The Role of Natural Resource Management in our Transition to a Sustainable Economy and Society

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Co-chair UNEP International Resource Panel (IRP)

Kassel, 14th September 2022
International Resource Panel
Natural Resource Management Optic
International Resource Panel - IRP was launched in 2007 with the idea of creating a science-policy interface on the sustainable use of natural resources and in particular their environmental impacts over the full life cycle.
IRP Structure

Panel Co-Chairs: Janez Potočnik and Izabella Teixeira

**SCIENTIFIC PANEL**
- Internationally recognized experts on sustainable resource management;
- Scientific assessments and advice, networks

**Science-Policy interface**
- Head of Secretariat: Merlyn van Voore

**UNE SECRETARIAT**
- Direction, procedures, support in development and implementation of assessments, outreach

Steering Committee Co-Chairs: Astrid Schomaker and Mark Radka

**STEERING COMMITTEE**
- Governments from developing and industrialized countries;
- Strategic guidance, political support, regional synergies

Strategic Partners:
- One planet, handle with care
- World Business Council for Sustainable Development
- ESCAP
- International Science Council
- World Economic Forum
- SUN
- Ellen MacArthur Foundation
- YEE
- ICC
- United Nations
- ECLAC
- OECD
- PACE
- IUCN

PBL, Netherlands Environmental Assessment Agency

World Resources Forum

World Resources Institute

Science Policy Business Forum
More than 30 published reports between 2011-2022

And many more at:
http://www.resourcepanel.org/reports
IRP’s High Impact Priority Areas for 2022-2025

**HIPA 1**
Current trends and future prospects for global resource use and sustainable resource management

**HIPA 2**
Sustainable Resource Management for effective action on Climate Change, Biodiversity and Pollution

**HIPA 3**
Sustainable Resource Management for effective action on human health, well-being, prosperity and equity

**HIPA 4**
Role of trade, finance and innovation in enabling sustainability transitions
Main Challenges

The diagnosis of the problem
Biomass of Life
Humans in Perspective

Source: Visualcapitalist.com
In 2020, the amount of anthropogenic mass exceeded the weight of all global living biomass.

The current rate of accumulation for human-made mass is approximately 30 Gt of mass per year.

As accumulation rates increase, the amount of human-made mass is predicted to almost triple the total amount of global living biomass by 2040.

Source: Visualcapitalist.com
Animal Kingdom 4 Gt

Plastic 8 Gt

Source: Visualcapitalist.com
A compass for human prosperity

- Basis human needs
  - incl. minimum requirements of resource supply
- Outer limit by Planetary Boundaries

Adapted from Raworth 2017
Humanity is living far out of balance

Source: Potsdam Institute for Climate Impact Research, 2022 reassessment
Divergent national contexts

goodlife.leeds.ac.uk

Malawi
$1,000 pc

China
$17,200 pc

Belgium
$54,000 pc

Australia
$54,900 pc
Biophysical Boundaries Transgressed
Social Thresholds Achieved

colonialism
military power
trade & finance rules
resource extraction
climate-change impacts

humanity's sweetspot

goodlife.leeds.ac.uk
For the first time in 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.
From “Empty” World to “Full” World

Source: Club of Rome: Simplified after Herman Daly

Labour and Infrastructure limiting factors of human wellbeing

Natural resources and Environmental sinks limiting factors of human wellbeing
The Dasgupta Review
Main reasons for the current situation - it highlights institutional failure and the failure of contemporary economics to acknowledge that we are embedded in, and not external to nature, and to act accordingly.
Growth of GDP in the past decades has been achieved at the cost of depleting natural capital and indebting future generations.
Economic, social and environmental (in)balance

Producers/Consumers
Rational Behaviour

Market Economy

- Natural capital not valued
- Production capital overvalued
- Human capital undervalued

