

# SWICE position paper on wellbeing

Sascha NICK

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## 1. Goal of this position paper

This document aims to help **ensure consistent use of wellbeing in all work packages and activities of SWICE** (*Sustainable Wellbeing for the Individual and the Collectivity in the Energy transition*).

Sustainability is usually defined as a practice that “*meets the needs of the present without compromising the ability of future generations to meet their own needs*” (Brundtland 1987), which corresponds to *wellbeing for all within planetary boundaries*. SWICE aims to answer the question for Switzerland: how to improve wellbeing for all with a much lower resource footprint, especially energy? While completely absent from political discourse, this question is probably the most important one the country is facing.

Simply constraining resource use without changing the way society is organized will *reduce* overall wellbeing. A positive outcome requires a culture of sufficiency, better provisioning systems, reduced inequalities, as well as adapting rules, laws, and institutions.

Identifying and validating such conditions is the focus of SWICE.



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## 2. Main approaches to wellbeing

**Wellbeing is a state of thriving, which involves full participation in society, a sense of prosperity and of leading a good life, based on the precondition of all needs being satisfied. Sustainable wellbeing extends this wellbeing to future generations.**

The concept of human needs is central to wellbeing, and the only approach that can define wellbeing in a broad culturally meaningful way, relevant now and far in the future.

In contrast, today's dominant concept of "preference satisfaction", or the different but equally subjective one of hedonic happiness cannot be a basis for wellbeing, for many reasons such as limits to knowledge or rationality, adaptation, lack of moral distinction, or cultural differences (Gough 2015, 2017).

### 2.1. Eudaimonic vs. hedonic wellbeing

Most definitions of wellbeing can be traced back to two Greek philosophers who lived 2400 years ago, Aristotle and Epicurus (Brand-Correa & Steinberger 2017). Eudaimonic wellbeing broadly follows Aristotle's concept of (objective) flourishing, thriving, or a life well lived, based on full participation in society. Hedonic wellbeing is based on seeking (subjective) pleasure and avoiding fear and pain, as taught by Epicurus.

As SWICE aims to improve wellbeing by rethinking buildings, neighborhoods, spaces, and infrastructure, there are many good reasons to **focus on eudaimonic wellbeing**, as objective, taking a long-term perspective, and evaluative of life satisfaction (as opposed to momentary happiness). Based on needs and satisfiers, it allows the study of sufficiency and satiability, the very basis of sustainability.

In the two main scientific approaches to human needs (Max-Neef 1991, Doyal & Gough 1991), **needs** are required conditions to avoid serious harm, they are universal and constant over time and cultures, finite and classifiable, non-substitutable, objective and empirically validated, and satiable (i.e. beyond a threshold, additional resources do not contribute to better need satisfaction, and can be detrimental). On the other hand, **satisfiers** (goods, services, institutions, activities, or relationships used to satisfy a need) are culturally specific and change over time. This distinction is essential: if satisfying human needs is the aim, how this is done – with what satisfiers – is open for discussion and can be planned by society. Satisfiers can be *singular* (satisfy one need), *synergistic* (satisfy multiple needs), *pseudo-satisfiers* (give the false sense of satisfying a need), *inhibitors* and *destroyers* (partially or strongly impair the ability to satisfy other needs).

This distinction of needs and satisfiers, plus the satiability of needs, make **wellbeing for all within planetary boundaries** possible in principle. This is closely related to sufficiency, as explained in section 2.4.

### 2.2. Main concepts related to eudaimonic wellbeing

- **Subjective vs. objective** assessment of wellbeing: both eudaimonic and hedonic wellbeing can be evaluated by individuals themselves (subjective), or others, based on measurable indicators (objective). The self-assessment of life satisfaction is a subjective measure of both eudaimonic and hedonic wellbeing (Brand-Correa & Steinberger 2017).
- **Needs:** Satisfying fundamental human needs is a necessary precondition for wellbeing; otherwise serious harm is caused to people and societies.
- **Satisfiers:** There are numerous ways of satisfying each need, collectively defining a culture: material or immaterial, individual or collective; or how the main satisfiers are rooted in history, adapted to local climate and ecosystems; and how they are produced, including the associated provisioning systems.
- **Desires:** Potentially infinite, do not satiate, change over time or place, may or may not be linked to needs or satisfiers, culturally fabricated, often manipulated by private companies for financial gain.

