University of Lausanne – UNIL

Sustainability Transformation Research Initiative - STRIVE

A research programme social and ecological transformation

Thematic and methodological guidelines

Introduction (context, STRIVE overall objective, document's outline)

The unsustainability of our societies' current functioning is widely documented. Similarly, the objectives to be achieved to address this situation are well known, at least in broad terms. They are based on the current state of scientific knowledge, which has reached sufficient consensus to be included in many statements of political intent. The aim is to prevent human activities from causing disruptions to the natural environment that exceed some critical thresholds, beyond which the stability and proper functioning of the various (eco)systems that make up the "earth system" can no longer be guaranteed. In addition to this environmental objective, embodied by the model of the planetary boundaries (Röckstrom et al. 2009), there is a need to ensure the basic needs and well-being of all, from a social justice perspective. In a report published in 2019, the UN stressed the need for "an urgent and intentional transformation of socioenvironmental-economic systems, differentiated across countries but also adding up to the desired regional and global outcomes, to ensure human well-being, societal health and limited environmental impact" to achieve the sustainable development goals (ONU, 2019, p. xxi).

Current knowledge shows that because of, on the one hand, the scale of the reduction needed in environmental impacts to achieve this objective, and on the other hand, the significant inequalities in the distribution of well-being, the societal changes to be pursued will have to be significant and even radical, in the etymological sense of the term. This calls for looking beyond mere treatment of the symptoms (environmental and social issues), by identifying their underlying causes and devising alternatives. To this end, we need to gain a better understanding of the processes and dynamics at work, which influence, structure or condition our collective progress along the path to ecological and social transformation.

The "Sustainability Transformation Research Initiative" (STRIVE), a research programme launched in 2024 by the University of Lausanne (UNIL), aims to study this fundamental and systemic issue. Drawing on contributions from a wide range of disciplines, mainly from the humanities and social sciences, it aims to provide coordinated, cross-disciplinary answers to questions such as: How do we transform a society? What are the social, economic and political constraints, obstacles and blocking factors that slow down or prevent transformation? How can they be overcome? What leverages and instruments, in a broad sense, can facilitate or accelerate it? How can we gain a better understanding of the various options available and shed light on the many societal choices that must inevitably be discussed if we are to complete the journey towards a sustainable and fair socio-economic system? What lessons can be learned from existing knowledge, and how can it be mobilised to facilitate change? What role can or should the various spheres of action (civil society, private enterprises, public sector) play in this transformation? And what role can and should research play in this?

Based on the assessment that the current situation and the goal of the social and ecological transformation are sufficiently well known, STRIVE focuses on the transformation process itself, as its primary topic. As part of a transformative approach, STRIVE aims to support research exploring the means of bringing about an ambitious and rapid transformation of our socio-economic system. To this end, the programme will fund eight to ten research positions over four years (PhDs and post-docs), within an inter- and trans-disciplinary project, whose systemic and, if possible, transformative contributions will be coordinated and facilitated by the Competence Centre in

Sustainability (CCD). A part of the budget will also allow seed-funding grants to be awarded to develop projects falling within the STRIVE guidelines and then submit them to research funding organisations. The programme also aims to create a dynamic and close-knit research community around the study of societal transformations at UNIL.

The Swiss Academy of Sciences (SCNAT) believes that the creation of broad, integrated and transdisciplinary research programmes in the field of sustainability research is a priority. Its report entitled "Lighthouse Programmes in Sustainability Research and Innovation" (Wuelser, Edwards, 2023) specifies four essential elements to characterise such programmes: (i) embracing the complexity of sustainability issues (which implies aligning research with policy objectives and adopting a systems approach), (ii) ensuring the societal relevance of research (which implies understanding the needs and contexts on the field, taking account of the unexpected and building transformative networks), (iii) striving to produce knowledge that is likely to generate an impact and concrete transformative courses of action, and finally (iv) ensuring framework conditions enabling collaboration and the co-production of knowledge and its dissemination. STRIVE is designed to respond to these different elements.

This document aims to clarify the theoretical and conceptual foundations of STRIVE, in particular by clarifying the very notion of ecological and social transformation, as reflected by its title. It presents the chosen framework, specifying the aim of the transformation and the spatio-temporal context of the programme. Then, it focuses on the various transversal research themes that will guide the programme and unite the various disciplines around a common set of questions, while also presenting some structuring details for the projects within the programme (spheres of action and cross-disciplinary research axes). Finally, it addresses methodological aspects characterising how the notion of transformative research is understood within the STRIVE programme.

