A SYSTEM CHANGE COMPASS

Implementing the European Green Deal in a time of recovery

GLOBE Wake Up Call - 26 November 2020

Funded by

Gobal Context: 21st Century Reality Check

For the first time in a human history we face the emergence of a single, tightly coupled human social-ecological system of planetary scope.

We are more interconnected and interdependent than ever.

Our individual and collective responsibility has enormously increased.

THE CLUB OF ROME

SYSTEMIQ

2020: Wake-up call for "The future we want"

Tipping point for the climate-biodiversity-health:

We are leaving the "safe operating space" across multiple earth systems

An economic reset:

Economies in lockdown and governments releasing the biggest stimulus packages in recent memory

Paradigm change in European politics:

The European Green Deal as new strategic objective, supported by a new cohort of politicians

Multilateralism on the test bench:

America and China are going different ways

Activism with renewed vigour:

Greta Thunberg +F4F, "Convention Citoyenne pour le Climat" in France, "German Zero", Black Lives Matter, Gilet Jaunes etc.

THE CLUB OF ROME

SYSTEMIQ

European Green Deal

Important to Remember

- *It is a new growth strategy acknowledging that environmental and economic goals are not in contradiction and future economic development depends on how we will preserve and protect our natural capital*
- *Special attention is given to social considerations of the transition. Success of the reform efforts proposed by EGD depends on acceptance, particularly from the socially more vulnerable groups of people.*

THE CLUB OF ROME

SYSTEMIQ

President von der leyen State of the union - Building the world we want to live in: a union of vitality in a world of fragility

- *This is our **opportunity to make change happen by design** – not by disaster or by diktat from others in the world.*
- *To emerge stronger by **creating opportunities for the world of tomorrow** and not just building contingencies for the world of yesterday.*
- ***Propelling Europe forward**: building the world we want to live in*
- ***The European Green Deal is our blueprint to make that transformation**.*
- *It is about making **systemic modernisation across our economy, society and industry**. It is about building a stronger world to live in.*
- *The Virus showed the **limits of a model that values wealth above wellbeing. It brought into sharper focus the planetary fragility** that we see everyday through melting glaciers, burning forests and now through global pandemics*
- ***Our leadership is not about self-serving propaganda**. It is not about*

The Objective of the Report

Trigger:

- *Need to think holistically about EGD*
- *Conversation with EC on challenges of combining EGD with recovery*

Authors:

- *Club of Rome and SYSTEMIQ*

Contributors:

- *Wide array or organisations from civil society, academia and business leaders*

5 core questions for our report:

Will the EGD achieve its goals as it stands today?

If not, what (systemic) conditions need to be in place to change that?

What interventions are needed to put these conditions in place?

What are the economic ecosystems that will meet our societal needs in the spirit of the EGD?

What are the industrial champions that we should support to build these systems (and where budget and recovery money should be spent)?

THE CLUB OF ROME

SYSTEMIQ

The System Change Compass contributes to the implementation of the ambitions of the European green Deal

- ***Sets zero net emissions*** *of GHG by* ***2050*** *and* ***decoupling of growth and resource use***
- *Acknowledges need for fair and* ***just transition***
- *Aims at* ***strongly interlinked and mutually reinforcing*** *policy recommendations*

- ***Does not sufficiently address drivers and pressures*** *that cause environmental damage*
- ***Does not offer systemic perspective*** *to guide decision-making*
- *Implementation is put at extra risk due to* ***COVID-19 recovery***

- ***Maps and envisions*** *the system in service of people and planet*
- ***Derives system level orientations*** *towards desired state*
- *Charts pathway towards prosperity and wellbeing* ***within planetary boundaries***

THE CLUB OF ROME SYSTEMIQ

UNEP IRP and Club of Rome:

The core limiting factor of human wellbeing and our (economic) development are (the unsustainable use of our) natural resources and environmental sinks

*Report is based on **natural resource optics**.*

The way we treat natural resources to a large extent determines economic results, as well as environmental and health impacts. Natural resources are the bridge between economy and competitiveness on one hand and climate change, biodiversity loss, pollution and health implications on the other.

THE CLUB OF ROME

SYSTEMIQ

System change approach

Relation to existing global agreements

Report does also not have the ambition to address all system changes arising from global commitments like those related to SDGs and Paris climate agreement.

Yet it is still an important contribution to their implementation.

According to the International Resource Panel trade-offs among various SDGs are unavoidable and the most efficient strategy to mitigate them and create synergies to resolve the development and environmental challenges is through sustainable consumption and production.