Economic, social and environmental (in)balance
Resource Perspective
The Common Roots of the Triple Planetary Crises
Natural resources are the **bridge** between economy and competitiveness on one hand and climate change, biodiversity loss, pollution and health implications on the other.
• Natural resources have been in the human history always closely related to stability, conflicts, wars (land, water, oil, precious minerals …)

• According to the UN IRP, in the mid-term, except in specific cases, resource shortage will not be the core limiting factor of our (economic) development …

• But the environmental (climate change, biodiversity loss, pollution … ) and health consequences caused by excessive and irresponsible use of resources will be!
Natural Resources:
Provide the foundation for the goods, services and infrastructure that make up our current socio-economic systems

- **Biomass** (wood, crops, including food, fuel, feedstock and plant-based materials)
- **Fossil fuels** (coal, gas and oil)
- **Metals** (such as iron, aluminum and cooper...)
- **Non-metallic minerals** (including sand, gravel and limestone)
- **Water and Land**

Materials Extracted from earth
Extraction and Processing of Natural Resources Drives all Aspects of the Triple Planetary Crisis

Environmental impacts of materials in the value chain in extraction and processing phase

- 90% of global land related biodiversity loss and water stress
- 50% of global climate change impacts
- 1/3 of air pollution health impacts
Global material use
Material demand per capita and Material productivity

Global material use has more than tripled since 1970

Global material demand per capita grew from 7.4 tons in 1970 to 12.2 tons per capita in 2017

Material productivity started to decline around 2000 and has stagnated in the recent years

Biomass
Fossil fuels
Metals
Non-metallic minerals
If current trends would continue, global material consumption is predicted to double by 2060

Decoupling
An Implementable Paradigm for Sustainability Transitions

Essential development needs and provisioning systems

DUAL DECOUPLING
FOR INCLUSIVE AND SUSTAINABLE GROWTH LINKING DEVELOPMENT AND SUSTAINABILITY:

I. increasing wellbeing per unit of resource use;
II. decreasing environmental pressures per unit of resource use

Natural and social capital required to underpin sustainable development
Circular economy should be seen as an instrument for deliver decoupling of economic growth from resource use and environmental impacts and as a part of the bigger picture of economic, societal and cultural transformation needed to deliver the SDGs.
The first dimension is often overlooked...

### Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
<th>Strategies</th>
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<tbody>
<tr>
<td>1</td>
<td>BETTER: Minimise product need through better system design</td>
<td>Refuse and Rethink strategies</td>
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<tr>
<td>2</td>
<td>LEANER: Optimise product design</td>
<td>Reduce strategies in manufacture and use</td>
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<td>3</td>
<td>LONGER: Maximise lifespan of products and its parts</td>
<td>Reuse, Repair, Refurbish, Remanufacture, Repurpose and Recycle strategies</td>
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<tr>
<td>4</td>
<td>CLEANER: Minimise waste and pollution</td>
<td>Recovery strategies</td>
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</tbody>
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Source: Emerging thinking by IRP Co-Chairs, based on GRO19 and emerging GRO23 work
We do not need cars ... We need mobility
We do not need light bulbs ... We need light
We do not need chairs ... We need to sit
We do not need refrigerators ... We need chilled and healthy food
We do not need CDs ... We want to listen to the music
We do not need pesticides ... We want healthy plants
From selling light bulbs to selling light

Dematerialisation and Decoupling

Light bulbs sold to the consumer are the basis for producers' profit

Light bulbs used to provide the light to the consumer are producers’ cost
Ownership and product (under)utilisation - Consumer

It is not about owning, it is about using.

- **Problem:** Preferences from consumers to own products like houses, cars, refrigerators, cloth ... are driving consumption in a massive lock-in in underutilization.

