Global Sustainable Development Report (GSDR 2019) and on the science based understanding of the possibilities and challenges for advancing Agenda 2030 in the Decade of Action

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4.11.2021

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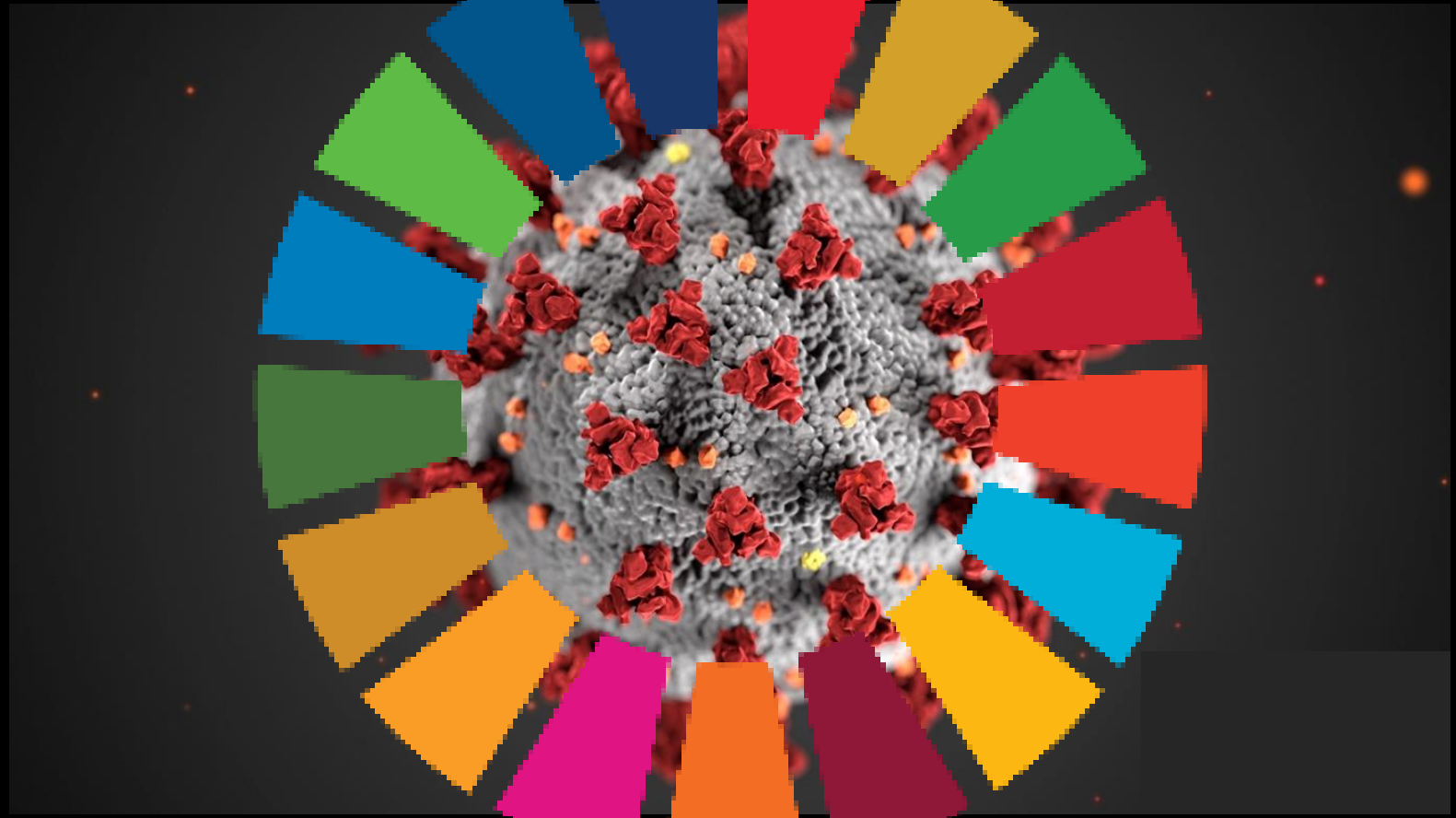

How have the targets been reached?

Business-as-usual approaches

GOAL	WITHIN 5%	5–10%	>10%	NEGATIVE LONG-TERM TREND
Goal 1		1.1. Eradicating extreme poverty	1.3. Social protection for all	
Goal 2		2.1. Ending hunger (undernourishment)	2.2. Ending malnutrition (stunting) 2.5. Maintaining genetic diversity 2.a. Investment in agriculture*	2.2. Ending malnutrition (overweight)
Goal 3	3.2. Under 5 mortality 3.2. Neonatal mortality		3.1. Maternal mortality 3.4. Premature deaths from non-communicable diseases	
Goal 4	4.1 Enrolment in primary education	4.6 Literacy among youth and adults	4.2. Early childhood development 4.1 Enrolment in secondary education 4.3 Enrolment in tertiary education	
Goal 5			5.5. Women political participation	
Goal 6		6.2. Access to safe sanitation (open defecation practices)	6.1. Access to safely managed drinking water 6.2. Access to safely managed sanitation services	
Goal 7		7.1. Access to electricity	7.2. Share of renewable energy* 7.3. Energy intensity	
Goal 8			8.7. Use of child labour	
Goal 9		9.5. Enhancing scientific research (R&D expenditure)	9.5. Enhancing scientific research (number of researchers)	
Goal 10			10.c. Remittance costs	Inequality in income**
Goal 11			11.1. Urban population living in slums*	
Goal 12				12.2. Absolute material footprint, and DMC*
Goal 13				Global GHG emissions relative to Paris targets**
Goal 14				14.1. Continued deterioration of coastal waters* 14.4. Overfishing*
Goal 15				15.5. Biodiversity loss* 15.7. Wildlife poaching and trafficking*
Goal 16			16.9 universal birth registration *	

* target not specified ** based on most recently available data

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Four alarming trends, which threaten the progress of the entire 2030Agenda

