Environmental dimension

Data and Statistics for Evidence-based Voluntary National Reviews

Some messages from existing VNRs:

- **Ghana:** The inter-linkages between the SDGs create co-benefits that can be leveraged for effective policy and investment decision-making, and trade-offs.
  - ✓ Government's promotion of **clean cookstoves** (SDG 2), will reduce health risks (SDG3), particularly for women (SDG5), create jobs (SDG8), while positively impacting on climate (SDG13) and terrestrial ecosystems (SDG15)
  - ✓ Intensive use of agrochemicals to boost agricultural productivity poses risks to water resources (SDG6), human health (SDG2), soil health and ecosystems (SDG15), which are being addressed through education on proper application of inorganic fertilisers and good irrigation practices, and the promotion of large scale compost plants
- **Iceland:** including the ambitious Government Action Plan on Climate Change, which is an example of a coordinated policy laid out by seven ministers in consultation with various stakeholders.

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Environment-related indicators in the SDGs

Data underpin good decisions

Measuring Progress
Towards achieving the
environmental dimension of the SDGs
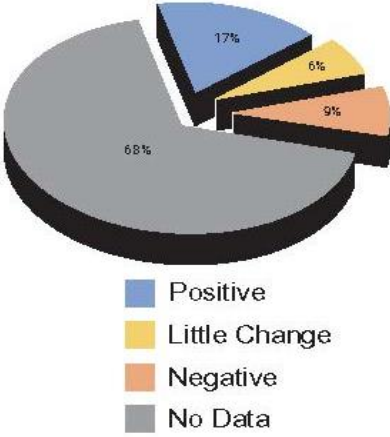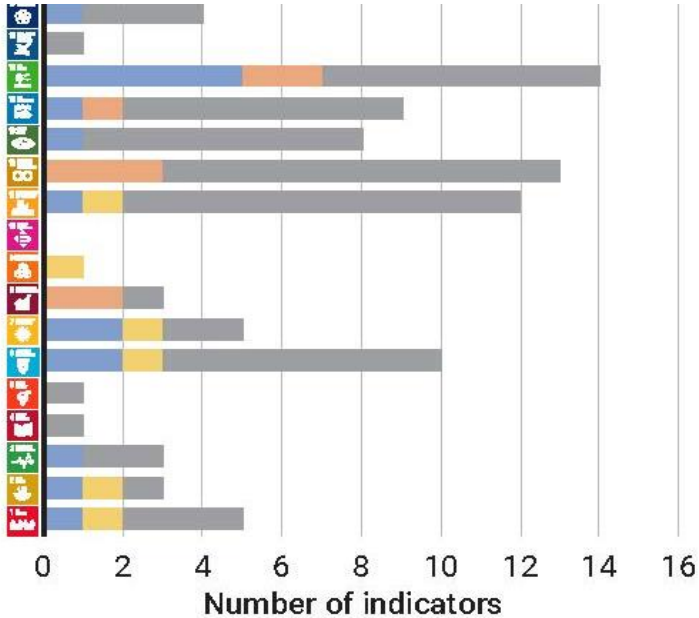
- 68% of environment-related SDG indicators do not have enough data to assess global progress.
- Investment in data and statistics is essential.
- There is even less data availability that is disaggregated by vulnerable population or geospatially.