Choice of the concept of social-ecological *transformation*

The concepts of *transition* and its derivatives (ecological transition, societal transition, just transition, etc.), as well as *transformation*, have gradually become institutionalised, being invoked in debates on sustainability by a wide range of actors, both public and private. The research points out that these notions are often used interchangeably to "convey the idea of fundamental, systemic, or radical change" (Feola, 2015, p. 379) or as one of the potential trajectories that the other can take, and vice versa (Child & Breyer, 2017; Hölscher et al., 2018).

To differentiate the two terms, some insist on a distinction regarding the depth and scale of change, where transformation is used to refer to major, more radical, large-scale, and long-term changes applicable to entire societies, whereas the notion of transition would mostly focus on the analysis of change in specific sectors such as energy, mobility, or agriculture (Feola, 2015; Hölscher et al., 2018). Hölscher et al. (2018) also note that transformation is often applied in relation to concepts such as resilience and planetary boundaries. For Stirling (2015), transitions are "managed under orderly control, through incumbent structures according to tightly disciplined knowledges, often emphasizing technological innovation, towards some particular known (presumptively shared) end", while transformations are "involving more diverse, emergent and unruly political alignments, more about social innovations, challenging incumbent structures" (Stirling, 2015, p. 54).

This distinction can be summarised, in a necessarily reductive and schematic form, as follows: the concept of transition would be mobilised by stakeholders who believe that sustainability is achievable within existing structures (status quo perspective) or that it requires reforms without a radical rupture with the system in place (reformist perspective), whereas the use of the concept of transformation would refer to the need for an in-depth reconfiguration of the political and economic structures of society (transformative perspective) (cf. e.g. Block & Paredis, 2019; Hopwood et al, 2005). The transformative perspective sees sustainability as intrinsically connected to issues of social equity, considering the links between access to livelihoods, health, resources, and economic and political decision-making (Hopwood et al., 2005). It is in this sense that the concept is used in the 6th Report of the 2nd Working Group of the Intergovernmental Panel on Climate Change (IPCC), published in 2022, where transformation is defined as "a change in the fundamental attributes of a system including altered goals or values", or as including the "transitioning to systems that strengthen the resilience of ecosystems and society" (IPCC, 2022, Chap. 18.3.1 and Box 18.1).

The assessment of the current situation informs us that simple incremental changes to Western socio-economic systems are insufficient to make them sustainable (i.e. to achieve the objectives of the transformation described below), which justifies the choice of the term "transformation" to name the programme and the aim to place it in a transformative perspective. This choice also reflects the intention to address the issues from a systemic and interdisciplinary perspective, as well as to avoid the programme being assimilated to research focusing on simple sectoral transitions. Furthermore, it reflects the aim to study the process(es) of change by examining all spheres of society (civil society and NGOs, private companies, public sector), an aim that will be reflected in the structuring of the projects.

This choice is consistent with the positioning of UNIL, whose approach to sustainability reflects a "strong sustainability" perspective. It also mirrors international institutions' use of the term "transformation", particularly the work of the IPCC, which adopts a broad understanding of the term (including in its 6th report, Working Group II) with the aim of integrating issues of equity, climate justice and large-scale institutional and societal change. The IPCC uses it as a solution-oriented concept, aimed at contributing to societal change (IPCC, 2022, chapters 1.5.1 and 18).

The choice of the concept of transformation as the title of the STRIVE research programme is essentially intended to emphasise the following distinctive elements, which we hope will be reflected in the hypotheses, framework and methods of the research projects conducted within the programme:

- The depth of the changes required: transformation refers to radical and structural modifications of the socio-economic system;
- The scale of the changes required, meaning that they are cross-cutting, cross-sectoral and apply to the whole society;
- The need for a systemic understanding of the issues at stake in order to grasp these changes, which implies interdisciplinary or even transdisciplinary approaches to study them;
- The rupture with several dominant assumptions, structures and epistemic models, in the sense of a paradigm shift. This implies integrating a certain amount of reflexivity into the choice of research methods and researchers' posture. Insofar as this opens the door to

unpredictable results, it will also be necessary to question the criteria for success and impact of the research carried out as part of the programme.

The differences in the use of the terms transition and transformation in the academic literature is explained in more detail here (in French).

General framework for STRIVE research projects

Transformation target: Switzerland in the Donut by 2050

As indicated in the contextual elements, the research programme intends to focus essentially on the **processes and dynamics of transformation**, rather than on a precise or quantified examination of the normative definition of what a sustainable socio-economic system means. It chooses a given normative framework to allow the construction, in broad terms, of a common vision of the goals targeted by the transformation process, as well as to allow the various researchers involved to conduct research that is coherent and coordinated with the other STRIVE projects or sub-projects. The most important thing is to be clear about **what we're aiming for** and **how much change is needed**.