Rising inequalities

Biodiversity loss

Climate change

Growing amount of waste

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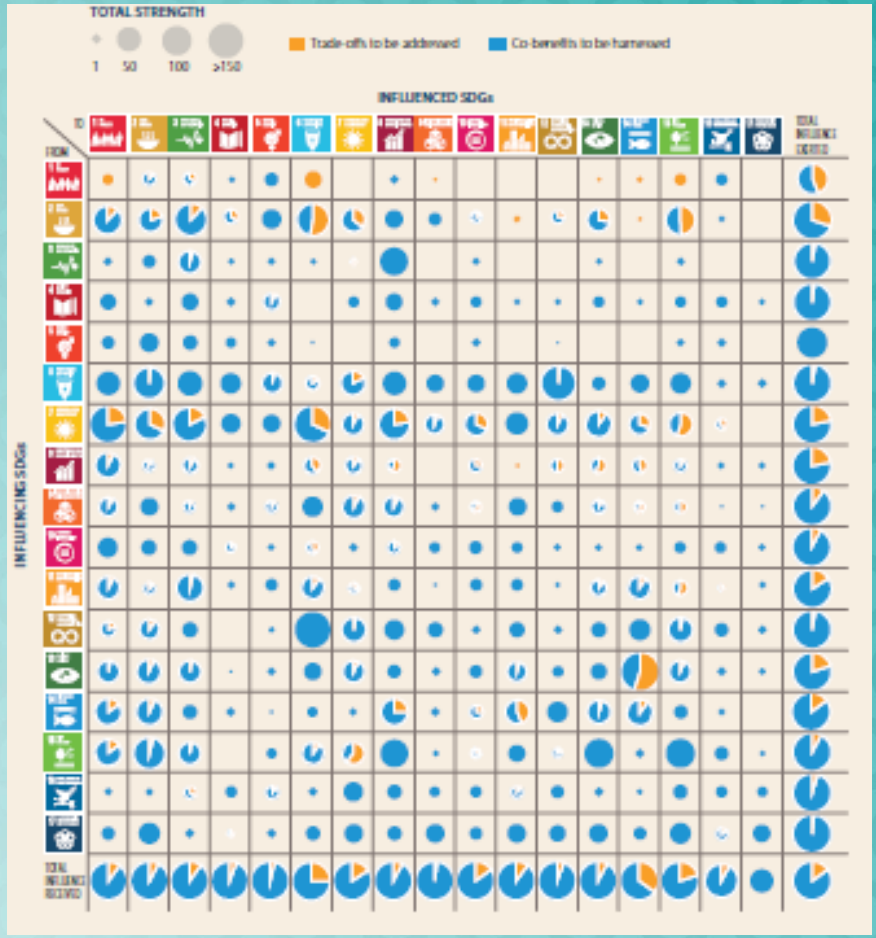
Interlinkages between goals essential: foreseeing the potentials and the needs to act



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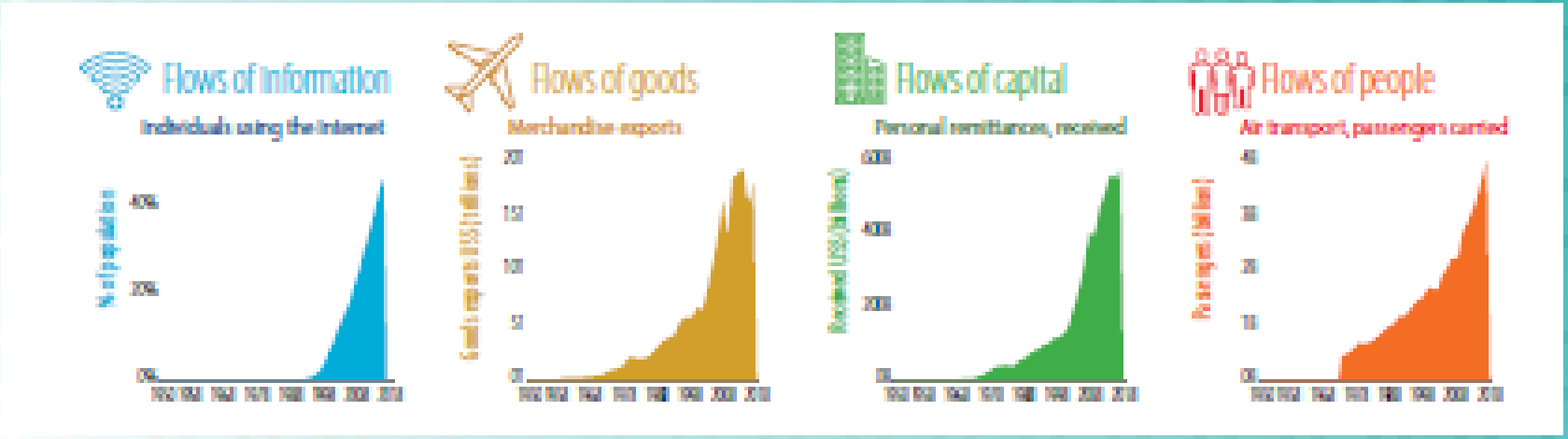
An increasingly hyper-connected world -> benefits and losses of global flows are divided inequally



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Both challenges as well as transformations are in the hands of several actors

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winners...

	Country/Corporation	Revenue (USD bn)		Country/Corporation	Revenue (USD bn)		Country/Corporation	Revenue (USD bn)		Country/Corporation	Revenue (USD bn)
1	United States	3363	26	Mexico	224	51	General Electric (US)	140	76	Walgreens Boots Alliance (US	104
2	China	2465	27	Switzerland	216	52	CSCEC (CN)	139	77	HP (US)	103
3	Japan	1696	28	Berkshire Hathaway (US)	211	53	AmerisourceBergen (US)	136	78	Assicurazioni Generali (IT)	103
4	Germany	1507	29	India	200	54	Agricultural Bank of China	133	79	Cardinal Health (US)	103
5	France	1288	30	Norway	200	55	Verizon (US)	132	80	BMW (DE)	102
6	United Kingdom	996	31	McKesson (US)	192	56	Chevron (US)	131	81	Express Scripts Holding (US)	102
7	Italy	843	32	Russia	187	57	E.ON (DE)	130	82	Nissan Motor (JP)	102
8	Brazil	632	33	Austria	187	58	AXA (FR)	129	83	China Life Insurance (CN)	101
9	Canada	595	34	Turkey	184	59	Indonesia	129	84	J.P. Morgan Chase (US)	101
10	Walmart (US)	482	35	Samsung Electronics (KR)	177	60	Finland	128	85	Koch Industries (US)	100
11	Spain	461	36	Glencore (CH/JE)	170	61	Allianz (DE)	123	86	Gazprom (RU)	99
12	Australia	421	37	ICBC (CN)	167	62	Bank of China (CN)	122	87	China Railway Eng. (CN)	99
13	State Grid (CN)	330	38	Daimler (DE)	166	63	Honda Motor (JP)	121	88	Petrobras (BR)	97
14	Netherlands	323	39	UnitedHealth Group (US)	157	64	Cargill (US)	120	89	Schwarz Group (DE)	97
15	South Korea	304	40	Denmark	157	65	Japan Post Holdings (JP)	119	90	Trafigura Group (NL/SG)	97
16	China Nat. Petroleum (CN)	299	41	EXOR Group (IT/NL)	154	66	Costco (US)	116	91	Nippon Telegraph and Tel. (JI	96
17	Sinopec Group (CN)	294	42	CVS Health (US)	153	67	Argentina	116	92	Boeing (US)	96
18	Royal Dutch Shell (NL/GB)	272	43	General Motors (US)	152	68	BNP Paribas (FR)	112	93	Venezuela	96
19	Sweden	248	44	Vitol (NL/CH)	152	69	Fannie Mae (US)	111	94	China Railway Constr. (CN)	95
20	Exxon Mobil (US)	246	45	Ford Motor (US)	151	70	Ping An Insurance (CN)	110	95	Microsoft (US)	94
21	Volkswagen (DE)	237	46	China Constr. Bank (CN)	150	71	Kroger (US)	109	96	Bank of America Corp. (US)	93
22	Toyota Motor (JP)	237	47	Saudi Arabia	150	72	Société Générale (FR)	108	97	ENI (IT)	93
23	Apple (US)	234	48	AT&T (US)	147	73	Amazon.com (US)	107	98	Greece	93
24	Belgium	232	49	Total (FR)	143	74	China Mobile Comm. (CN	106	99	Nestlé (CH)	92
25	BP (GB)	226	50	Hon Hai Precision Ind. (TW)	141	75	SAIC Motor (CN)	105	100	Wells Fargo (US)	90

