

Data gaps and challenges for measuring environment-related SDGs

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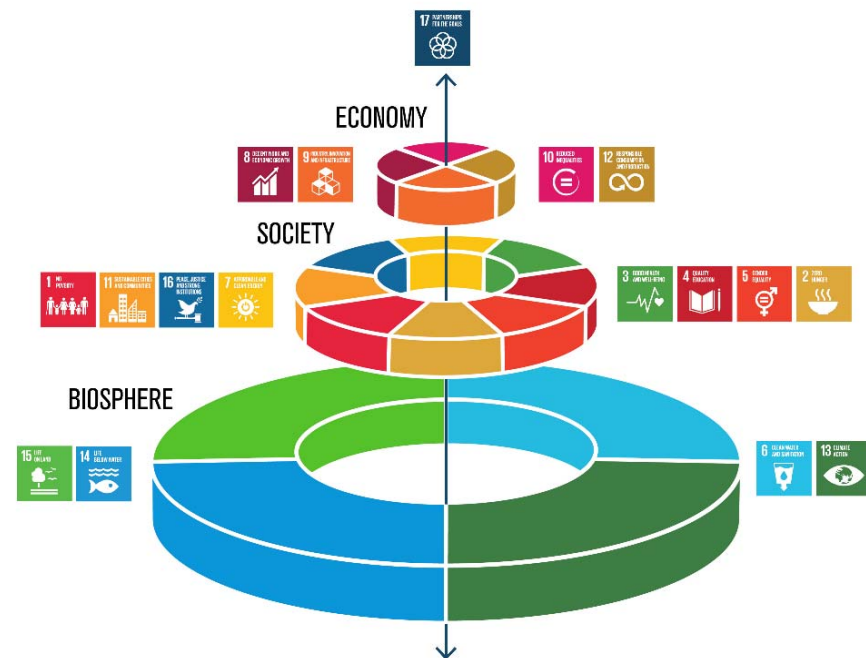
Strategic and Quantitative Analysis Centre
Institute for Global Environmental Strategies (IGES)

E-Learning on Environment-related SDGs
February, 2020, Hayama, Japan



Importance of SDGs as a framework for integrating the three dimensions of sustainable development

- SDGs aim to transform the world by
 - ending poverty
 - protecting the planet
 - ensuring prosperity for all.



Source: Rockström and Sukhdev (undated)