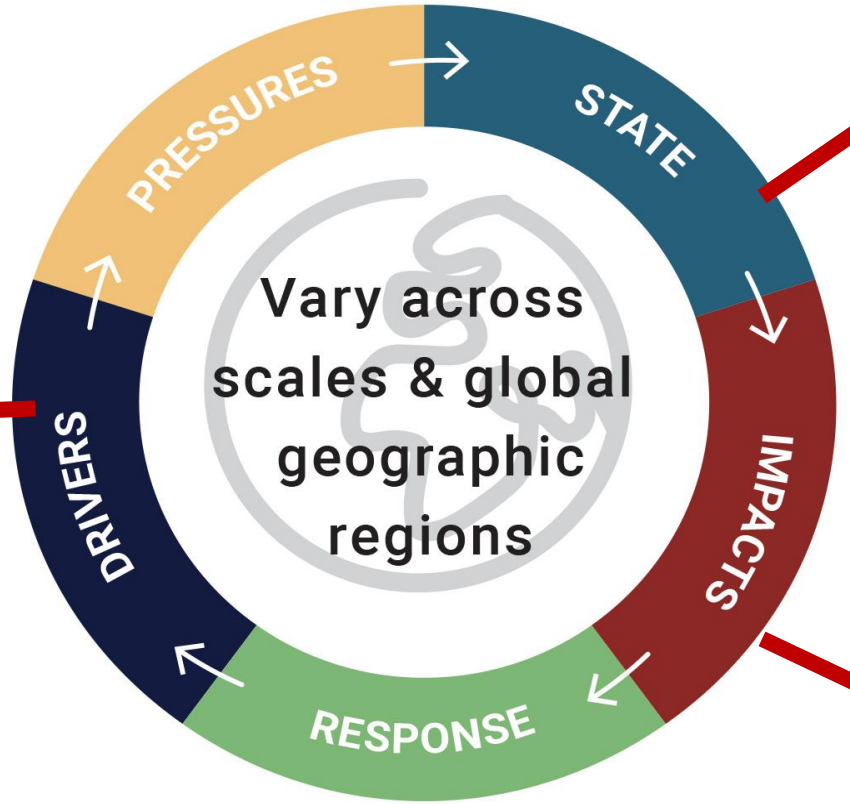
THE CLUB OF ROME

SYSTEMIQ

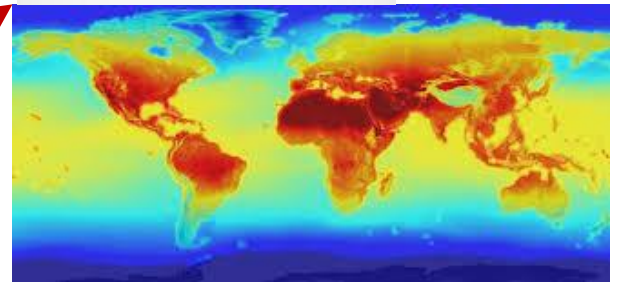
International Resource Panel

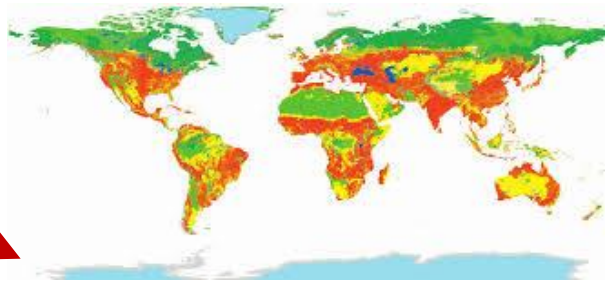
sponse

Our Economy



ipcc
INTERGOVERNMENTAL PANEL ON climate change





Convention on Biological Diversity

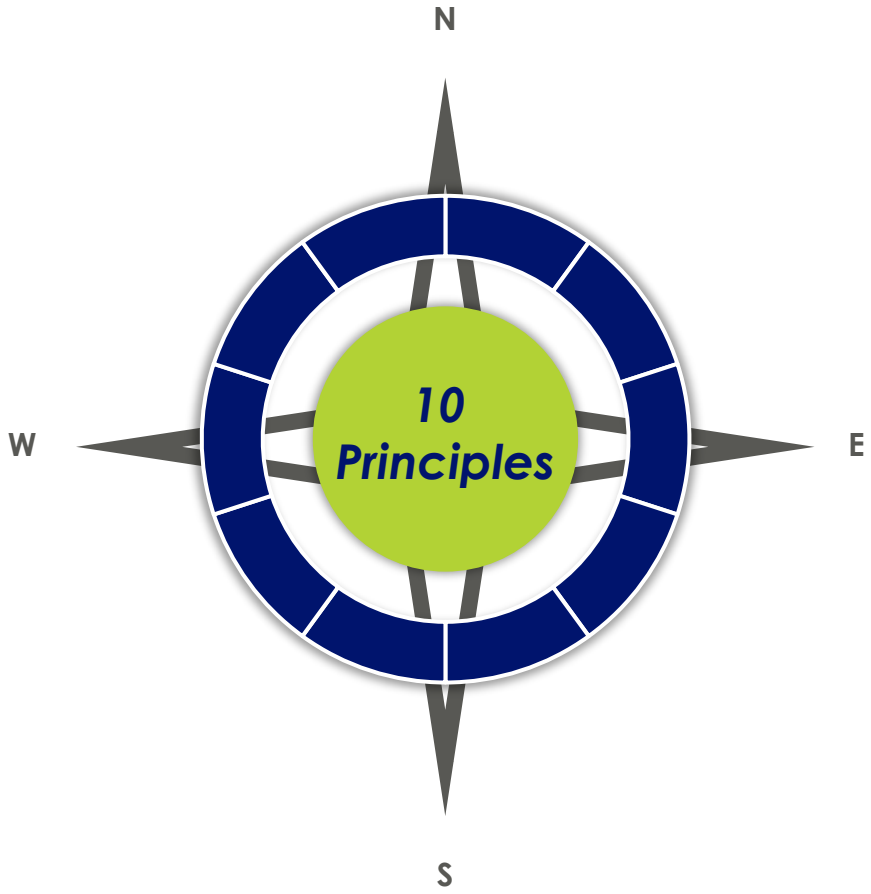
ipbes
Science and Policy for People and Nature

THE CLUB OF ROME

SYSTEMIQ

Translating the system change compass to systemic orientations

System Change Compass (10 Principles)



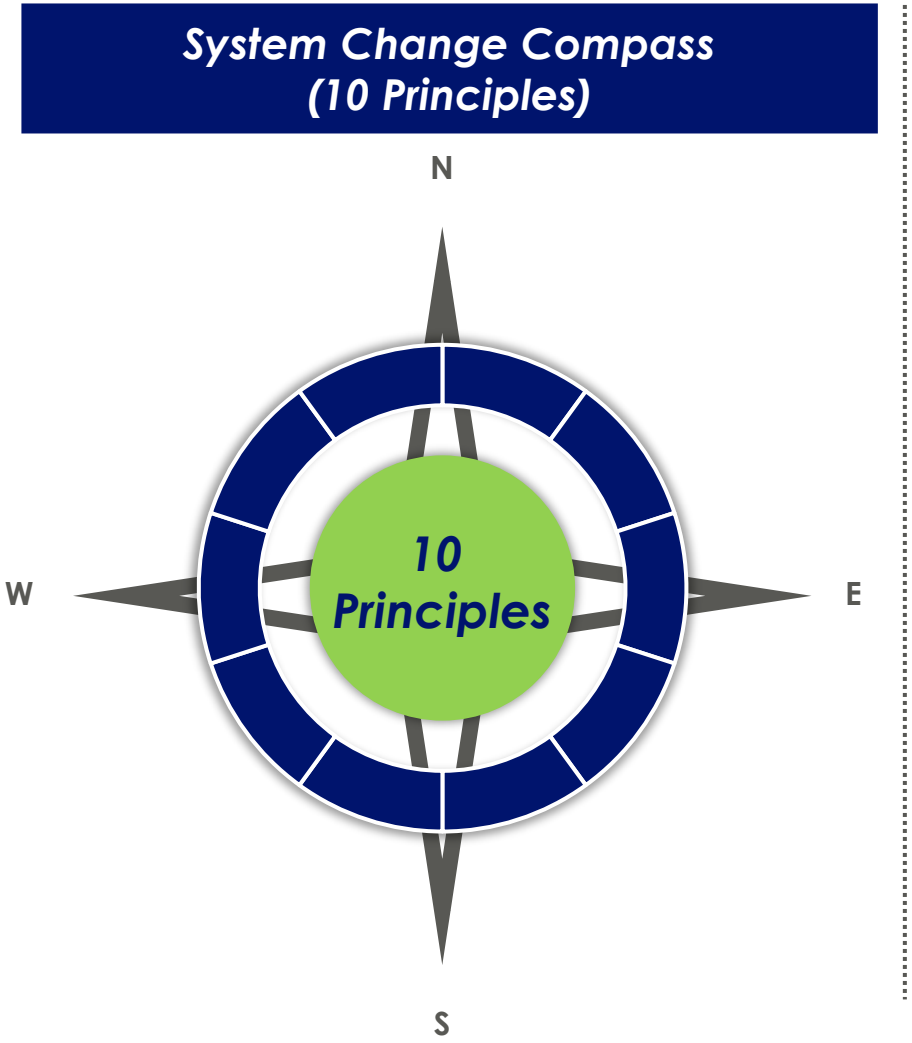
Application to the system to derive systemic orientations

- 30 System-level orientations
- 3-5 ecosystem-level orientations
- 50+ Champion orientations

THE CLUB OF ROME

SYSTEMIQ

Translating the system change compass to systemic orientations

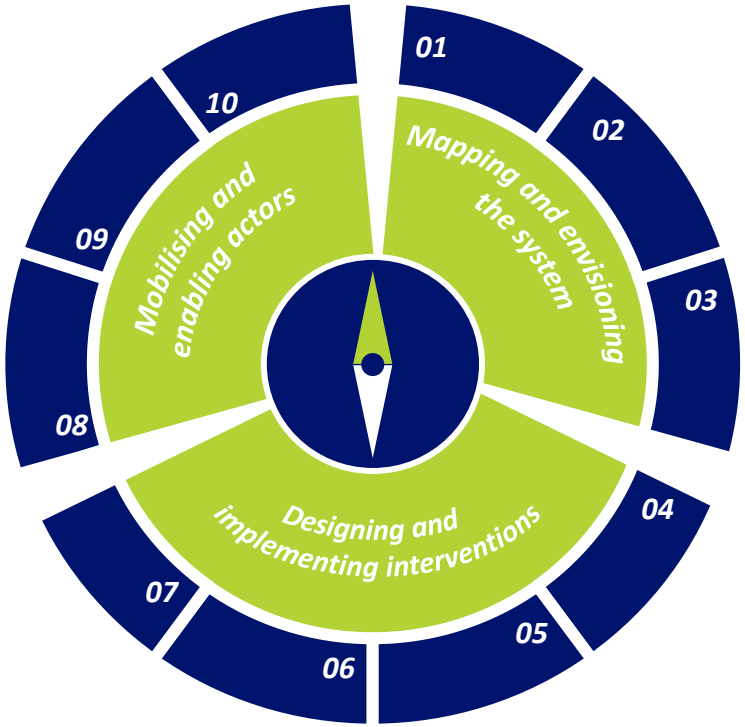


THE CLUB OF ROME

SYSTEMIQ

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity



From

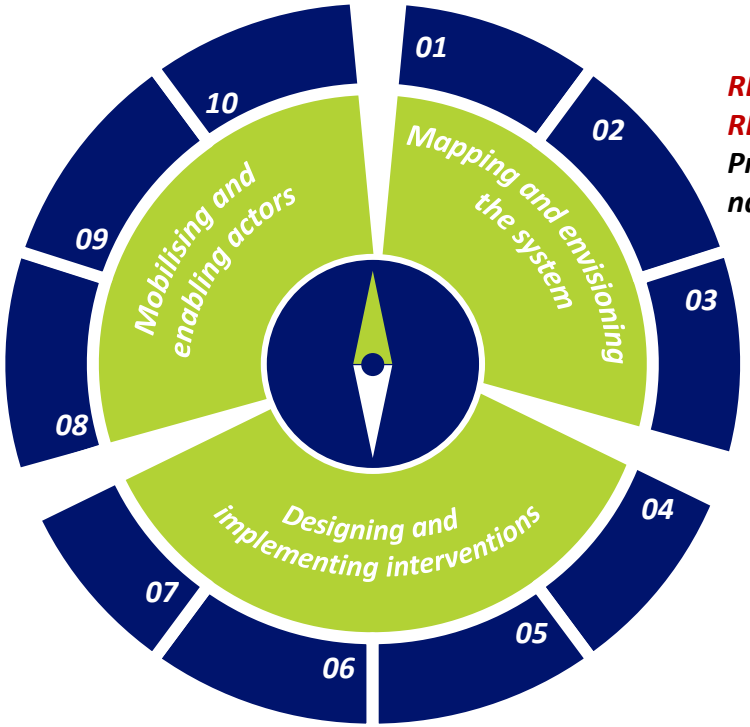
Prosperity defined by aggregate economic growth