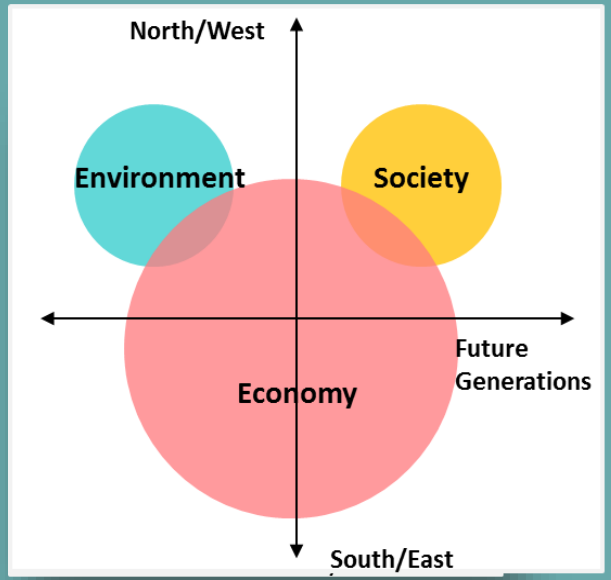
Nation states Multi-national company Fossil-fuel based industry

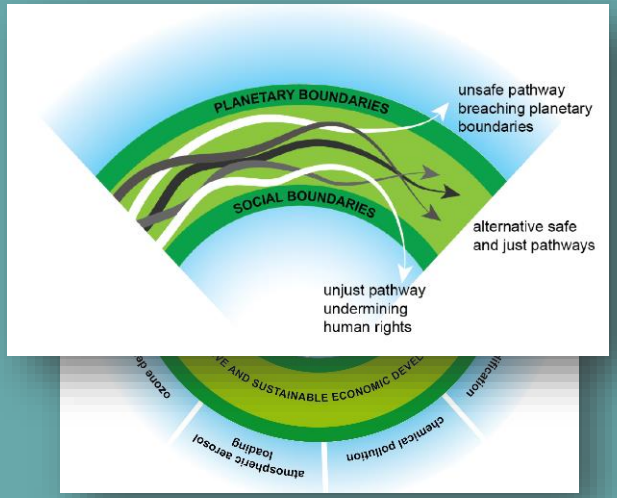
Based on Babic M, Fichtner J, Heemskerk EM. 2017. States versus Corporations: Rethinking the Power of Business in International Politics. The International Spectator. 52(4):20–43. doi:10.1080/03932729.2017.1389151.

… and losers

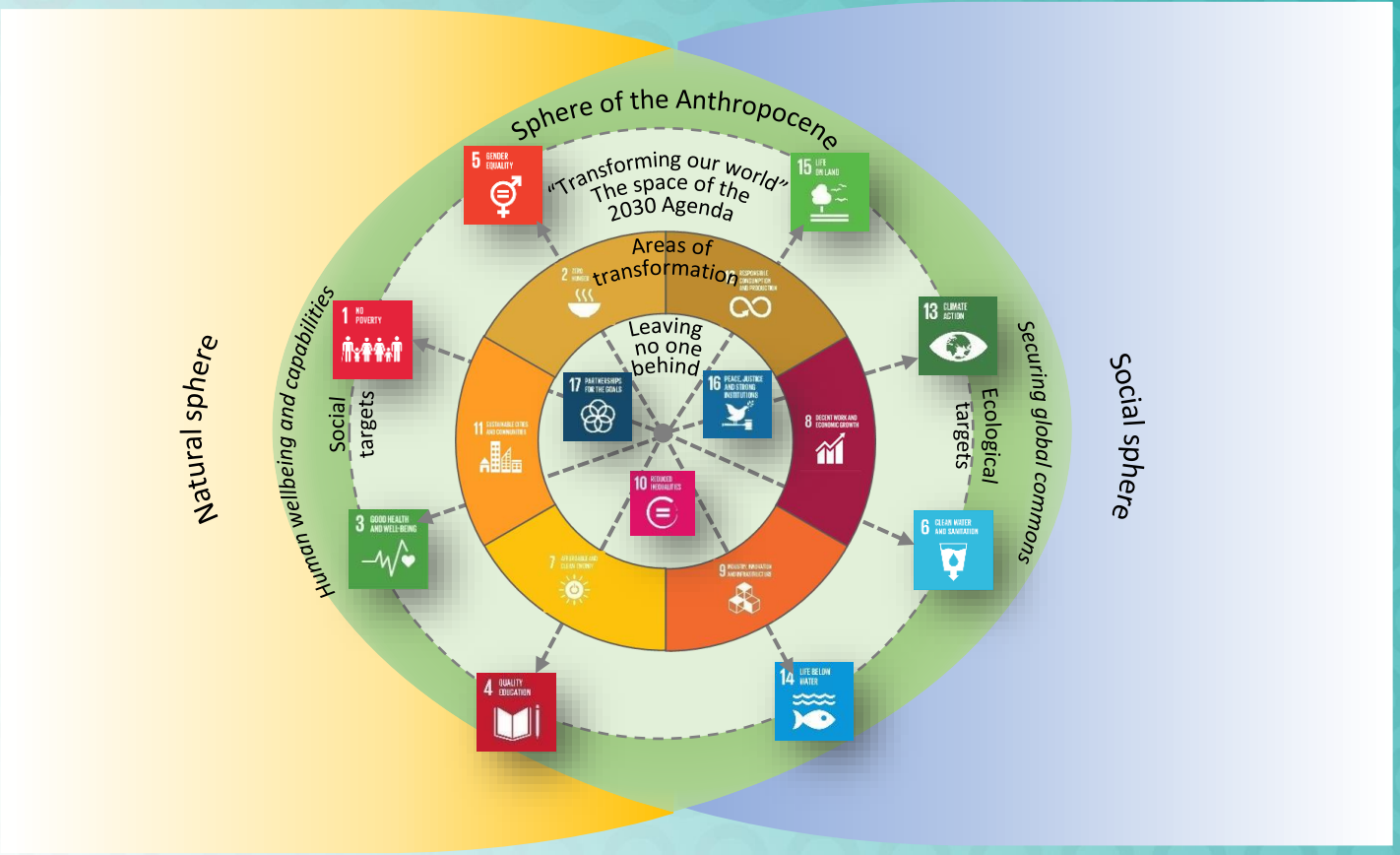
Counter-transformations: nationalism and populism

