



THE FUTURE
IS NOW

SCIENCE FOR ACHIEVING
SUSTAINABLE DEVELOPMENT



GLOBAL SUSTAINABLE
DEVELOPMENT REPORT

2019

United Nations
Department of Economic and Social Affairs



The GSDR- a brief history

- *Origins – Rio+20, science-policy interface*
- *Annual editions – 2014-16*
- *Ministerial declaration, 2016*
- *The Independent Group of Scientists*
- *Process and outcomes*



The Independent Group of Scientists



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Peter Messerli (Switzerland)
Centre for Development and Environment (CDE), University of Bern, Switzerland



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Macroecology, Evolution and Climate and Sustainability Science Center, University of Copenhagen, Denmark



Muhammad Saidam (Jordan)

Royal Scientific Society, Jordan



David Smith (Jamaica)

Institute for Sustainable Development at the University of the West Indies (UWI)



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Jean-Pascal van Ypersele (Belgium)

Earth and Life Institute Université catholique de Louvain, Louvain, Belgium



Process of GSDR

Face-to-face meetings in New York and continuous consultations facilitated by UN DESA
Support by Task Team of six UN Agencies: DESA, UNCTAD, UNDP, UNEP, UNESCO, World Bank





UN Secretary General and IGS: 10 September 2019





Summits - Making commitments to 2030 Agenda

The 74th United Nations General Assembly was marked by strong international commitment to realize the 2030 Agenda. Five high-level summits brought leaders together seeking to accelerate progress on sustainable development.

Climate Action Summit

- Recognition that the pace of climate action must be rapidly accelerated.
- Significant announcements by government and private sector leaders.
- Youth mobilization and commitment to continue pressure for urgent action.

SDG Summit

- Unanimously adopted political declaration commits to a decade of ambitious action, including mobilizing financing, enhancing national implementation and strengthening institutions.
- Over 120 acceleration actions announced.

Financing for Development

- Leaders from government and industry sounded the alarm regarding addressing financing gaps.
- Resolved to mobilize resources, generate action and restore momentum to achieve the globally agreed goals to eliminate poverty, promote prosperity and well-being while protecting the environment.

Universal Health Coverage

- World leaders adopted the most comprehensive set of health commitments ever made at the General Assembly
- WHO and 11 other multilateral organizations launched a Global Action Plan, for more streamlined support to countries to help deliver universal health coverage.

Small Island Developing States

- Adopted political declaration reaffirms solidarity with small island developing States, which face a unique set of challenges.
- The High-Level Review of the Samoa Pathway discussed progress on combating the impacts of climate change, building resilience, and announced new partnerships.



UN SDG Summit – GSDR launch 24 September 2019





A decisive decade ahead

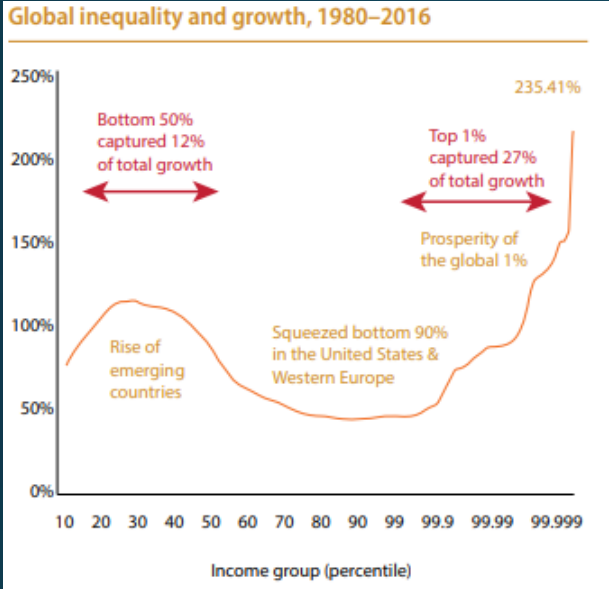
Sounding the alarm bell - It is time to scale-up and accelerate implementation

Projected distance from reaching selected targets by 2030 (at current trends)

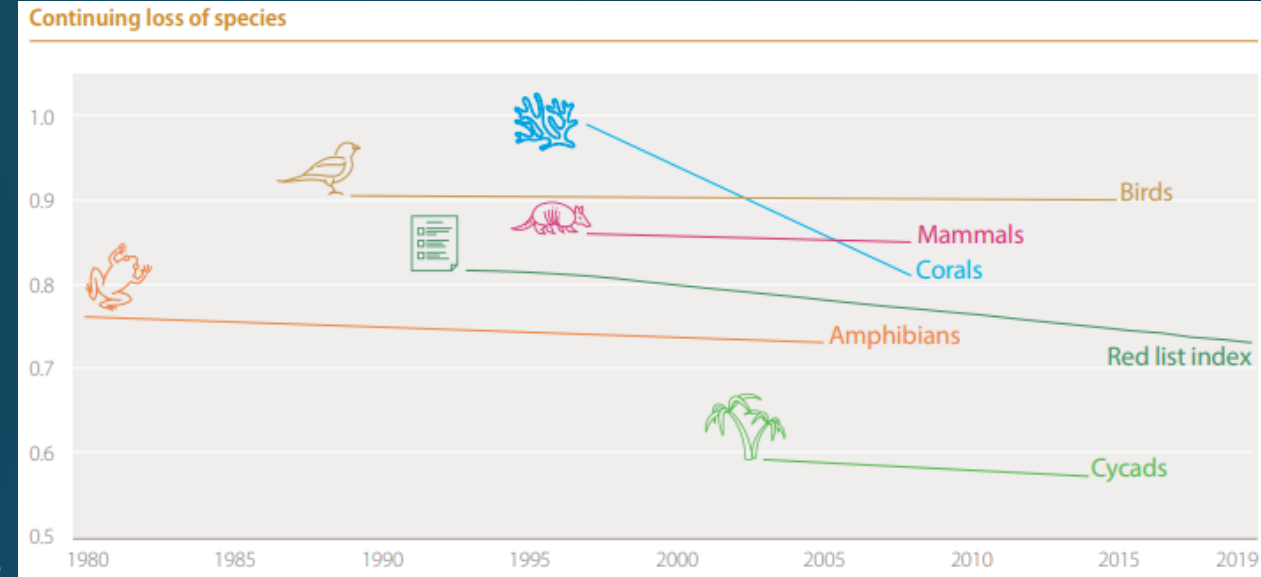
GOAL	WITHIN 5%	5-10%	>10%	NEGATIVE LONG-TERM TREND
Goal 1		1.1. Eradicating extreme poverty	1.3. Social protection for all	
Goal 2		2.1. Ending hunger (undernourishment)	2.2. Ending malnutrition (stunting) 2.5. Maintaining genetic diversity 2.a. Investment in agriculture*	2.2. Ending malnutrition (overweight)
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				