Systematically confused in everyday language: “I need X” may denote desire, not need. Totally unsuitable as a basis for analyzing, or planning for wellbeing.

- **Wealth / consumption:** Culturally dominant satisfiers, together with their provisioning systems, will determine the level of (monetary) wealth and (resource) consumption of a society needed to collectively satisfy its needs, and even its very ability to do so. More inclusive societies are better at satisfying individual needs, regardless of individuals’ wealth or ability to pay. Human needs are satiable (Lamb & Steinberger 2017, Gough 2015), but the consumer society perpetuates growth by satisfier substitution, identified as “the symbolic language of material goods” (Jackson 2016).
- **Happiness:** Eudaimonic wellbeing is not directly concerned with (momentary) happiness, and takes a long-term, multidimensional evaluative view of life satisfaction. Despite its name, the World Happiness Report actually measures life satisfaction. Happiness is less useful for sustainability analysis, as it cannot easily be planned for.

## 2.3. Human needs: the main eudaimonic schools of thought

There are many different approaches to human needs. Here we present several of the main ones, useful for SWICE, with some overlap between them. See Appendix for details and comparison.

- Max-Neef (1991), Fundamental Human Needs: “Human Scale Development” defines community wellbeing, based on nine axiological needs (related to values): **Subsistence, Protection, Affection, Understanding, Participation, Idleness, Creation, Identity, and Freedom**, in four existential dimensions (Being, Having, Doing, Interacting). This forms a 9x4 matrix of satisfiers, developed in a series of workshops in Latin America and later Europe and Canada, and the satisfiers are further classified into *destroyers, inhibitors, pseudo-, singular, and synergistic satisfiers*. This essential distinction of needs and satisfiers is also the foundation of Doyal & Gough’s work.
- Doyal & Gough (1991), Theory of Human Need: defines a hierarchy starting with the universal goal of **Minimally impaired social participation**, with **Physical health** and **Autonomy of agency** as basic needs, and defining universal characteristics of needs satisfiers. Additionally, **Critical participation** (the ability to change society) requires *Critical autonomy*, based on *Cross-cultural learning* and *Political freedoms*.
- Sen & Nussbaum, The Capability Approach (Robeyns et al 2021): human wellbeing can be understood in terms of **capabilities** (real freedoms defining what people can do if they so choose) and **functionings** (realized capabilities). Martha Nussbaum famously defined ten “central capabilities”: *life; bodily health; bodily integrity; senses, imagination and thought; emotions; practical reason; affiliation; other species; play; and control over one’s environment*. The Human Development Index (HDI) is based on the Capability Approach.
- Di Giulio & Defila (2020), Protected Needs: they organize needs into three groups, *material, person-focused, and community-focused*, requiring “special protection”. In other words, the approach focuses on the needs that society can plan for and protect, at a collective and institutional level. This list of needs has been tested in Switzerland through a representative survey, making this latest approach relevant to Switzerland and SWICE.

## 2.4. Sufficiency and wellbeing

Sufficiency is a central concept in sustainability theory and practice, building on the satiability of human needs, itself a central concept in all main theories of human needs. It is a necessary condition for reaching *wellbeing for all within planetary boundaries*, the main goal of sustainability. Being incompatible with neoclassical economics and numerous institutions, beliefs, and today’s practices, sufficiency is widely misunderstood, and almost completely absent from national and regional policy.

At the most basic level, sufficiency is “an adequate amount of something, especially of something essential” (Oxford Dictionary). In the theory and practice of sustainability, it is used in the sense of eco-sufficiency, as a concept of reducing the energy and material use, and the environmental footprint of individuals and societies. “The Logic of Sufficiency” defines sufficiency as a desirable organizing principle of society, opposed to today’s dominant efficiency, as a basis for wellbeing within ecological constraints (Princen 2005).