A Renewed Understanding of Transformations to Sustainable Development





Sustainable Development in the world of the 2030 Agenda



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The way forward

culture as frame and as process

culture as practices of joint living and as

art, cultural heritage and production

sustainability calls for a change from

cultural heritage to future heritage

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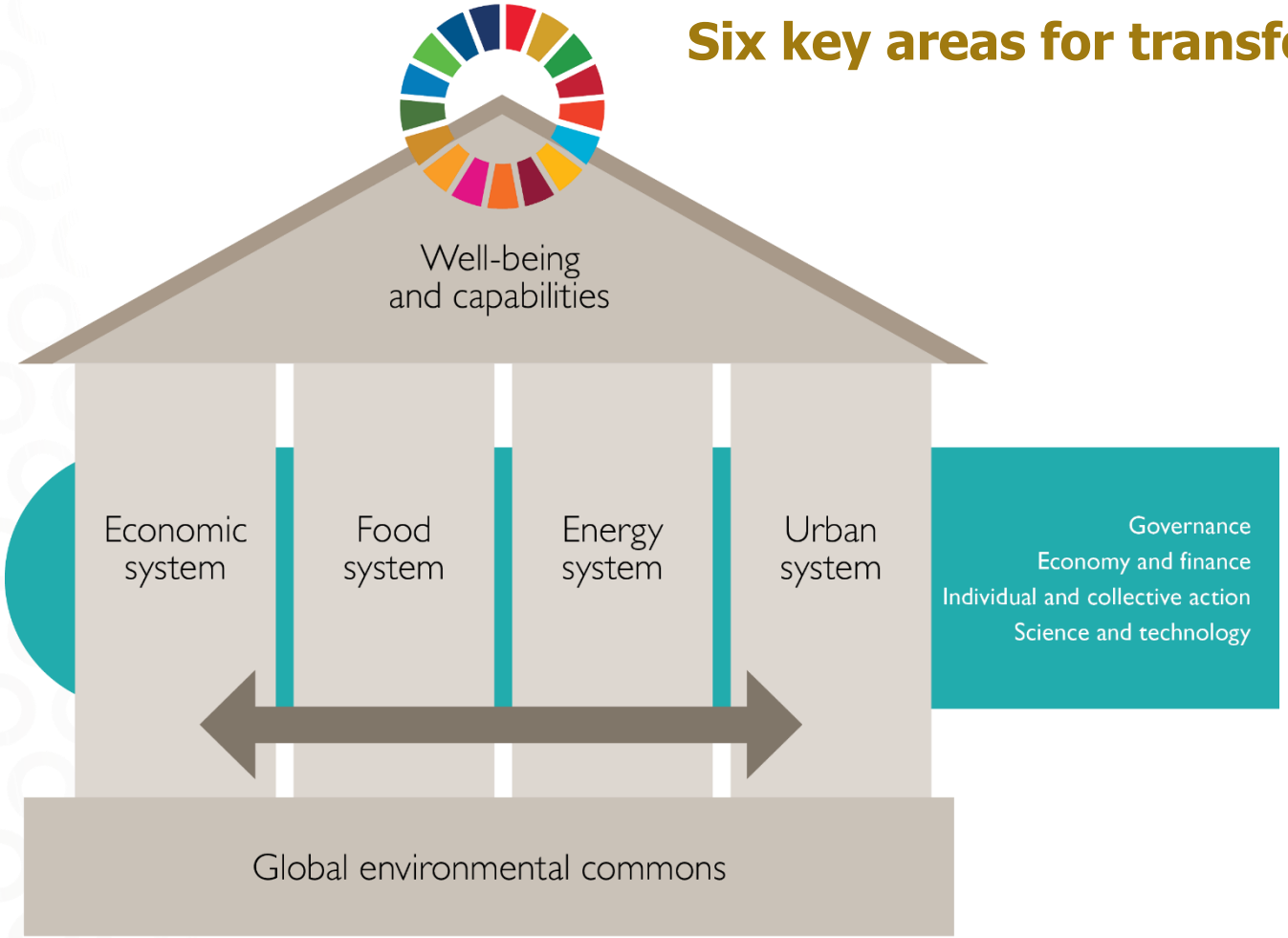
Jaakko Niemelä 2021

Six key areas for transformation



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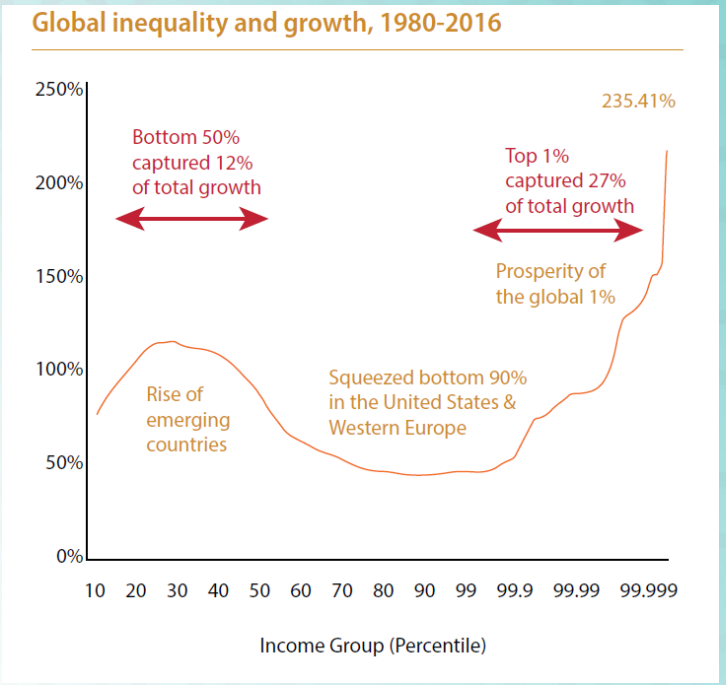
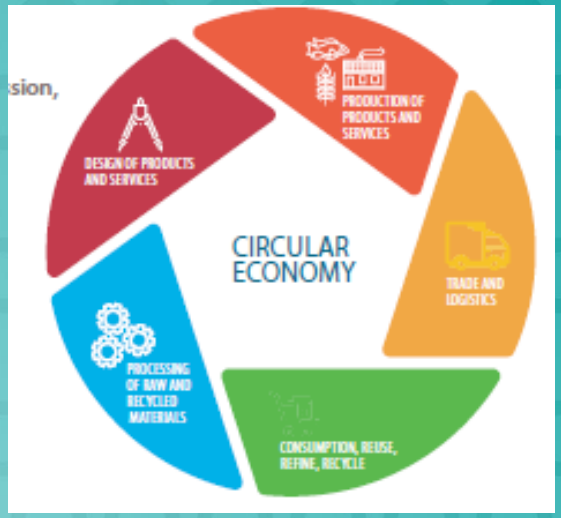
KESTÄ VYYS PANEELI