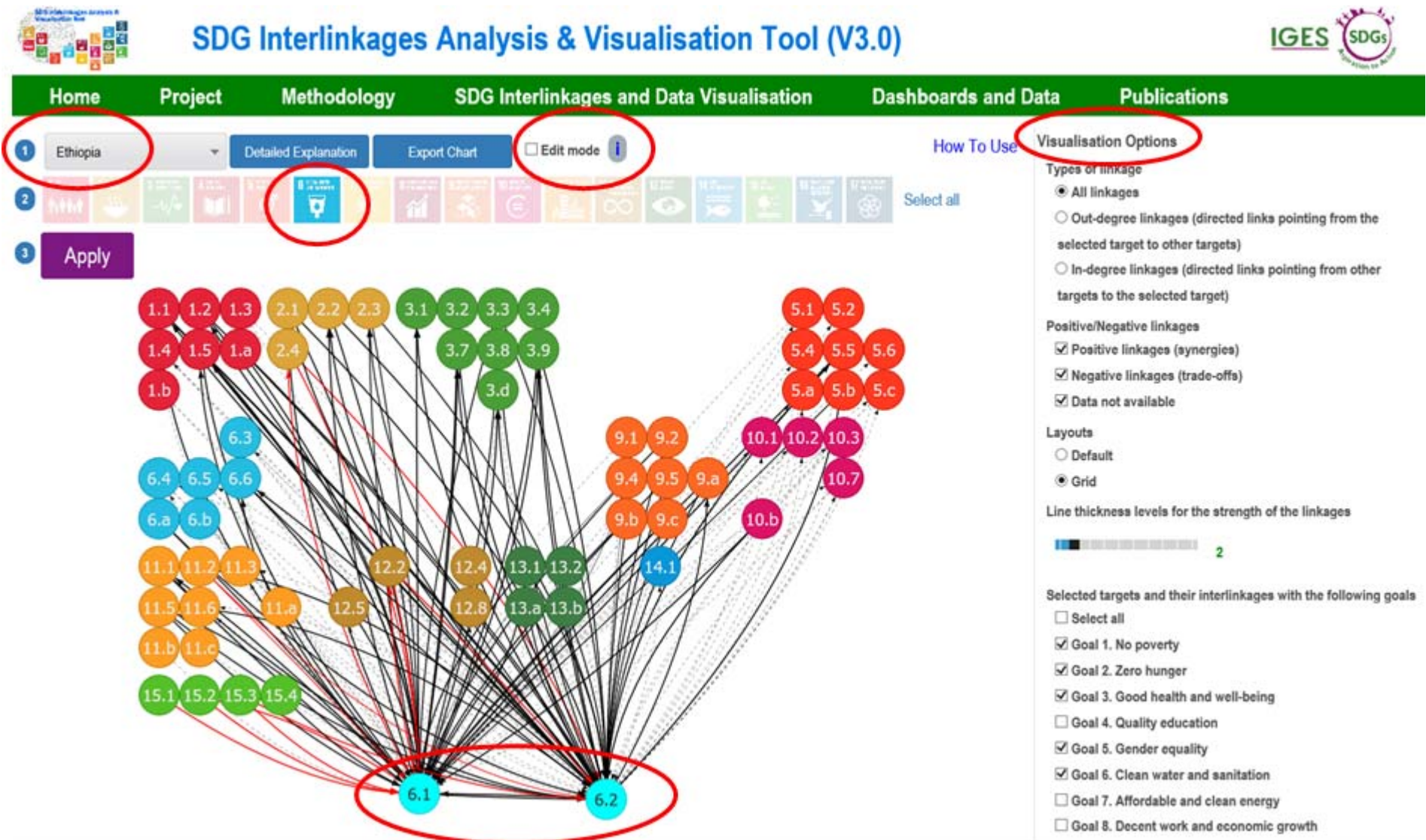
Environmental sustainability for SDGs



Source: EC-Environment homepage

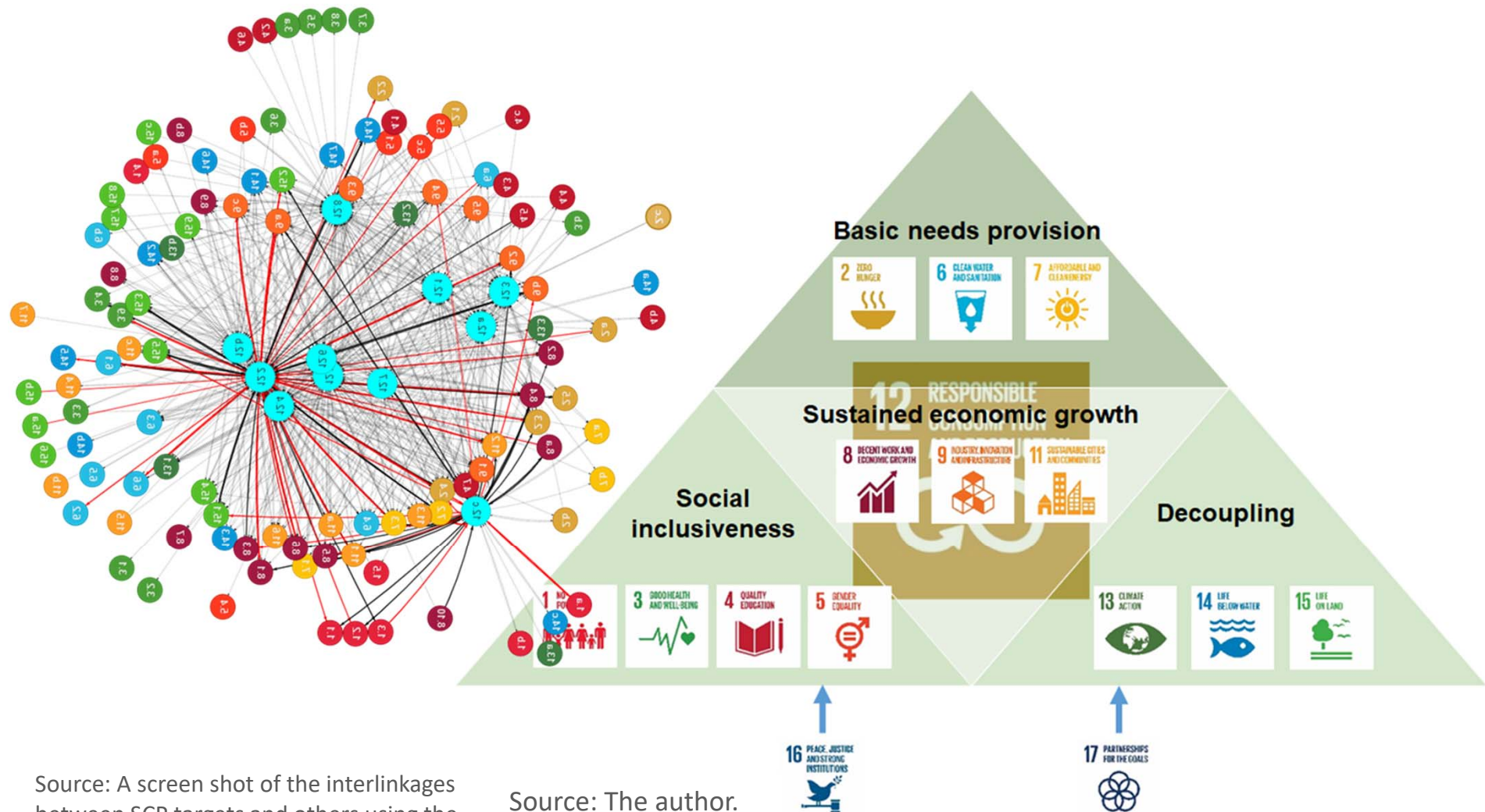
IGES SDG Interlinkages Analysis & Visualisation Tool (V3.0)

(<https://sdginterlinkages.iges.jp/visualisationtool.html>)

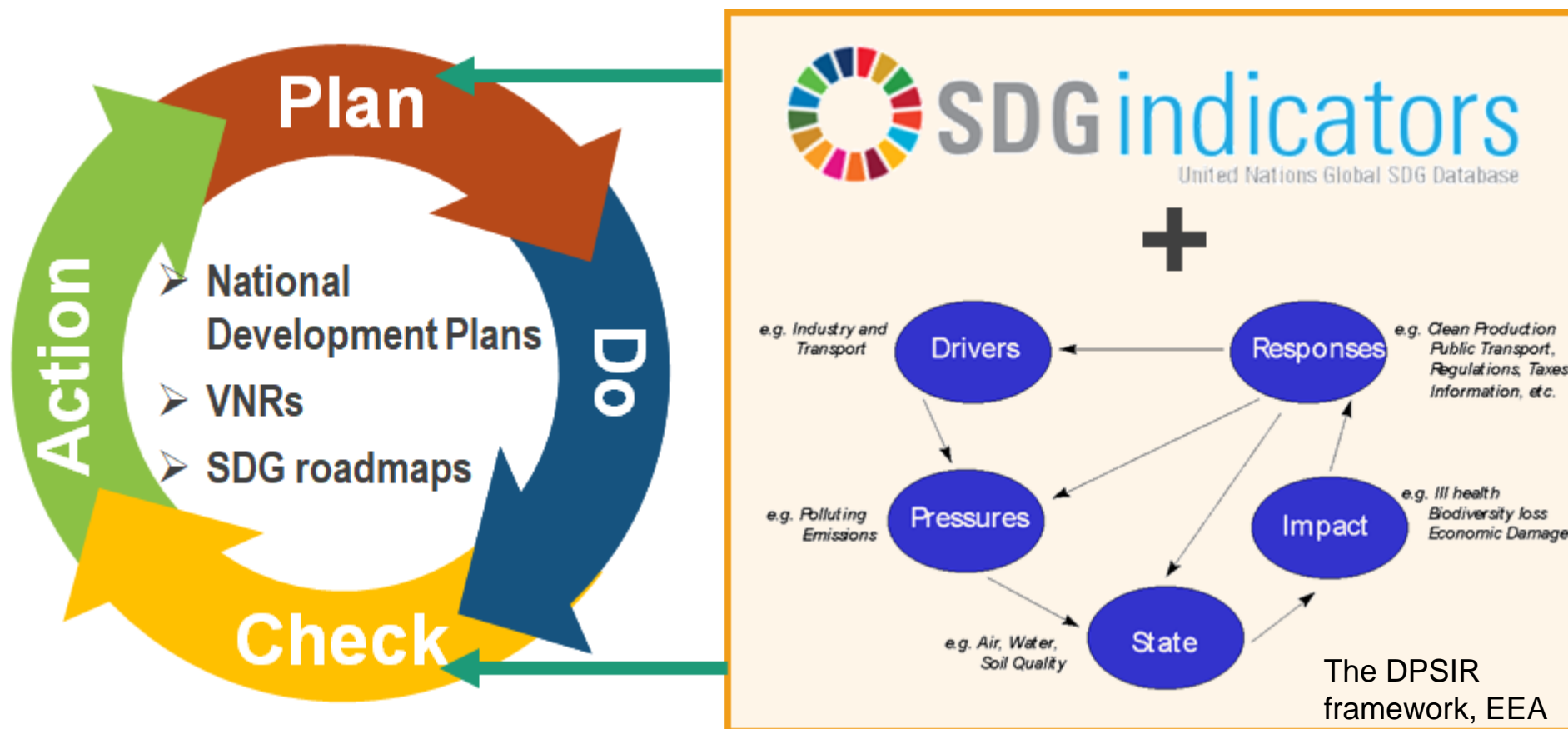


Source: A screenshot taken from the SDG Interlinkages Analysis and Visualisation Web Tool (Zhou, et al., 2019)