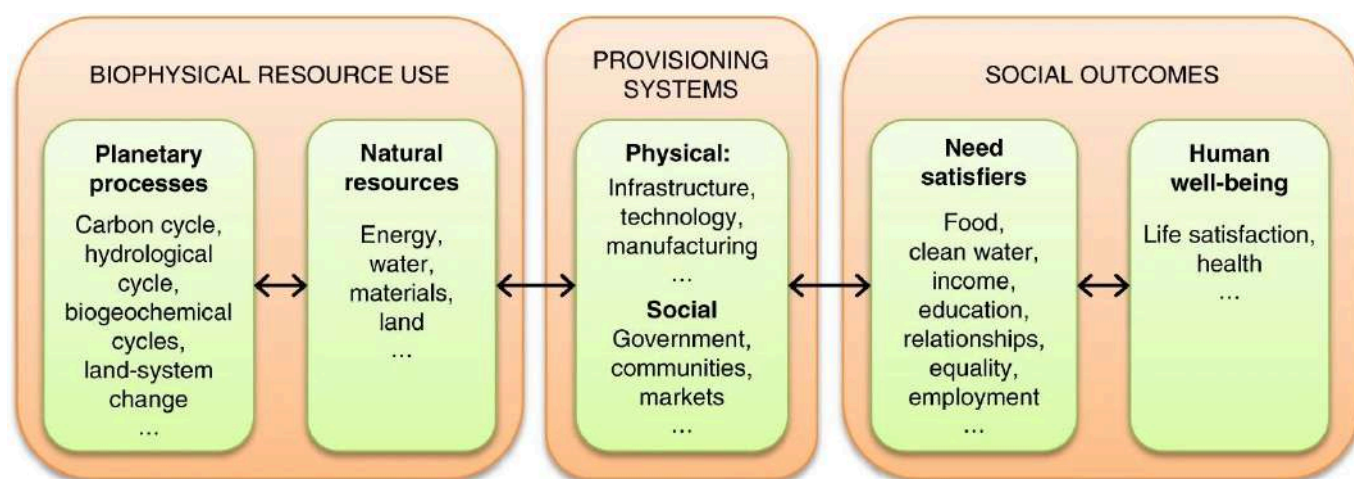
[IPCC AR6 WG3 SPM](#) (2022) states “Sufficiency policies are a set of measures and daily practices that avoid demand for energy, materials, land and water while delivering human wellbeing for all within planetary boundaries”.

Again we find the essential components of sufficiency:

- Using less, reducing activity level, while ensuring human wellbeing
- Ecological constraints, to ensure ecosystem integrity
- Collective or society-level goals, organizing principles, policies, actions

## 2.5. Analytical framework

For SWICE, we propose using the Living Well Within Limits (LiLi) analytical framework (O’Neill et al 2018):



1. **Planetary processes:** C-N-H<sub>2</sub>O-N-P cycles, land-system change
2. **Natural resources:** energy, water, materials, land, biomass
3. **Provisioning systems** → **collectively “economy”**: physical and social (gov’t, communities, markets)
4. **Need satisfiers** → **collectively “culture”**: food, clean water, education, relationships, equality, ...
5. **Human wellbeing:** life satisfaction, health

## 2.6. The central role of provisioning systems

A provisioning system is a socio-technical system that transforms resources (energy, water, materials, land, ecosystem services) into satisfiers.

Provisioning systems have a positive component (satisfier provision) and a detrimental component (appropriation, or rent extraction, i.e. getting an excessive or unearned return). Both components use the same physical infrastructure and institutions (laws, power structures, culture, organizations, etc.). Appropriation systems can be presented as integrated or separate from provisioning systems (Fanning et al).

Key to provisioning systems and their transformation is a consideration for the institutional arrangements, power relations involved, and social practices that make some forms of provisioning more sustainable than

others, create path-dependency dynamics and allow some needs to be satisfied above others (Stoddard et al, 2021; Plank et al, 2021)

Here we propose a **classification**, and separately a **descriptive** framework. The connections between the two could be an interesting focus of research.

Each provisioning system can be classified along several dimensions, such as:

- Geographic scale: globalized, regional, national, or local
- Local organization and scale: building group, neighborhood, low density zones
- Market, non-market, hybrid; public or private
- Related to the foundational economy or not

We propose the following **Descriptive Framework for Provisioning Systems**

	Resources	Structure	Governance	Meaning	Appropriation	Satisfiers	Wellbeing
	<b>( Input )</b> Energy, water, materials, land, ecosystem services	Physical infrastructure  Institutions, relations, information flows, laws	Power structure: who decides what and how	Culture, values, rituals, habits, associated narratives	Actual and potential rent extraction	<b>( Output )</b> Description and type of satifier (destroyer, pseudo-, simple, synergistic)	<b>( Outcome )</b> Health, life satisfaction, social participation, autonomy of agency
Satisfier 1							
Satisfier 2							
...							