- **Solution:** Explore the opportunity that the young generation has less ownership biased constraints and provide alternative options.
Ownership and resource (under)utilisation - Producer

It is about how to incentivise producer to use less resources

Problem:  
PRODUCER → CONSUMER → SOCIETY

Solution:  
PRODUCER → CONSUMER → PRODUCER

Design, business models

Better Connecting Producer with his Product through for example: EPR, Product Value Retention, Retaining Ownership of the Product
Towards Sustainable and Equitable World

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

- Ambition of the EGD is high...
- ...but implementation is uncertain

- 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 and war in Ukraine
- 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

Systemiq
From the IRP science to the System Change Compass

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

OVERARCHING SYSTEM

PROVISIONING SYSTEMS

CHAMPIONS
Redefining the Socio-Economic System

REDEFINING PROSPERITY:
Embracing social fairness
for real prosperity

From
Prosperity defined by aggregate economic growth

To
Prosperity defined by fair and social economic development and wellbeing for all
Redefining the Socio-Economic System

**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
Redefining the Socio-Economic System

**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
Redefining the Socio-Economic System

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 wellbeing metrics including natural capital and social indicators
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: Resource optimization through digitization 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
Redefining the Socio-Economic System

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 INCENTIVES:
Show the real value of social and natural capital

REDEFINING COMPETITIVENESS:
Resource optimization through digitization at the heart of European competitiveness

From
Incentives supporting the status quo

To
Incentives aligned with Green Deal ambitions leading to economic, social and environmental balance and sustainability
Redefining the Socio-Economic System

**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:** Resource optimization through digitization 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
Redefining the Socio-Economic System

Redefining Prosperity:
Embracing social fairness for real prosperity

Redefining Natural Resource Use:
Prosperity decoupled from natural resource use

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

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Resource optimization through digitization 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 transitional needs and sustainable economy of the future
Redefining the Socio-Economic System

**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

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**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
Redefining the Socio-Economic System

- **Redefining Leadership**: Intergenerational agreement through new forms of leadership
- **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
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- **Redefining Consumption**: From owning to using
- **Redefining Governance**: A systematic approach to governance influenced by science

**From**
- Traditional leadership roles and expectations

**To**
- System leadership based on an intergenerational agreement
## 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 ecosystems.**

3. **Replace part of the income-based taxes with resource-based taxes to address resource as well as social policy targets.**
Translating the system change compass to systemic orientations

System Change Compass
(10 Principles)

Application to the system to derive systemic orientations

10 Principles

30 System-level orientations

3-5 ecosystem-level orientations
Provisioning Systems

Related to resource intensive human needs

- Nutrition
- Mobility
- Housing
- Daily functional needs

Resource relevant systems enabling and supporting the provisioning systems delivering societal needs
50+ nascent industrial investment opportunities that should be supported to built ecosystems based on compass orientations