The STRIVE programme is based on the Donut model created by Kate Raworth, economist at the University of Oxford. This normative framework aims to rethink the dominant socio-economic system so that its impacts stay within a safe and just operating space. To remain within this *safe* space, the impact of socio-economic activities should stay below an ecological ceiling set by planetary boundaries, which are thresholds of disturbance to natural processes that must not be crossed to ensure the stability of the Earth system (Steffen et al. 2015; Rockström et al. 2009). To remain within a *just* space, we need to ensure that a social foundation is respected, comprising the basic needs and minimum determinants of well-being that should enable everyone to lead a dignified life. The parameters of the social foundation are not, however, conceived as a definitive list, and certain parameters may vary depending on the regions of the world, cultures and scales considered. The planetary boundaries and the social foundation define the safe and just doughnut-shaped zone within which human activities should be circumscribed (Figure 1) (Raworth 2017).
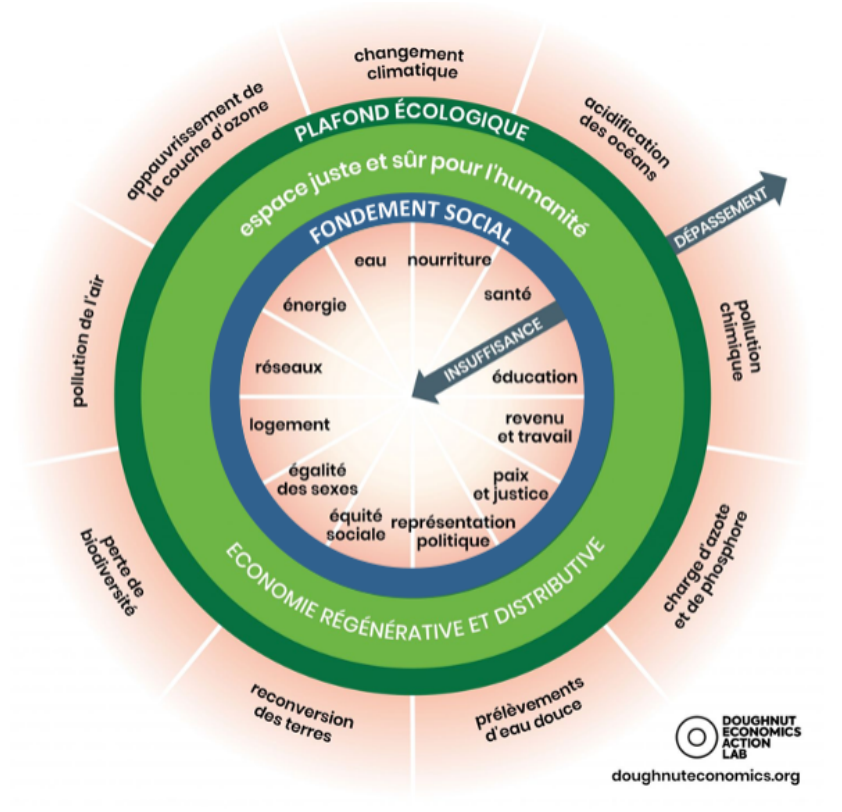
Figure 1 - Kate Raworth's Doughnut Model

Existing research on transitions stresses the need to explicitly include the diversity of contexts in which transitions occur, to avoid '*one-world views*', which tend to neglect local points of view in favour of 'developmental' trajectories inspired by Western/Northern experiences. Diversity could be the key factor to a more sustainable transition and to new territorial paths (Sustainability Transitions Network, Newsletter no. 45, September 2022). One way of taking this requirement into account is to anchor the scope of STRIVE's projects and sub-projects in a well-defined territorial context. Given UNIL's institutional ties to its home territory, the context chosen is that of Switzerland. As for the time frame adopted, it covers the transformation of our socio-economic system towards a sustainable system by 2050.

The research will essentially look at **the processes and dynamics** that could take Switzerland from its current situation to a **Switzerland whose impact in 2050 lies within the 'safe and just' space delimited by the Doughnut**. From this perspective, respecting planetary boundaries means reducing the direct and indirect impacts of the whole country's consumption ("footprint" approach). This approach allows the impact of the Swiss socio-economic system abroad to be taken into account. However, such a perspective does not rule out Switzerland's commitment at international level to encourage the pursuit of a similar objective in other territories.