**Legend:** provisioning system components, inputs - outputs - outcomes of the provisioning system  
Adapted from Kalt et al 2019, Fanning et al 2020, Doyal and Gough 1991.

## 2.7. Decent Living Standards (DLS)

The Decent Living Standards (DLS) approach identifies material prerequisites for wellbeing, as well as minimum energy and material requirements (Rao & Min 2018). DLS combines basic needs from Doyal & Gough with Nussbaum's central capabilities, and defines essential requirements at the household, community, and country level (see DLS structure in Appendix). DLS energy requirements have been estimated for India, Brazil, and South Africa (Rao et al 2020), and at a global level (Millward-Hopkins et al 2020). The resulting energy requirement of approx. 15 GJ per capita per year is less than 10% of final energy used in rich countries today, while providing wellbeing for all.

### 3. State of knowledge, research agenda for SWICE

#### What do we know?

The main elements of section 2 are summarized here, to frame the research agenda below.

1. Wellbeing is the result of satisfying needs in all major human needs approaches.
2. Needs are universal, constant over time and cultures, classifiable, non-substitutable, and satiable.
3. Satisfiers, separate from needs, are culturally specific but have common characteristics. Resource need strongly depends on the dominant satisfiers.
4. Desires, potentially infinite, are often disconnected from needs, and are not useful in designing for wellbeing.
5. Multidimensional needs satisfaction is a necessary condition for and strongly correlates with wellbeing (O'Neill et al 2018, Helliwell 2008).
6. The Decent Living Standards (DLS) approach shows that all material prerequisites for wellbeing can be satisfied with 10% of final energy used in rich countries today, while providing wellbeing for all.
7. Significant gaps in providing shelter, nutrition, health, mobility, and socialization remain in all world regions. Closing *all* DLS material provisioning gaps requires new infrastructure which could be built with a one-time investment of 290 EJ, or 9 months of world's final energy use (Kikstra et al 2021).
8. Provisioning factors strongly affect the effectiveness of satisfier provision: positively (public service, public health, clean energy access, democracy, equality) or negatively (extractivism, economic growth) (Vogel et al 2021)

#### What do we NOT know? (*Gaps in literature and research questions for SWICE WP2*)

1. How to design a provisioning system to create synergistic satisfiers with little resources. This includes minimizing rent extraction (appropriation).
2. DLS under "realistic" conditions, including residual non-zero inequality, or what technology can be installed within a useful time-frame, say 10-15 years. Which elements of societal organization are a required pre-condition for low energy demand?
3. Levers to start the required deep transformation of society.
4. How to gain broad stakeholder acceptance for the needed change towards wellbeing for all within planetary boundaries.

Many more gaps exist, some of which might be covered by SWICE:

- How to experiment with different ways of satisfying needs, using living labs?
- How to integrate power dynamics, social justice, etc.?
- How to deal with the potential (or perceived) tradeoff between establishing consumption corridors (DLS for instance) and the satisfaction of some of the more "liberal" needs / concepts used by several authors ("freedom" and "creation" in Max-Neef's approach, "human agency" and a few central capabilities in Nussbaum's approach, etc.)?
- From the perspective of architecture and urban planning we see that the concept of wellbeing is explored in relation to the socio-spatial built environment, but we still lack applicable concepts, context-relevant operationalization, and ways to measure and assess it, which are appropriate for specific urban scale and architectural typologies, and can be carried out with users across age-groups in a participatory fashion.