Number of indicators

17%
6%
9%
68%

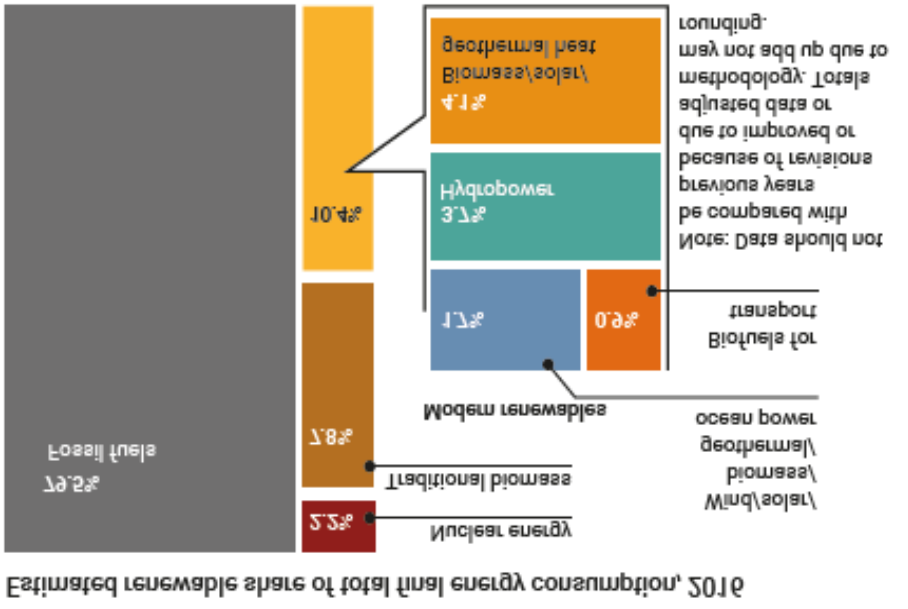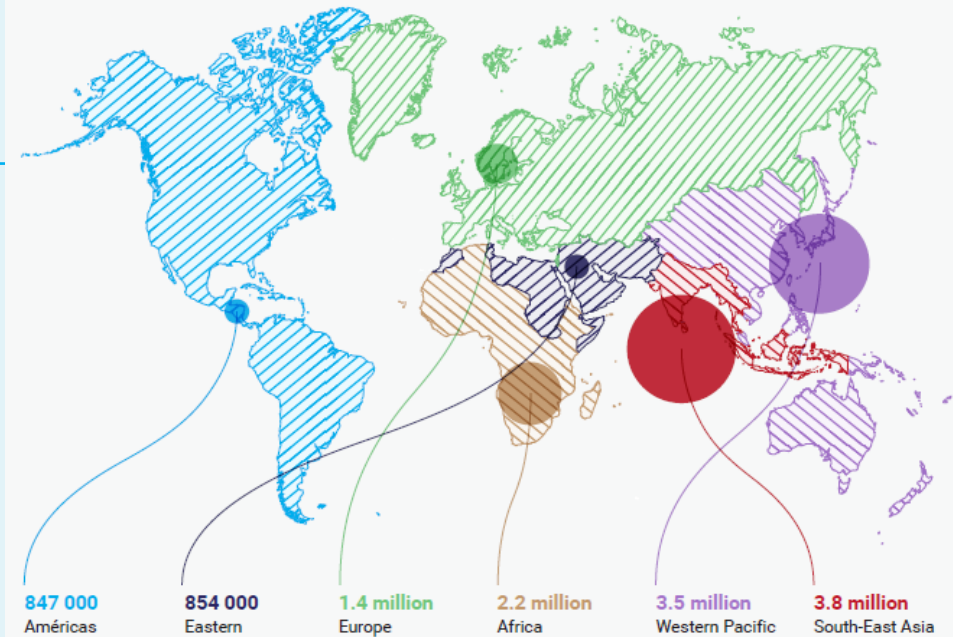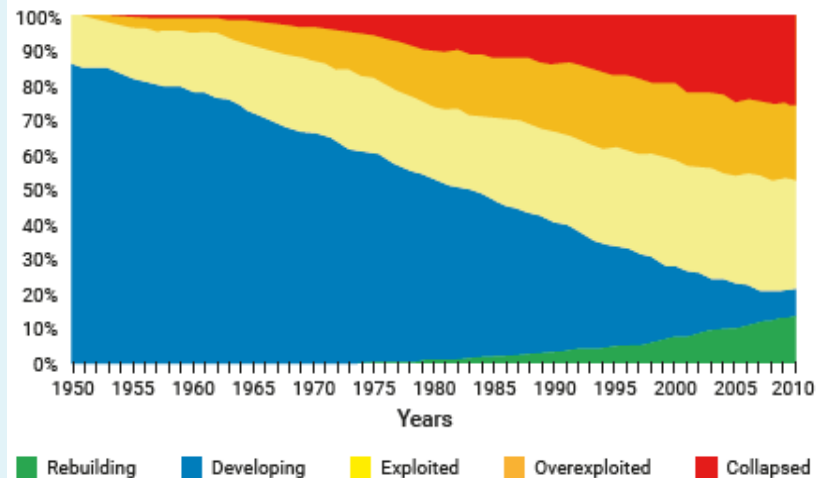- Positive
- Little Change
- Negative
- No Data