Understanding the systemic challenges

Rising inequalities

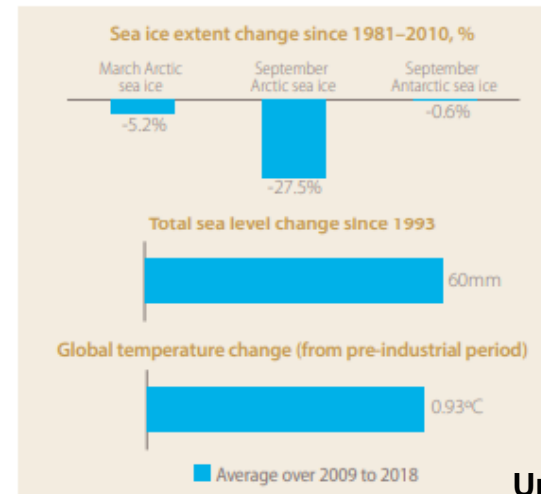
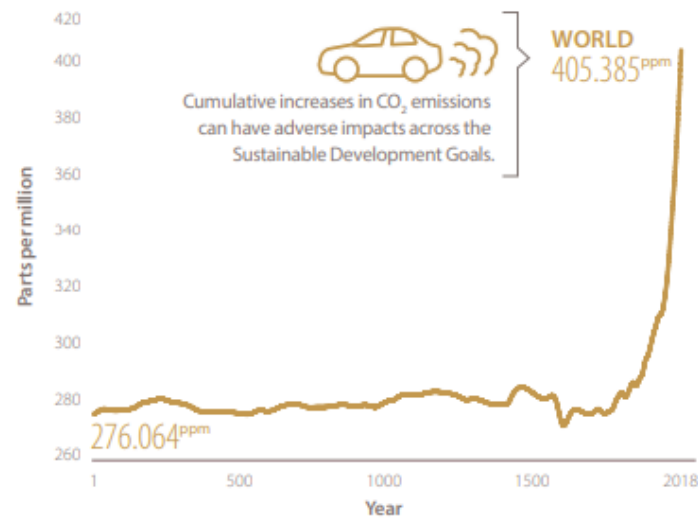


Biodiversity loss



Climate change

Human activity induces climate change: rising CO₂ levels, increasing mean temperatures, shrinking sea ice, elevated sea levels

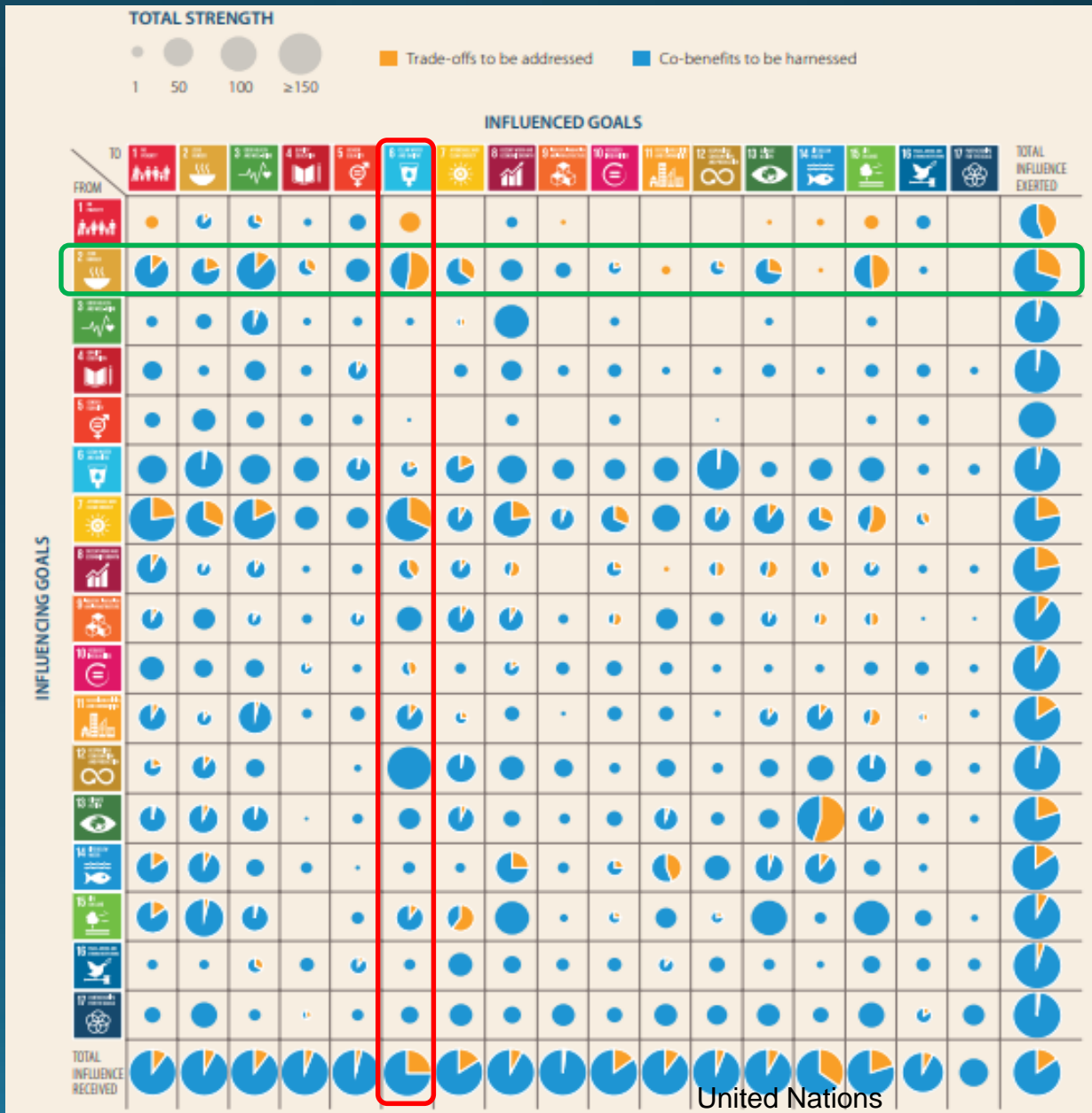




Boxes to arrows – A systems perspective

Moving forward:

- *Address trade-offs*
- *Harness co-benefits*
- *Turn vicious cycles into virtuous cycles*