Reducing material and energy flows: sobriety

To get an idea of the scale of the decrease needed to achieve the goal of a Switzerland respecting planetary boundaries, we can refer to a recent study commissioned by the federal government: "*Starting from planetary boundaries, we recommend a 74% reduction in the biodiversity footprint and a 48% reduction in the eutrophication footprint (...). Given the country's existing targets (Long-Term Climate Strategy 2050 and Sustainable Development Strategy 2030), we recommend at least*

an 89% reduction in the greenhouse gas footprint by 2040. In terms of total environmental impact, we estimate the need for a 67% reduction, based on Switzerland's environmental targets and legal limit values" (EBP/OFEV, 2022, p. 7). Only focusing on material and energy efficiency strategies and occasional improvements is insufficient to achieve these targets. In 2013, a study estimated that "simple measures" aimed at optimising the use of resources, even extremely drastic ones, could at best lead to a 40% reduction (cf. Kissling-Näf et al. 2013, p. IV).

It appears that achieving these objectives will require an absolute reduction in the material and energy flows, which implies the implementation of sobriety strategies. Achieving these objectives will hence require a fundamental and coordinated transformation of the Swiss society and its various sectors (housing, mobility, food, energy, economy, etc.), fully justifying the use of the notion of transformation.

Therefore, **the imperative of a rapid decrease in material and energy flows** must guide the way in which the processes and dynamics of change will be studied within the STRIVE programme. For instance, here are a few cross-cutting questions that could be addressed by the STRIVE project: What are the obstacles making sobriety policies so difficult to implement, and how can they be overcome? How could we make the necessary decrease in energy and material flows towards a sustainable society, politically and socially acceptable, even desirable? How could we rethink and communicate the links between material and energy consumption, and well-being? How could the current economic paradigm, or the Swiss legal framework, be modified to serve the objectives of a more sober society? What are the characteristics of contemporary capitalism, favourable or unfavourable, to the various dimensions of the transformation?

An objective aligned with the national political goals and with the intentions of UNIL

This choice is in line with Switzerland's political aims, which seek not only to limit "*Switzerland's environmental impact at home and abroad (...) to what nature can support* " (CONSEIL FÉDÉRAL SUISSE, *Stratégie pour le développement durable 2016 - 2019*, 27 janvier 2016, p. 25), but also to guarantee the fundamental human rights of its citizens and of the rest of the world's population.

Back in 2012, the federal popular initiative "For a sustainable economy based on efficient resource management (green economy)" was already calling for Switzerland's ecological footprint to be reduced by 2050 so that, extrapolated to the world's population, it would not exceed one planet equivalent (FF 2012 7781). At the time, the Federal Council emphasised that an approach "*promoting, as part of a global approach, a sustainable economy based on the efficient and economical management of natural resources, is legitimate in view of the pressing challenges posed by global problems relating to the use of resources and the resulting effects on the planet's ecosystems*", adding that reducing "*the global ecological footprint to one planet equivalent is now vital, because the efficient use of natural resources is not only a necessity for environmental policy, but also for economic policy.*" (FF 2014 1751, 1776).

Today, these declarations of intent are being transposed, at least in part, into objectives written into the law. For instance, there is the goal of achieving zero net greenhouse gas emissions in Switzerland by 2050. This goal was enshrined in article 3 of the *Climate and Innovation Act* approved by popular vote on the 18th of June 2023. More globally, Switzerland is aiming to limit the increase in temperature to 1.5°C, in line with the 2018 publication of the IPCC's special report on 1.5°C global warming (cf. art. 2 al. 1 let. a of the Paris Agreement and Switzerland's National Determined Contribution).

The decision to focus STRIVE on the study of the processes enabling the transformation towards a Switzerland within the Donut in 2050 is also consistent with UNIL's approach. As a research institution serving society, UNIL emphasises the ecological transition as one of the priority issues of its 2021-2026 intentions plan and, in this context, wishes to strengthen researchers' support, helping them to produce high-quality research that sheds light on the world's complex issues while promoting research rooted in its local environment and open to the world.

Structuration of the projects

A systemic issue: overview, coordination, integration

As a reminder, research within the STRIVE programme aims to study the processes of change required to reduce the direct and indirect environmental impact generated by Switzerland's socio-economic activities by around two third in less than three decades, while respecting the minimum social standards necessary for the well-being of all members of society. The aim is to gain a better understanding of the dynamics of change, to identify the obstacles standing in the way of transformation, and the leverages that can be used to overcome them.