## 4. Operationalizing wellbeing

### 4.1. Measuring and modeling wellbeing

Depending on the context, wellbeing can be measured and modeled directly by estimating the level of satisfaction of each need, or indirectly, by asking about general or domain-specific life satisfaction:

1. Composite, measuring subjective life satisfaction using a single question (Cantril ladder / World Happiness Report): *Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?*
  - a. **Existing data:** The World Happiness Report (Helliwell et al 2022) measures life satisfaction and strongly correlates with objective conditions and need satisfaction. The index ranges from 7.8 for Finland, the happiest country in 2022, to 2.4 for Afghanistan, the least happy. The Taliban made things significantly worse: a later survey in August 2022 showed the index drop to 1.5 for men and 1.0 for women, hitting rock bottom, [according to The Economist](#).
2. Composite for life satisfaction, specifically asking about living conditions (Diener et al 1985):
  - a. “Satisfaction with Life Scale” asks five questions: (1) In most ways my life is close to my ideal; (2) The conditions of my life are excellent; (3) I am satisfied with my life; (4) So far I have gotten the important things I want in life; (5) If I could live my life over, I would change almost nothing. SWLS is widely cited, but its questions are hard to relate to human needs.
3. Intermediate approach, distinguishing technical and social systems (following O’Neill et al 2018):
  - a. *How do you feel the physical infrastructure that you live in (especially housing and transport systems) enables you to satisfy your needs and flourish within your society?*
  - b. *How do you feel the social systems that you live in (public services, social support, culture and community) enables you to satisfy your needs and flourish?*
4. Measuring satisfaction of needs, following Max-Neef or Doyal & Gough:
  - a. Do you feel our society makes it easy for you to satisfy your material needs, such as food or shelter? Why or why not?
  - b. Do you feel our society makes it easy for you to live a healthy life? Why or why not?
  - c. Do you feel our society makes it easy for you to satisfy your social needs, such as participating in society, creating, relaxing, or being who you want to be? Why or why not?
5. Combining descriptive and analytical satisfaction of needs:
  - a. Asking people to describe their habits and everyday lives in order to then extrapolate in analysis how their needs are being met, based on a common list of needs.
  - b. At the same time, asking people to react directly to a common list of needs, so as to state what needs are being satisfied in relation to certain practices (keeping warm, getting around, preparing a meal, etc.)



## 4.2. Existing data sources

Many other approaches exist; here is a selection, where detailed data for Switzerland is available:

6. Social Progress Index, SPI, [socialprogress.org](https://socialprogress.org): launched in 2013, published annually, covers 169 countries and calculates three elements of social progress, Basic Human Needs, Foundations of Wellbeing, and Opportunity, in turn based on a total of components, based on around 50 indicators. It is an objective measure of wellbeing based on mostly national data. -> [Switzerland](#)
7. OECD Better Life Index, [oecdbetterlifeindex.org](https://oecdbetterlifeindex.org): launched in 2011, published every two years, covers the 38 OECD member countries and for each country calculates 11 scores per topic: housing, income, jobs, community, education, environment, governance, health, life satisfaction, safety, and work-life balance. An interactive tool “Your Better Life Index” allows individuals to change weights of the 11 topics, initially equal. -> [Switzerland](#), [How’s Life in Switzerland?](#)
8. Swiss Federal Statistical Office, “[Mesure du bien-être](#)”: this is a set of 27 indicators in 7 categories, adapted from “Stocks and flows framework for capitals, goods and services, and wellbeing” (Harper and Price 2011, Fig.1, p.6), basically a stock-flow model of provisioning, with wellbeing as a result of consumption, i.e. not at all based on human needs (see beginning of section 2). The data is of good quality, but only partly related to wellbeing. We urge caution when using [FSO > Material Deprivation](#), where only two indicators (cannot afford a full meal, cannot keep home warm) correspond to DLS, the rest being linked to societal organization or dominant (consumerist) satisfiers.
9. UNDP Human Development Index, [HDI](#): this is the oldest and simplest index, measuring a composite of longevity, education, and income, calculated annually since 1990, for 190 countries. It is not suitable for analyzing wellbeing.