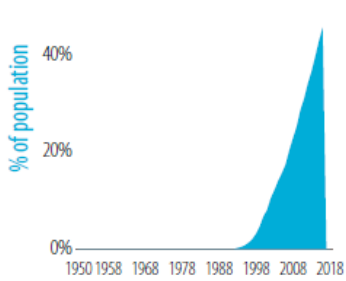


Change in a hyper-connected world

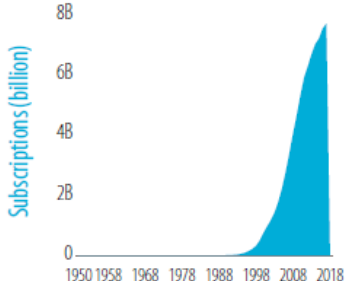


Flows of information

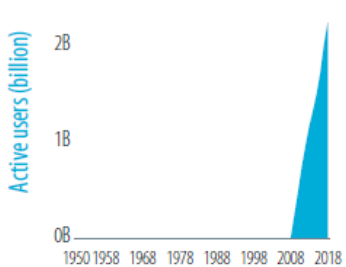
Individuals using the Internet



Mobile cellular subscriptions

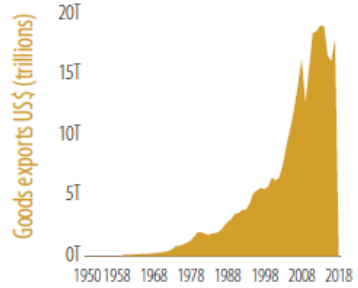


Monthly active Facebook users worldwide

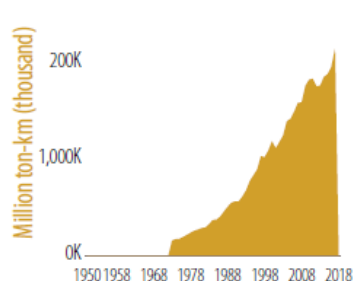


Flows of goods

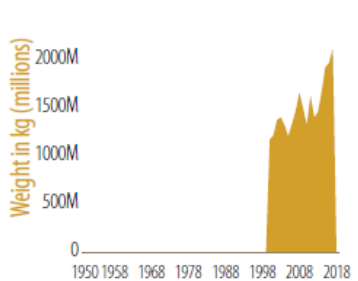
Merchandise exports



Air transport, freight

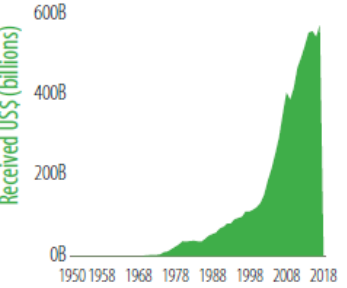


Rice imports by the EU

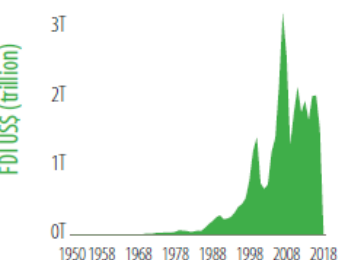


Flows of capital

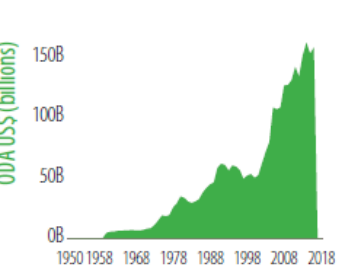
Personal remittances, received



Foreign direct investment, net outflows

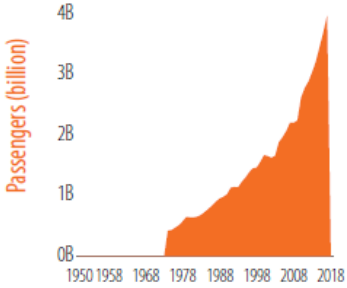


Net official development assistance received