The complexity, uncertainty and unpredictability which characterise sustainability issues call for a systemic perspective, i.e. a focus on the interrelationships between the different elements that make up the system, as well as putting contemporary challenges in their historical context and in relation to their future prospects.

To organise research and questionings relating to the transformation towards a sustainable Switzerland in a systemic, interdisciplinary and coordinated manner, STRIVE relies on:

- A simplified representation of the socio-economic system and its spheres of action.
- Three cross-disciplinary research axis.

These two elements will help structure the project and its sub-projects, offering a common framework and enabling the different types of knowledge acquired to be linked together.

Simplified representation of the system by spheres of action

To provide a systemic representation of the transformation's challenges, while going beyond the traditional approach by sector or discipline, STRIVE will mainly focus on the **interactions** between the three main *spheres of action* listed below (see figure 2). More specifically, it is the mutual influences of these spheres that constitute potential obstacles and leverages on the path to transformation, and largely define the dynamics of change. These spheres also allow for the characterisation and questioning of the worldviews, attitudes, values and actions of the various stakeholders within them, and to examine their contribution, positive or negative, to the ecological and social transformation. These spheres of action should not be seen as monolithic or watertight categories, but simply as means of situating the various themes and issues addressed by STRIVE within a broader conceptual framework.

- **Individuals and civil society** (behaviour, social norms, etc.)
- **Institutions and the public sector** (democracy, law, public policies, etc.)
- **Economy and businesses** (macroeconomics, finance, business models, etc.)
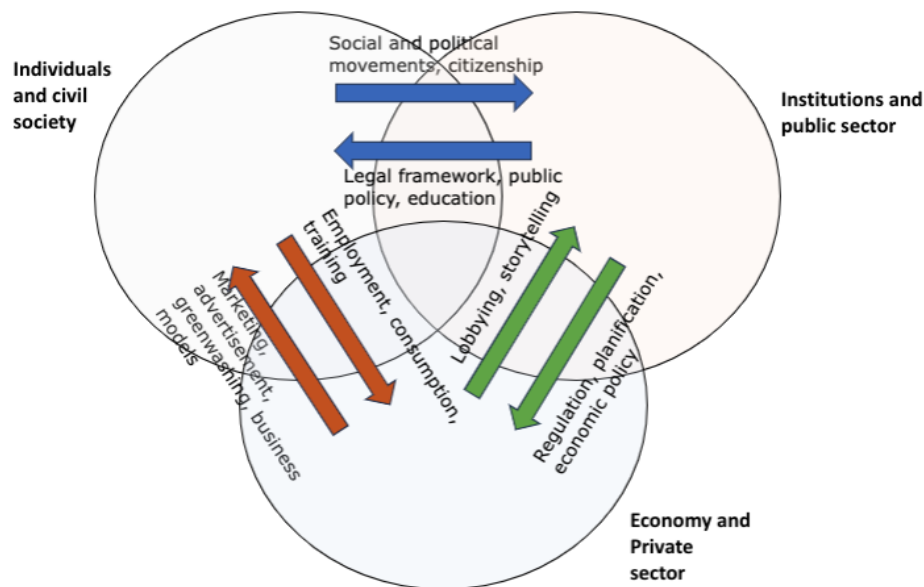
Figure 2 – Spheres of action and their interactions

Cross-cutting themes

To enable a cross-cutting approach to the identified issues, common research axis to all sub-projects will guide the structure of the research.

The choice of these axis is the result of a process of emergence and maturation built over approximately six months. An initial reflection was conducted, taking into account (i) a systemic vision of the transformation (based on the direction members' expertise and the academic literature), and (ii) a preliminary study of the possible contributions of the various disciplines to the study of transformation (based on discussions within the scientific council whose members represent a wide diversity of disciplines). This led to the definition of preliminary cross-cutting themes. Secondly, an interdisciplinary conference on the ecological and social transformation research was organised in February 2023 at UNIL, bringing together researchers from within UNIL and several invited external researchers. The two-day conference, a summary of which is available here, resulted in the following three cross-cutting themes to be chosen:

- Governance of change and leadership
- Social justice and equity in the transformation
- Communication, narratives and storytelling

The relevance of focusing on each of these themes as part of the study of transformation processes towards a sustainable socio-economic system is briefly described below. To illustrate this, we suggest a series of preliminary questions which emerged from the above-mentioned conference, and that the research projects and sub-projects could attempt to answer. These questions are only examples and are not meant to serve as a guide. More specific research questions will be decided and narrowed down by the research teams, following a collective and interdisciplinary work process, or even a co-construction process with other stakeholders.