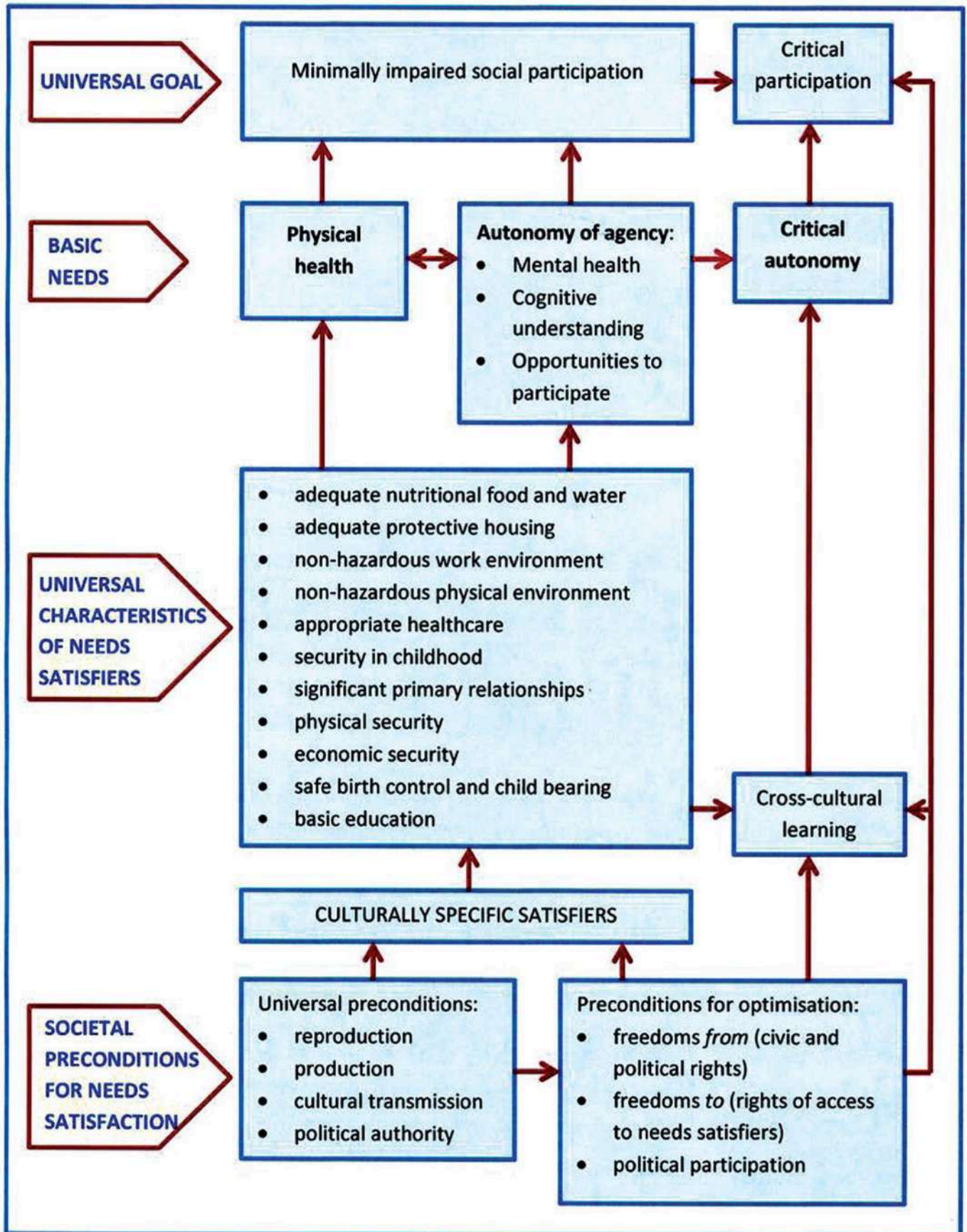
From the perspective of SWICE, we are interested in planning and policies for wellbeing, i.e needs satisfaction, hence the focus of our proposed questions on satisfiers and provisioning systems, in a language understandable to non-specialists.