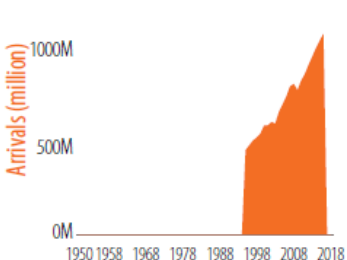


Flows of people

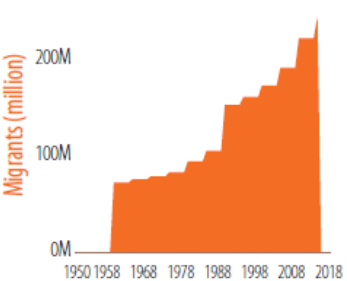
Air transport, passengers carried



International tourism, number of arrivals



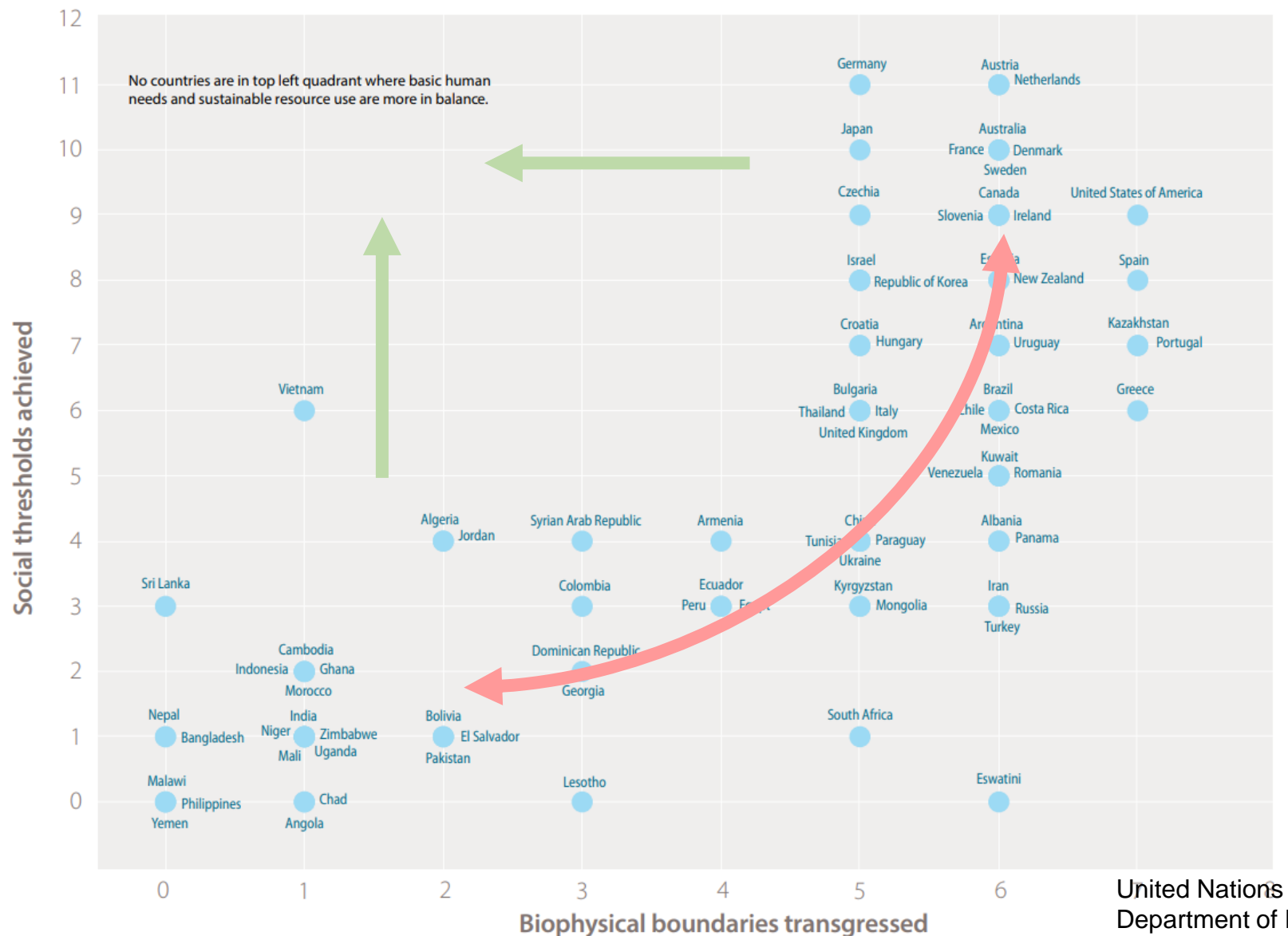
International migrant, total





Striking a better balance – Context matters

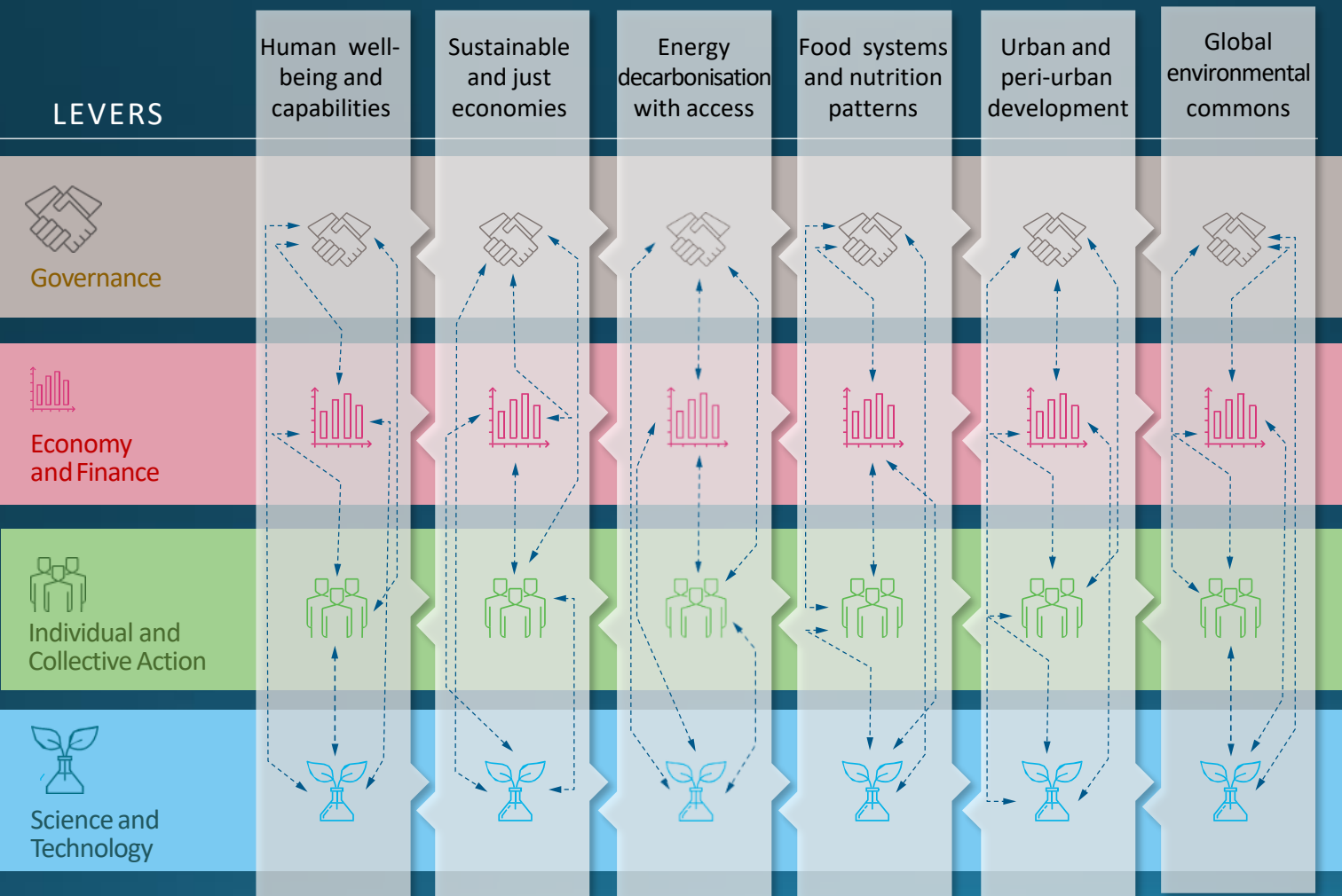
Striking the balance: no country is meeting basic human goals within biophysical boundaries





Pathways to transformation for sustainability

ENTRY POINTS FOR TRANSFORMATION



Each entry point:

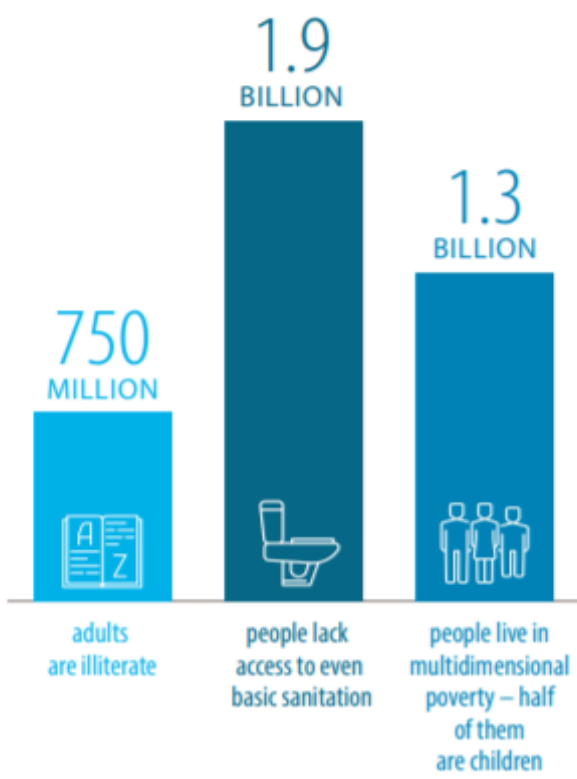
- Impediments
- Levers
- Integrated and context-specific pathways
- Call to Action

Pathways are context-specific configurations of levers to achieve transformation in each entry point