To

Prosperity defined by fair and social economic development

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity



REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

From

Prosperity based on natural resource consumption

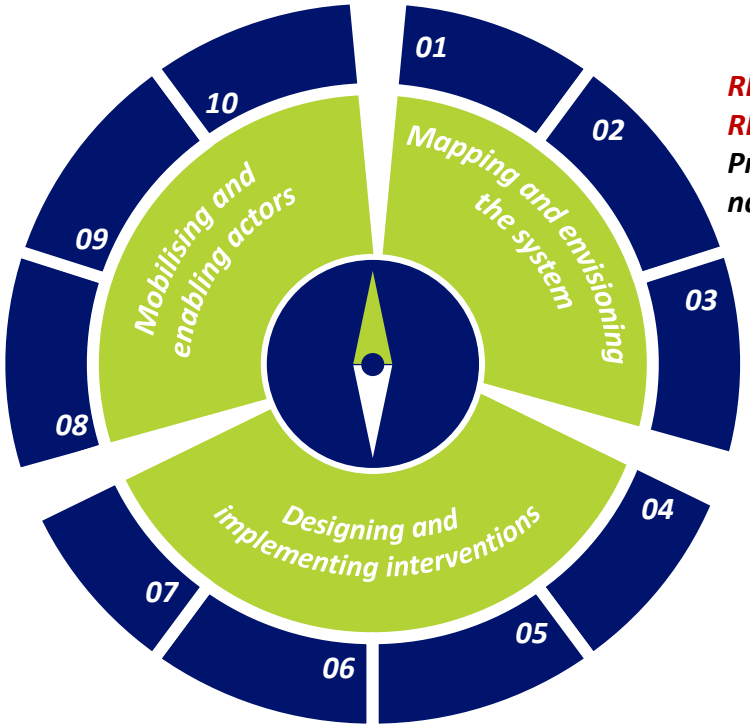
To

Prosperity decoupled from resource consumption through efficiency, sufficiency and a shift to responsible use of natural resources

THE CLUB OF ROME
SYSTEMIQ

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity



REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

From

Growing economic activities and sectors

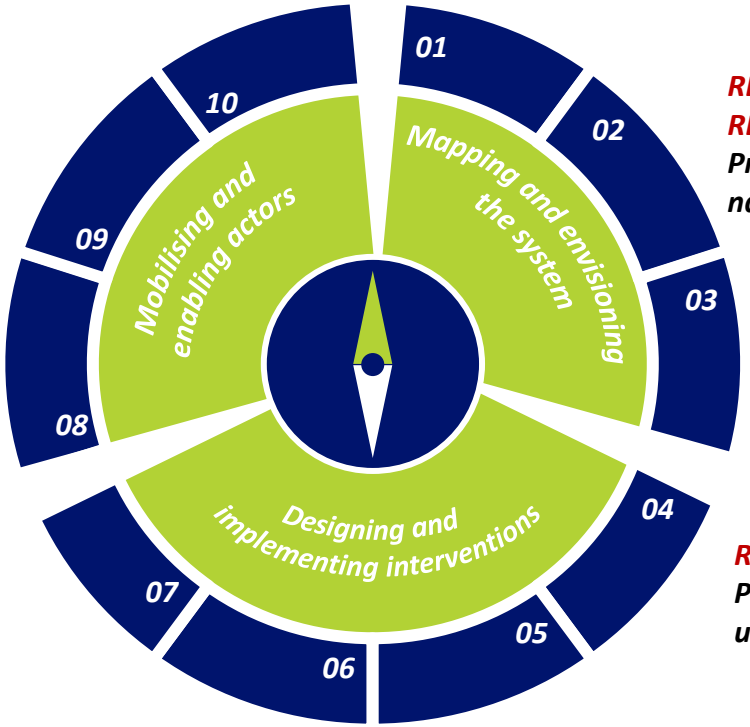
To

Focusing on societal needs that need to be fulfilled without transgressing planetary boundaries

THE CLUB OF ROME
SYSTEMIQ

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity



REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

REDEFINING METRICS:
Performance measurement updated

From

Decisions driven by optimising for GDP growth

To

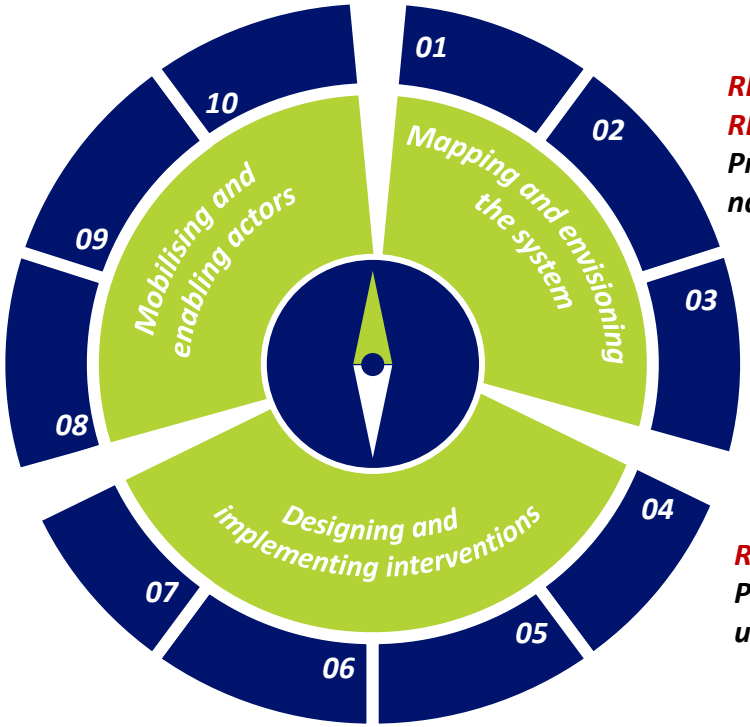
Decisions driven by holistic metrics including natural capital and social indicators

THE CLUB OF ROME

SYSTEMIQ

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity



REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

REDEFINING METRICS:
Performance measurement updated

REDEFINING COMPETITIVENESS:
Digitization and smart prosperity at the heart of European competitiveness

From

Massive dependency of Europe on imports of natural resources

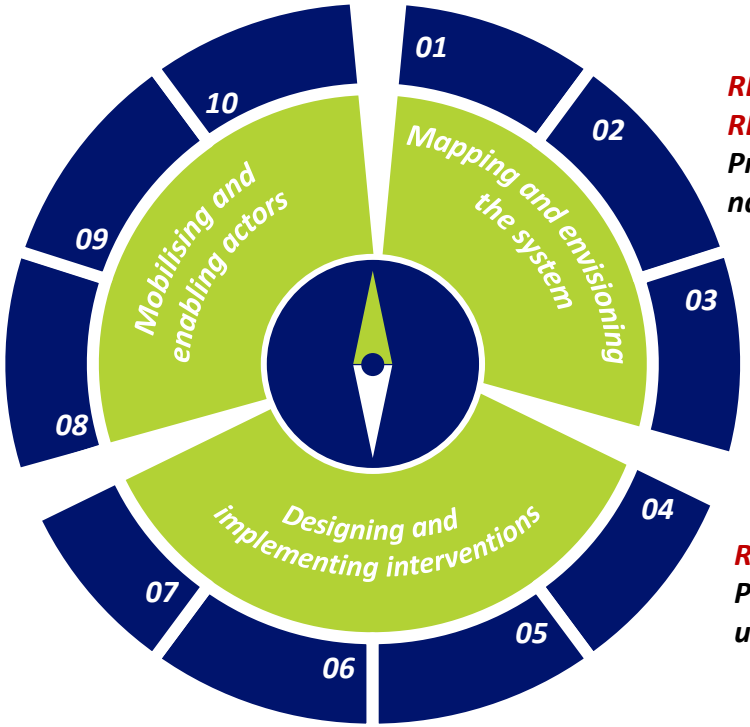
To

A resilient Europe based on low carbon products, services, and digital optimisation