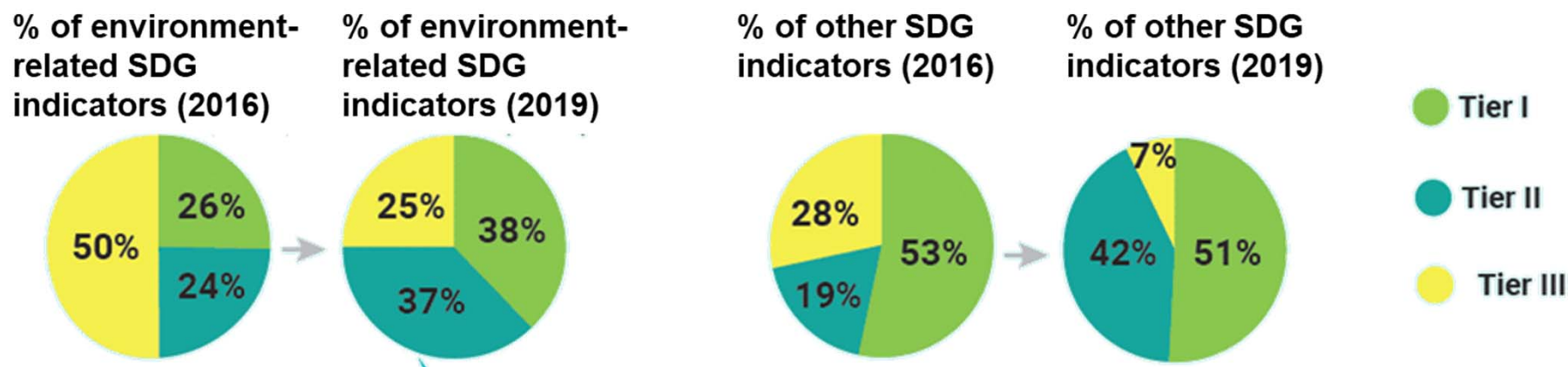
Cross-cutting and essential role of environment-related Goals: An example of Goal 12 on SCP



SDG indicators and quality data is crucial to an effective PDCA policy cycle



Significant data gaps in general and for 93 environment-related indicators in particular

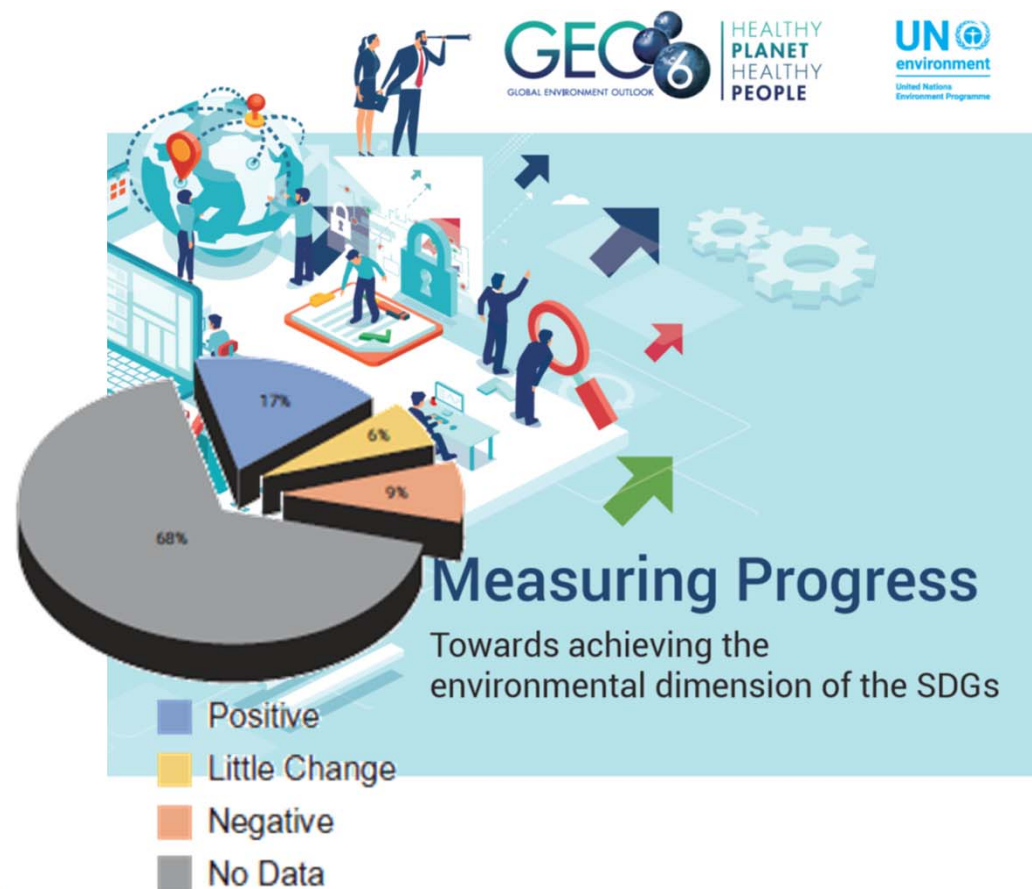
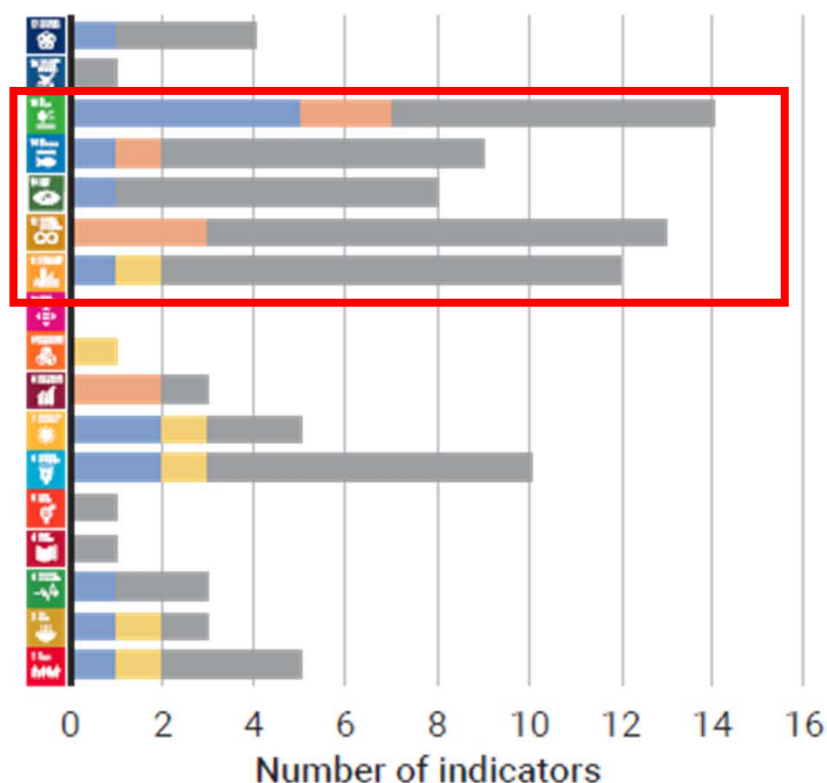