Governance of change and leadership

Governance, in its various dimensions, can be seen as a powerful vector for transformation. This means being ready to rethink some of the features of our institutional and democratic system, or even the ground values on which they are based. In this regard, it seems crucial to ask **how best to govern transformation, at all levels.**

Is the institutional organisation governing the current socio-economic system capable of accommodating, or even initiating, the desired transformation? Are reforms to the major institutional rules governing democracy and decision-making necessary to create and govern a sustainable society in Switzerland? Which reforms would be necessary in the design of public policies, the distribution of competences between institutional levels, cross-sectoral coordination, etc.? Are the current conventions legitimising public action, and the current interpretation of public order and public interest, still adapted to the issues at stake, and if not, how can they be adapted? Should our legislative system, largely based on the safeguarding of individual interests, evolve to enable us to better respond to more collective societal interests?

These questions regarding governance also arise at the organisational level. How can we define and promote new forms of organisation and leadership that are compatible with the challenges of transformation? In this context, should we encourage more flexible, inclusive and shared governance, and if so, how? But the governance of change is also concerned with strategies for preventing change. In this context, what role does misinformation organised by players who have no immediate interest in change play? How do the various strategies aimed at delaying action manifest themselves in our public and corporate policies, and what effects do they have on the economic, social and political spheres? How do they achieve (or fail to achieve) their objective, and how can they be countered?

Social justice and equity in the transformation

Currently, at global level, the richest 10% of individuals are responsible for almost half (48%) of CO2 emissions - a high level of income being generally correlated with a high environmental impact. The latest report on global inequality (2022) stresses that "inequality is a political choice, not an inevitability" and that climate and environmental policies in wealthy countries "should target wealthy polluters more", given that "the poorest half of the population in rich countries is already at (or near) the 2030 climate targets set by rich countries, when these targets are expressed on a per capita basis" (Chancel, 2022, p.17). Without going into too much detail, it is clear that drastically reducing the impact of the Swiss socio-economic system by 2050, while guaranteeing social justice and well-being for all, requires us to reflect on how to share the transition effort and to avoid placing an unbearable burden on the most vulnerable. This includes both reducing pre-existing inequalities, which are reinforced by environmental degradation, and developing fair transformation policies that set social justice at the centre of their concerns.

How should the burden of transition be distributed, that is who should bear the cost of the transition (which stakeholders, but also which territories)? How should stranded assets be handled? How can we ensure that the price of certain goods in a less carbon-intensive world still meets the social foundation of the Doughnut? Which public policies and instruments should be implemented to enable such redistribution (e.g. should we continue to rely mainly on the market, or is some form of planning also an interesting tool to mobilise in this context)? Which fundamental

values would enable us to move towards greater equity? Which dominant narratives are worth discarding to allow for a new distribution? Do the educational and training system, the production of knowledge and the relation to scientific expertise need to be modified or reinvented to enable a better distribution of wealth and knowledge?

Communication, narratives and storytelling

Social-ecological transformation also implies a transformation of values and of the collective narrative in which they are embedded. A lack of imagination to break away from the familiar and usual practices ('imagination deficit') is sometimes quoted as one of the barriers to transformation (cf. Loorbach 2023, transformation conference). In this context, it seems crucial to examine the influence of discourses and narratives (in particularly in the media, politics, advertisements and fiction, but also in life, historical and spiritual narratives, etc.) and to consider, in all spheres of action, which narratives are capable of encouraging discussion, commitment and the adhesion required for an ambitious transformation. Along the same lines, it is essential to understand who has the power to formulate and spread these narratives. In this sense, it seems essential to pay particular attention to divergent or alternative narratives to those carried by the dominant socio-economic model. Storytelling can be used as a means of investigating public issues and eventually of reorganising them. The political or instrumental use of narratives (storytelling), particularly in politics, is also a key theme in the study of the dynamics of transformation.

On which narratives, or even myths, is the current socio-economic system based, and what could they be replaced with to enable the desired transformation? What kind of transformative narratives are needed in this context, how can they be created and what communication channels are useful for disseminating them? Which narratives need to be elaborated in which spheres of action? How do the various vectors of change contribute to the evolution (or not) of the context and the narrative in favour of an ambitious socio-economic transformation towards a low-carbon society? How to make existing alternatives attractive and accessible? How can fiction be used to support transformation, not only to imagine what is "not yet possible", but also to engage empathically with other subjects and possibly modify affects? Which factors, and in particular which power relationships within society, are decisive for alternative narratives to become dominant?