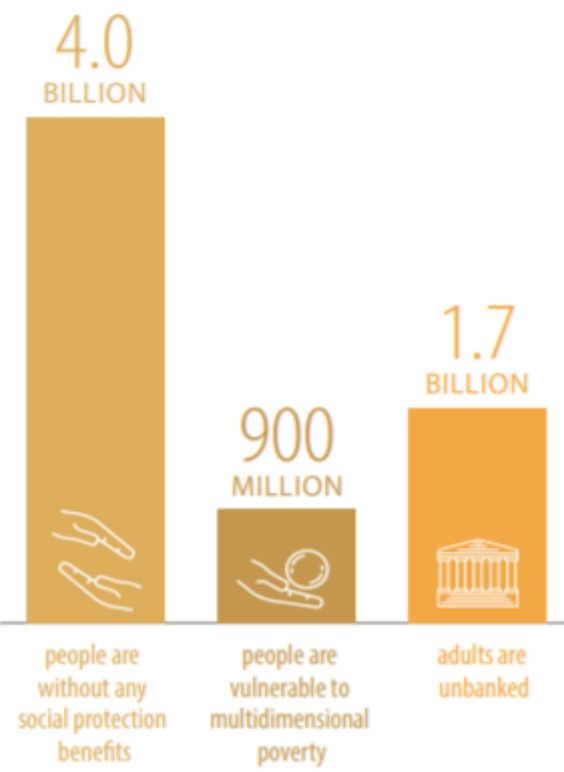


Human well-being - where the world is falling short

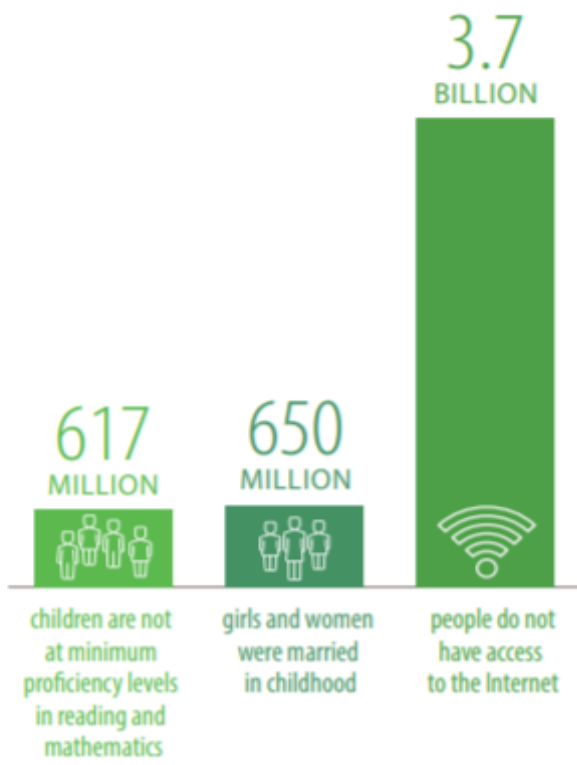
Basic deprivations are shrinking, but action is needed toward full eradication



Building resilience to shocks is imperative to secure gains in well-being



Inequalities in opportunities must be eliminated to expand human capabilities





Strengthening human well-being and capabilities

Entry point

Levers

Human well-being and capabilities

Pathway



- Ensure universal access to services – healthcare, education, clean water, sanitation
- Provide incentives for more and higher quality services
- Eliminate discrimination in laws and norms
- Expand social protection to increase resilience



- Incentivize private sector investments in capabilities
- Increase public-private partnerships ensuring that citizen needs are at the forefront
- Encourage private sector investments in public goods



- Communicate evidence in clear and easily communicated ways
- Reduce social barriers to technology use
- Empower everyone to participate in public dialogue



- Apply new technologies to service delivery and improve access
- Generate better data to inform policies (disaggregated, longitudinal)
- Advance medical research and applications





Sustainable and just economies – the facts



Economic growth can be decoupled from environmental impacts



20+ COUNTRIES
Since 2000, have reduced annual GHG emissions while growing their economies



Carbon pricing revenues raised by governments in 2018 were US\$44 billion compared to US\$33 billion in 2017



Global primary material use expected to almost double by 2060



Economies need to generate higher and more equal living standards



In almost three quarters of countries, the share of income paid to workers has declined



On average, women continue to be paid approximately 20% less than men



20% of workers in low- and middle-income countries live in extreme or moderate poverty



Shifting towards sustainable and just economies

Entry point

Levers

Sustainable and just economies

Pathway



- Apply regulations to drive innovations toward more efficient and less environmentally harmful resource use.
- Support just transitions to ensure those currently employed in resource intensive sectors have future options.



- Provide incentives to direct private capital towards more sustainable production including through a Sustainable Development Investment label.
- Use fiscal systems (taxes, public expenditure) to facilitate fair redistribution.
- Encourage public sector research and development to reduce cost of new technologies.



- Organize collective action to reduce waste and promote responsible consumption.
- Enhance worker agency and generate bargaining power for workers.
- Change social norms and laws that limit women's labour participation and perpetuate other differences at work.

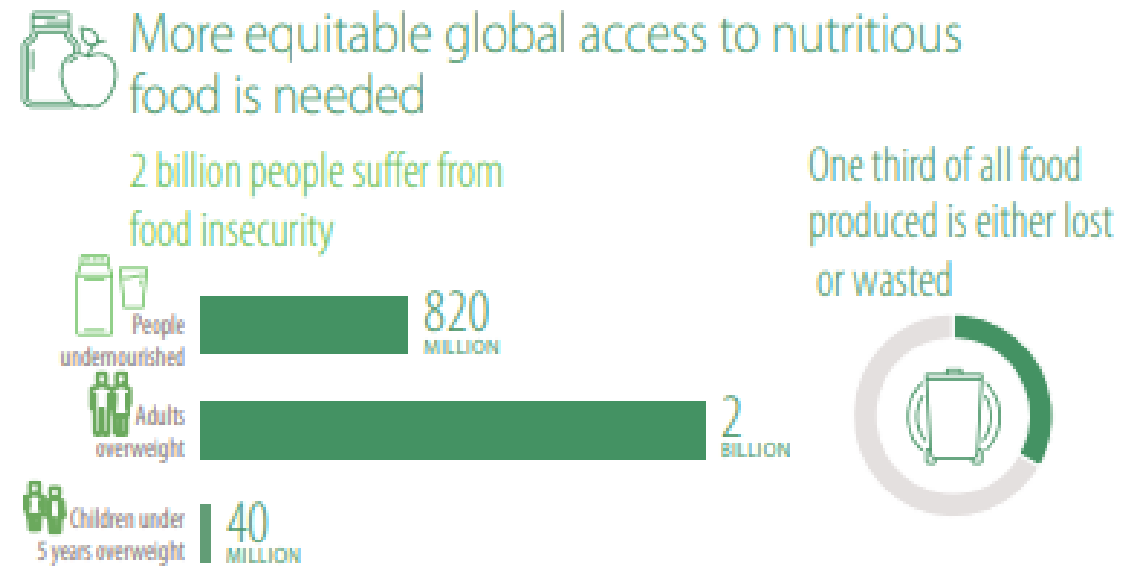


- Assess holistic impacts of new technologies to reduce trade-offs.
- Deploy new technologies that reduce inequalities rather than increase them.



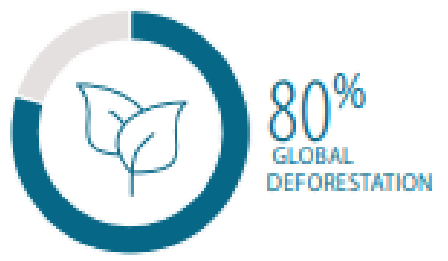


Changing food systems is essential for sustainable development

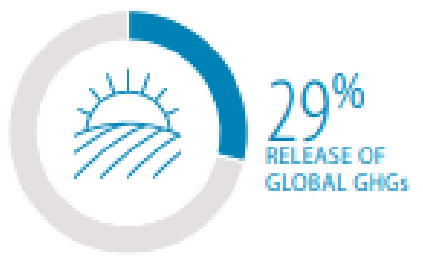


Climate and environmental impacts of food production must be minimized

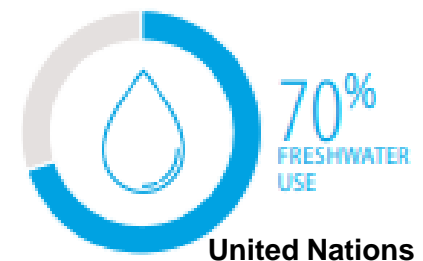
Agriculture is responsible for 80% of global deforestation



Food systems release 29% of global GHGs



Agriculture accounts for 70% of freshwater use





Building sustainable food systems and nutrition patterns

Entry point

Levers

Food systems and nutrition patterns

Pathway



- Strengthen social protection floors to reduce vulnerabilities to food insecurity.
- Legislate to minimize ecosystem degradation and unsustainable farming.
- Improve labelling and certification for sustainable food production.