THE CLUB OF ROME
SYSTEMIQ

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity



REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

REDEFINING METRICS:
Performance measurement updated

REDEFINING COMPETITIVENESS:
Digitization and smart prosperity at the heart of European competitiveness

REDEFINING INCENTIVES:
Show the real value of social and natural capital

From

Incentives supporting the status quo

To

Incentives aligned with Green Deal ambitions and economic ecosystems

THE CLUB OF ROME

SYSTEMIQ

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity

REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

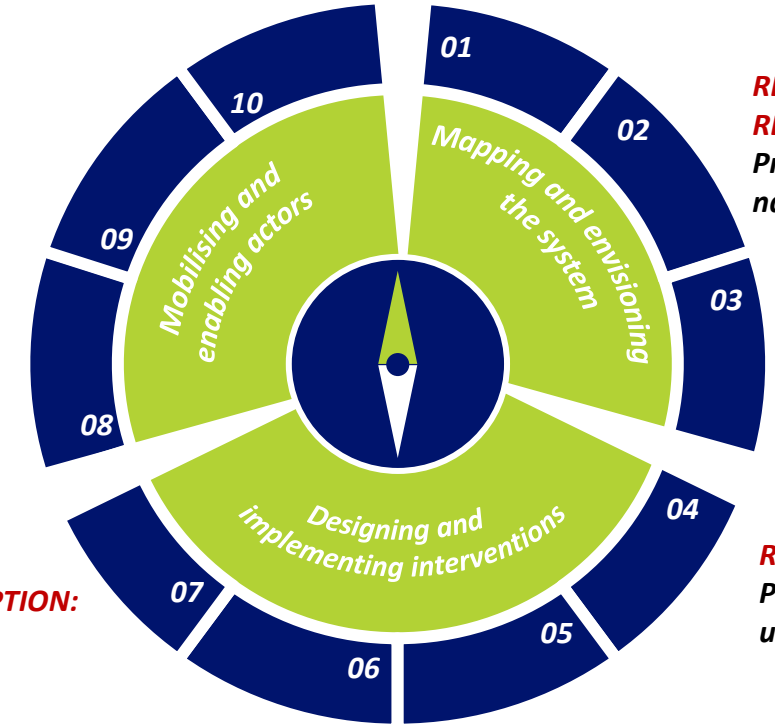
REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

REDEFINING METRICS:
Performance measurement updated

REDEFINING COMPETITIVENESS:
Digitization and smart prosperity at the heart of European competitiveness

REDEFINING INCENTIVES:
Show the real value of social and natural capital

REDEFINING CONSUMPTION:
From owning to using



From

Owning products as part of individual identity

To

Experiencing and using products and services as part of individual, shared, and collective identity

THE CLUB OF ROME

SYSTEMIQ

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity

REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

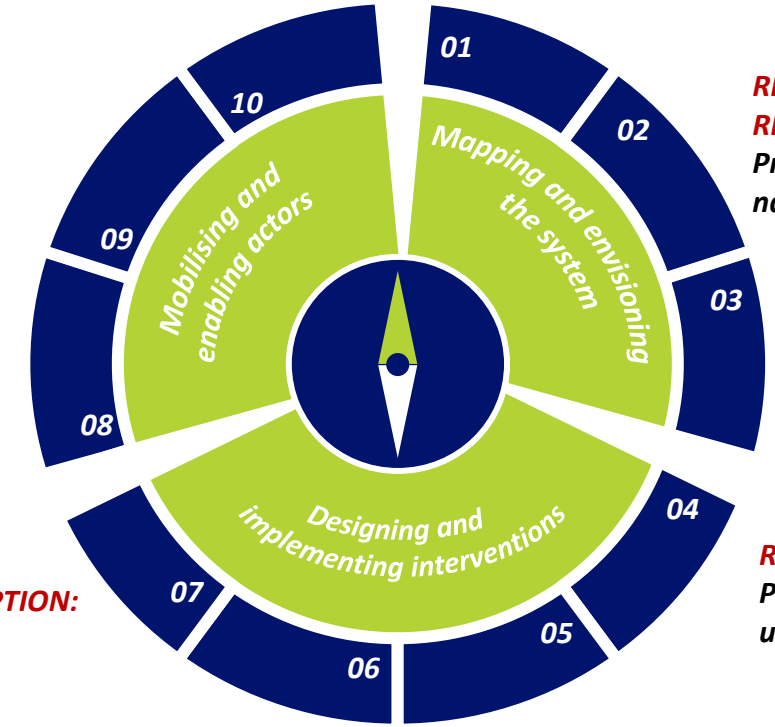
REDEFINING METRICS:
Performance measurement updated

REDEFINING COMPETITIVENESS:
Digitization and smart prosperity at the heart of European competitiveness

REDEFINING INCENTIVES:
Show the real value of social and natural capital

REDEFINING CONSUMPTION:
From owning to using

REDEFINING FINANCE:
The facilitator of the transition



From

Subsidising and investing in "old" industries

To

Supporting and facilitating economic ecosystems

THE CLUB OF ROME

SYSTEMIQ

The System Change Compass

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity

REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

REDEFINING METRICS:
Performance measurement updated

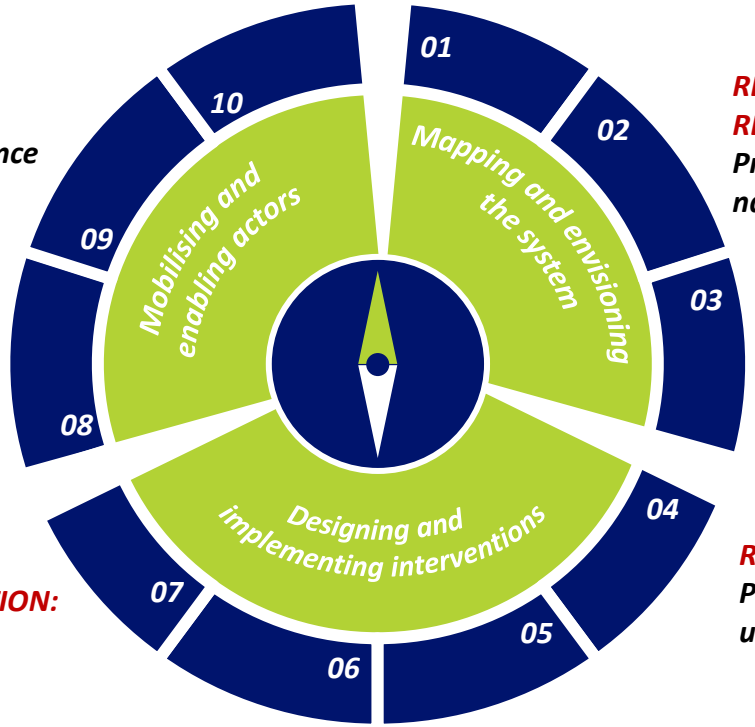
REDEFINING COMPETITIVENESS:
Digitization and smart prosperity at the heart of European competitiveness

REDEFINING INCENTIVES:
Show the real value of social and natural capital

REDEFINING CONSUMPTION:
From owning to using

REDEFINING FINANCE:
The facilitator of the transition

REDEFINING GOVERNANCE:
A systematic approach to governance influenced by science



From

Top down, static, slow normative policy processes

To

Transparent, flexible, inclusive, participatory models of governance influenced by science