Methodological considerations

Transformation research and transformative research

Transformation research (i.e. research on transformation processes) is not (yet) regarded as an established field of research, but as an emerging research perspective aimed at investigating complex societal problems, as well as researching and supporting fundamental change processes and dynamics in the long-term. This approach encompasses different research fields which investigate social change leading to sustainability (Wittmayer & Hölscher, 2017, p. 14).
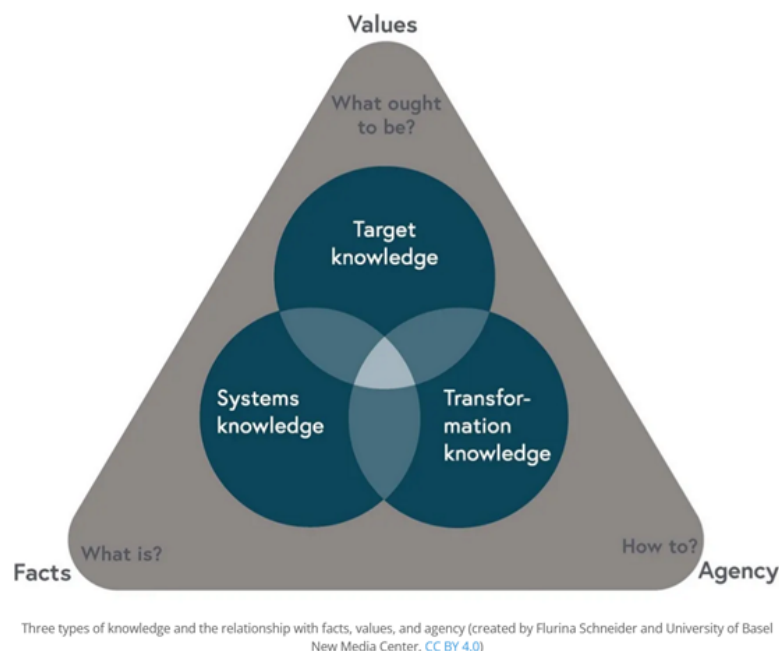
Transformative research (transformative research; transformational sustainability science) contributes to solving societal issues and is characterised by an explicit aspiration to get involved: the aim is to catalyse processes of change and actively involve stakeholders in the research process, in order to generate the 'socially robust' knowledge needed for transformations towards sustainability. Transformative research and transdisciplinarity are often linked, as various

stakeholders are involved in the knowledge production process (Wuppertal institut, n.d.). Moreover, transdisciplinary research combines the resolution of social problems with the co-production of scientific knowledge with other stakeholders (SCNAT savoir, n.d. -a).

The STRIVE programme aims to contribute to this field of research by producing useful knowledge for transformation, and possibly transformative knowledge. Below, we also provide an overview of possible areas of application which could prove particularly interesting to study in order to guarantee a transformative impact.

Producing useful knowledge for transformation

The network for transdisciplinary research of the Swiss Academies of Arts and Sciences (TD-Net) distinguishes three types of knowledge necessary for solving societal issues: knowledge regarding how social systems function (systems knowledge), knowledge aimed at identifying the appropriate transformation goals (target knowledge) and knowledge focused on better understanding how to change the system in order to move from the current situation to the desired state (transformation knowledge) (SCNAT savoir, n.d. -b; Buser & Schneider, 2021). Although these three types of knowledge are not entirely dissociable, STRIVE essentially aims to produce results that fall into the category of **systems knowledge** and **transformation knowledge**, the more "normative" part relating to target knowledge already being integrated as a hypothesis common to all the research packages within STRIVE (see section: Transformation target). Nevertheless, this normative framework remains quite wide and it will no doubt be necessary to refine this objective in partnership with other stakeholders involved in the project, as well as adapting it to each project's context (Wuelser, Edwards 2023).

Three types of knowledge and the relationship with facts, values, and agency (created by Flurina Schneider and University of Basel New Media Center, CC BY 4.0)

Figure 3 : Three types of knowledge – Integration and Implementation Insights (i2insights.org)

Characteristics of knowledge production targeted by STRIVE

Projects funded by STRIVE aim to produce knowledge with the following characteristics:

- Systemic - looking at the system as a whole and the interactions between its various components
- Exploitable (and if possible transformative) - of immediate relevance to stakeholders in the field and oriented towards the production of sustainable futures
- Reflexive - including a reflection on the role of academic research, the positioning of researchers, and the possible participation of other stakeholders in the processes of (co-) creation of knowledge with both a societal and scientific impact.