- Increase access to insurance against shocks for small-scale farmers.
- Improve trade agreements in food supply chains to ensure sustainability.
- Expand market access for agroecological farms.



- Increase consumer awareness and change norms to reduce food waste.
- Ensure access to sufficient, safe and nutritious foods.
- Change dietary habits to reduce demand for animal products.



- Apply technology to maximize food's nutritional value and minimize environmental impacts.
- Improve access to information and data systems to increase crop resilience.
- Invest in energy efficient food system infrastructure and transportation.

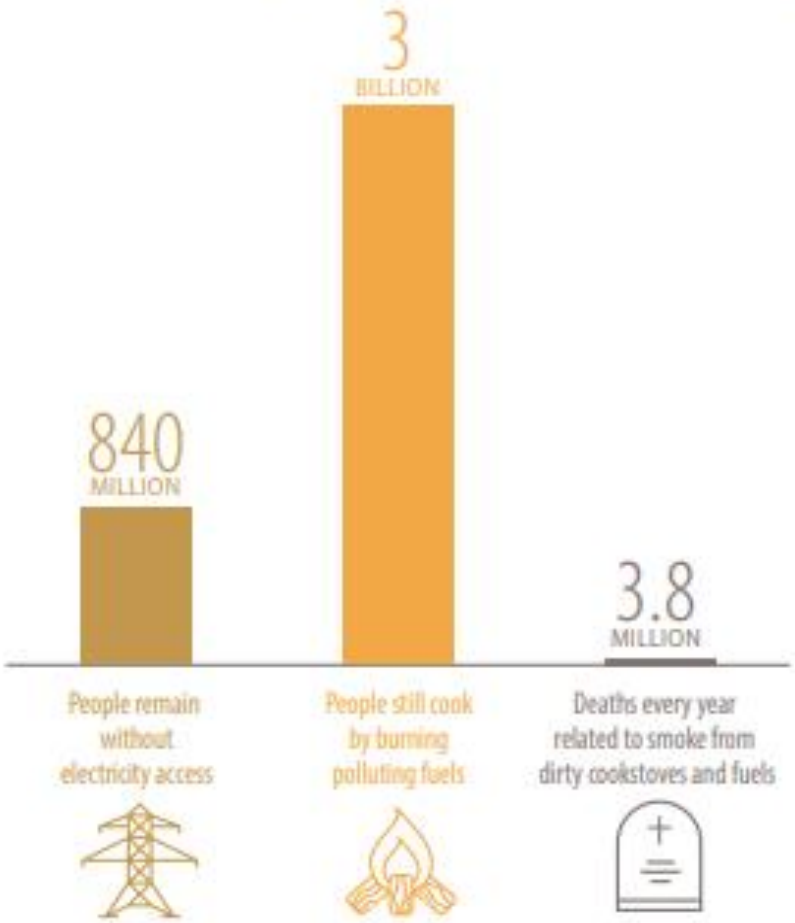


Photo Credit: Xun Wang and Xin Zhang, University of Maryland



Energy decarbonization with universal access

 Increasing access to clean energy is needed to reduce poverty and enhance well-being



 Decarbonizing energy sources must speed up and scale up





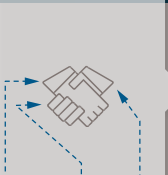
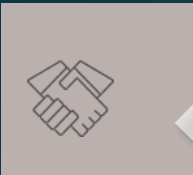
Achieving energy decarbonization with universal access

Entry point

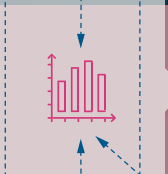
Levers

Energy

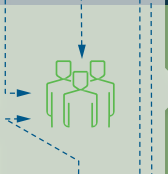
Pathway



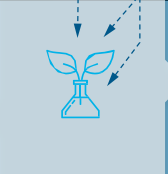
- Include clear standards and targets for shares of renewable energy in national plans.
- Mandate and incentivize companies to prepare decarbonization plans.
- Ensure energy access for all and prioritize needs of those at risk of being left behind.



- Shape spending and taxation policies and subsidies to reduce fossil fuel reliance.
- Invest in support to workers who lose livelihoods from phasing out fossil fuels.
- Introduce energy efficiency standards and regulations to reduce consumption.



- Call for energy services that prioritize efficiency and high rates of renewables.
- Harness media to influence energy use practices at home and in transport.
- Support youth action and social mobilization for climate action.

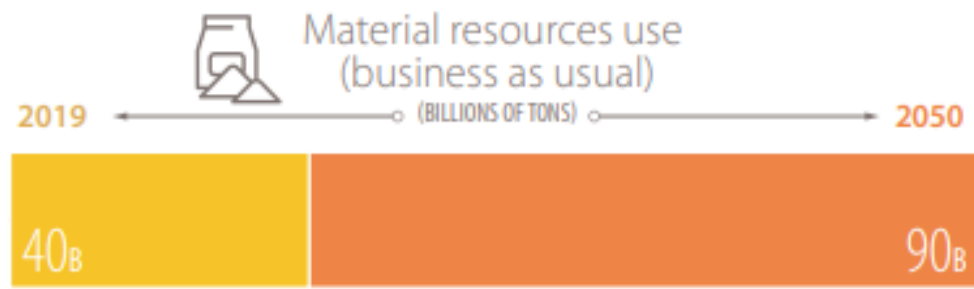
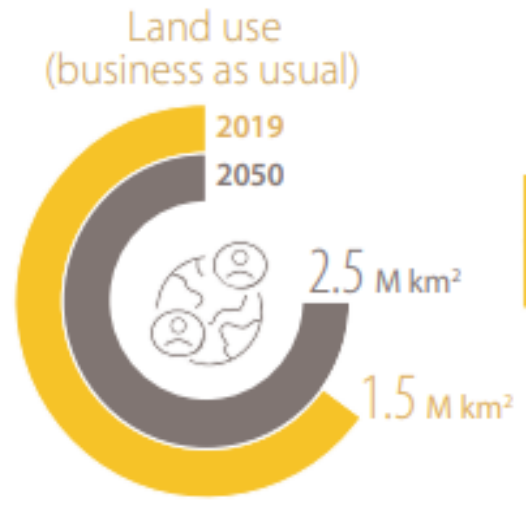
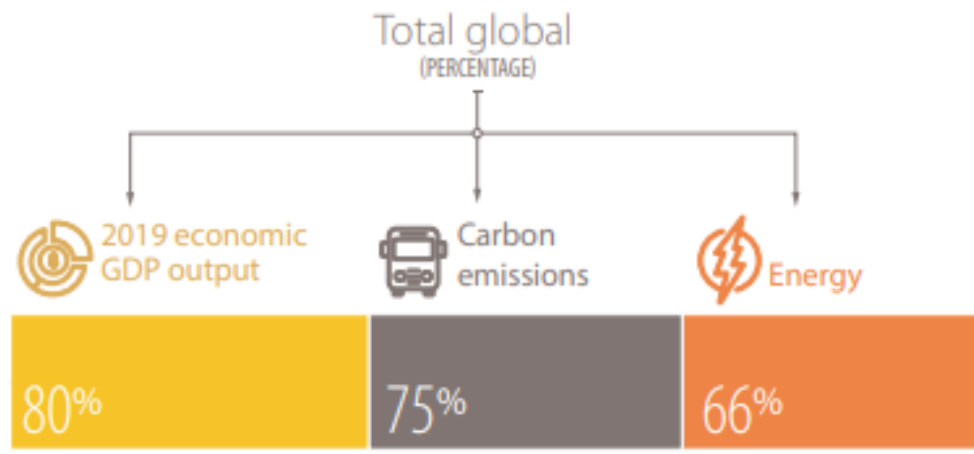
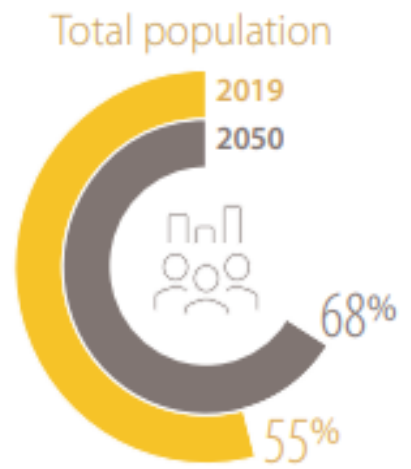


