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# ASSESSING GLOBAL RESOURCE USE



International  
Resource  
Panel

## A systems approach to resource efficiency and pollution reduction

**Better and more efficient production and use of natural resources can be one of the most cost-efficient and effective ways to reduce impacts on the environment (including pollution) and advance human well-being.**

### Why a Global Assessment of Resources?

Research shows that, either directly or indirectly, natural resources and the environment are linked to all of the United Nations Sustainable Development Goals. Decoupling economic activity and human well-being from resource use – enhanced resource efficiency – is necessary to achieve these goals.

### Evidence Base for Transformational Change

Environmental and sustainability policy require an evidence base that allows monitoring the scale of the physical economy.

The physical economy includes the material, energy, water and land used and emissions generated in making, using and providing goods, services and infrastructure systems. Information drawn from up-to-date data on the drivers, state and trends of the physical economy can help to identify leverage points for targeted and effective policy intervention.

### A Systems Approach to Natural Resources

Focusing on single resources, economic sectors or environmental and health impacts will not achieve the collective vision of the Sustainable Development Goals. A systems approach can link the way natural resources are used in the economy to their impacts on the environment and people.

The concept of footprints captures resource use across borders and is a critical tool in a systems approach.

Regularly reported data drawn from this and future global assessment reports by the International Resource Panel can inform the setting of long-term orientation goals, incentive frameworks, and systems of engagement to pave the way for transformational change.

### Material Resources

Material resources are the biomass (wood and crops for food, energy and plant-based materials), fossil fuels (coal, gas and oil), metals (such as iron, aluminum and copper) and non-metallic minerals (including sand, gravel and limestone) that are used in the economy.

Based on a material resources database that covers almost five decades (1970 to 2017) and 191 countries, existing trends forecast global material use to reach 88.6 billion tonnes in 2017 – more than three times the amount from 1970 – with high-income countries consuming ten times more per person than low-income countries.

This is significant because, all else being equal, growing material extraction with subsequent material flows point to growing environmental pressures and impacts, including pollution, across the globe.

Modelling of the combined economic and environmental consequences of ambitious resource efficiency and greenhouse gas abatement policies shows the potential to achieve win-win outcomes that reduce environmental pressure while improving income and boosting economic growth.



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By 2050, these models show that such ambitious policies could reduce global resource requirements by about a quarter and deliver global economic growth of 3 to 5 per cent above the existing trend.

A new economic paradigm is needed to improve resource productivity and allow for production and consumption systems to be run with lower material and energy requirements, as well as reducing waste and emissions while providing all services needed.

## Driving a Profound Resource Efficiency Transition

A long-term vision underpinned by evidence-based targets and incremental policy signals can combine to produce a profound transformation of the physical economy. Coordinated policymaking across ministries and the active buy-in of stakeholders is critical for success.

### Seven policy strategies for multi-beneficial policymaking

#### 1. Set targets and monitor progress

Resource efficiency footprint targets (materials, land, water, and fossil fuels and greenhouse gas emissions) can guide policy development and inform a progress-monitoring framework.

#### 2. Act on key leverage points across all levels of governance

National and international resource efficiency programmes can strategically coordinate monitoring, streamline institutional arrangements and promote synergies in policy interventions.

#### 3. Take advantage of leapfrogging opportunities

Fast-growing cities and developing economies are not locked into current design and business models, and have an opportunity to avoid resource- and energy-intensive design for new infrastructure.

#### 4. Implement a policy mix that builds incentives and corrects market failures

Aligning price signals and fiscal policies with the strategic goals of society can adjust the behaviour of firms and

individuals, so that investment and purchase decisions reflect them.

#### 5. Promote innovations toward a circular economy

Redirecting consumption to recycled materials and renewable resources, and extending the lifetime of resources through reuse, repair, refurbishing or remanufacture can transform existing production and consumption systems.

#### 6. Enable people to develop resource-efficient solutions

New types of alliances to collaborate, experiment and learn are critical to a successful transition. Skills training, education programmes and financial support are needed to spread risk associated with innovations.

#### 7. Unlock the resistance to change

Training and education, recycling tax revenues back to affected industries and businesses and explicitly protecting the very poor and vulnerable in policy packages are some of the ways resistance to change can be mitigated.

The International Resource Panel aims to improve the evidence base for systemic monitoring and policy making, in particular through systems-based assessment of the natural resource related challenges and opportunities supporting the transition towards sustainable development.



This fact sheet highlights key findings from the 'Assessing Global Resource Use: A systems approach to resource efficiency and pollution reduction' interim report of the International Resource Panel presented at the Third Session of the United Nations Environment Assembly.  
→ The full report can be downloaded at <http://www.resourcepanel.org/reports/assessing-global-resource-use>