THE CLUB OF ROME

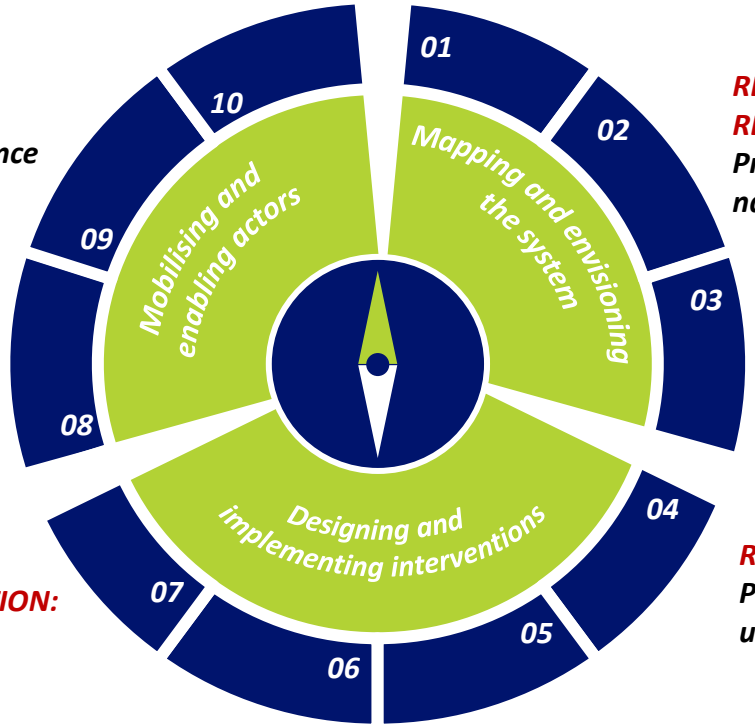
SYSTEMIQ

The System Change Compass

REDEFINING LEADERSHIP:
Intergenerational agreement through new forms of leadership

REDEFINING PROSPERITY:
Embracing social fairness for real prosperity

REDEFINING GOVERNANCE:
A systematic approach to governance influenced by science



REDEFINING NATURAL RESOURCE USE:
Prosperity decoupled from natural resource use

REDEFINING FINANCE:
The facilitator of the transition

REDEFINING PROGRESS:
Meeting societal needs as a purpose of a model based on economic ecosystems

REDEFINING CONSUMPTION:
From owning to using

REDEFINING METRICS:
Performance measurement updated

REDEFINING INCENTIVES:
Show the real value of social and natural capital

REDEFINING COMPETITIVENESS:
Digitization and smart prosperity at the heart of European competitiveness

From

Traditional leadership roles and expectations

To

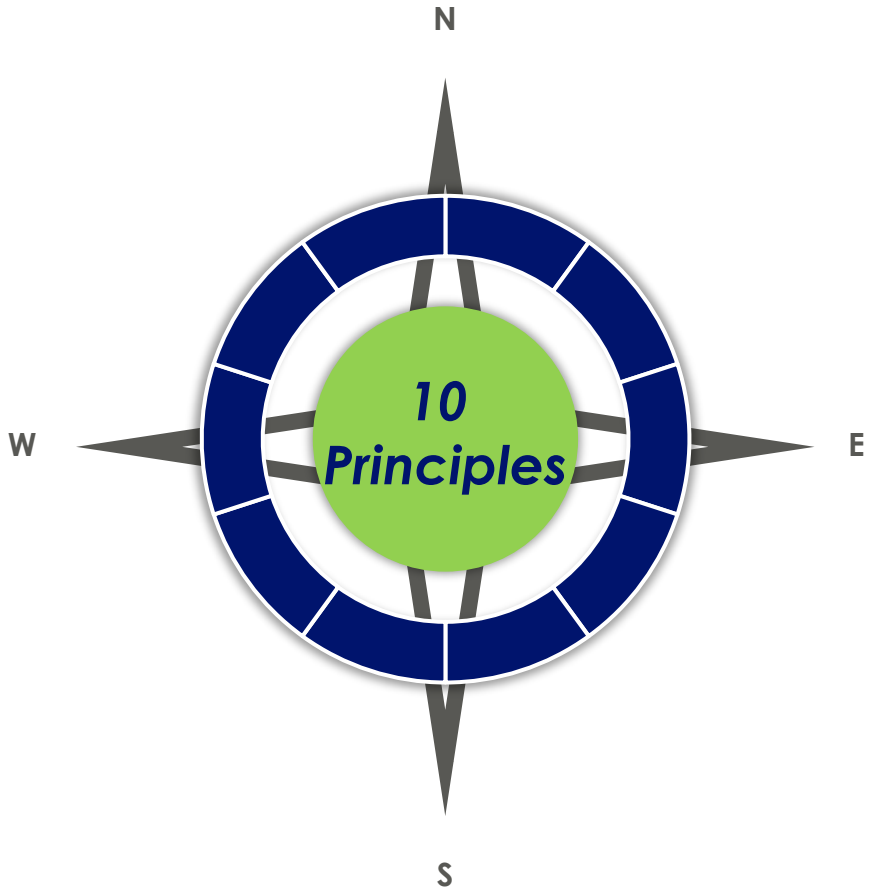
System leadership based on an intergenerational agreement

THE CLUB OF ROME

SYSTEMIQ

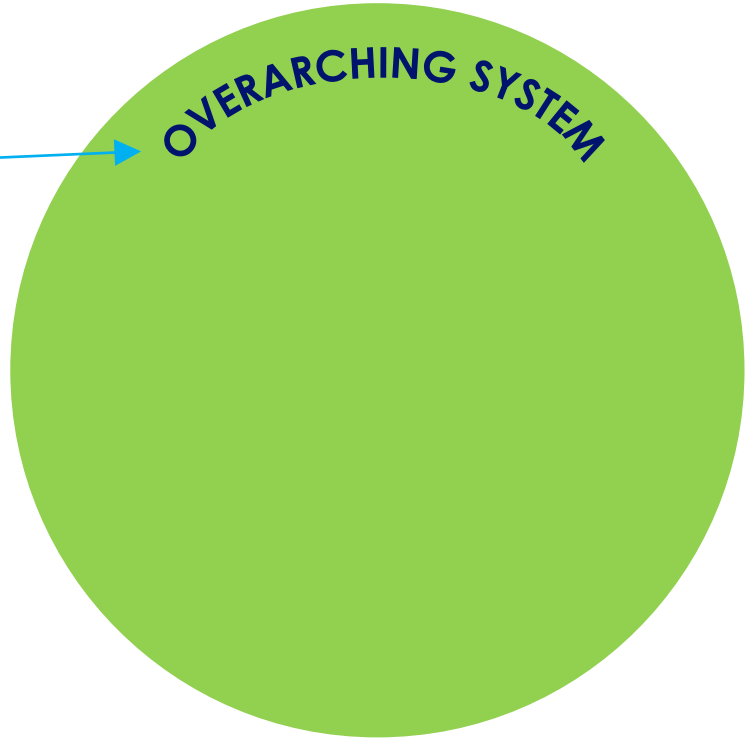
Translating the system change compass to systemic orientations

System Change Compass (10 Principles)



Application to the system to derive systemic orientations

30 System-level orientations



THE CLUB OF ROME

SYSTEMIQ

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES	SYSTEM LEVEL INTERVENTION
01 REDEFINING PROSPERITY: Embracing social fairness for real prosperity	1. Balance policy attention from income and wealth creation to income and wealth distribution, and ensure that economic transition contributes to equality and social fairness by guaranteeing universal basic services and minimum levels of income 2. Create conditions for social acceptance of the necessary transition through enhancing reskilling and educational programmes; introducing funding mechanism to support transition and supporting lower- and middle-income groups to help them absorb full-costs introduced through all economic eco-systems 3. Replace part of the income-based taxes with resource-based taxes to address resource as well as social policy targets

THE CLUB OF ROME

SYSTEMIQ

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES		SYSTEM LEVEL INTERVENTION
02	REDEFINING NATURAL RESOURCE USE: Prosperity decoupled from natural resource use	1. Complement energy and GHG-related targets by introducing science-based resource use (absolute) decoupling targets following sufficiency principles 2. Assess all policy proposals through dematerialisation and energy-efficient decarbonisation impacts 3. Align current legal and financial systems with circular and carbon-free principles and support the necessary infrastructure and research to contribute to achieving a carbon-free circular transition

