-life approaches that conceptualize said transition by becoming "places of circularity."

3 Systemic Approach for Systemic Change

Since the beginning of the Anthropocene at the latest, i.e., an age in which human action has become the most important influence on ecosystems and their processes, environment, society, and economy can no longer be thought of as discrete. However, the **effects** of current economic value creation on society and nature are far more **complex and far-reaching** than one might assume. For example: Experts are convinced that the food demand for an exponentially growing world population, for example, could be met in the short term by means of more efficient technologies in the agricultural sector. It is to be expected, however, that these kinds of "solutions" cause further socio-ecological problems such as soil degradation, loss in biodiversity and lower resilience. Mitigating symptoms cannot change the **inherent contradictions of the system**. Major socio-ecological crises are not "external", there are direct consequences of human action.

Substantially changing or abolishing unsustainable processes and their consequences requires adopting a systemic perspective that views **social, ecological, and economic processes in context rather than individually** [3].

Additionally, and according to a **strict understanding of sustainability**, economy must be understood as a subsystem of society, embedded in the natural environment [4].



Indeed, circular economy develops a systemic understanding of economically generated material flows and materials in the biosphere and technosphere that goes far beyond other existing approaches. However, the concept of circular economy neglects structures and patterns of resource consumption as well as human behavior, cultural practices, social interdependencies, and normative attitudes that have emerged within society. But resource extraction, production, ways of usage and resource recovery [2], to give just a general example, is directly impacted by how people perceive, value, and interact with the natural world, the structures and infrastructures in which their actions take place, and how they assign value and utility (monetary, emotional, social) to technical things.

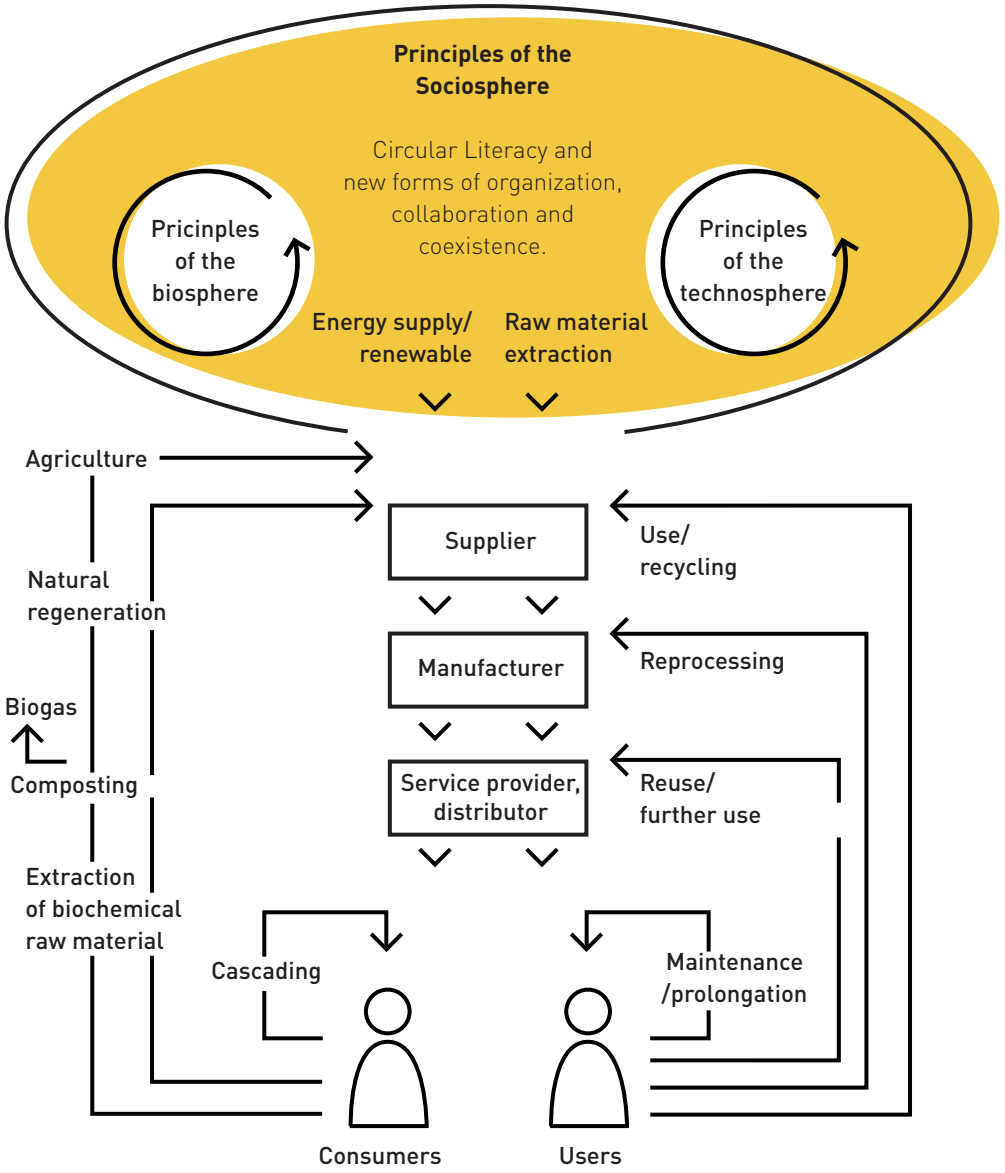
Changing social norms and standards, paradigms, values, and flows of information are far more **profound leverage points** for the transition towards a more sustainable system than mere technical optimizations in the production sphere [5].

Jaeger-Erben and Hofmann [1] account for these facts by adding a third sphere, the "sociosphere", to the biosphere and technosphere of a circular economy. They supplement the basic design principles of biosphere and technosphere (see chart p.9) with initial suggestions for principles of a **sociosphere** (see chart p.24).

The authors focus on the principle of **circular literacy**, which describes those **knowledge-based skills** that make it possible to understand and respect natural cycles and material flows [1] and to develop and implement circular models which promote a sustainable development [6].

According to the understanding of the Hans Sauer Foundation and the social design lab, the path to a circular society requires new types of knowledge and skills (circular literacy) as well as **new forms of organization, cooperation, and coexistence** – all characteristics of the sociosphere as described by Jaeger-Erben and Hofmann.

3 Balance of The Biosphere, Technosphere, and Sociosphere



Hans Sauer Foundation according to [7] and [8]

3 References

[1] Jaeger-Erben, Melanie; Hofmann, Florian (2019): Kreislaufwirtschaft – Ein Ausweg aus der sozial-ökologischen Krise? Schriftenreihe Nachhaltigkeit: Eine Veröffentlichung der Hessischen Landeszentrale für politische Bildung. Wiesbaden.