Sustainable economies

Culture of sharing and trust





- Environmental footprint
- Equal division of benefits and losses
- Governance of global flows

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Food and nutrition

- Global food systems to deliver just and environmentally sustainable food to the growing populations
  - Transformation of agriculture
  - Small farms with forest farming
- Healthier and more sustainable eating habits, reduction of foodwaste

New food and eating cultures

10 billion people

KPHOTOS OPENNESS.EU JA MINNA KALJONEN/SYKE

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Sustainable energy systems for de-carbonisation and access for all

- Transformation of the global energy system to align with the Paris Agreement

- 840 milj. people without electricity

Sharing experiences in decentralised energy production

Social innovations

Sustainable technologies exist -> the challenge within application and distribution

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Urban and peri-urban development

unsustainable use of natural resources

pollution

inequalities

- Evidence based planning and governance of cities
  - nature based solutions
  - polycentrism
  - Co-creation withall actors

Towards active citizenship

KUVAT: PAT KRUPA, JORGE VIDAL

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Global environmental commons

BIODIVERSITY ♥ AIR ♥ OCEANS ♥ LAND

- **The balance of nature and humans**
- Earth systems rely on biodiversity

Finding new relationship with nature

KUVAT: EEVA FURMAN

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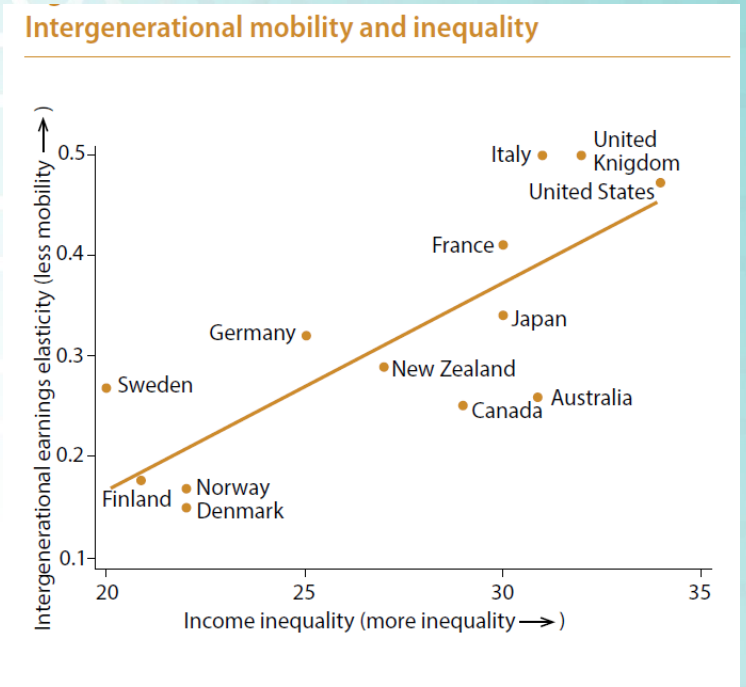
Human wellbeing and capabilities



- Multi-dimensional inequality
- Importance of early childhood
- Education/learning for sustainable development

Shared wellbeing with environment

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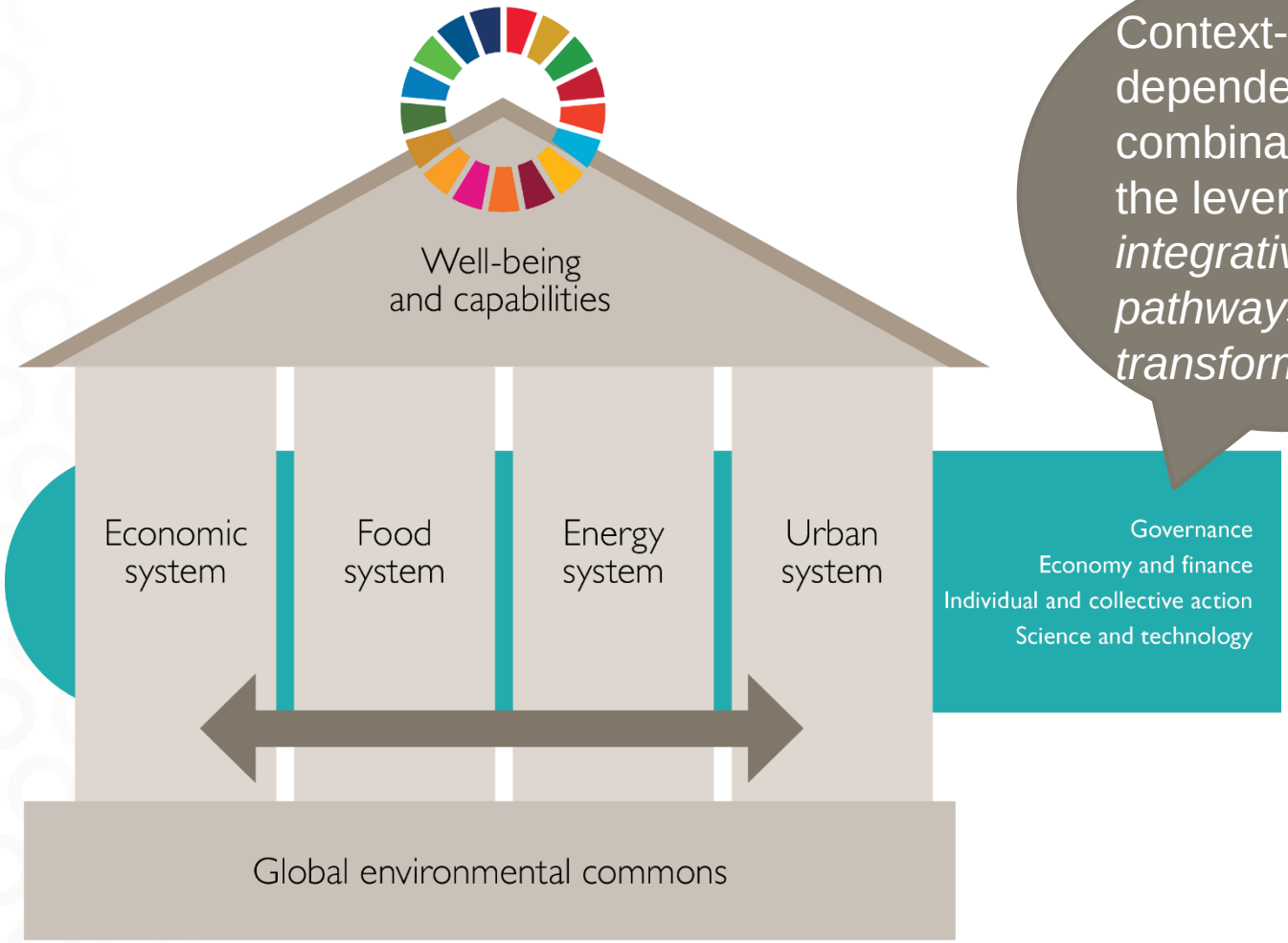