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES		SYSTEM LEVEL INTERVENTION
03	REDEFINING PROGRESS: Meeting societal needs as the Purpose of a model based on economic ecosystems	1. Meeting societal needs inside safe operating space, respecting planetary boundaries, should be a primary goal for all European institutions and national governments 2. Replace short-term-based governance driving public, private and financial policy decisions with longer-term strategic approach and incentives 3. Reorganise European institutions, governments and other governing bodies and promote industrial dialogue, to address societal needs and industrial ecosystems logic and enable addressing the complexity of challenge - avoid a silos-based approach

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES	SYSTEM LEVEL INTERVENTION
04 *REDEFINING METRICS:* *Performance measurement updated*	1. *Replace GDP with a new, comprehensive wellbeing measure that also integrates social and environmental needs, accompanied by a set of additional indicators* 2. *Introduce natural capital accounting* 3. *Standardise company and investor reporting with a decoupling lens against indicators of societal needs, pollution and emissions related to production*

THE CLUB OF ROME

SYSTEMIQ

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES		SYSTEM LEVEL INTERVENTION
05	REDEFINING COMPETITIVENESS: Digitalisation and smart prosperity at the heart of European competitiveness	1. Build EU competitiveness based on resource, including energy, productivity leading to optimisation enabled by digitalisation 2. Support the development and deployment of new digital services-based or other resource and energy reducing models 3. Support solutions, which will strengthen resilience and strategic autonomy of the European economy, provide new local jobs and enhance education and job (re-training) programmes

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES	SYSTEM LEVEL INTERVENTION
06 REDEFINING INCENTIVES: Introduce the real value of social and natural capital	1. Follow the policy principles in all industrial eco-systems, which would reflect and include all costs, like carbon pricing or resource taxes, related to environmental and health impacts (so called "externalities") 2. Replace, without further delay, all harmful and unsustainable subsidies supporting extraction, consumption, and disposal of natural resources. Strengthen producer liability and use freed up funding to support activities reducing natural resource use, especially of hard to abate sectors 3. Prioritise investments in "rebooting" nature and update environmental standards to take into consideration systemic interactions between climate-biodiversity-health, to ensure greater resilience to future shocks

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES	SYSTEM LEVEL INTERVENTION
07 REDEFINING CONSUMPTION: From owning to using	1. Educate consumers and provide them with information, like product passport, to empower them for informed choices 2. Explore the opportunity offered by a less ownership-biased younger generation and provide consumers with alternatives to meet their needs 3. Support transition of governance, legal and financial systems to enable Producer Ownership business models

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES	SYSTEM LEVEL INTERVENTION
08 REDEFINING FINANCE: The facilitator of the transition	1. Ensure financial accounting and risk assessment fully disclose climate, nature and diversity impact indicators of investment portfolios 2. Orientate all public investments to catalyse system change, along the lines of compass orientations and economic ecosystems while considering immediate "symptomatic" action needs 3. Support and de-risk private investment and expend blended financing in emerging industrial ecosystems and their respective champions

3 System Level Interventions for each Compass Orientation

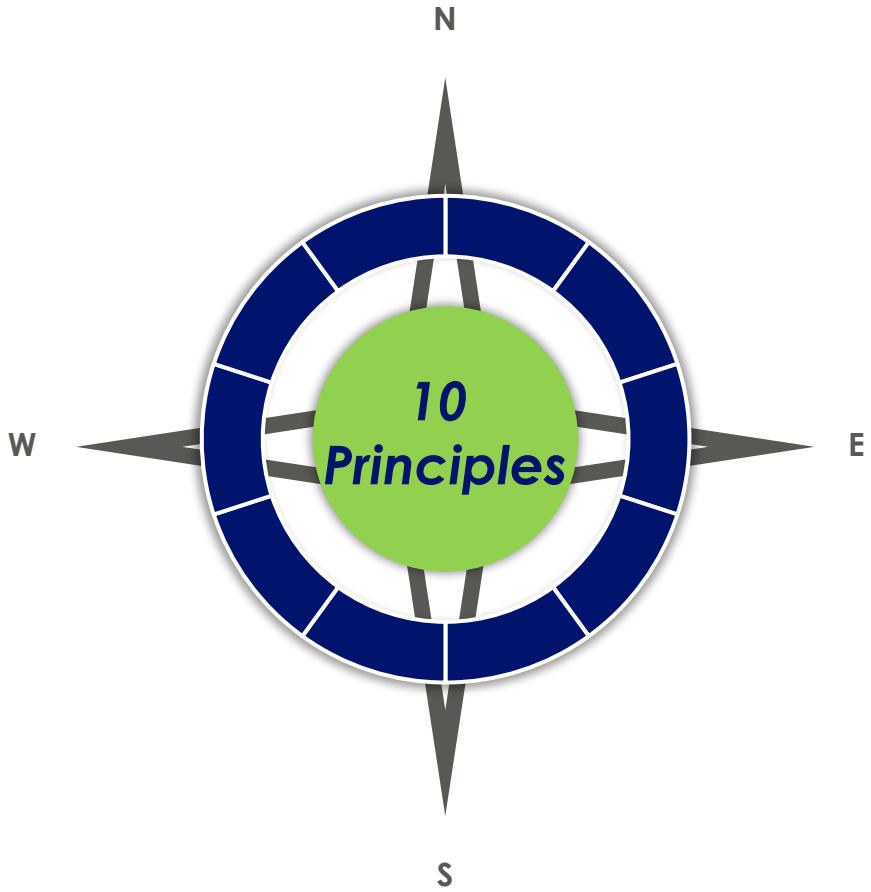
COMPASS PRINCIPLES	SYSTEM LEVEL INTERVENTION
09 REDEFINING GOVERNANCE: Sharing sovereignty and working together	1. Support inclusive, informed, fair and participatory governance systems, ensuring that all relevant stakeholders have voice, agree and share the ownership of necessary system change 2. Explore the establishment of an international resource management convention and ensure better inclusion of resource management in all existing international agreements 3. Lead the implementation of more innovative, deliberative formats for policymaking, especially at supranational level; provide development funds to promote decoupling globally through co-creating or fostering new projects and programmes that are "bottom-up", and enhance governance models to support those implementing them

3 System Level Interventions for each Compass Orientation

COMPASS PRINCIPLES	SYSTEM LEVEL INTERVENTION
10 REDEFINING LEADERSHIP: Intergenerational Agreement by System Change Leaders	1. Build trust through stronger commitment to, and rules on, science-informed policy making, based on credible knowledge from diverse knowledge systems on all governance levels, and better define how the precautionary principle should be used in practice to strengthen resilience and build preparedness. 2. Empower and support system change leaders at all levels, from private to public, from local to global, and ensuring gender equality, to drive the change 3. Ensure that the rights of future generations are considered in policymaking and their voices are better heard and included in decision-making debates

Translating the system change compass to systemic orientations

System Change Compass (10 Principles)