Integrative and systemic

The general design of the STRIVE programme described above, which focuses on the interactions between the different spheres of action and proposes an interpretation of these according to three main transversal themes, aims to allow the production of systemic knowledge. The project is designed to enable dialogue between the various sub-projects and integration of the knowledge produced by the different disciplines into a coherent whole. This work begins as soon as the project is launched, and will culminate in a phase of the programme explicitly designed to pool and disseminate the work of the various sub-projects.

Exploitable - and if possible transformative

To produce usable knowledge, at least some aspects of the research will have to be transformative, and therefore transdisciplinary. Research teams must remain aware of this requirement, to avoid research that is disconnected from the realities of the field. This inclusion of other stakeholders in the process can take various forms: co-production of research questions, adoption of appropriate methodologies (e.g. participative, living-labs, etc. - see below), diffusion and integration of knowledge among stakeholders, etc. The project coordination team will work to create a research environment in which regular exchanges with other stakeholders can take place, by building an informal 'sounding board' composed of actors from the political world, businesses and civil society.

Shaping collaboration between stakeholders in a systematic and traceable way requires specific tools and methods. The methods to be used for conducting transformative research are not fixed (e.g. scenario planning and analysis, policy analysis and evaluation, quantitative and qualitative analyses, interviews, group discussions, case studies, living labs, pilot projects, etc.). Research teams are invited to refer to the td-net toolbox provided by the Swiss Academy of Sciences (SCNAT), which brings together tools and methods specifically designed for joint project development, conducting research and exploring ways of having an impact on heterogeneous groups. This mapping of methods and tools suitable for conducting inter- and trans-disciplinary research has been extended by an ITD Alliance working group, which offers a recent review and assessment of the various methodologies available (ITD Alliance Working Group on Toolkits and Methods, 2023).

Reflexive

Each project and sub-project will devote part of its research to a reflection on its own scientific production and its axiological and epistemological positions.

Generally speaking, the need for reflexivity also implies thinking about the nature and types of scientific output expected from research projects. While scientific publication obviously remains an essential form of knowledge production and transmission, it is not sufficient to achieve the stated transformative targets. It will therefore be essential to be open to less conventional types of deliverables and productions (recommendations, policy briefs, practical guides, workshops, events, etc.).

Examples of potential areas of application

When specific case studies are required to find concrete answers rooted in the reality of the field, in collaboration (or co-construction) with those involved on the ground, projects may focus on areas where the environmental impact is currently among the greatest in Switzerland. Their transformation will be crucial if we are to move from the current situation to the Donut goal in 2050. These areas are not considered as sectors, but as entry points for studying the processes of societal change, which are systemic by nature. Therefore, it is not necessary to treat them in a sectoral manner, but rather to examine them from the viewpoint of a set of obstacles and levers, arising from different spheres of action and enabling the transformation of the area in question.

The four areas of final demand with the largest environmental footprint in Switzerland are housing (construction, furniture, household appliances, etc.), food, private mobility and health (Figure 4). If the research context allows, we recommend using these areas as case studies for STRIVE.
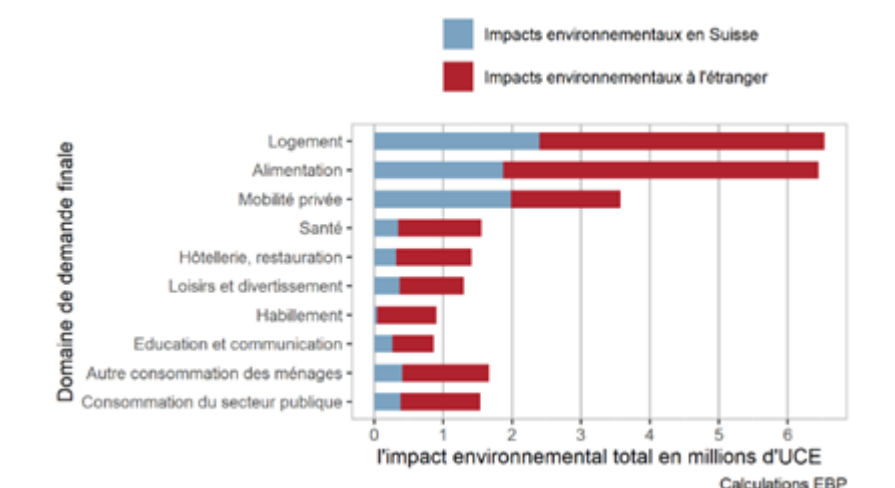

Figure 4 : https ://www.newsd.admin.ch/newsd/message/attachments/73485.pdf.

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