● Positive ● Little change ● Negative ● Some data is available ● No data

1.4.2	1.5.1	1.5.2	1.5.3	1.5.4	2.4.1	2.5.1	2.5.2	3.9.1
3.9.2	3.9.3	4.7.1	5.a.1	6.1.1	6.3.1	6.3.2	6.4.1	6.4.2
6.5.1	6.5.2	6.6.1	6.a.1	6.b.1	7.1.2	7.2.1	7.3.1	7.a.1
7.b.1	8.4.1	8.4.2	8.9.2	9.4.1	11.2.1	11.3.1	11.3.2	11.4.1
11.5.1	11.5.2	11.6.1	11.6.2	11.7.1	11.b.1	11.b.2	11.c.1	12.1.1
12.2.1	12.2.2	12.3.1	12.4.1	12.4.2	12.5.1	12.6.1	12.7.1	12.8.1
12.a.1	12.b.1	12.c.1	13.1.1	13.1.2	13.1.3	13.2.1	13.3.1	13.3.2
13.a.1	13.b.1	14.1.1	14.2.1	14.3.1	14.4.1	14.5.1	14.6.1	14.7.1
14.a.1	14.c.1	15.1.1	15.1.2	15.2.1	15.3.1	15.4.1	15.4.2	15.5.1
15.6.1	15.7.1	15.8.1	15.9.1	15.a.1	15.b.1	15.c.1	16.8.1	17.6.1
17.7.1	17.9.1	17.14.1						

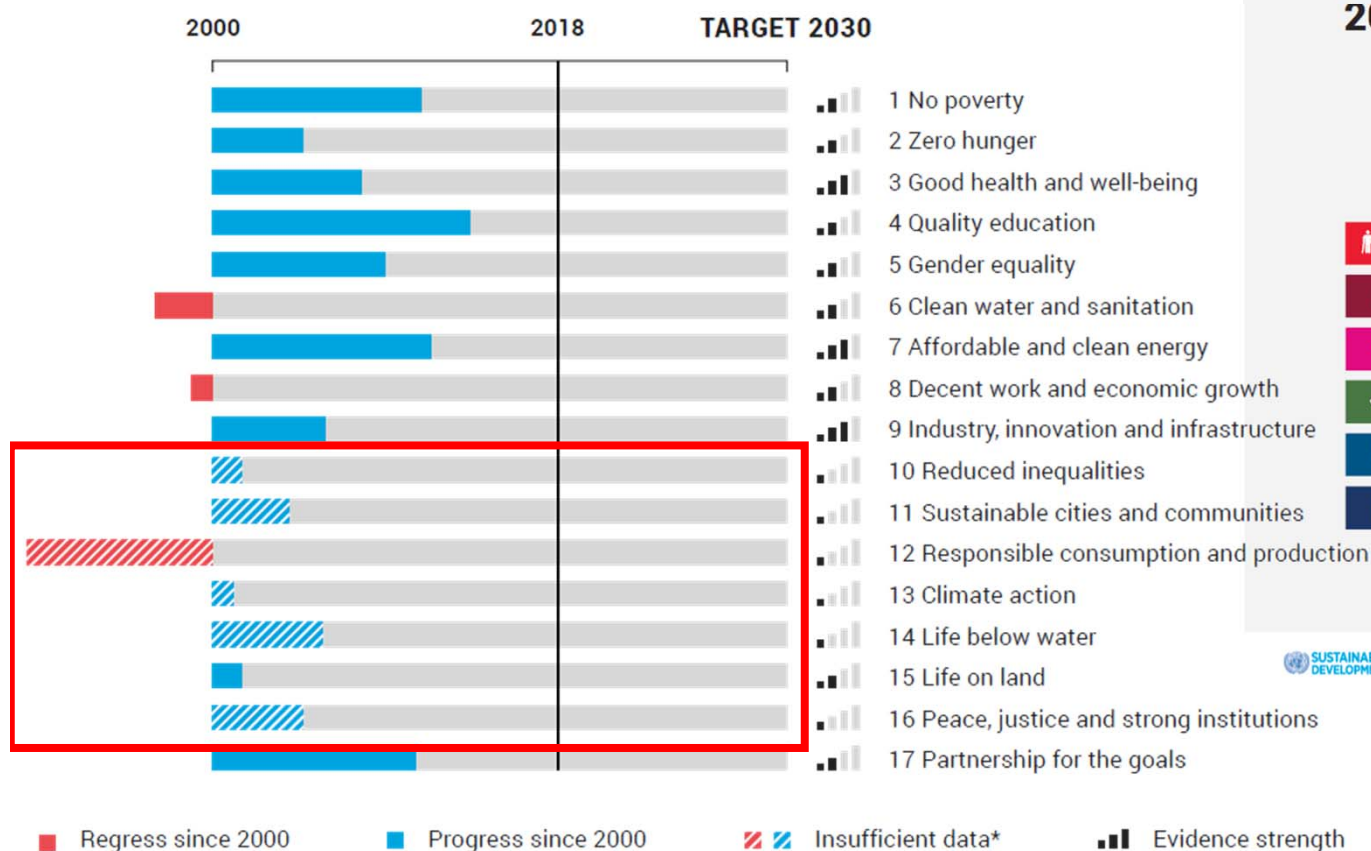
Source: UNEP, 2018. <https://environmentlive.unep.org/sdgpolicybrief>

Data constraints on global and regional efforts in SDG monitoring: GEO 6 Measuring progress towards achieving the environmental dimension of the SDGs

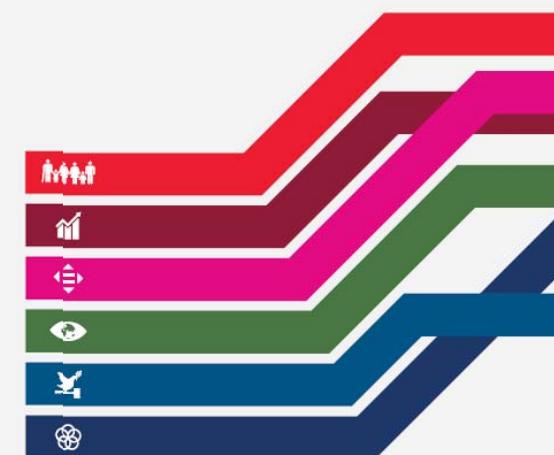


<https://wedocs.unep.org/bitstream/handle/20.500.11822/27627/MeaProg2019.pdf?sequence=1&isAllowed=y%22>

Data constraints on global and regional efforts in SDG monitoring: ESCAP's Asia and the Pacific SDG progress report



ASIA AND THE PACIFIC SDG PROGRESS REPORT 2019



SUSTAINABLE DEVELOPMENT GOALS

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

https://www.unescap.org/sites/default/files/publications/ESCAP_Asia_and_the_Pacific_SDG_Progress_Report_2019.pdf

Data constraints on global and regional efforts in SDG monitoring: SDG index and dashboards

Sustainable Development Report Dashboards 2019
Transformations to Achieve the Sustainable Development Goals