Application to the system to derive systemic orientations

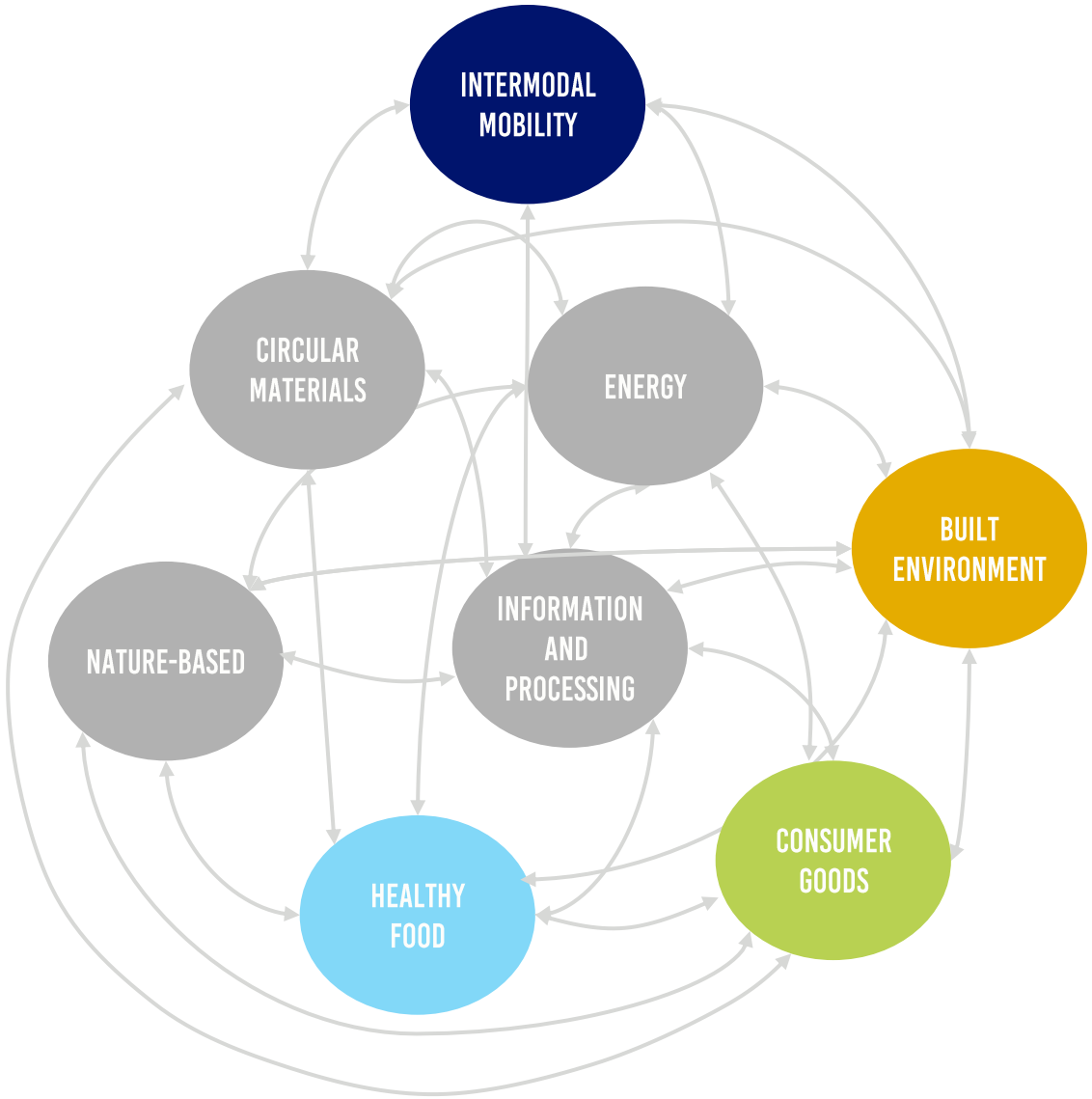
30 System-level orientations

3-5 ecosystem-level orientations

THE CLUB OF ROME

SYSTEMIQ

Economic Eco-Systems



Related to resource intensive human needs

Nutrition *Mobility*

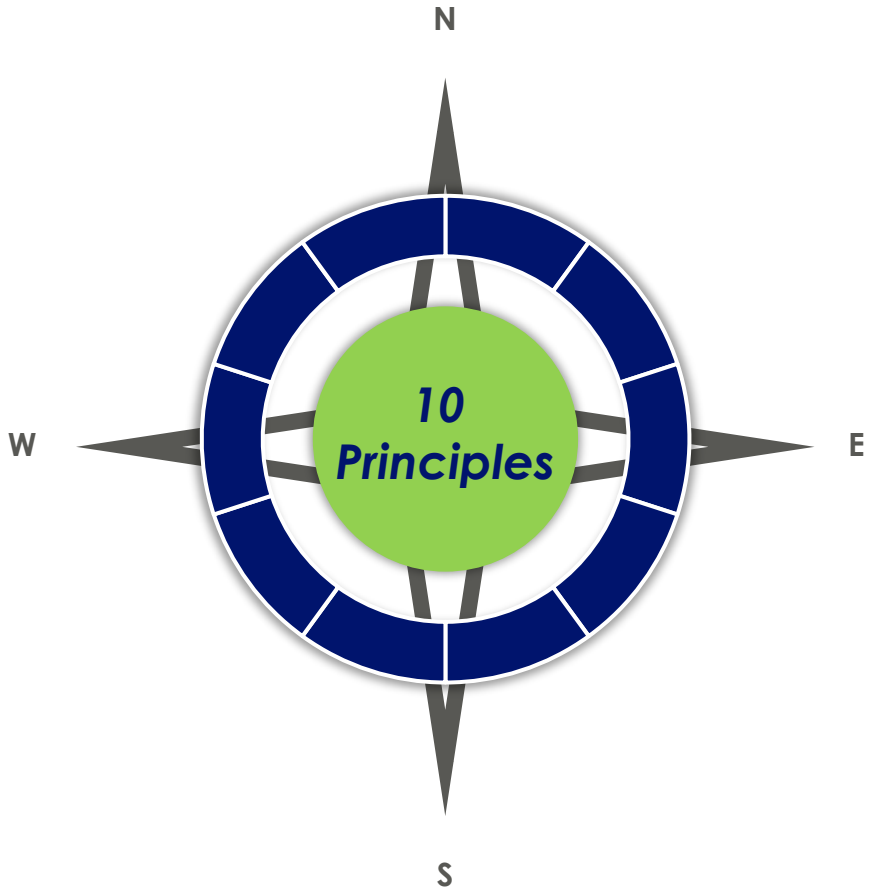
Housing *Daily functional needs*

Supporting the fulfilment of multiple human needs

THE CLUB OF ROME SYSTEMIQ

Translating the system change compass to systemic orientations

System Change Compass (10 Principles)



Application to the system to derive systemic orientations

- 30 System-level orientations
- 3-5 ecosystem-level orientations
- 50+ Champion orientations

THE CLUB OF ROME

SYSTEMIQ

50+ nascent industrial champions
that should be supported to built ecosystems based on compass orientations

Healthy food
- Organic food and beverages
- Regenerative agriculture
- Sustainable aquaculture and fishing
- Reduce and valorise food waste
- Urban agriculture
- Product reformulation for nutritious food
- Alternative proteins

Built Environment
- Smart urban planning
- Rethink built environment ownership
- Repurposing of underutilized buildings
- Retrofit existing buildings
- Fluid and sufficiency-oriented space management
- Circular and net-zero housing

Intermodal Mobility
- Fast charging infrastructure
- High speed railway infrastructure
- Modern and adapted transit infrastructure
- Car and ride sharing models
- End of life management for cars
- Electric and autonomous vehicles
- Infrastructure to improve traffic flow and AV adoption
- Green aviation
- Green shipping
- Walking/cycling infrastructure

Consumer goods
- Product-as-a-Service models
- Maintenance and value retention in products
- Peer-to-peer product sharing platforms

Nature-based
- Restoration of degraded land and coasts
- Sustainable Forest management
- Urban greening
- Systems for paid ecosystem services
- Seaweed
- Marine and land based environmental protection areas
- Ecotourism

Energy
- Renewable power generation
- Energy storage
- Hydrogen economy
- Smart metering and (point-of use) energy management
- Grid integration and technologies
- Production of low-carbon gaseous and liquid fuels
- Carbon capture infrastructure (transition technology only)

Circular Materials
- Localized and distributed value chain systems
- Asset recovery systems and reverse logistics
- Markets for secondary materials
- Mechanical recycling
- Chemical recycling
- Materials-as-a-service models
- New materials and high-performing substitutes
- Additive manufacturing