Context-dependent combinations of the levers form *integrative pathways to transformation*

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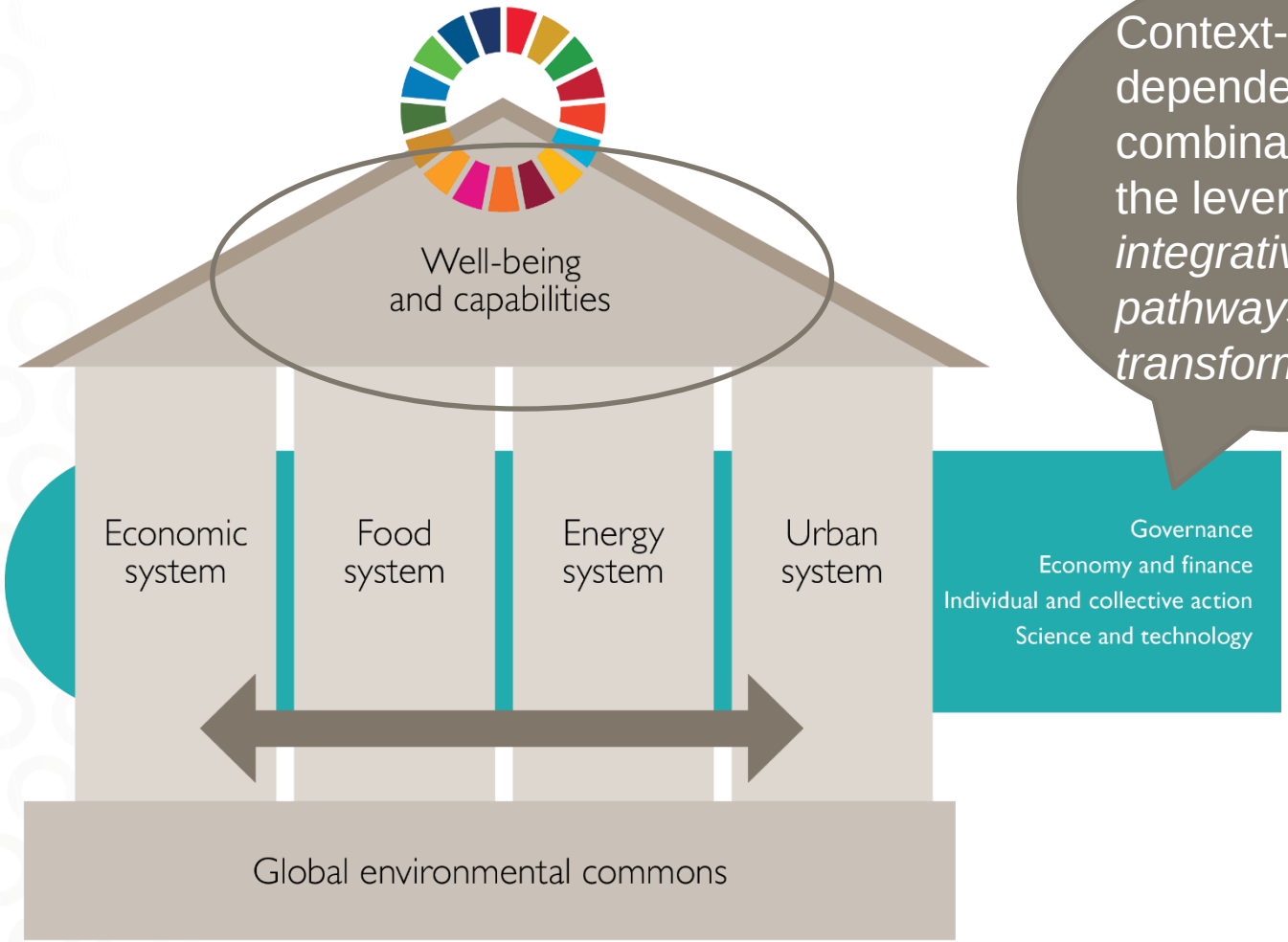

Context-dependent combinations of the levers form *integrative pathways to transformation*

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Human wellbeing and capabilities

Levers

- Libraries, museums and citizen organisations as platforms
- Education for systems thinking and imagination

- Media to support cultural change Investing on empowering economics and innovative sustainable business

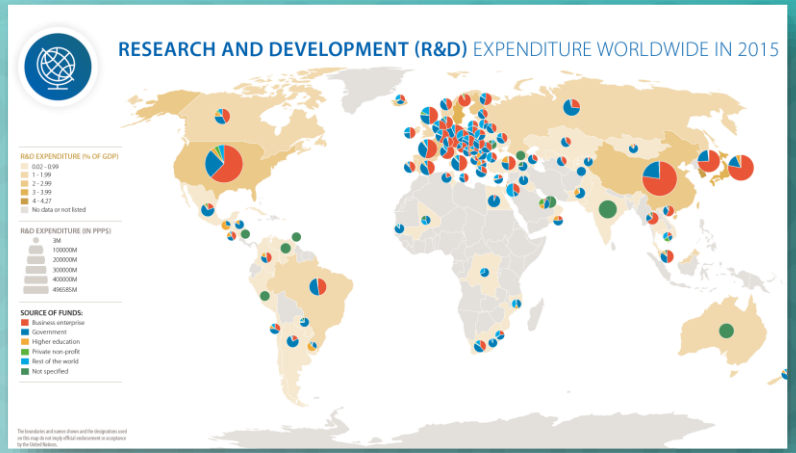
- Active citizenship and sd consumerism
- Co-creating nature relationship
- Trust and intergenerational care

- Inter- and transdisciplinary research on cultural change and ESD and learning
- Open science

Photo Credit: Xun Wang and Xin Zhang, University of Maryland

A ‘moon-shot’ mission for Sustainability Science

- Mission-oriented research guided by the 2030 Agenda
- Scientific assessment of existing transformation knowledge including non-academic sources
- Funding schemes & programmes for inter- and transdisciplinary research
- Incentive- and evaluation schemes
- Experimental spaces and transformation labs for next generation science-policy interfaces



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Universal sustainability science calls for a major transformation in science

comment

Expansion of sustainability science needed for the SDGs

Dominant research modes are not enough to guide the societal transformations necessary to achieve the 2030 Agenda. Researchers, practitioners, decision makers, funders and civil society should work together to achieve universally accessible and mutually beneficial sustainability science.