Environment – Economy – Social Interlinked

Poor environmental quality affects economic growth and wellbeing

847 000	854 000	1.4 million	2.2 million	3.5 million	3.8 million
Américas	Eastern Mediterranean	Europe	Africa	Western Pacific	South-East Asia

Estimated renewable share of total final energy consumption, 2016

Fossil fuels
19.5%

Nuclear energy
2.2%

Traditional biomass
7.8%

Modern renewables
10.4%

Biomass/solar/geothermal heat
4.1%

Hydropower
3.7%

Wind/solar/biomass/geothermal/ocean power
1.7%

Biofuels for transport
0.9%

Note: Data should not be compared with previous years because of revisions or improved data to avoid double counting. Totals may not add up due to rounding.

Proportion of fish stocks within biologically sustainable levels.

Years

Rebuilding Developing Exploited Overexploited Collapsed

Example: Pollution – Major Sources

Major sources of today's pollution

	Agriculture and food	Land-based farming, food and agro-industry, fisheries and aquaculture
	Energy	Combustion plants, fossil fuels, biomass, nuclear, domestic solid fuel heating
	Industrial	Chemicals, mineral extractives, forestry and paper products, cement
	Manufacturing	Information technology, home electronics, construction and home-building products, batteries, textiles, apparel, footwear, and luxury goods, pharmaceuticals (for example antibiotics)
	Services	Retail, hospitality and tourism, hospitals and health-care services
	Transport	Automobiles, fuel use and supply, engine emissions, road (tyres, surface), shipping, aviation, urban
	Waste	Improper management of municipal solid waste (which includes e-waste, plastics, food waste, organic waste and open burning), industrial waste (which includes e-waste, construction and demolition waste), hazardous waste (which includes e-waste), sewerage effluents, landfills (leachates)

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Example: Pollution − Impacts

Agriculture Food

Health

Economy

Ecosystems

Environment

Air pollution

- 6.5 million people die annually as a result of poor air quality including 4.3 million due to household air pollution
- Lower respiratory infections: 52 million years lost or lived with disability annually due to household or ambient air pollution, including second-hand tobacco smoke
- Chronic obstructive pulmonary diseases: 32 million years life lost or lived each year with disability because of household air pollution and workers' exposure
- Ground level ozone pollution is estimated to reduce staple crop yields up to 26 per cent by 2030

Marine and coastal pollution

- 3.5 billion people depend on oceans as a source of food yet oceans are used as waste and waste water dumps
- Close to 500 "dead zones", regions that have too little oxygen to support marine organisms, including commercial species
- 4.8 to 12.7 million tonnes of plastic waste enters the ocean every year from inadequate waste management

Freshwater pollution

- 58 per cent of diarrhoeal disease due to lack of access to clean water and sanitation and a major source of child mortality
- 57 million years of life lost or lived with disability annually due to poor water, sanitation, hygiene and agricultural practices
- Over 80 per cent of the world's wastewater is released to the environment without treatment

Chemicals

- Over 100,000 die annually from exposure to asbestos
- Lead in paint affects children's intellectual ability
- Children poisoned by mercury and lead develop problems in their nervous and digestive systems and kidney damage
- Many impacts of chemicals such as endocrine disruptors and developmental neurotoxicants and long-term exposure to pesticides on human health and well-being and biodiversity and ecosystems are still to be fully assessed

Land/Soil pollution

- Open waste dumps and burning impacts lives, health and livelihoods and affect soil chemistry and nutrition
- Excessive exposure and inappropriate use of pesticides affects health of all - men, women and children
- Stockpiles of obsolete chemicals pose a threat to people's health and the environment

Waste

- 50 biggest active dump sites affect the lives of 64 million people, including their health and loss of lives and property when collapses occur
- 2 billion people are without access to solid waste management and 3 billion lack access to controlled waste disposal facilities

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Example: Pollution − Impacts dump sites

Event	Year	Human impact
Landslide in Shenzhen, China, triggered by collapse of a construction waste disposal site	2015	at least 69 people were killed
Poor waste management at dumpsites	First seven months of 2016	750 deaths
Waste landslide at Koshe landfill in Addis Ababa, Ethiopia	2017	at least 115 people were killed
90 metre dump collapse in Colombo, Sri Lanka	2017	145 houses buried and 32 people killed