[2] Jaeger-Erben, Melanie; Hofmann, Florian (2019): From Take-Make-Dispose to a Circular Society. Introduction of a new vision in six propositions. Research Group 'Challenge Obsolescence'. Berlin.

[3] Meadows, Donella H. (2008): Thinking in systems: A primer. White River Junction: Chelsea green publishing.

[4] Döring, Ralf; Ott, Konrad (2001): Nachhaltigkeitskonzepte. In: Zeitschrift für Wirtschafts- und Unternehmensethik: Jg. 2 (3) S. 315-342.

[5] Meadows, Donella H. (1999): Leverage points. Places to intervene in a system. Hartland.

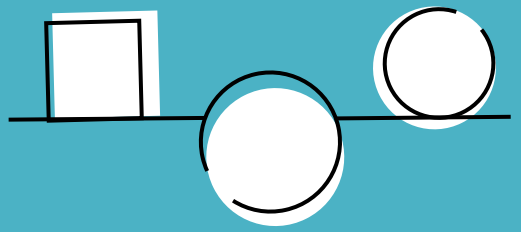
[6] Zwiers, Jakob; Jaeger-Erben, Melanie; Hofmann, Florian (2020): Circular literacy. A knowledge-based approach to the circular economy. In: Culture and Organization: Jg. 272 (4) S. 1-21.

[7] Ellen MacArthur Foundation; SUN; McKinsey Center for Business and Environment (o. J.) Infographic: Circular Economy System Diagramm. Verfügbar über: https://www.ellenmacarthurfoundation.org/circular-economy/concept/infographic (Letzter Zugriff: 09.03.2020)

[8] Institute of Design Research Vienna (IDRV) (2019): Qualitätsstandards für Circular Design: Gestaltungskriterien für eine nachhaltige Entwicklung. Verfügbar über: http://www.designaustria.at/system/assets/5506/original/qfcd_19_web.pdf (Letzter Zugriff: 09.03.2020)

4

Leverage Points for Circularity: New Forms of Knowledge Production and Participatory Solution Development.



4 New Forms of Knowledge Production and Use

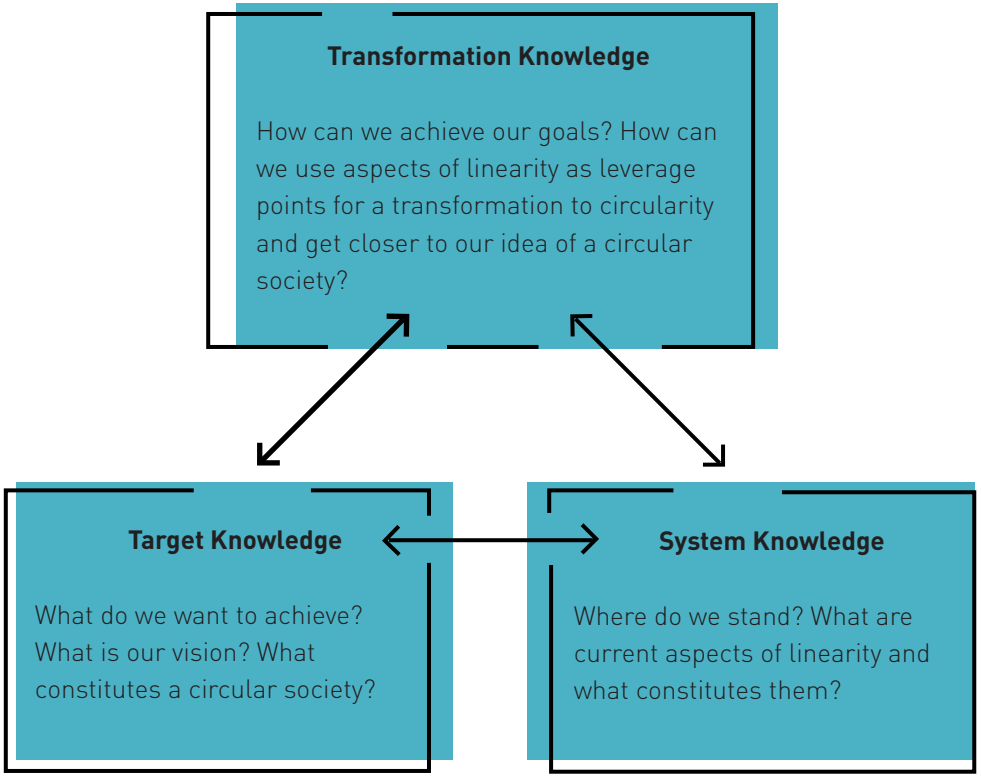
The production and distribution of knowledge has become the crucial foundation for politics, economy, and culture, which explains the popularity of analyses that refer to western societies as "knowledge societies" [1]. The way **knowledge** is produced, shared, and used fundamentally **influences the course of transformation processes** [2]. Existing ways of thinking and acting are mostly based on empirical values and institutionalized, established know-how that has been produced not least in the attempt to address issues of the existing system. Changing these ways of thinking and acting requires different types of new knowledge: First, it is essential to understand the existing systems of knowledge production and distribution (**system knowledge**) – but also how to identify goals and expectations of a sustainable transformation (**target knowledge**) and which methods help to meet these goals and expectations (**transformation knowledge**) [2].

Such an understanding of knowledge increasingly challenges the superiority of scientific knowledge over other types of knowledge; the increasingly complex societal challenges require new **forms of knowledge production**. Examples are: transdisciplinary sustainability research, transformative research, experimental approaches such as real laboratories, or participatory forms of research in "citizen science" [3]. These approaches all consider the participation of civil **actors from practice** to be relevant and important in the production of knowledge.

These actors are relevant not only because their involvement promotes **societal participation**, but rather because actors operating at local/regional level amidst sustainability challenges are often more aware of and thus more familiar with the respective level of complexity than scientists and can therefore play an **important role in problem identification and solution development** [2]. The development of **locally applicable but globally connected solutions** is enriched by shared learning processes between different actors and the building of local communities and circular networks [5]. This type of knowledge production and utilization has the potential to close the still dominant gap between knowledge and action [2].

4 System, Target and Transformation Knowledge

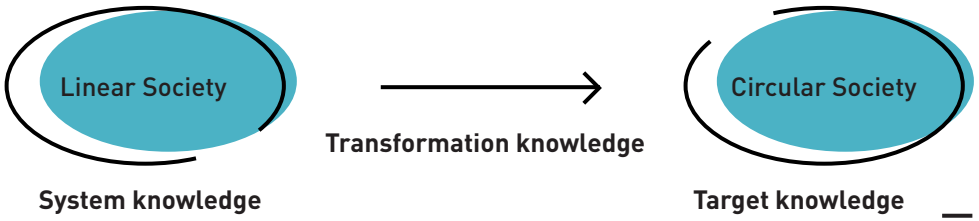
The transformation to a circular society requires new knowledge and new skills – related to the understanding of systems, setting goals and transformability.