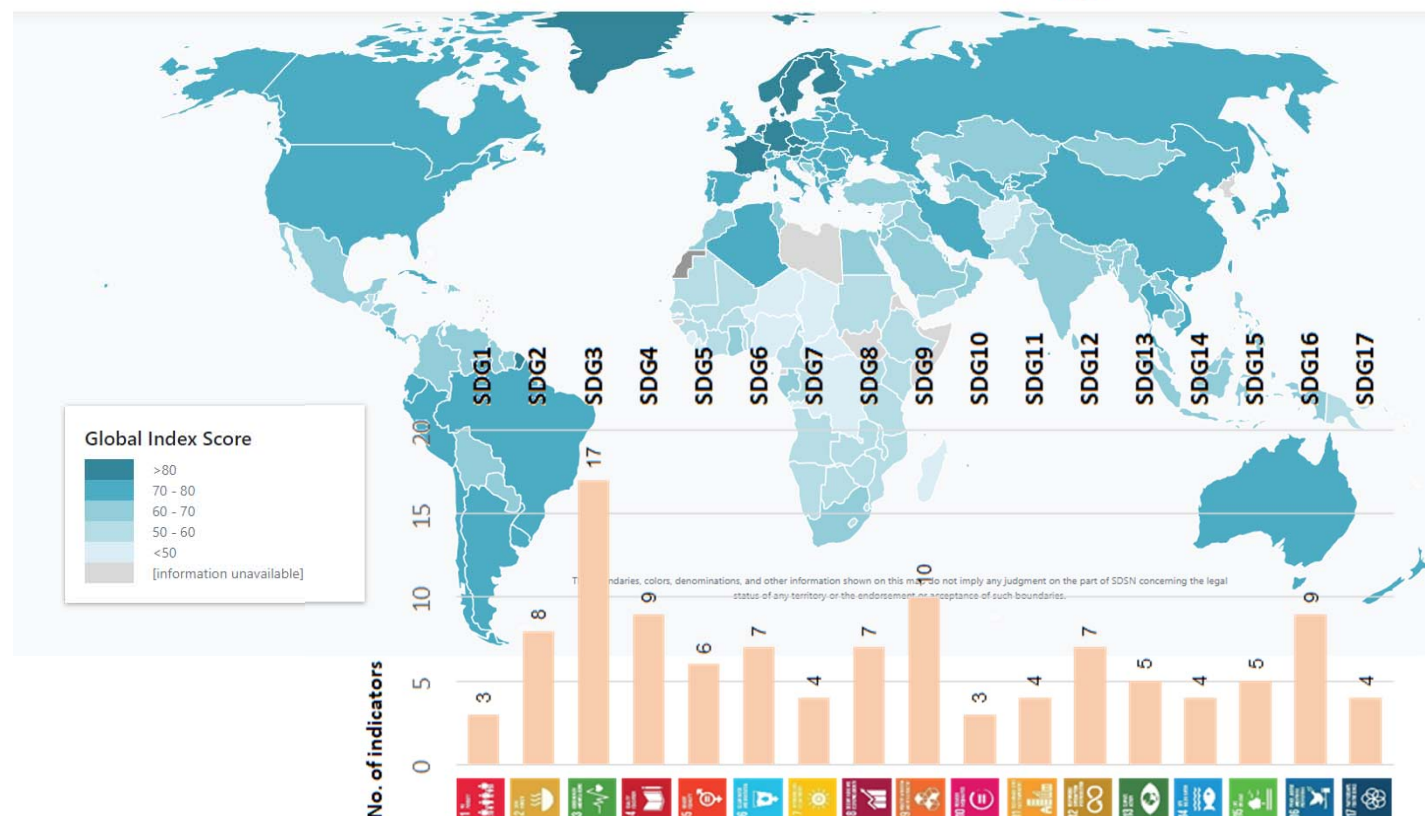
BertelsmannStiftung

SUSTAINABLE DEVELOPMENT REPORT 2019

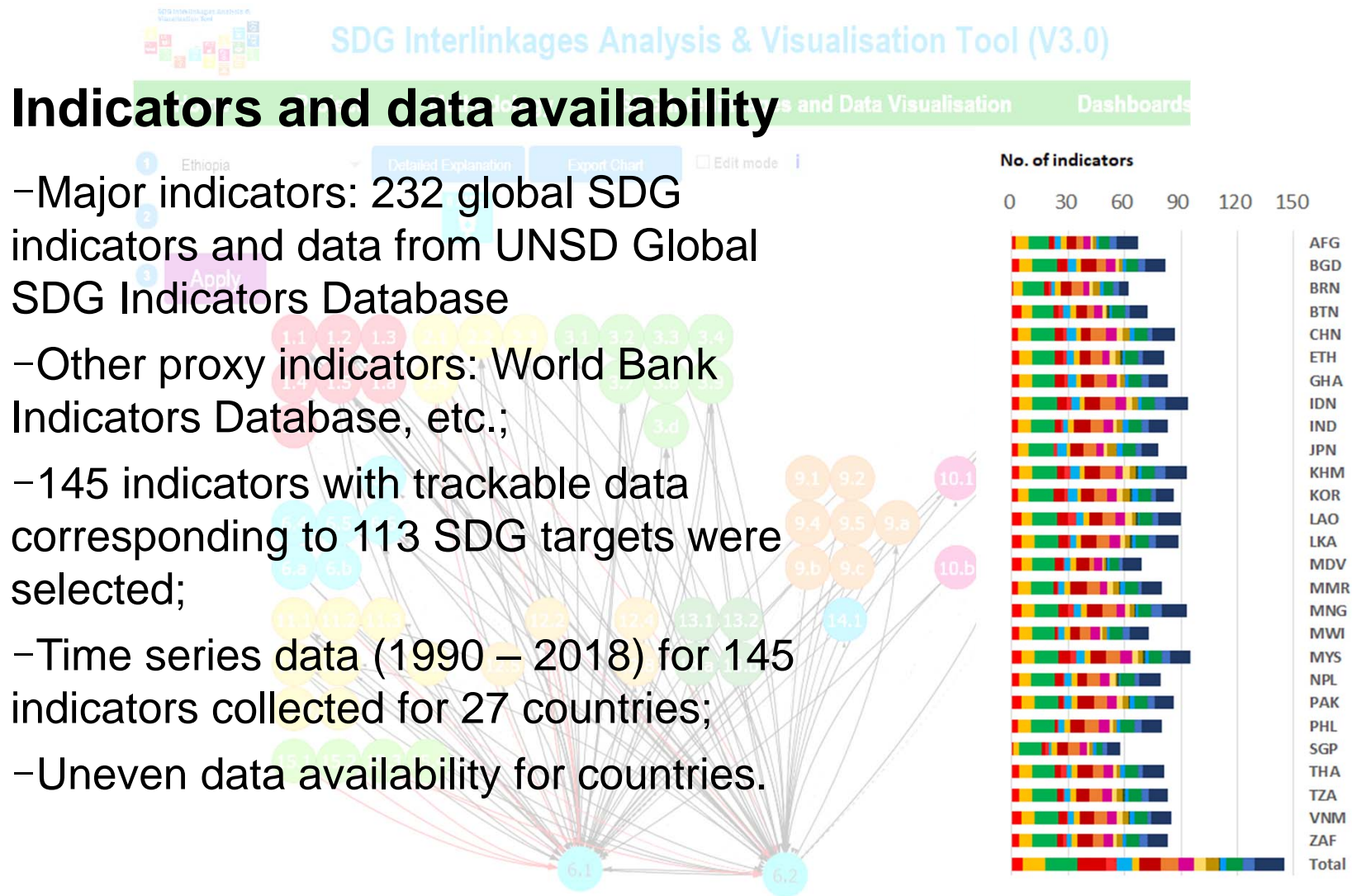
Transformations to achieve the
Sustainable Development Goals
Index and Dashboards