Peter Messerli, Eun Mee Kim, Wolfgang Lutz, Jean-Paul Moatti, Katherine Richardson, Muhammad Saidam, David Smith, Parfait Eloundou-Enyegue, Ernest Foli, Amanda Glassman, Gonzalo Hernandez Licona, Endah Murniningtyas, Jurgis Kazimieras Staniškis, Jean-Pascal van Ypersele and Eeva Furman

This is a decisive year for the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs). Convening this week, the United Nations High-level Political Forum on Sustainable Development (HLPF) includes a quadrennial SDG summit under the auspices of the General Assembly. Here, the Global Sustainable Development Report (GSDR)[1], prepared by an independent group of scientists, will be officially presented. It reviews progress and strives to chart ways ahead.

Adopted in 2015, a remarkable year for multilateralism, the 2030 Agenda has successfully raised awareness of the kinds of transformations needed — in policy, civil society, business, science and technology — to put countries on a sustainable development path.

But recent scientific assessments[2,3] paint a sobering picture of progress towards the SDGs. There is a growing gap between what needs to happen and what is actually being done. Just a handful of the 169 sub-targets are on track to fulfil the 17 higher-level SDGs. Many are off track and some display even negative trends including those related to tackling climate change, inequalities and biodiversity loss[4]. Massively expanded concerted actions are urgently needed to enable sustainable development in the next decade. In particular, we must quickly make available the best policy-relevant knowledge to guide these actions.

GSDR framework

The GSDR 2019 proposes a framework for knowledge-based transformations to sustainable development that reconciles evidence and socio-political deliberations for accelerated action. It emphasizes the following three key complementary areas of knowledge production[4,5]:

Understanding systemic interactions. Guided by the 2030 Agenda, we must improve understanding of how complex human–environment system dynamics can produce trade-offs that hinder individual targets, on the one hand, or produce synergies, on the other. For example, scaling up dominant food systems to meet growing demand can harm targets related to ending poverty, halting climate change and preserving life on land. Conversely, sustainable intensification of food production (for example, agroecology) and adapting people's diets can have positive spillover effects for many social and environmental targets.

Understanding competing development agendas. Governance, business and finance, individual and collective action, as well as science, technology and innovation all provide crucial levers for transforming vicious systemic circles into virtuous circles[1]. However, we must clearly identify how the values and interests of powerful actors help or hinder the 2030 Agenda, and how rules and incentives can be changed to enable collaboration towards common goals. For instance, there is a pressing need for evidence-based guidance on how to regulate the financial sector, markets, trade, taxation, and so on, to support — not harm — ecological sustainability and social cohesion[6].

Understanding transformations in concrete contexts. Individual countries and regions face unique challenges and have different development priorities. The specific design of transformation pathways depends on each context — few solutions will work the same way everywhere. Instead, we must strive to combine different sets of transformation levers based on the needs and conditions of each setting. At the same time, harmonized high-level efforts are needed to steer the interactions between pathways and their aggregate outcomes to deliver universal progress towards the 2030 Agenda. For example, poor nutrition is a global challenge demanding international cooperation, but it also requires customized local pathways based on cultural preferences, educational attainment, prevalent food systems, available technologies and other local factors.

Achieving the 2030 Agenda

Science has played a central role in building the still fragile international consensus on the SDGs. Researchers have made major advancements in understanding coupled human–environment systems, especially thanks to increasing use of interdisciplinary approaches[7]. Various international scientific assessments have successfully synthesized fragmented evidence, enabling policy breakthroughs such as the 2015 Paris Climate Agreement.

Nevertheless, there are fundamental limits to our ability to design sustainable transformation pathways based on evidence[8]. Human–environment systems remain highly complex and difficult — or impossible — to map fully. Causes and effects are often hard to distinguish and context dependent. Stakeholders frequently disagree about problems and solutions[9]. In such cases, decision makers must navigate ways forward based on careful consideration of risks, uncertainty and issues of social justice. Precautionary measures or interventions may be advisable even if cause-and-effect relationships are not fully established.

In response to such challenges, the growing field of sustainability science has adopted a variety of useful approaches —

Analyse interactions → Analyse those with power → Co-create transformations

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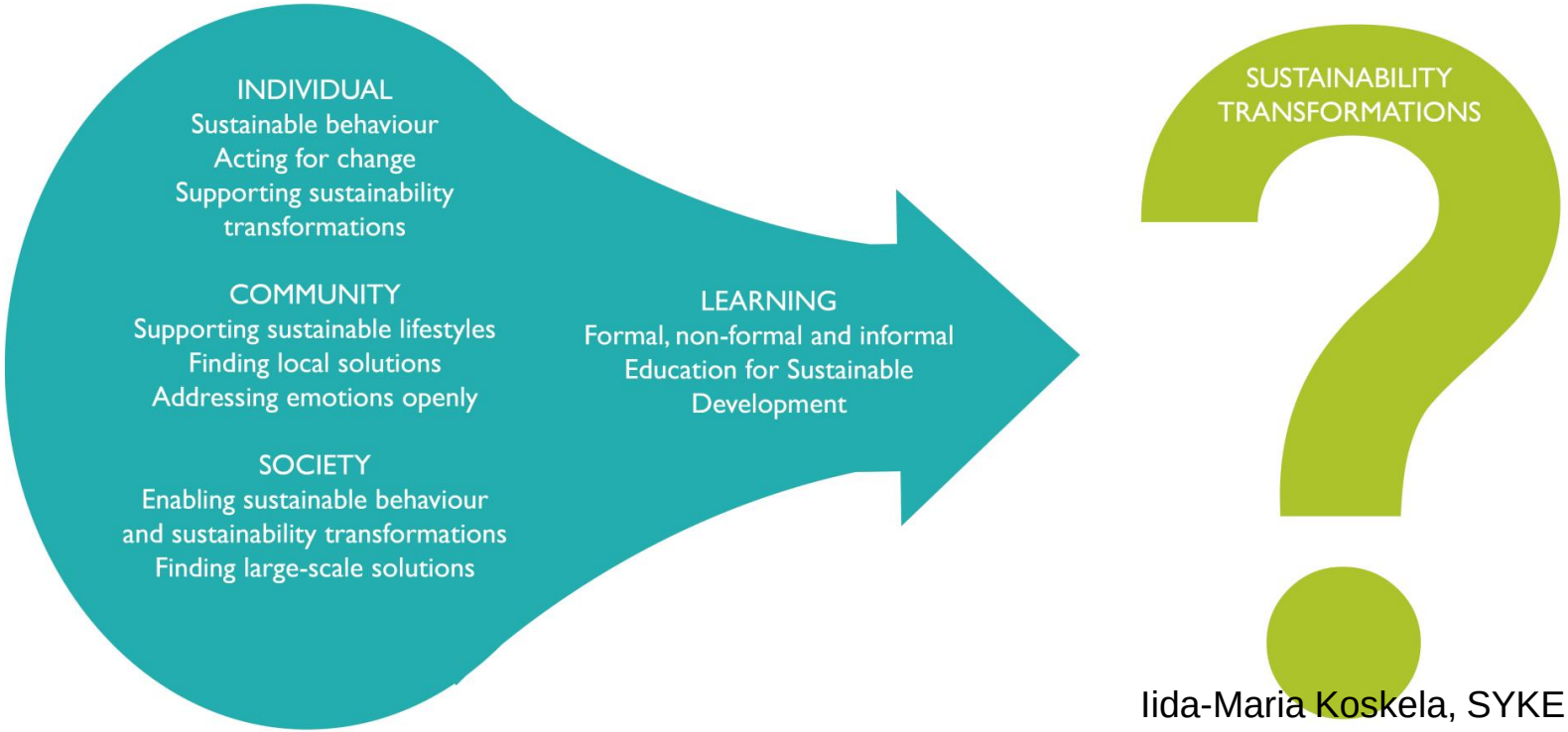
Messerli et al. 2019