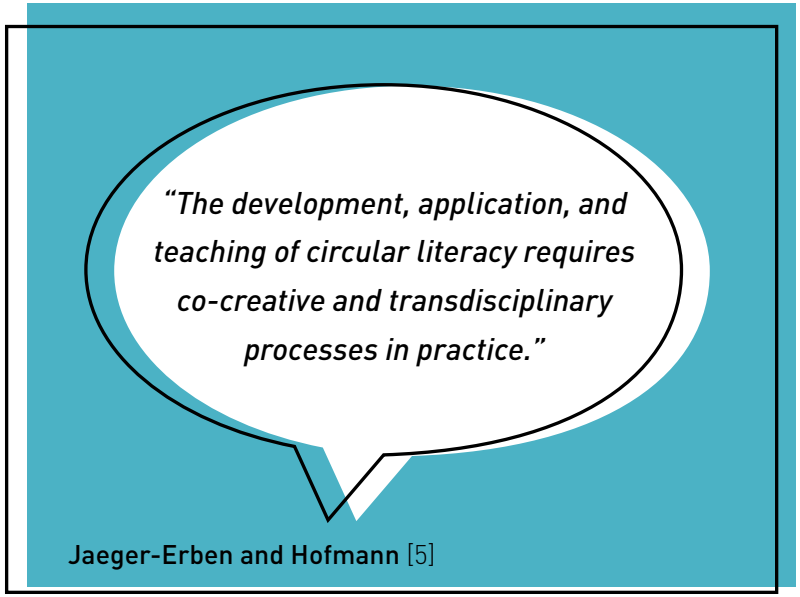


4 New Knowledge and Skills

Circular literacy [1] as a concept adequately describes the knowledge required for a circular society and the necessary skills for action. Zwiers et al. draw on the previously mentioned distinction between system knowledge, target knowledge, and transformation knowledge, which is widely used in transdisciplinary research. A transition to a circular society requires all three types of knowledge. Characteristics of circular literacy are innovative, systemic, and reflexive thinking, the ability to thoroughly understand and manage complexity as well as the ability to cooperate and design across different disciplines and social differences. Circular literacy provides the foundation for embedding human action in the biosphere and for finding creative solutions to achieve circularity in the technosphere. Circular literacy promotes proactive participation in a circular society, in particular its production and consumption systems [5].

Circular literacy can support understanding **patterns and practices** of linearity (see Circular Economy, p.9) which in turn can help to identify and acknowledge **leverage points for a transformation** towards more circularity. The leverage point as well as the outcome of transformation are **(new) forms of organization, collaboration, and coexistence**. This includes substantial changes in material and energy flows, infrastructures, and business models, but also a change in social forms of cooperation, values, norms, and paradigms. In the process, the prevailing guiding principles of economic practice must be replaced by **new narratives**, which do not focus on business efficiency and logic of profit or economic growth but have their starting point in goals such as socio-ecological sustainability and thus transversal justice or the creation of quality of life [5].





4 References

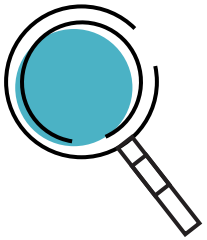
[1] Zwiers, Jakob; Jaeger-Erben, Melanie; Hofmann, Florian (2020): Circular literacy. A knowledge-based approach to the circular economy. In: Culture and Organization: Jg. 272 (4) S. 1-21.

[2] Abson, David J.; Fischer, Joern; Leventon, Julia; Newig, Jens; Schomerus, Thomas; Vilsmaier, Ulli; von Wehrden, Henrik; Abernethy, Paivi; Ives, Christopher D.; Jager, Nicolas W.; Lang, Daniel J. (2017): Leverage points for sustainability transformation. In: Ambio: Jg. 46 (1) S. 30-39.

[3] Defilia, Rico; Di Giulio, Antonietta (2019): Transdisziplinär und transformativ forschen. Eine Methodensammlung. Wiesbaden: Springer-Verlag.

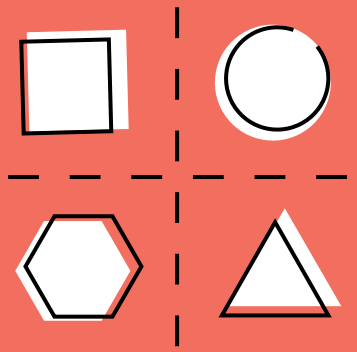
[4] Umweltbundesamt (UBA) (2017): Transformationsforschung. Definitionen, Ansätze, Methoden. Dessau-Roßlau

[5] Jaeger-Erben, Melanie; Hofmann, Florian (2019): From Take-Make-Dispose to a Circular Society. Introduction of a new vision in six propositions. Research Group ‘Challenge Obsolescence’. Berlin.



5

Designing Social Innovation and Transformation Processes: The Potential of Social Design in the Transition to A Circular Society



5 Shaping Social Transformation

New approaches, supportive structures, and sustainable processes with transformative potential are the necessary drivers for acquiring circular literacy and transitioning to a circular society.
In the current discourse on social transformation processes, "intermediary infrastructures," "innovation labs" [1], "real labs" [2] or "living lab for transformation" [3] are becoming increasingly relevant. All of them offer **spaces of cooperative culture** in which actors from different fields can jointly **develop and test innovative solutions** under **protected and favorable conditions**.
Such places and infrastructures, which enable the application of transformed ways of thinking, have become increasingly important especially at the local level. The local level, i.e., the level of close proximity, is where, on the one hand, societal challenges become particularly manifest and immediate answers have to be found on a daily basis. On the other hand, the local level offers room for experimenting and learning; it is where new solutions can be tested and mistakes can be corrected relatively easily [1].

In view of the increasing relevance of such structures for initiating and developing change processes, i.e., "social laboratories", the Hans Sauer Foundation has initiated such a laboratory, funded by the IKEA Foundation, and supported by project partners: The **social design lab** uses the approach of social design to master social challenges – such as the transition to a circular society. Social design uses methods and approaches from design and other creative disciplines to initiate change processes, hence the name [4]. Social design focuses less on designing objects than on initiating and designing processes of social change [5] [6]. Social design – at least according to the understanding of the social design lab – builds on a transformation model that wants to achieve change **from the individual all the way to the systemic level**.