<table>
<thead>
<tr>
<th>Healthy food</th>
<th>Built Environment</th>
<th>Intermodal Mobility</th>
<th>Consumer goods</th>
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</thead>
<tbody>
<tr>
<td>- Organic food and beverages</td>
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<tr>
<td>- Regenerative agriculture</td>
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<tr>
<td>- Sustainable aquaculture and fishing</td>
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<td>- Reduce and valorise food waste</td>
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<td>- Urban agriculture</td>
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<td>- Product reformulation for nutritious food</td>
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<td>- Alternative proteins</td>
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<td>- Smart urban planning</td>
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<td>- Rethink built environment ownership</td>
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<td>- Repurpose underutilized buildings</td>
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<td>- Retrofit existing buildings</td>
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<tr>
<td>- Fluid and sufficiency-oriented space management</td>
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<td>- Circular and net-zero housing</td>
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<td>- Fast charging infrastructure</td>
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<td>- High-speed railway infrastructure</td>
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<td>- Modern and adapted transit infrastructure</td>
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<tr>
<td>- Car- and ride-sharing models</td>
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<td>- End-of-life management for cars</td>
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<td>- Electric and autonomous vehicles</td>
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<td>- Infrastructure to improve traffic flow and AV adoption</td>
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<td>- Green aviation</td>
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<td>- Green shipping</td>
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<td>- Walking/cycling infrastructure</td>
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<td>- Product-as-a-Service models</td>
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<td>- Maintenance and value retention in products</td>
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<tr>
<td>- Peer-to-peer product sharing platforms</td>
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<tr>
<th>Nature-based</th>
<th>Energy</th>
<th>Circular Materials</th>
<th>Information and processing</th>
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<tbody>
<tr>
<td>- Restoration of degraded land and coasts</td>
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<td>- Smart forest management</td>
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<td>- Urban greening</td>
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<td>- Systems for paid ecosystem services</td>
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<td>- Seaweed</td>
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<td>- Marine and land-based environmental protection areas</td>
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<td>- Ecotourism</td>
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<td>- Renewable power generation</td>
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<tr>
<td>- Energy storage</td>
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<tr>
<td>- Hydrogen economy</td>
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<tr>
<td>- Smart metering and (point-of-use) energy management</td>
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<td>- Grid integration and technologies</td>
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<tr>
<td>- Production of low-carbon gaseous and liquid fuels (transition technology only)</td>
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<td>- Carbon capture infrastructure (transition technology only)</td>
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<td>- Localised and distributed value chain systems</td>
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<td>- Asset recovery systems and reverse logistics</td>
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<td>- Markets for secondary materials</td>
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<td>- High-value material recycling</td>
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<tr>
<td>- Materials-as-a-Service models</td>
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<td>- New materials and high-performing substitutes</td>
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<td>- Additive manufacturing</td>
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<td>- Distributed manufacturing</td>
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<tr>
<td>- High-speed digital infrastructure</td>
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<tr>
<td>- Digital material information and tracking systems</td>
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<tr>
<td>- Data generation, processing, and protection</td>
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<tr>
<td>- Artificial Intelligence for societal challenges</td>
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</table>
System Change Compass

New organization of economic activities
One overarching system that consolidates the European economy in its entirety.

Application of the compass on each level
10*3 = 30 system-level policy orientations
3-5 specific economic ecosystem policy orientations 50+ economic subecosystems orientations

“Champions” are economic subsystems which could become the new spearheads of the green, resilient and fair post-COVID economy Europe wants to build.

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).
From Internal to External Focus
We need a systemic approach aligned with SDGs and countries most responsible for the current situation should take the lead

- The map of resource use still shows the shadows of an imperialist world, where wealthy nations pursue their ambitions at the expense of others. Making our economies and societies more resilient and fair is our best defence against any future crises.
- In the longer term any security and stability related issues are not about opening a new economic front. They are, first of all, about reassessing our values, rethinking our economies and reducing overconsumption and resource use.
- Standards and behaviour patterns linked to the current economic model were set by high-income countries. They are ethically bound to show the world, that they are willing and able to change a reality we created, and to lead the essential transition – at home and globally. While the responsibility for the past is clear, responsibility for future is joined and common.
In short: What would change mean in policy terms?

- Redefining consumption from owning to using;
- Redefining production from mass sales to providing efficient functionalities;
- Redefining core economic incentives such as taxation, subsidies, public procurement … and stop tolerating tax heavens;;
- Integrating wellbeing as an objective across all policies;
- Providing consistency among internal and external (supply and demand side) policies;
- Applying measures leading to fairer and more equal society and world;
- Measuring sustainability with a lifecycle perspective, harmonised across policy areas;
- Activating all existing financial potential to enable transition;
- Looking at innovation in categories of meeting human needs and providing functionalities, rather than in categories of production sectors;
- etc.
Next Flagship Report: Global Resources Outlook 2024

GRO24 will...

✓ Centralize System Change logic, building directly on GRO19 and System Change Compass

✓ Assess past, present, and future resource use through the lens of human needs

✓ Compare the gap between current plans and the transition we need

✓ Give time-bound policy recommendations, aligning short and long-term interests
Main Blind-Spots
Which are Limiting Effective Management of the Transition
**Lack of Holistic System Approach**

Public leaders lack capacity or knowledge of how to translate system change visions into their concrete policies/investment structures which ends in conflicting policy logics that hinder real transformation.