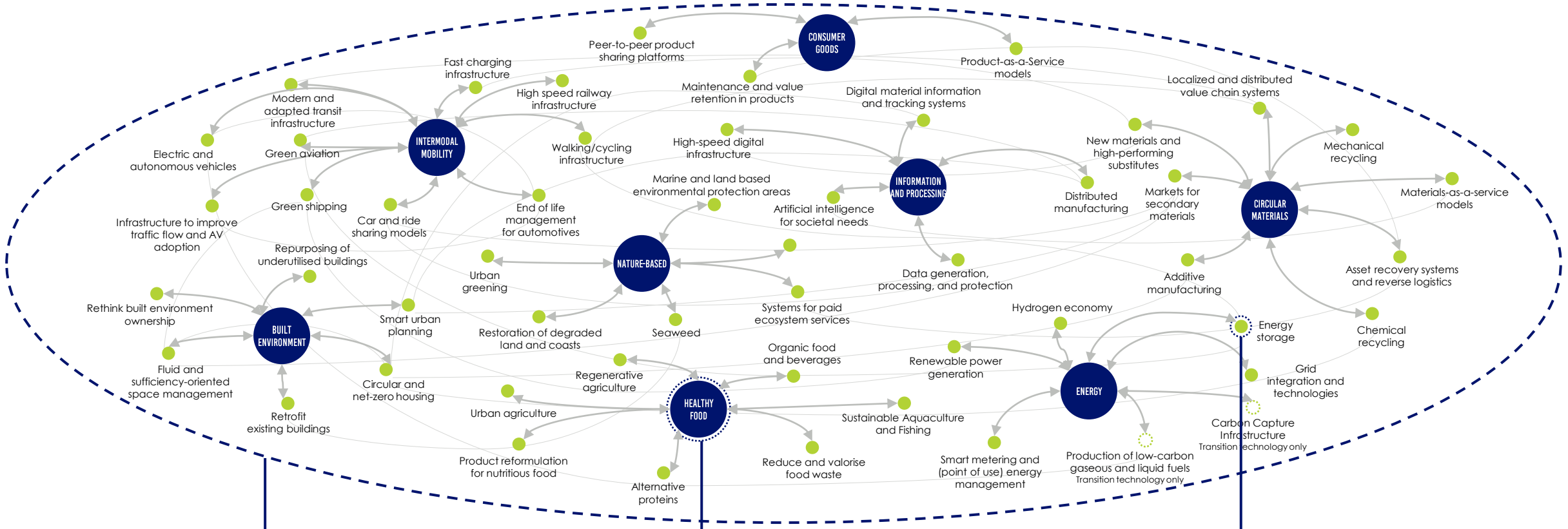
Information and processing
- Distributed manufacturing
- High-speed digital infrastructure
- Digital material information and tracking systems
- Data generation, processing, and protection
- Artificial Intelligence for societal challenges

R&I European Partnerships (49 proposed)

THE CLUB OF ROME

SYSTEMIQ

A new systems map to envision the system and its parts



1 Overarching system guided by compass

8 Economic ecosystems

50+ Champions

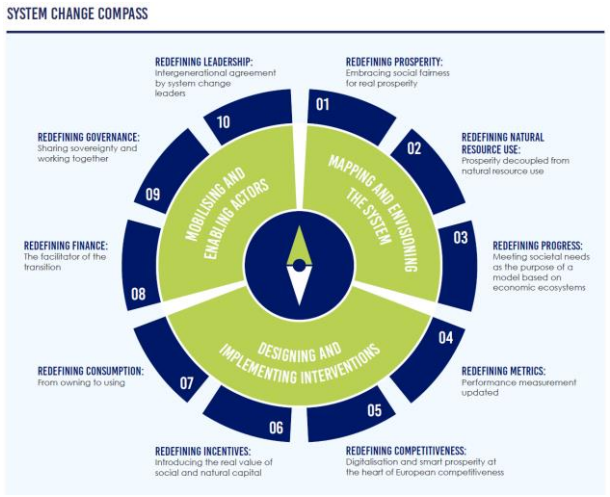
New organization of economic activities	*One overarching system that consolidates the European economy in its entirety.*	*Economic ecosystems can meet a specific societal need (e.g. intermodal mobility system) or support the fulfilment of multiple societal needs (e.g. new energy system).*	*"Champions" are economic subsystems which could become the new spearheads of the green, resilient and fair post-COVID economy Europe wants to build*
Application of the compass on each level	***30 System-level political orientations***	***3-5 economic ecosystem level orientations***	***50+ champion orientations***

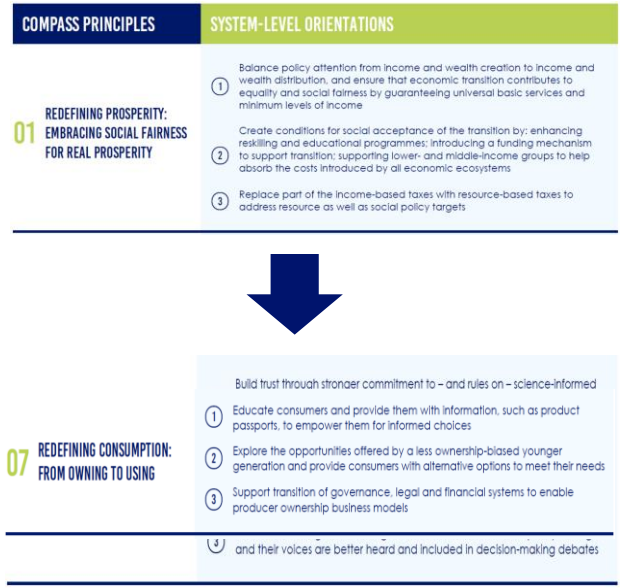
THE CLUB OF ROME

SYSTEMIQ

How this could be useful in policy creation

Mobility





INTERMODAL MOBILITY

ECONOMIC ECO-SYSTEM ORIENTATIONS	ECONOMICAL	SOCIAL	ENVIRONMENTAL	RESILIENCE
Reduce the need for motorized trips through ○ city design for shorter commutes, facilitating residential relocation to shorten commutes, improving digital infrastructure and offerings to promote non-travel meetings. ○ promoting working-from-home (teleworking) policies ○ enabling low-material, zero-fuel "active" transport e.g. extension of cycling lanes, conversion of highly frequented city zones into pedestrian areas ○ shortening supply chains to increase freight efficiency	✔		✔	✔
Prioritize medium of transport that is easiest to electrify and maximise utilisation through ○ e.g. train transport over airplanes, particularly for regional or domestic flights			✔	
Maximize the utilisation per vehicle and trip for freight and passengers through ○ intercity: (high-speed) rail ○ urban: public transport, intermodal integrated mobility offerings ○ enablers: infrastructure, exclusive lanes for shared transport and micro mobility, digital platforms. ○ ocean/air: avoiding empty/unladen-journeys resp. in passenger aviation not fully booked flights, modularity of planes for different uses that is adaptable to current need of either passenger or freight capacity through modules	✔		✔	
Reduce energy intensity and consumption of fuel made of mineral oil by ○ promoting electric vehicles in all possible cases ○ reducing energy intensity (energy consumption per tonne transported) by technical and operational interventions in aviation and shipping ○ shifting to sustainable fuels for indispensable aviation and shipping trips			✔	

Policy support

- Regulation
- Funding support
- Other incentives
- Market signals etc.

Intermodal Mobility

- Fast charging infrastructure
- High speed railway infrastructure
- Modern and adapted transit infrastructure
- Car and ride sharing models
- End of life management for cars
- Electric and autonomous vehicles
- Infrastructure to improve traffic flow and AV adoption
- Green aviation
- Green shipping
- Walking/cycling infrastructure

THE CLUB OF ROME

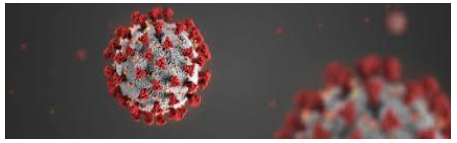
SYSTEMIQ

System Change Compass: Policy Conclusions

- *Define desired target societal outcomes and metrics per economic ecosystem and restructure scope of work on EGD to be in line with this*
- *Bring a "whole of government" approach to the implementation of the EGD, based on shared outcomes to be achieved across departments*
- *Pressure test implementation policy measures to ensure they address drivers and pressures (as identified in the Compass) and not merely address symptoms*
- *Across all levels of the system, consider political orientations and their respective implementation through policy measures*
- *At champion level, consider how best to create market conditions and direct funding support like coronavirus recovery money into the new building blocks of the European industrial backbone for the 21st century*

THE CLUB OF ROME

SYSTEMIQ



EGD and the post-COVID Recovery
Two Sides of the same Coin

1. *The economic policy designed by the EGD and related documents is the most convincing competitiveness policy for the European Union*
2. *EGD already provides convincing answers to some COVID-19 related concerns in relation to reconsidering globalisation effects*
3. *Both EGD and post-COVID-19 call for an inter-generational solidarity and agreement*
4. *COVID-19 is providing the necessary missing urgency to the EGD and climate related financial efforts*
5. *Both COVID-19 and EGD related challenges require a new approach to governance, in particular on the global level*

THE CLUB OF ROME

SYSTEMIQ

THANK YOU!

THE CLUB OF ROME

SYSTEMIQ