Learning new norms and new routines through experimenting



Iida-Maria Koskela, SYKE

Focus from education to learning

- High quality teaching of conceptual thinking
- Numerical targets for learning
- Skills to foster the economic growth

- Understanding the human – nature connection, systemic thinking
- Understanding local problems and ability to look for solutions
- Ability for critical thinking
- Recognising the importance of a peaceful and just society
- Ability for empathy, social skills

kemu

TARINOITA KESTÄVYYSMURROKSESTA

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Orienting towards a new positive future

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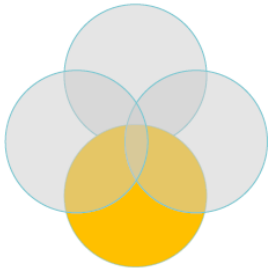
Culture *in* sustainable development

- Culture as fourth ”pillar” (in the picture represented in orange)
- Well-established view; in discussions soon after Brundtland’s report 1987
- For instance culture as art; creative production; cultural heritage

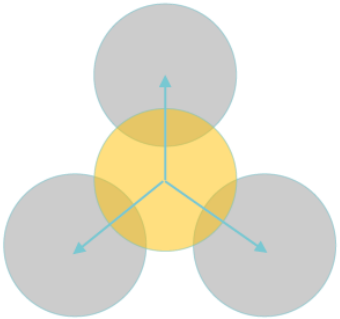


- Focus in human made tangible and intangible cultural items, and primarily neither in human beings nor in nature

Culture for sustainable development

- Culture (orange) as driver of or instrument for sustainable development – connecting and mediating
- ”culture can be the way to balance competing or conflicting demands and work through communication to give human and social meaning to sustainable development”
- The focus is on the other dimensions of sustainability, not in the cultural dimension
- Dessein et al. 2015, 29-31.

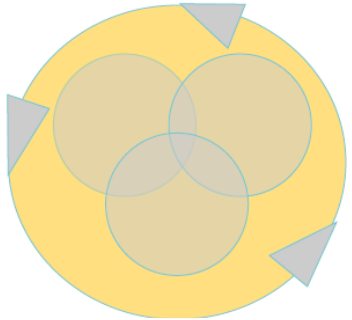
- Ecosystem services
- Creative economy
- Green care
- Etc.



Culture as sustainable development

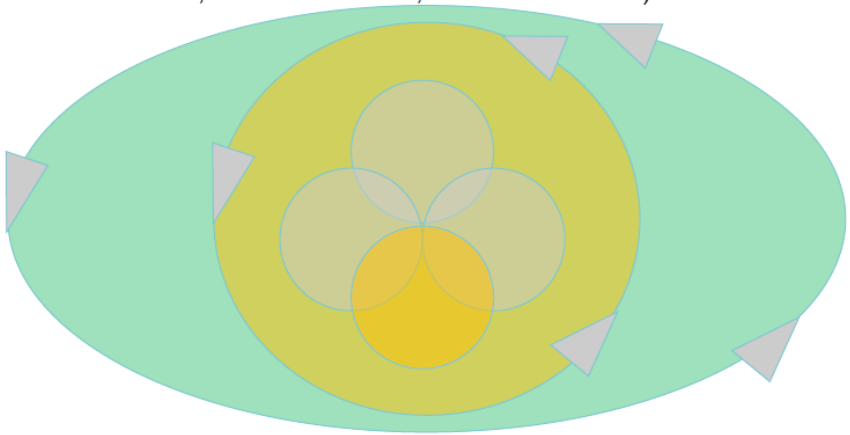
- ”Culture (orange) takes on its evolutionary, holistic and transformative role, providing a new paradigm to the question of sustainable development”

- Culture as ”fundamental new processes of social learning that are nourishing, healing, and restorative”
- Dessein et al. 2015, 29-31.



Fourth form of cultural sustainability: Cultural sustainability transformation as a part of nature

- Care of the transformative power of the interactive, interconnected, and changing, interconnected process of culture and nature, including both tangible and intangible elements of the world, and care of everyone's possibilities to have an impact on this process without harming others and compromising possible and preferable futures
- Culture (orange) and nature (green) including four dimensions of sustainability
- (Siivonen 2008a; Siivonen 2017; Siivonen 2018; Siivonen 2020.)



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https://sustainabledevelopment.un.org/gsdr2019

www.kestavyyspaneeli.fi/en

Inger Birkeland& Rob Burton & Constanza Parra & Katriina Siivonen (ed. by), *Cultural Sustainability and the Nature-Culture interface. Livelihoods, Policies, and Methodologies*. London: Routledge.

Dessein, J., Soini, K., Fairclough, G. and Horlings, L. (eds) 2015. Culture in, for and as Sustainable Development. Conclusions from the COST Action IS1007 Investigating Cultural Sustainability. University of Jyväskylä, Finland.

Special thanks to Katriina Siivonen (katriina.siivonen@utu.fi)