- Apply research and development to support infrastructure for key technologies.
- Implement measures that support wider uptake of existing clean energy technologies.
- Adopt policies and incentives that encourage investment in technology development.





Urban and peri-urban development: growing cities, growing impacts





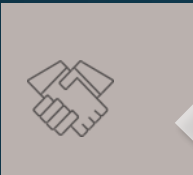
Promoting sustainable urban and peri-urban development

Entry point

Levers

Sustainable urban and peri-urban dev

Pathway



- Shape urban development with a well-planned, evidence based and inclusive approach.
- Make urban governance participatory and reflective of local level concerns.
- Ensure that individual and collective land rights are protected and secure and scale up urban resilience.



- Encourage investment in sustainable infrastructure and services in urban areas.
- Support mass public transport for health, economic dynamism and low emissions.
- Invest in pro-poor urban development that provides decent jobs for all.



- Spur citizen campaigns and social engagement to break unsustainable choices.
- Promote green space, urban biodiversity and urban food production and encourage strong ties with surrounding urban and peri-urban areas.



- Leverage technology and data to help with effective service provision.
- Bolster the "science of cities" to enhance education and training for urban planners and urbanization professionals.

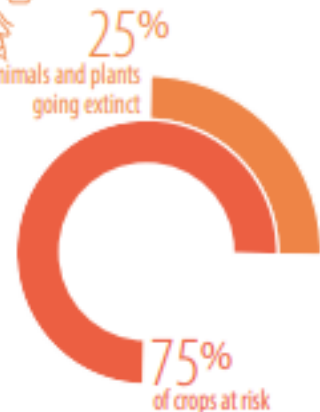




Human survival and the global environmental commons



Biodiversity



25% of animals and plants are threatened with extinction (nearly 1 million species), many in the coming decades

75% of our crops are at risk due to loss of pollinators



Atmosphere



Air pollution kills approximately 8 million people annually

8 MILLION people die annually

Net-zero emissions must be reached in 2050 to keep global warming limited to 1.5°C



Oceans

The livelihoods of 60 million fishers depend on ocean resources



60 MILLION fishers depend on ocean resources



33.1% fish stocks are fished at unsustainable levels



50% of all coral reefs have been lost since 1870



Land



33% of all land is used for agriculture



20% of the Earth's vegetated land surface showed declining productivity from 1998 to 2013



30.7% of land area covered by forest



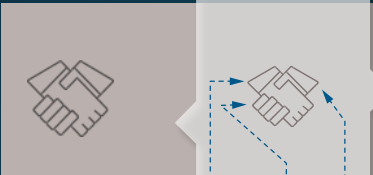
Securing the global environmental commons

Entry point

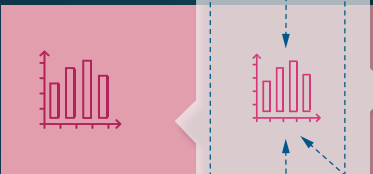
Levers

Sustainable and just economies

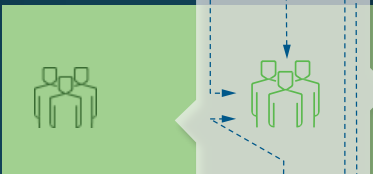
Pathway



- Fulfill commitments to multilateral agreements which aim to secure the global environmental commons.
- Support multi-stakeholder platforms and deliberation about collective goals for transforming the use of global resources and sinks.



- Direct industry toward approaches that do not generate global damage.
- Enable leapfrogging directly to more sustainable forms of production.
- Encourage impact investing where success is measured by social and environmental benefits.



- Harness social mobilization to raise awareness and catalyse innovation.
- Encourage individual and collective agency around preserving natural life support systems.