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**Lack of Resource Perspective**

Resource management is not given enough importance within policy making which is linked to the lack in actionable system thinking insights for concrete decisions.

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**Lack of Demand Side Focus**

Policy attention is mainly given to the supply side of the economy, to the cleaning of the existing economic system - lacking the attention to the demand side which is leaving out an important solutions potential and questions of responsibility and equity.
Climate Change Example
Lack of Holistic System approach

Public leaders lack capacity or knowledge of how to translate system change visions into their concrete policies/investment structures which ends in conflicting policy logics that hinder real transformation
We need to extend the optic and potential policy options beyond the currently prevailing energy supply. This leads to trade-offs and future lock-ins rather than to synergies and potential multiple-benefits and resilient economy and society.
A ‘Glasgow Breakthrough’ was announced on road transport aiming for zero emission vehicles to be the new normal, accessible, affordable, and sustainable in all regions by 2030.
Our mobility system and structural inefficiencies

**LAND UTILISATION:**
- Road reaches peak throughput only 5% of time and only 10% covered with cars then
- 50% of most city land dedicated to streets and roads, parking, service stations, driveways, signals, and traffic signs

**Car utilisation**
- 1.6% looking for parking
- 1% sitting in congestion
- 5% driving
- Typical French car parked 92% of time
- Average European car has 5 seats but carries 1.5 people/trip

**Tank-to-wheel energy flow - gasoline**
- Energy used to move people
- Inertia vehicle
- Rolling resistance
- Auxiliary power
- Transmission losses
- Aerodynamics
- Engine losses
- Idling
- 86% of fuel never reaches wheels
- 12:1 dead-weight ratio

**Deaths & injuries/year on road**
- 30,000 deaths in accidents and 4x as many disabling injuries
- >95% of accidents from human error

**Tank-to-wheel energy flow - gasoline**
- 86% of fuel never reaches wheels
- 12:1 dead-weight ratio
- Engine losses
- Idling

**Deaths & injuries/year on road**
- 30,000 deaths in accidents and 4x as many disabling injuries
- >95% of accidents from human error
System change in road transport means less and more efficient traffic, for more value

Five Levers for Sustainable Car-Based Transport

- **Reduce** overall mobility need (e.g., through remote work)
- **Modal shift** from cars to foot, bike, & public transport
- **Higher utilization of vehicles** through sharing
- **Electrification** based on renewable energy
- **Circularity**, maximizing value of used materials

Reduce demand for car-based transport

Ensuring remaining vehicles are as sustainable as possible
Lack of Resource Perspective

Resource management is not given enough importance within policy making which is linked to the lack in actionable system thinking insights for concrete decisions.
### Impact of Electricity Generation Technologies

#### Key Metrics
- **GHG emissions (per kWh)**
- **Human health (per kWh)**
- **Ecosystem health (per kWh)**
- **Land use (per kWh)**
- **Material requirements (per kWh)**

#### Electricity Generation Technologies
- **Renewable**
  - Photovoltaics
  - Concentrated Solar Power
  - Windpower
  - Hydropower
- **Fossil Fuels**
  - Coal with CCS
  - Coal without CCS
  - Natural Gas with CCS
  - Natural Gas without CCS

#### Environmental Impact
- The environmental impact of producing the materials required by different energy technologies is included in the total life cycle results. Material requirements are identified here as an indication of resource use. The higher material requirements represent a manageable share of global production, to meet the world’s electricity needs in 2050 as per the International Energy Agency’s “Blue Map Scenario.” It would require one year of current global iron production and two years of copper production.