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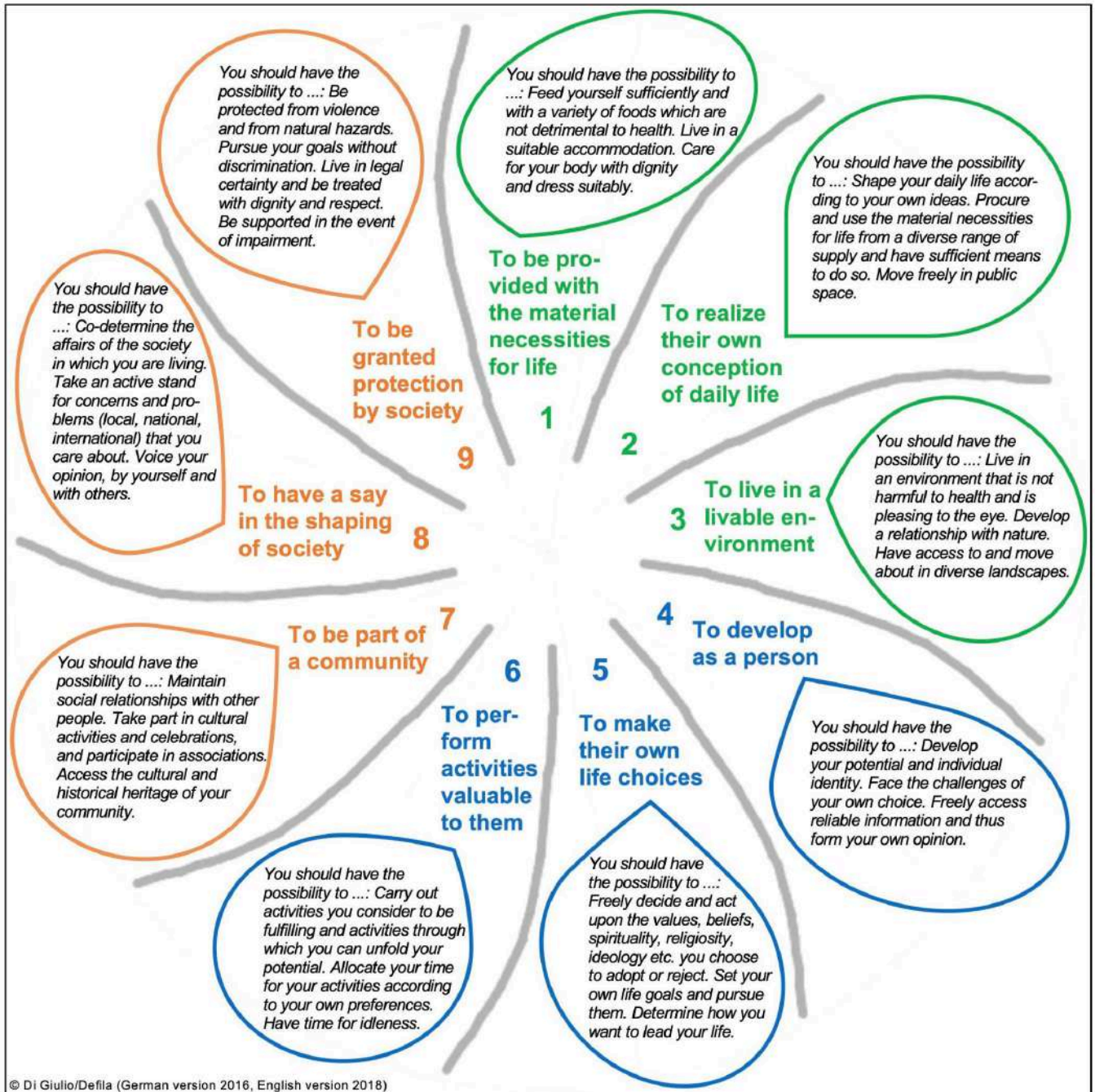
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## 6. Appendix