Sources: Yang et al 2016, United Nations Environment Programme and International Solid Waste Association 2015; and newspaper articles (Maasho 2017, Aneez and Sirilal 2017)

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Example: Pollution − costs

Pollution	Costs (2015 billion US$)	% of Gross Domestic Product
Indoor and outdoor air pollution	5 322	7.2
Chemicals (volatile organic compounds, lead, mercury)	480	0.4
General waste	216	0.3
Land degradation and desertification in Africa (42 countries)	127	12.3
Land degradation in Asia (46 countries) at 2013 price	Not available	6.6

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Example: Selected examples of multiple benefits of tackling pollution

Pollution area	Intervention	Benefits of interventions
Air pollution	Regulation	United States Environmental Protection Agency regulations issued between 2004 and 2014 to limit air pollution generated benefits of between $157 billion and $777 billion (2010 prices). Costs of implementation were estimated to be between $37 billion and $44 billion. This is a clear indication that benefits outweighed costs by a ratio of at least 4 to 1 (World Bank and Institute for Health Metrics and Evaluation 2016).
	Air pollution reduction	The health welfare benefits of reducing air pollution in China in the period 2015 to 2025 were estimated at $125 billion (2015 prices). (Sun et al. 2016)
	Shipping emissions	A review of the health impacts of shipping emissions found that on-time (2020) implementation of a global low-sulphur fuel cap for shipping would prevent some 200,000 premature deaths due to a reduction in toxic fumes, mainly in coastal communities in the developing world (Seas at Risk 2016).
Freshwater	Access to clean drinking water and sanitation	Access to improved drinking water can yield substantial welfare gains to many developing countries. The World Health Organization (2012) estimates the benefits of avoided mortality from universal access to improved drinking water to be $3 billion per year (2015 prices) for sub-Saharan Africa, Asia (East, South, South-East and West), Latin America and the Caribbean. The benefits of water pollution control amounted to 7.4 billion (2015 prices). This includes averted mortality from unsafe drinking water, externality effects from agriculture, and other costs.
Chemicals and waste	Strengthened governance of chemicals management	In Uganda, the benefits of strengthening the governance of chemicals management for the agriculture sector are estimated to be $1.98 billion over the period 2011 to 2025. Crop yield gains are estimated at 20 per cent in the cultivated areas concerned (Kateregga 2010).
	Reduction of global mercury emissions	If global mercury emissions could be reduced by 50 per cent to 60 per cent before 2020, the resulting prevention of water and fish contamination, and exposures to pregnant women and children, could reap global economic benefits of between $2.2 billion and $2.7 billion in 2020 (Sundseth et al. 2010).

Conclusion

Data is needed to explore interlinkages across environmental areas and with social and economic information in order to produce insights.

The economic costs of biophysical and environmental consequences of policy inaction, and the associated benefits of new policies, are often not quantified. Therefore, economic discussions are often dominated by the very visible costs of policy action. Thus, it is essential to improve the toolkits that economists use to assess the benefits of environmental policies.

There is a need not only for national level statistics, but for geospatial data and data which can be disaggregated for vulnerable populations.

Thank you

Let's talk ....

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Group exercise

The complexity of challenges facing our world today - from climate change to the reinvention of work to economic inequality to mass migration - is unprecedented, and our policymaking and problem-solving approaches are insufficient. We need both innovative solutions and innovation in how we develop solutions.
Data has been widely recognized as a possible source of innovation

UNLESS WE DEFINE THE QUESTIONS WELL...

TO UNLOCK THE POTENTIAL OF DATA AND DATA SCIENCE

HOW CAN WE PROVIDE ANSWERS THAT MATTER?

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Exercise / dialogue: questions for discussion

ENVIROMENTAL QUESTIONS AND SUPPORTING DATA/STATISTICS

Q.1 What are your (policymaker, country) most pressing, high-impact questions on the environment that could be answered if relevant datasets were available and accessible in your country?

Q.2 What national datasets would be needed to answer your questions?

INTEGRATION OF ENVIRONMENTAL ISSUES AND DATA IN THE 2020 VNRs

Q.3 What environmental issues and supporting data are you planning to include in your country's VNR for 2020?

Q.4 What support from the UN System would be desirable help integrate these issues (and supporting data) in your country's VNR for 2020?