In combination with the knowledge and expertise of other disciplines such as the social and cultural sciences, the **methods and practices of social design** are consistently harnessed **to initiate transformation processes**.

The Lab translates its understanding of social design in a work process of participatory, iterative, open-ended, and bottom-up solution finding.
Researchers, actors from practice, and others involved act as equal co-designers contributing their diverse skills and their formal and informal **knowledge**.

Inherently transdisciplinary processes enable shared and incremental development of new solutions. These solutions are then tested in real-life for their effects and their viability [4][7]. In this way – following Zwiers et al [8] – transformation knowledge is created and societal transformation and innovation processes are triggered, which are then actively shaped by people and therefore – it is hoped – receive wide and long-term support. At the same time, new knowledge and skills are strengthened which in trun creates the corresponding new practices, offers and infrastructures.

5 Circular Literacy in the Social Design (Lab) Process

This approach analyses local manifestations of the linear system – actors, established ways of acting, locations, processes, etc. – against the concept of a circular society and examines **leverage points** for transformation. In light of constant uncertainty about temporally and spatially decoupled consequences of actions and extremely accelerated processes (9), goals and visions are not specified in detail, but are continuously and jointly (further) developed within the framework of the process. Analyzing and reflecting the system is not only the starting point but integral part of the entire design process. In this respect, both the process and the methods used are in a permanent **"beta state," characterized by continuous reflexive questioning, innovation, and adaptation**. There is continuous participatory and collaborative production of target knowledge, system knowledge and, in particular, transformation knowledge – all part of circular literacy. The result – as the social design lab believes – are **innovative, adaptive, and socially "robust" solutions to societal challenges**. [4][7]

Social Design stands for methods, processes, and skills that enable transdisciplinary knowledge production about local/regional problems, the collaborative development of visions and the identification of new solutions and ways of implementing them (generating/developing knowledge and skills).

The **social design lab** is a laboratory for social design processes. It initiates change processes and provides an infrastructure to test, develop and also sustainably establish new knowledge, new skills and new forms of organization, cooperation, and coexistence (infrastructure for alternative narratives).

5 References

[1] Howaldt, Jürgen; Kaletka, Christoph; Schröder, Antonius; Zirngiebl, Marthe (2018): Atlas of Social Innovation – New Practices for a Better Future. Dortmund. TU Dortmund.

[2] Defilia, Rico; Di Giulio, Antonietta (2019): Transdisziplinär und transformativ forschen. Eine Methodensammlung. Wiesbaden: Springer-Verlag.

[3] Jonas, Wolfgang; Zerwas, Sarah; Von Anshelm, Kristof (Hrsg.) (2015): Transformation Design. Perspectives on a new design attitude. Basel: Birkhäuser.

[4] Hans Sauer Stiftung (2019): Über das Lab. München. Verfügbar über: https://socialdesign.de/ueber-das-lab/ (Letzter Zugriff: 11.02.2020)

[5] Banz, Claudia (Hrsg.) (2016): Social Design – Gestalten für die Transformation der Gesellschaft. Bielefeld: transcript Verlag.

[6] Papanek, Victor (1985): Design for the Real World. Human Ecology and Social Change. Chicago: Academic Chicago Publishers.

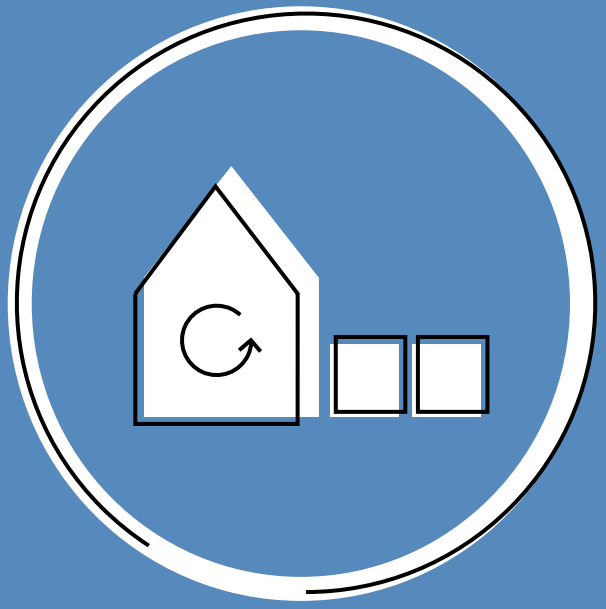
[7] Haus des Stiftens (2019): Das social design lab der Hans Sauer Stiftung. München. Verfügbar über: https://www.hausdesstiftens.org/social-design-lab-hans-sauer-stiftung/ (Letzter Zugriff: 11.02.2020)

[8] Zwiers, Jakob; Jaeger-Erben, Melanie; Hofmann, Florian (2020): Circular literacy. A knowledge-based approach to the circular economy. In: Culture and Organization: Jg. 272 (4) S. 1-21.

[9] Steffen, Will; Broadgate, Wendy; Deutsch, Lisa; Gaffney, Owen; Ludwig; Cornelia (2015): The trajectory of the Anthropocene: the great acceleration. The Anthropocene Review: Jg. 2 (1) S. 81-98.

PLACES OF CIRCULARITY I

Mehrwerthof (Circular Value Center)
Markt² Schwaben



Recycling Center Turned *Mehrwerthof*

In the Bavarian town of Markt Schwaben, the social design lab used the new construction of the local **recycling center** as an opportunity to initiate a social **process of local transformation**. Recycling centers are an integral part of the existing linear system of disposing of materials and things. Recycling centers cannot change anything about the design and manufacturing process of products; they are at the end of the use phase in the linear chains. Still, they offer opportunities for **downstream measures** to reduce ecological and social consequences and close cycles. The downstream strategy of managing the enormous stock of materials that is already in the world and rarely considered for further use and recycling will remain an important task for a circular society for decades to come. In Germany, recycling centers are the hubs for such downstream measures: They collect and transfer things that lost their value for their owners. Recycling centers are part of a differentiated waste management system and allocate the material according to "fractions" to different recycling or disposal contexts. Depending on the material class, these fractions are developed to varying degrees, ranging from those with high recycling rates for metals to composites made of plastics, which are mostly incinerated.

In this project, the social design lab, together with Markt Schwaben, anderwerk GmbH and other partners, examine whether and how it is possible to add or break the **established patterns and disposal chains** at this center by creating new cycle-oriented offers such as repair, second-hand goods trading, production sites, educational formats, exchange opportunities, material exchange platforms, and more. Such a new type of recycling center is to be actively co-designed by local people so that results and innovations receive broad and lasting support, and a new place of communal life is created. Topics related to climate protection and the use of resources are to be made tangible and placed in the context of communal needs. The new ***Mehrwerthof*** can thus function as a **place of circularity**, as one of the necessary new places in a circular society where a regenerative use of resources is actively lived and broadly anchored in society.