<https://dashboards.sdgindex.org/#/>



Data gaps for the indicators used in the SDG Interlinkages Tool



Source: The author

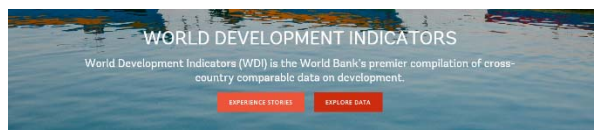
Closing SDG data gaps: Using proxy indicators

Global Proxies for Some Tier III Indicators

Developed by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs)

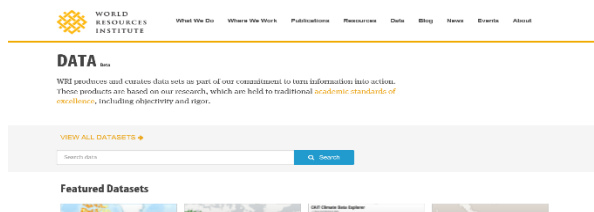
25 February 2019

<https://unstats.un.org/sdgs/files/Proxies%20Summary.pdf>



The World Development Indicators is a compilation of relevant, high-quality, and internationally comparable statistics about global development and the fight against poverty. The database contains 1,600 time series indicators for 217 economies and more than 40 country groups, with data for many indicators going back more than 50 years.

<http://datatopics.worldbank.org/world-development-indicators/>



<http://datasets.wri.org/>



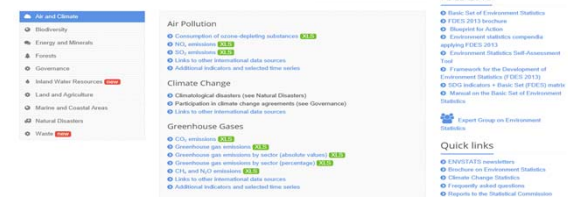
<https://environmentlive.unep.org/sdgs>



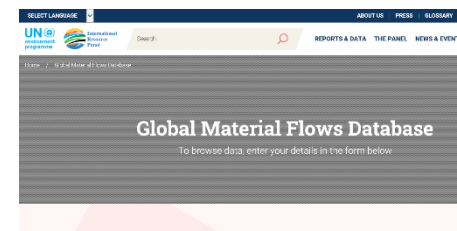
<https://epi.envirocenter.yale.edu/>



https://stats.oecd.org/Index.aspx?DataSetCode=GREEN_GROWTH

UNSD
Environmental
Indicators

<https://unstats.un.org/unsd/envstats/qindicators.cshtml>



<https://www.resourcepanel.org/global-material-flows-database>



The Role of the System of Environmental-Economic Accounting as a Measurement Framework in Support of the post-2020 Agenda

https://seea.un.org/sites/seea.un.org/files/seea_as_a_measurement_framework_in_support_of_the_post-2020_agenda_1.pdf

Addressing SDG data gaps: Role of ICT and Big Data



How data science and analytics can contribute to sustainable development



www.unglobalpulse.org
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1 NO POVERTY
Spending patterns on mobile phone services can provide proxy indicators of income levels

2 ZERO HUNGER
Crowdsourcing or tracking of food prices listed online can help monitor food security in near real-time

3 GOOD HEALTH AND WELL-BEING
Mapping the movement of mobile phone users can help predict the spread of infectious diseases

4 QUALITY EDUCATION
Citizen reporting can reveal reasons for student drop-out rates

5 GENDER EQUALITY
Analysis of financial transactions can reveal the spending patterns and different impacts of economic shocks on men and women

6 CLEAN WATER AND SANITATION
Sensors connected to water pumps can track access to clean water

7 AFFORDABLE AND CLEAN ENERGY
Smart metering allows utility companies to increase or restrict the flow of electricity, gas or water to reduce waste and ensure adequate supply at peak periods

8 DECENT WORK AND ECONOMIC GROWTH
Patterns in global postal traffic can provide indicators such as economic growth, remittances, trade and GDP

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Data from GPS devices can be used for traffic control and to improve public transport

10 REDUCED INEQUALITY
Speech-to-text analytics on local radio content can reveal discrimination concerns and support policy response

11 SUSTAINABLE CITIES AND COMMUNITIES
Satellite remote sensing can track encroachment on public land or spaces such as parks and forests

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Online search patterns or e-commerce transactions can reveal the pace of transition to energy efficient products

13 CLIMATE ACTION
Combining satellite imagery, crowd-sourced witness accounts and open data can help track deforestation

14 LIFE BELOW WATER
Maritime vessel tracking data can reveal illegal, unregulated and unreported fishing activities

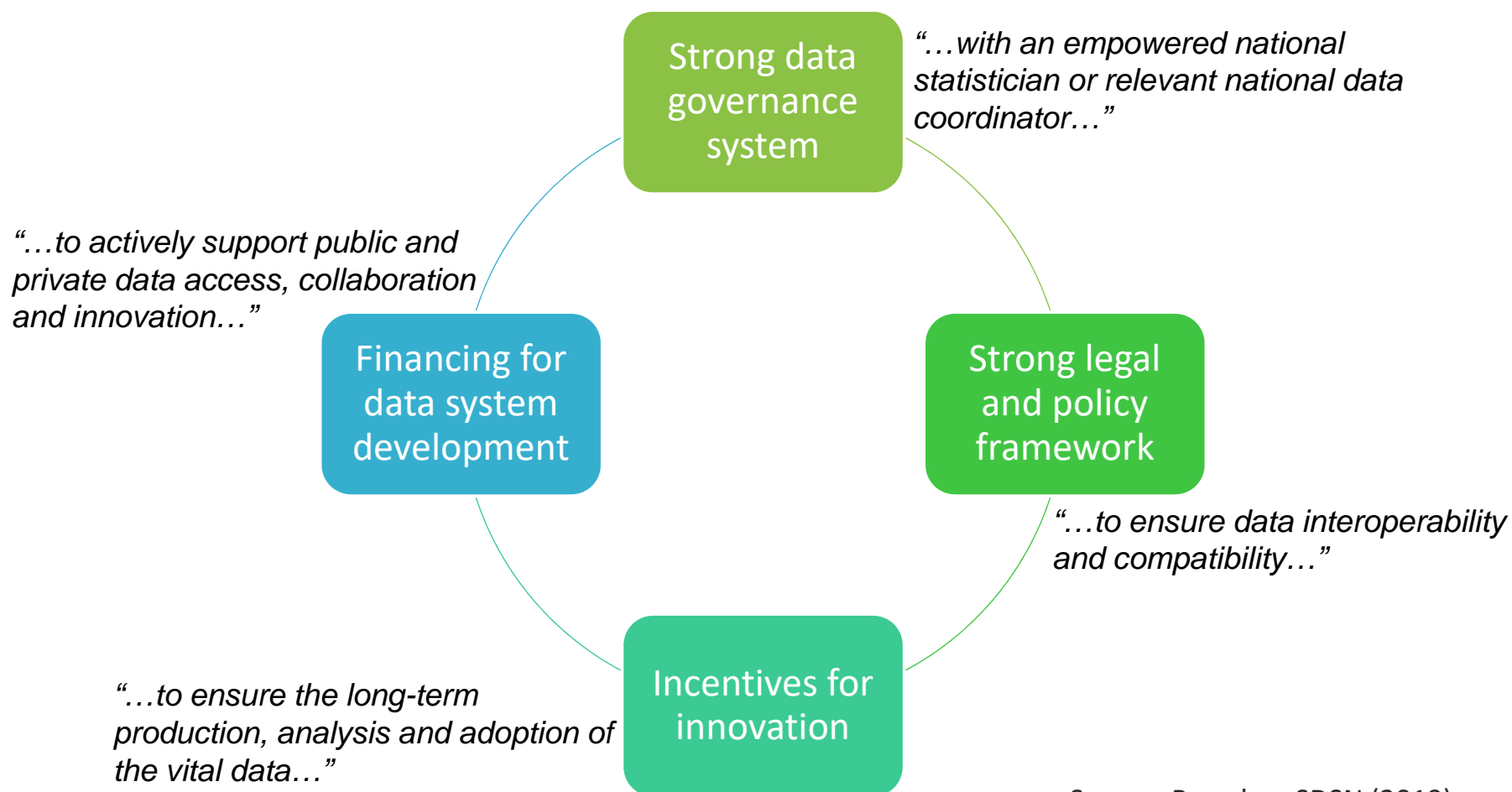
15 LIFE ON LAND
Social media monitoring can support disaster management with real-time information on victim location, effects and strength of forest fires or haze