Max-Neef's matrix of needs and satisfiers		Existential needs			
		Being	Having	Doing	Interacting
Axiological needs	<b>Subsistence</b>	physical health, mental health, equilibrium, sense of humor, adaptability	food, shelter, work	feed, procreate, rest, work	living environment, social setting
	<b>Protection</b>	care, adaptability, autonomy, equilibrium, solidarity	insurance systems, savings, social security, health systems, rights, family, work	cooperate, prevent, plan, take care of, cure, help	living space, social environment, dwelling
	<b>Affection</b>	self-esteem, solidarity, respect, tolerance, generosity, receptiveness, passion, determination, sensuality, sense of humor	friendships, family, partnerships, pets, relationships with nature	make love, caress, express emotions, share, take care of, cultivate, appreciate	privacy, intimacy, home, space of togetherness
	<b>Understanding</b>	critical conscience, receptiveness, curiosity, astonishment, discipline, intuition, rationality	literature, teachers, method, educational policies, communication policies	investigate, study, experiment, educate, analyze, meditate	settings of formative interaction, schools, universities, academies, groups, communities, family
	<b>Participation</b>	adaptability, receptiveness, solidarity, willingness, determination, dedication, respect, passion, sense of humor	rights, responsibilities, duties, privileges, work	become affiliated, cooperate, propose, share, dissent, obey, interact, agree on, express opinions	settings of participative interaction, parties, associations, churches, communities, neighborhoods, family
	<b>Idleness</b>	curiosity, receptiveness, imagination, recklessness, sense of humor, tranquility, sensuality	games, spectacles, clubs, parties, peace of mind	daydream, brood, dream, recall old times, give way to fantasies, remember, relax, have fun, play	privacy, intimacy, spaces of closeness, free time, surroundings, landscapes
	<b>Creation</b>	passion, determination, intuition, imagination, boldness, rationality, autonomy, inventiveness, curiosity	abilities, skills, method, work	work, invent, build, design, compose, interpret	productive and feedback settings, workshops, cultural groups, audiences, spaces for expression, temporal freedom
	<b>Identity</b>	sense of belonging, consistency, differentiation, self-esteem, assertiveness	symbols, language, religion, habits, customs, reference groups, sexuality, values, norms, historical memory, work	commit oneself, integrate oneself, confront, decide on, get to know oneself, recognize oneself, actualize oneself, grow	social rhythms, everyday settings, settings which one belongs to, maturation stages
	<b>Freedom</b>	autonomy, self-esteem, determination, passion, assertiveness, open-mindedness, boldness, rebelliousness, tolerance	equal rights	dissent, choose, be different from, run risks, develop awareness, commit oneself, disobey	temporal/spatial plasticity



Outline of the theory of human need, reproduced from Doyal & Gough 1991



Mandala of Protected Needs (Di Giulio & Defila 2020)

<b>Nussbaum Central Human Capabilities</b>	<b>Max-Neef Axiological Categories of Human Need</b>	<b>Doyal and Gough Theory of Human Need</b>	<b>The Sustainable Development Goals</b>
Life Bodily health		Physical health (BN) Appropriate health care (IN) Safe birth control/childbearing (IN)	3. Good health and well-being 5. Gender equality
	Subsistence	Adequate food/water (IN)	2. Zero hunger
Bodily integrity Control over one's environment	Protection	Protective housing (IN) Safe physical environment (IN) Safe work environment (IN) Physical security (IN) Security in childhood (IN)	6. Clean water and sanitation 7. Affordable and clean energy 16. Peace, justice and strong institutions
		Economic security (IN) Non-hazardous work environment (IN)	1. No poverty 5. Gender equality 8. Decent work and economic growth
Senses, thought, imagination Emotions	Creation	Mental health (BN) Cultural understanding (BN)	3. Good health and well-being
Practical reason	Understanding Identity	Cognitive understanding (BN) Appropriate education (IN)	4. Quality education
Affiliation	Participation Affection	Opportunities to participate (BN) Significant primary relationships (IN)	5. Gender equality
Play	Leisure Freedom	Critical autonomy (BN)	16. Peace, justice, and strong institutions
Other species		Sustainability preconditions	14. Life below water 15. Life on land 13. Climate action
	Satisfiers	Societal preconditions for need satisfaction (means, not ends)	9. Industry, innovation, and infrastructure 10. Reduced inequalities 11. Sustainable cities and communities 12. Responsible consumption and production 17. Partnerships for the goals

BN, basic needs; IN, intermediate needs.

Approximate comparison of the main eudaimonic approaches to wellbeing, reproduced from Lamb & Steinberger 2017

## Basic Needs & Central Capabilities

### Physical Wellbeing

Good health,  
Security

Life, bodily health,  
bodily integrity

### Social Wellbeing

Critical  
Autonomy

Affiliation;  
Senses,  
imagination  
& thought;  
Practical  
reason

## DLS: Essential Reqmts for Wellbeing

Household

Nutrition, Shelter, Basic Amenities, Clothes

Phone, Access to Internet, Access to motorized transport

Community

Health clinics, Physicians, Clean Air

Schools/teachers, Public transportation

National

Roads, utilities networks  
Public space,  
Health care expenditure

Education expenditure,  
Information infrastructure

## Natural Resource Requirements for DLS

Energy

Water

Phosphorous

Other resources

Structure of material requirements for Decent Living Standards, combining basic needs from Doyal & Gough with Nussbaum's central capabilities, reproduced from Rao & Min 2018