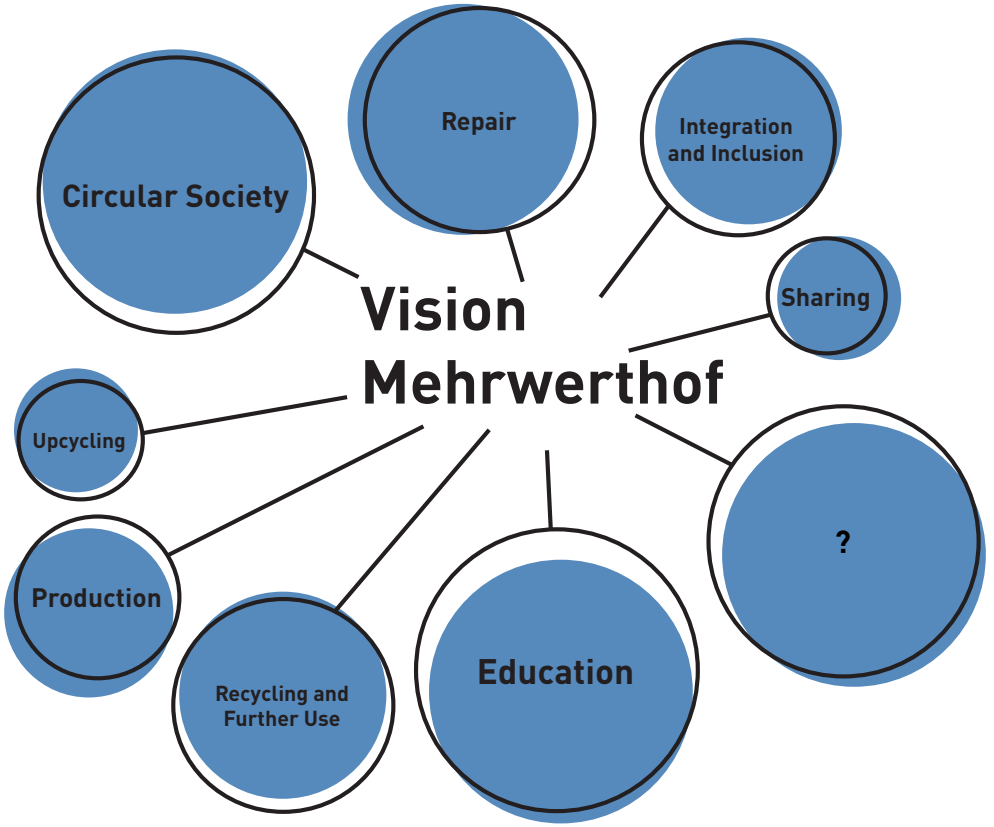
Citizens, project partners, and interdisciplinary teams from Munich University of Applied Sciences cooperated in local workshops using **participatory social design methods** to identify needs, ideas, and visions and to develop them into a concept. The result was the vision of a Mehrwerthof that comprises various circular modules and components.

In **novel alliances** between the municipality, social economy, foundation/lab, universities of applied sciences and citizens, pilot projects were initiated for the following modules: Repair events, events for exchanging materials, prototypical design and construction of street furniture from recycled material, and much more. The unifying idea is to test, establish and connect as many circular initiatives and impulses as possible in the community. Later, these can be located in the vicinity of the newly built recycling center.

The **vision of the *Mehrwerthof*** is not a fixed goal but is continuously extended and developed in an open and creative process in line with changing needs. Likewise, there is ongoing production of knowledge about aspects of linearity and about approaches to change said aspects – both with the active participation of citizens, as well as in cooperation with universities and universities of applied sciences. [1][2][3]

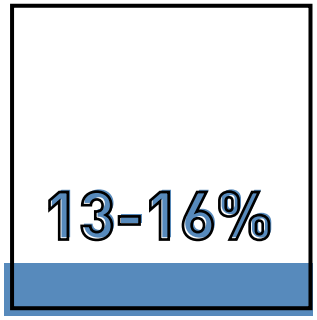
The locally adapted concept of the Mehrwerthof is suited for being transferred to other communities or urban contexts. These considerations tie in with the question of how the entire "metabolism" of a city can be thought of and designed in a more circular way and thus become a place of circularity as a whole.

Circular Dimensions of the *Mehrwerthof*

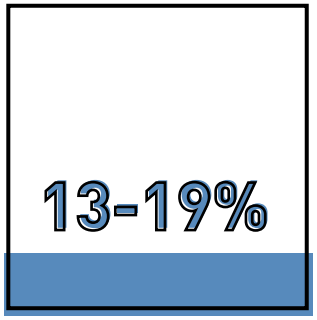


Hans Sauer Foundation [2]

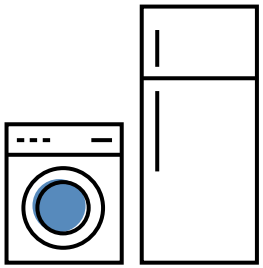
Recycling Center with Potentials

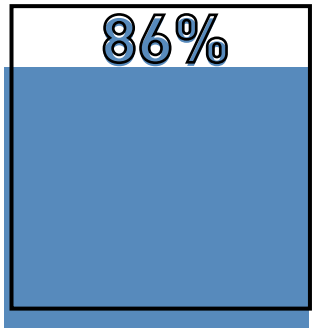


Depending on the type of waste, 13–16% of WEEE, used furniture, and recreational items could be directly processed for reuse at Bavarian collection points [4].



Another 13–19% could be exploited by changing collection, storage, and treatment of waste [4].





86% of the identified causes of damage to electrical devices and old electrical appliances are because of insufficient weather-resistant roofing [4].

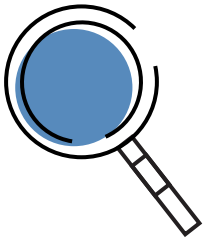
References

[1] Haus des Stiftens (2019): Das Social Design Lab der Hans Sauer Stiftung. München. Verfügbar über: https://www.hausdesstiftens.org/social-design-lab-hans-sauer-stiftung/ (Letzter Zugriff: 11.02.2020)

[2] Hans Sauer Stiftung (2018): Mehrwerthof Markt² Schwaben. München. Verfügbar über: https://socialdesign.de/portfolio/mehrwert-hof-markt-schwaben/ (Letzter Zugriff: 11.02.2020)

[3] Hans Sauer Stiftung (2019): Über das Lab. München. Verfügbar über: https://socialdesign.de/ueber-das-lab/ (Letzter Zugriff: 11.02.2020)

[4] Messmann, Lukas; Boldoczki, Sandra; Thorenz, Andrea; Tuma, Axel (2019) Potenzials of preparation for reuse: A case study at collection points in the German state of Bavaria. In: Journal of cleaner production: Jg. 211: S.1534-1546.