16 PEACE, JUSTICE AND STRONG INSTITUTIONS
Sentiment analysis of social media can reveal public opinion on effective governance, public service delivery or human rights

17 PARTNERSHIPS FOR THE GOALS
Partnerships to enable the combining of statistics, mobile and internet data can provide a better and real-time understanding of today's hyper-connected world

Closing SDG data gaps: National level

- SDSN's recommendations for a robust and inclusive national data system



Source: Based on SDSN (2019)

Practical application of the IGES SDG Interlinkages Tool: Bangladesh Case Study

Priority/Key Targets for Bangladesh			
Priority targets that are identified by both GIU-PMO and IGES			
1.1 End extreme poverty 1.2 Halve national poverty 2.2 End malnutrition 2.4 Build sustainable food production systems 4.1 All for free primary and secondary education 6.1 Universal access to safe drinking water		6.2 Universal access to sanitation and hygiene 7.1 Universal access to energy 7.2 Increase renewable energy 8.1 Sustain inclusive economic growth 8.5 Decent work for all 13.1 Strengthen resilience to climate change	
GIU-PMO draft priority targets		IGES recommended key targets	
3.2 End preventable young children deaths 3.6 Halve traffic deaths 4.4 Increase skilled workers for decent jobs 4.a Improve education facilities 5.3 Eliminate forced marriage 5.5 Enhance women's participation in decision-making 8.6 Improve youth employment 9.1 Develop resilient infrastructure 9.2 Promote inclusive and sustainable industrialization 9.c Universal and affordable access to ICT 10.1 Income growth of bottom 40% population	10.7 Improve equality of migrants 11.2 Universal access to sustainable transport system 12.5 Reduce waste generation 14.5 Conserve 10 per cent of coastal areas 15.1 Sustainable use of terrestrial and inland freshwater 15.3 Combat desertification and soil degradation 16.9 Provide legal identity to all 16.a Capacity building for preventing violence and terrorism 17.1 Capacity building for tax collection in developing countries 17.8 Enhance ICT in LDCs	1.3 Implement social protection systems to the poor 1.5 Build resilience of the poor to climate and other disasters 2.1 End hunger 2.3 Double agriculture productivity 2.5 Maintain agricultural genetic diversity 3.3 End epidemics of diseases 3.8 Universal health coverage 3.b Access to essential medicines 3.c Increase health workforce 7.3 Double energy efficiency 9.4 Resource-efficient and clean technology-based industrial retrofit 9.a Enhance international aid to build resilient infrastructure	10.a Special trade treatment for LDCs 10.b Encourage ODA to LDCs 11.1 Universal access to urban housing and basic services 12.2 Sustainable resource use 17.9 International support for sustainable development 17.18 Capacity building for developing countries in data availability

A case study on integrated priority setting for SDGs planning in Bangladesh to make SDG implementation

- effective in addressing the country's developmental priorities and
- efficient in leveraging co-benefits and reducing constraints

Approach

- ✓ Review Bangladesh's MDG progress and SDG preparedness
- ✓ Consult relevant governmental agency involved in SDG planning
- ✓ Reconcile governmental plans with the findings of SDG interlinkages analysis

Interlinkages analysis of Target 6.2 on sanitation and hygiene for Bangladesh

Synergistic with Target 6.2

1.1 (0.82)	1.2 (0.84)	2.1 (0.72)	2.2 (0.77)	3.1 (0.81)
3.2 (0.88)	3.7 (0.78)	3.8 (0.76)	3.a (0.85)	3.c (0.72)
5.3 (0.84)	5.6 (0.91)	6.1 (0.79)	9.2 (0.75)	9.c (0.72)
10.a (0.96)	11.1 (0.72)	1.5 (0.35)	2.3 (0.64)	3.3 (0.39)
3.6 (0.65)	3.b (0.66)	4.1 (0.69)	4.2 (0.04)	5.5 (0.39)
5.b (0.44)	9.a (0.19)	9.4 (0.53)	10.b (0.60)	11.5 (0.35)
13.1 (0.35)				

Conflicting with Target 6.2


9.b (-0.83)	3.4 (-0.43)	3.9 (-0.63)	11.6 (-0.64)
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Linked with Target 6.2 but the nature of the link unavailable (data missing)

1.4	3.5	3.d	4.a	5.1
5.2	5.4	5.a	5.c	6.3
6.4	6.5	6.6	8.9	9.1
10.1	10.2	10.3	10.4	10.5
10.6	10.7	10.c	11.3	12.4
12.5	14.1			

Legend

Strong positive	Weak positive	Strong negative	Weak negative	n.a.
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 More than 60 links observed across all the three dimensions of sustainability

- However, data is not available for as much as 44 percent of these linked targets (targets in grey cells)
- Consequently, the strength and nature of interlinkages of Target 6.2 with targets could not be identified