#### Diagram Notes
- The percentages shown in the diagram represent the impact of each technology on the specified metric.
Most climate policies still neglect systemic resource efficiency solutions, and thus miss major opportunities for climate and society.

G20 Nationally Determined Contributions and Long-term Climate Plans focus on energy efficiency and miss out on more systemic resource efficiency opportunities.

- Built environment: 10x more policies with quantified targets for resource efficiency compared to energy efficiency.
- Mobility: 4x more policies with quantified targets for resource efficiency compared to energy efficiency.

Source: SYSTEMIQ analysis of G20 NDCs
Lack of Demand Side Focus

Policy attention is mainly given to the supply side of the economy, to the cleaning of the existing economic system - lacking the attention to the demand side which is leaving out an important solutions potential and questions of responsibility and equity.
Focusing only on cleaning a supply side will not be enough, nor will lead to a fairer and more equal world

- Our international efforts, also to fight the climate crisis, remain focused on, and driven by, the supply side. This will not be enough to deliver the targets set. IRP is frequently repeating that message, but also recent IPPC report is clear about that.
- We must stop ignoring the inherent wastefulness of our production and consumption. For example, it would be in vain to decarbonize the production of steel, if it is used to produce under-used cars and houses, which contribute to traffic and property market bubbles, but not to real social prosperity.
- More fundamentally, demand-side measures/consumption side get us closer to the essential questions of responsibility and equity.
- NDCs and other national climate commitments should consider including also footprint based indicators and targets
To Conclude

Science is Clear and Change is Unavoidable

... and so are some quotes ☺
People are strange...

— Jim Morrison —

We want changes ... but we do not want to change
The problem primarily lies in our economic model

• Economic theory is based on the rational behaviour of consumers and producers: the more we produce at the lowest possible price, the higher the capital returns and GDP growth.

• Current market signals on our markets, are leading to systemic social and environmental imbalances - Food shopping centre example. Our short-term rational behaviour is leading to a long-term irrational “Charming mass suicide” (Arto Paasilinna novel title).

• Ambitious policies face an uphill battle to implement incentives and regulations to change our production and consumption patterns. Sending policy signals one way, and market signals the other, is creating confusion (not to mention intense lobbying by companies that fear the loss of profitable markets). It’s time to stop signalling to producers that destroying natural capital is free of charge. Time to stop contradictory messages to consumers, who still routinely pay more for food with a low environmental impact, instead of the reverse.
There are two ways to be fooled ...

One is to believe what isn’t true.  
The other is to refuse to believe what is true.

Importance of your role: creating the critical mass of science, which can hardly be disregarded by politicians and policy makers
Knowing is not enough; we must apply. Willing is not enough; we must do.

Johann Wolfgang Goethe
When asked why it is that mankind has stretched so far as to discover the structure of the atom, but we have not been able to devise the political means to keep the atom from destroying us he replied:

“That is simple, my friend. It is because politics is more difficult than physics”
There has never been a better moment ...

... to move from the history of “resource-driven imperialism” to an era of responsible use of natural resources, mitigating resource fragility and strengthening preparedness and resilience. The lesson learned from terrible war in Ukraine and extreme summer and weather events should be convincing enough.
For **The Future We Want** we must enter the untapped territories of the needed deep system transformation

If we want to avoid extinction of elephants in nature, we must extinct elephants in the rooms

*Source: Hop distance - The elephant in the room ...blogs.bmj.com*
Circularity is not a new concept ...

It is the oldest concept on the planet Earth.
Nature is a “bio-economy” based on the principles of the circularity. Nothing is lost and everything has its purpose.
So, for the beginning we would need to answer only one question:
Do we agree that we humans are part of the nature too?
To answer this question, we probably do not need the help of the most famous Belgium detective, but his advice is always useful.

HERCULE POIROT

When asked why he is speaking about himself always in a third person he replied something like that:

If one is such a genius like me, it is very important to establish a healthy distance to himself.
THANK YOU
for helping us deliver the future we want!