PLACES OF CIRCULARITY II

Circular Cities

The City as "Metabolism" from A Circular Perspective

The cross-sectoral and overall societal dimension of the circular use of resources is particularly evident in cities. In these highly dense centers of human coexistence, knowledge production, goods and services production, consumption, and waste generation there is a complex overlap of actors, resource flows and use patterns. In quantitative terms, cities play a **key role in the transition to a more sustainable society** due to their importance on a global scale [1]. In the multi-level political system, cities have taken on more and more responsibilities and in numerous areas of political and social action, cities develop their own agendas to complement national and international ones or embark on alternative and even completely new paths altogether [1] [3]. In addition to their autonomy in urban planning, water supply, waste management, public transport, etc., cities usually have extensive knowledge of urban processes and contexts or ways to generate such knowledge [4].

Cities thus not only bear **great responsibility for negative environmental impacts and social inequalities** they also have "transformative potential" [2] to test and implement new paths towards sustainability. This is especially true given that cities are also centers of civic initiatives and innovation; cities are places where a diverse urban society discovers new opportunities for developing and testing new knowledge and practices.

Cities have externalized meeting their resource needs and the consequences of their waste production by moving them to distant locations for centuries. Faced with growing pressure from resource scarcity, economic dependencies and risks, urban climate policies, etc., many cities are increasingly questioning this approach. Numerous cities are attempting to **re-internalize their resource supply** and create **circular flows of materials** [1] to ensure their supply systems being secure and to build resilient infrastructures that are less reliant on international, national, and regional structures. In Europe, cities such as London, Amsterdam, Glasgow, and Paris increasingly acknowledge circular approaches as a promising concept and have adopted the respective guiding principles. Given the complex global interdependencies in which cities

find themselves today and the magnitude of their existing infrastructures, these new guiding principles represent great challenges for cities while they also expose the myopic view of perspectives that exclusively focus on technology and economy.

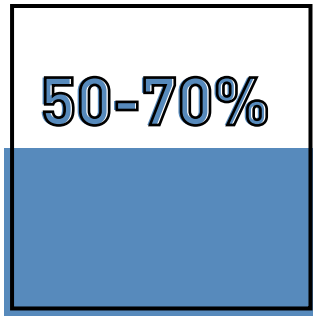
However, cities also offer special opportunities: the close **proximity and density** of circular cities offer favorable conditions for the circular use of technical and biological resources. The proximity of affected stakeholders simplifies cross-sector cooperation in closing resource cycles. Existing circular economy approaches can provide a basic framework for the conceptualization of circular strategies for urban resource management.
Furthermore, directing attention on social interaction processes, dominant urban infrastructures, and heterogeneous patterns of action and attitudes of inhabitants exposes the oversimplified and myopic focus on technology and production processes.

Cities, therefore, prompt a shift in focus on quite different types of resources, namely food and water in addition to soil and land. The daily reality in modern cities highlights the diversity of resource consumption across numerous sectors and puts the idea that improvements in terms of circular economy represent key leverage points for change into perspective. However, many existing widespread circular city concepts actually often reproduce circular economy approaches centered on technology und economy. Furthermore, they are developed as strategic visions by policymakers and administrators and conceptualized as top-down processes. [4]

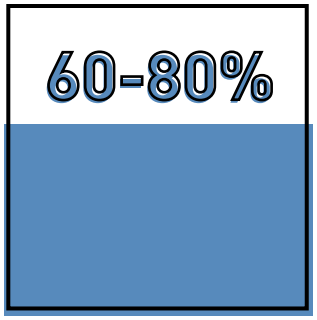
According to the transdisciplinary approach which has been described as the key to change, the transition to circular cities and communities would require top-down strategies of the public sector to be at least complemented, if not replaced, **by bottom-up initiatives and participatory design processes**. Grassroots initiatives play an important role in this regard: Citizens who advance sustainability through a **sustainable lifestyle** and active involvement in political and social issues and thereby enable **social innovations** that offer creative solutions to local needs (e.g., citizen energy program, repair cafés). The public sector should take on the task to encourage and promote such initiatives, e.g., by building knowledge, collaboration platforms, support programs of circular business models, supportive and adaptive infrastructure, and localized cycles as well as adapting regulatory frameworks. According to past experience, the development of **adaptable visions of the future**, the use of **experimental approaches** and **intermediary structures** such as lab approaches, and collaboration with various stakeholders are also important drivers. [5]

Cities are, in any case, the globally dominant spaces of human coexistence and the centers of production, consumption and disposal in the current system, which makes them crucial factors in the process of transformation. They would have to become places of circularity, for which they offer favorable conditions. Harnessing these conditions, however, requires conceptualizing municipal strategies in terms of an **urban circular society**.

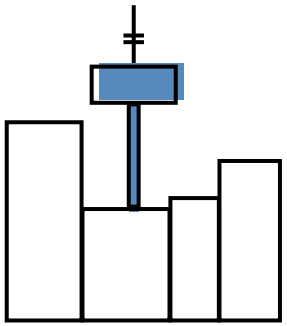
Cities in Global Context

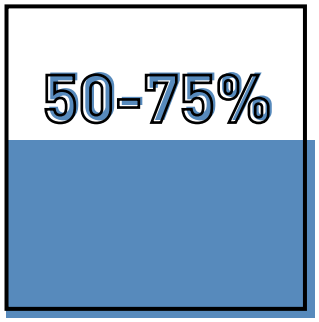


Currently, about 50 % of the world's population lives in cities. According to UN estimates, this trend will continue, with an expected increase to almost 70 % by 2050 [7].



Cities currently consume 60–80% of global natural resources [8].





Cities produce 50% of global waste and 75% of greenhouse gas emissions [8].

References

[1] Hodson, Mike; Simon Marvin (2010): Can cities shape socio-technical transitions and how would we know if they were? In: Research policy: Jg. 39 (4) S. 477-485.

[2] Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (WBGU) (2016): Der Umzug der Menschheit: Die transformative Kraft der Städte. Hauptgutachten. WBGU: Berlin.

[3] Loorbach, Derk; Wittmayer, Julia M.; Shiroyama, Hideaki; Fujino, Junichi; Mizuguchi, Satoru (2016): Governance of urban sustainability transitions. Japan: Springer-Verlag.

