THE FUTURE IS NOW
SCIENCE FOR ACHIEVING SUSTAINABLE DEVELOPMENT

GLOBAL SUSTAINABLE DEVELOPMENT REPORT 2019
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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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

- IGS nominations by Member States
- IGS appointment by UNSG

Dec 2016: Receive mandate

2017:
- Review mandate
- Develop overall concept

First Member State briefing
- Workshop in Helsinki
- External Inputs

2018:
- Zero Draft
- Consultations
- 1st Draft

Second Member State briefing
- Workshop Washington DC; Regional Consultation in South Africa; Argentina and Bangladesh
- Participation in regional UN fora

2019:
- 2nd Draft
- Scientific peer review
- Member State comments
- Final draft and launch at UN SDG Summit

Third Member State briefing
- Regional Consultation in Jordan

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UN Secretary General and IGS: 10 September 2019
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.
A decisive decade ahead

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

<table>
<thead>
<tr>
<th>GOAL</th>
<th>1.1. Evaluating extreme poverty</th>
<th>1.3. Social protection for all</th>
<th>2.2. Ending malnutrition (undernourishment)</th>
<th>3.3. Maintaining genetic diversity</th>
<th>2.2. Ending malnutrition (overweight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 4</td>
<td>6.6. Primary education attainment</td>
<td>5.5. Women’s political participation</td>
<td>6.1. Access to safely managed drinking water</td>
<td>6.2. Access to safely managed sanitation services</td>
<td></td>
</tr>
<tr>
<td>Goal 7</td>
<td>9.5. Enhancing scientific research (R&amp;D expenditure)</td>
<td>9.5. Enhancing scientific research (number of researchers)</td>
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</tr>
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<td>Goal 8</td>
<td>10.1. Remittance costs</td>
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<td>Goal 9</td>
<td>11.1. Urban population living in slums</td>
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<td>12.2. Absolute material footprint, and TAC b</td>
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<td>Goal 12</td>
<td>15.5. Biodiversity loss</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Goal 13</td>
<td>15.7. Wildlife poaching and trafficking</td>
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</tbody>
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Understanding the systemic challenges

Rising inequalities

Climate change

Biodiversity loss

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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
Striking a better balance – Context matters

No countries are in the top left quadrant where basic human needs and sustainable resource use are in more balance.
Pathways to transformation for sustainability

<table>
<thead>
<tr>
<th>ENTRY POINTS FOR TRANSFORMATION</th>
<th>LEVERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human well-being and capabilities</td>
<td>Governance</td>
</tr>
<tr>
<td>Sustainable and just economies</td>
<td>Economy and Finance</td>
</tr>
<tr>
<td>Energy decarbonisation with access</td>
<td>Individual and Collective Action</td>
</tr>
<tr>
<td>Food systems and nutrition patterns</td>
<td>Science and Technology</td>
</tr>
<tr>
<td>Urban and peri-urban development</td>
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<tr>
<td>Global environmental commons</td>
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</tbody>
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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

- 750 million adults are illiterate
- 1.9 billion people lack access to even basic sanitation
- 1.3 billion people live in multidimensional poverty – half of them are children

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

- 4.0 billion people are without any social protection benefits
- 900 million people are vulnerable to multidimensional poverty
- 1.7 billion adults are unbanked

Inequalities in opportunities must be eliminated to expand human capabilities

- 617 million children are not at minimum proficiency levels in reading and mathematics
- 650 million girls and women were married in childhood
- 3.7 billion people do not have access to the Internet

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Strengthening human well-being and capabilities

**Entry point**

**Pathway**

**Lever 1:** Human well-being and capabilities
- 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

**Lever 2:** Incentivize private sector investments in capabilities
- 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

**Lever 3:** Communicate evidence in clear and easily communicated ways
- Communicate evidence in clear and easily communicated ways
- Reduce social barriers to technology use
- Empower everyone to participate in public dialogue

**Lever 4:** Apply new technologies to service delivery and improve access
- Apply new technologies to service delivery and improve access
- Generate better data to inform policies (disaggregated, longitudinal)
- Advance medical research and applications

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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

<table>
<thead>
<tr>
<th>Year</th>
<th>Carbon Pricing Revenues</th>
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<tbody>
<tr>
<td>2017</td>
<td>US$33 billion</td>
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<td>2018</td>
<td>US$44 billion</td>
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Global primary material use expected to almost double by 2060

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<tr>
<th>Year</th>
<th>Material Use</th>
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<tr>
<td>2017</td>
<td>89 gigatons</td>
</tr>
<tr>
<td>2060</td>
<td>167 gigatons</td>
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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.

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Changing food systems is essential for sustainable development

More equitable global access to nutritious food is needed

- 2 billion people suffer from food insecurity
- One third of all food produced is either lost or wasted
- 2 billion
- 820 million
- 40 million

Livelihoods in agriculture must be considered

- Agriculture employs over 1.1 billion people

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

80% GLOBAL DEFORESTATION
29% RELEASE OF GLOBAL GHGs
70% FRESHWATER USE

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Building sustainable food systems and nutrition patterns

**Entry point**

**Pathway**

**Levers**

- Food systems and nutrition patterns

**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

- 3 BILLION
- 840 MILLION
- 3.8 MILLION

People remain without electricity access
People still cook by burning polluting fuels
Deaths every year related to smoke from dirty cookstoves and fuels

Decarbonizing energy sources must speed up and scale up

- 33.1 GT
- HISTORIC HIGH IN 2018 ON ENERGY-RELATED CO2 EMISSIONS

In 2016, the share of renewables in total final energy consumption reached 12.4%

To meet global SDG targets, global energy intensity needs to improve annually by 2.7%
Achieving energy decarbonization with universal access

**Entry point**

**Levers**

- 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.

**Pathway**

- 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

- Total population
  - 2019: 55%
  - 2050: 68%

- Land use (business as usual)
  - 2019: 2.5 M km²
  - 2050: 1.5 M km²

- Economic GDP output
  - 2019: 80%

- Carbon emissions
  - 2019: 75%

- Energy
  - 2019: 66%

- Material resources use (business as usual)
  - 2019: 40 B (billions of tons)
  - 2050: 90 B

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Promoting sustainable urban and peri-urban development

**Entry point**

**Levers**
- Sustainable urban and peri-urban development

**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.
- 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.
- 33.1% of 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**

**Pathway**

**Levers**

- **Sustainable and just economies**
  - 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.

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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

• 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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