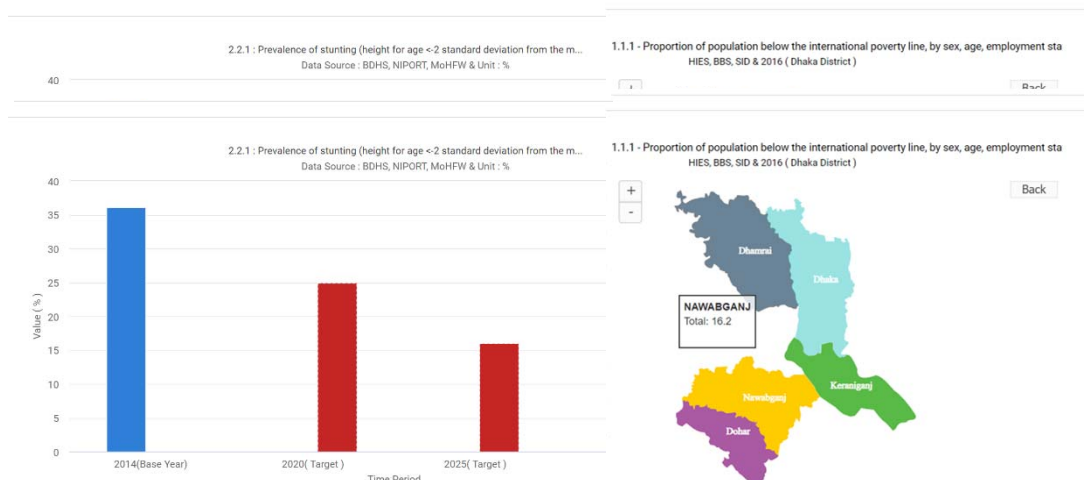
Closing SDG data gaps: National initiatives in Bangladesh

- **SDG Tracker of the Government of Bangladesh**

- Web-based data repository

- Governmental initiative aimed at

- Tracking SDG progress
- Strengthening data collection
- Situation analysis and performance monitoring
- Provides base year data as well as future targets for national and subnational levels



SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

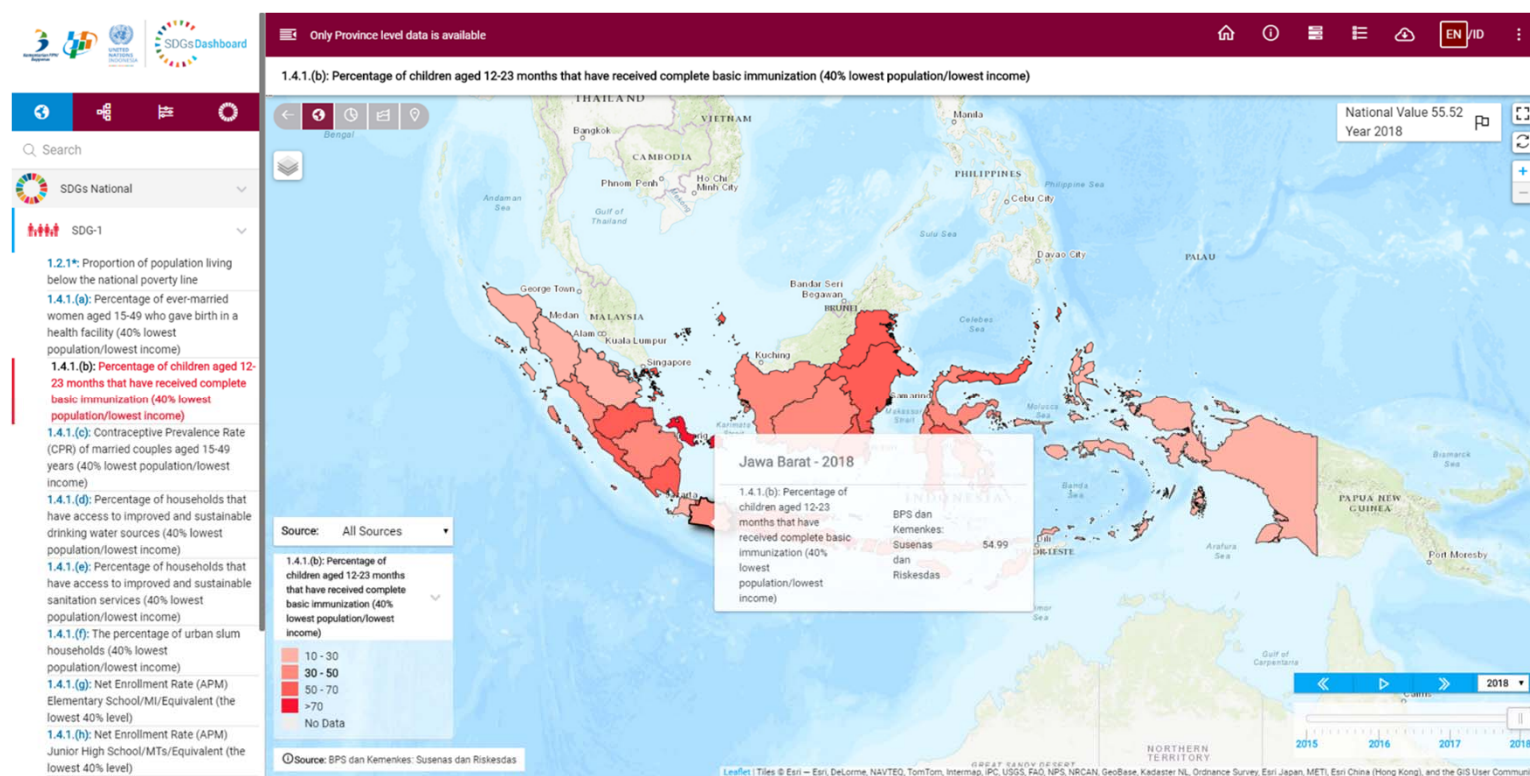
Data Providers: DoF, MoEF
Target 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
Indicator 14.1.1 Index of coastal eutrophication and floating plastic debris density
Target 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
Indicator 14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches
Target 14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
Indicator 14.3.1 Average marine acidity (pH) measured at agreed suite of representative sampling stations
Target 14.5 By 2020, conserve at least 10 per cent of coastal and marine areas as, consistent with national and international law and based on the best available scientific information
Indicator 14.5.1 Coverage of protected areas in relation to marine areas
Data Providers: MoS

Source: Bangladesh SDG Tracker Homepage)

Closing SDG data gaps: National and sub-national initiatives in Indonesia

- Indonesia SDGs Dashboard

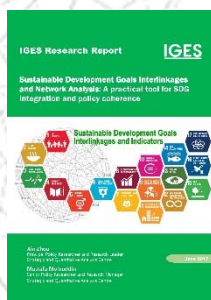
SDG indicators data available at the national and subnational levels



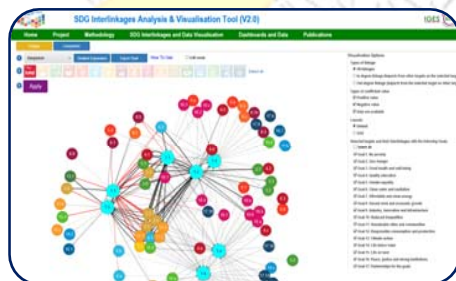
Source: Indonesia SDGs Dashboard homepages

Thank you!

Contact: zhou@iges.or.jp



Zhou, X., Moinuddin, M., 2017. Sustainable Development Goals Interlinkages and Network Analysis: A practical tool for SDG integration and policy coherence. IGES Research Report. Hayama: IGES. Available at: https://sdginterlinkages.iges.jp/files/IGES_Research%20Report_SDG%20Interlinkages_Publication.pdf.



Zhou, X., Moinuddin, M., Li, Y., 2017. SDG Interlinkages and Data Visualisation Web Tool. Hayama: IGES. Available at: <https://sdginterlinkages.iges.jp/visualisationtool.html>.