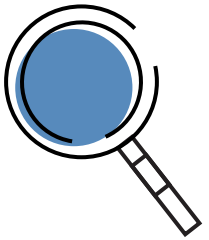
[4] Prendeville, Sharon; Cherim, Emma; Bocken, Nancy M.P. (2018): Circular cities: mapping six cities in transition. Environmental innovation and societal transitions, 26, S. 171-194.

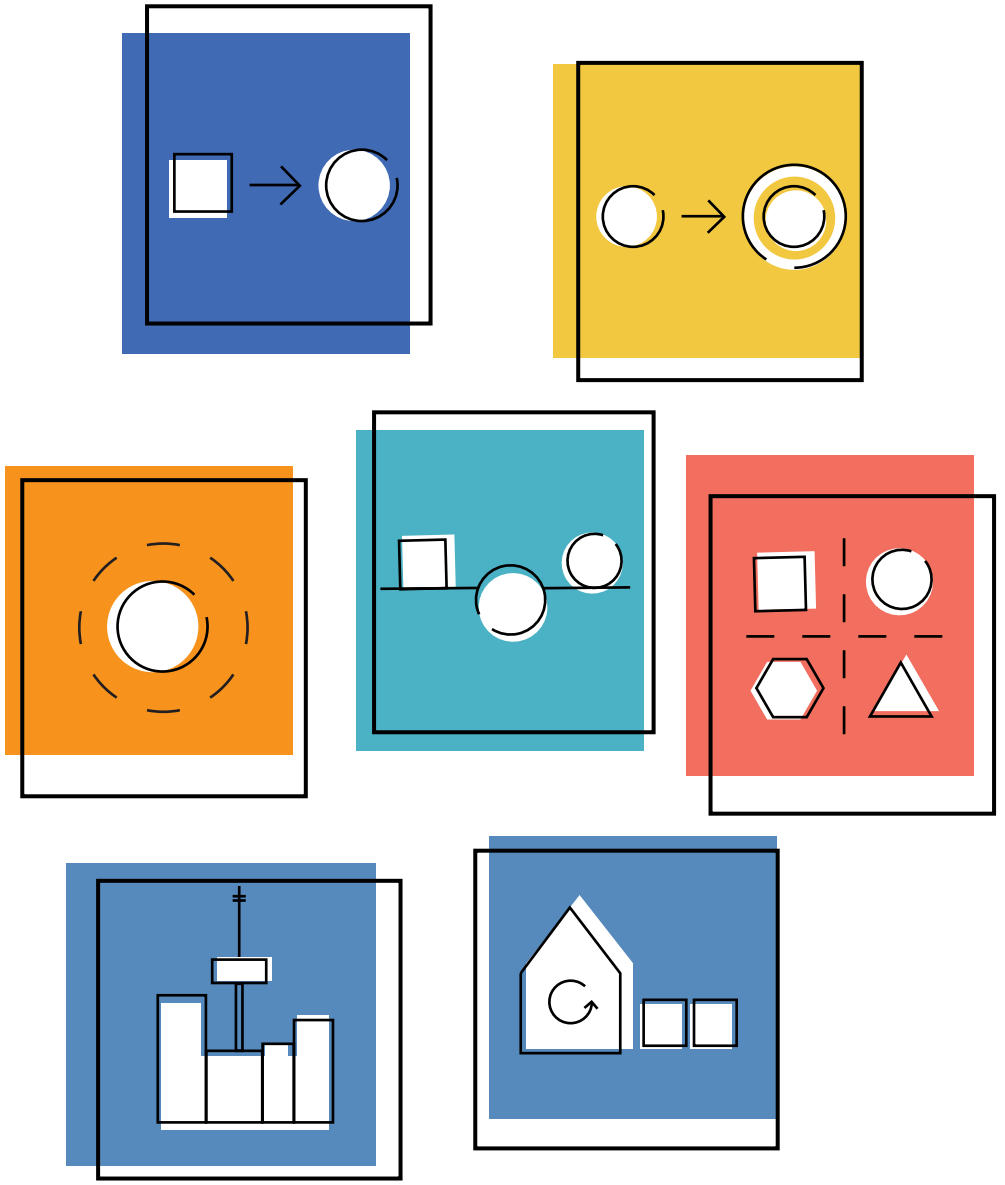
[5] Williams, Joanna (2019): Circular cities. In: Urban Studies: Jg. 56 (13) S. 2746-2762.

[6] Ellen MacArthur Foundation (2019): City Governments and their role in enabling a Circular Economy Transition. An overview of urban policy levers. Verfügbar über: https://www.ellenmacarthurfoundation.org/our-work/activities/circular-economy-in-cities (Letzter Zugriff: 09.03.2020)

[7] United Nations, Department of Economic and Social Affairs, Population Division (2014): World Urbanisation Prospects. The 2014 Revision, Methodology Working Pape No. ESA/P/WP.238

[8] Camaren, Peter; Swilling, Mark (2012): Sustainable Resource Efficient Cities: Making It Happen. UNEP.





Summary

1

The Linear System in Crisis: The Need for Transformation.

Current linear (economic) structures, ways of thinking and acting lead to ecological and social crises. There is a broad consensus in politics and science: We need transformation on various levels. In line with this consensus, the Hans Sauer Foundation and its social design lab, placed their thematic focus on the "Circular Society," and search for ways to substantially transform the prevailing structures and practices of linearity.

2

The Circular Economy: A Promising But Insufficient Sustainability Strategy.

Numerous players in politics, business and science consider the circular economy as a promising sustainability strategy. However, the concept focuses on economic value creation and technological innovation only and therefore largely neglects the social dimension. A shift toward more circularity requires much more than ecological modernization; it also requires a redesign of social practices, societal structures, and cultural patterns.

3

No Economy without Society: The Idea of A Circular Society.

Substantially changing unsustainable processes and their consequences requires a systemic perspective that views social, ecological, and economic processes not as discrete but in context. The Hans Sauer Foundation and the social design lab therefore use the concept of a circular society. This concept expresses the fact that circularity must become an essential guiding principle, structuring principle, and principle of action for numerous areas of society.

4

Leverage Points for Circularity: New Forms of Knowledge Production and Participatory Solution Development.

The transition to a circular society requires new knowledge and skills – system knowledge, target knowledge, and transformation knowledge. New forms of knowledge production and participatory solution development can help generate, develop, and apply the knowledge and skills for action needed for circular literacy. Circular literacy can be used to understand patterns and practices of linearity and recognize their potential as leverage points for a transformation to circularity. The development and application of circular literacy requires a co-creative process.