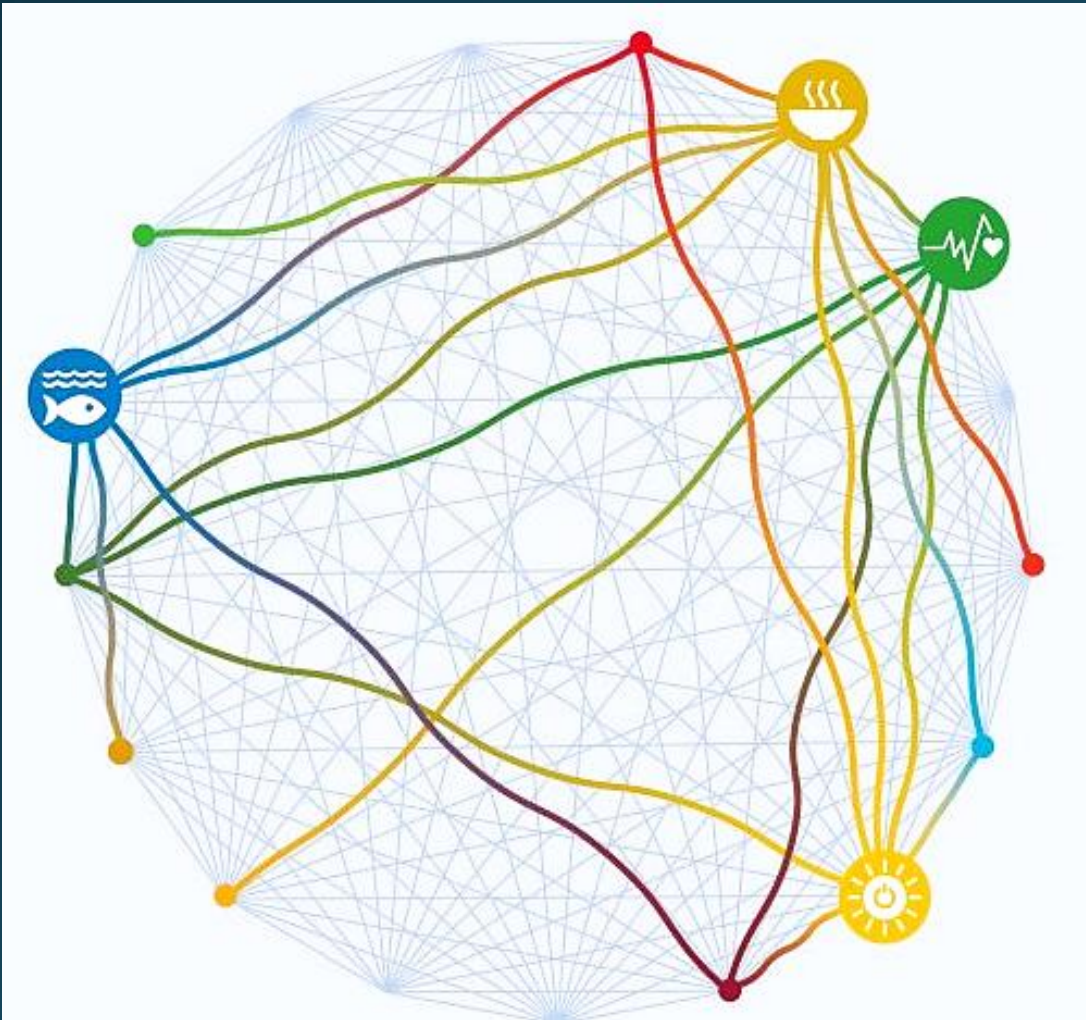


- Incentivize support for negative emissions technologies to scale up use.
- Support science diplomacy for advances in environmental protection including in ungoverned spaces.





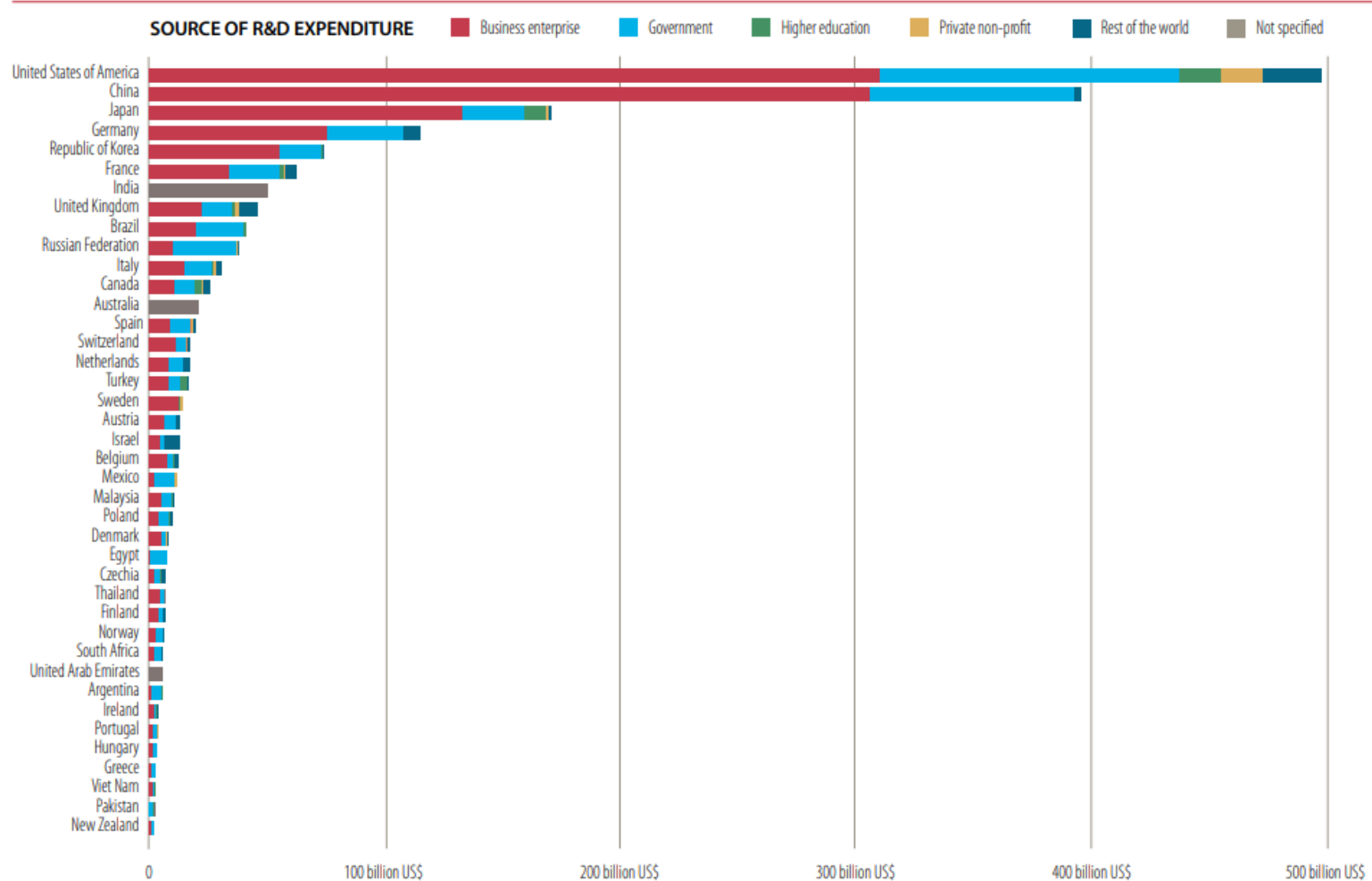
Harnessing science for knowledge-based transformations toward sustainable development



- *Support mission driven scientific assessments that cut across silos*
- *Establish open-access SDG knowledge platforms*
- *Enhance sustainable development councils and knowledge diplomacy*
- *Support science partnerships (public-private-civil society) and build competencies*

Strengthening scientific knowledge in all contexts

Research and development expenditure worldwide, 2015.



- *Harness and boost scientific capacities in all regions*
- *Support curricula and education in sustainable development*
- *Build national and regional scientific funding institutions*
- *Influence private R&D expenditure toward SDGs*



Science for a decade of action and transformation

- *Transformation for the SDGs requires:*
 - *All stakeholders working together across the six entry points*
 - *Concerted efforts to apply knowledge of interlinkages across goals to resolve trade-offs and contribute to co-benefits*
 - *Policy coherence and partnerships across the four levers of change – governance, business and finance, individual and collective action, science and technology*
 - *Implementation of integrated pathways that correspond to specific needs and priorities in different contexts, while contributing to global transformation*



Bringing the lessons of the GSDR to life: opportunities at the UN



- *Science, Technology, Innovation Forum*
- *High Level Political Forum*
- *SDG Good Practices Database*



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