5

Designing Social Innovation and Transformation Processes: The Potential of Social Design in the Transition towards A Circular Society.

Transitioning towards a circular society or acquiring circular literacy requires new approaches, supporting structures and sustainable processes with transformative potential. In view of social lab approaches becoming increasingly relevant, the Hans Sauer Foundation and its partners have founded the social design lab (see p. 35). The social design approach used by the lab offers methods and expertise that make it possible to initiate innovation and transformation processes in a transdisciplinary way and to generate, develop and apply circular knowledge and skills in practice. The social design lab provides the framework for these approaches.

Places of Circularity I: Mehrwerthof Markt² Schwaben

In the Bavarian town of Markt Schwaben, the social design lab seized the new construction of the local recycling center as an opportunity to initiate a social design process. This new place of sustainability, learning and, communal actions, is created with active participation of citizens, and a place of which a circular society needs many.

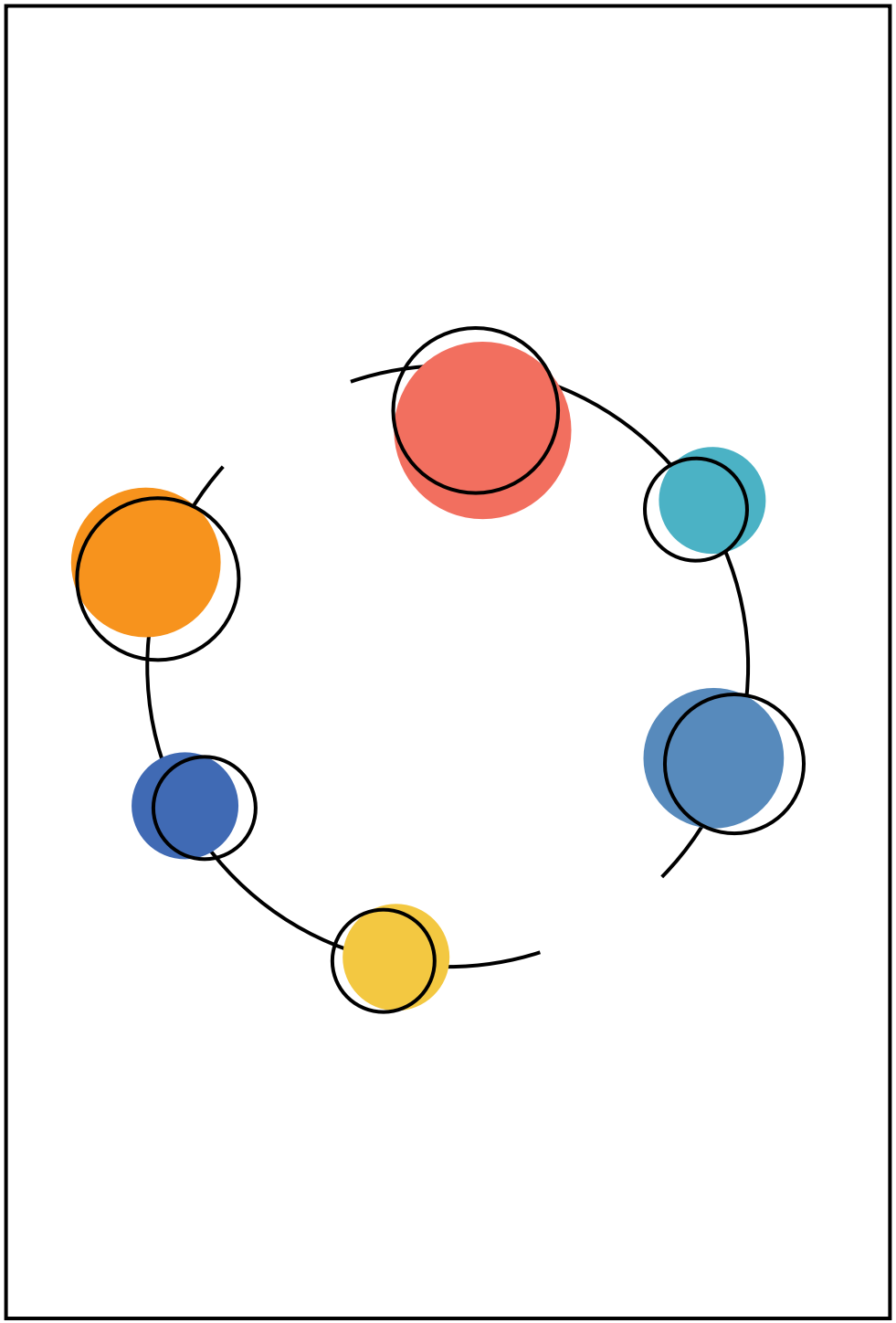
Places of Circularity II: Circular Cities

Cities have the potential for testing and implementing new paths toward sustainability. In addition to the development of the circular economy, many cities already consider the vision of a circular city as a promising strategy for the future. Currently, however, these strategies often focus on more effective resource management and disregard social aspects and the specifics of the urban context. The idea of a circular society can help to conceptualize circular city approaches in such a way that cities are viewed as "metabolism" and changed from a societal, circular perspective.

Conclusion

Linear structures, ways of thinking and acting have significantly contributed to current social and ecological crises; still, circular alternatives and concepts are far from being prevalent. Nevertheless, there are many practical approaches and pilot projects at the local level that break up linear structures and practices and have the potential to be at the beginning of a social transformation process.

In order to bring about substantial and sustainable change in the way society manages resources, it is essential to pursue local, experimental, and novel approaches, to connect actors across sectors and to transfer new practices and models and the knowledge they generate to other places. Participatory design processes can be an important catalyst for finding, testing, establishing and broadening paths towards a circular society. Such a circular society can only develop if it receives broad support from society, is continuously developed and translated into new practices and structures.



Hans Sauer Foundation

social design lab

The Hans Sauer Foundation is a primarily operational non-profit foundation. It was founded in 1989 by the inventor and entrepreneur Hans Sauer and is committed to his principles. Hans Sauer established his foundation with the vision that future innovations would be driven by social and ethical motivation and thus provide measurable social and ecological benefits.

The social design lab of the Hans Sauer Foundation, funded by the IKEA Foundation, is as a laboratory for social design processes. It addresses social challenges and initiates participatory and collaborative change processes aimed at finding new structures and solutions. In this way, new knowledge, new skills and new forms of organization, cooperation and coexistence can be tested, developed, and established long-term. Among others, the social design lab works on projects relating to the concept of circular society, ranging from experimental real-life projects such as the Mehrwerthof Markt² Schwaben (see p. 39) to theoretical-conceptual approaches and research such as this position paper.

Imprint

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