



# Environmental Sustainability as the Foundation for Economic Sustainability: Interpreting Environment and Economy in the SDGs

**Mark Elder**

**Institute for Global Environmental Strategies**

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# Environment & Economy: Synergies or Tradeoffs?

SDG Interlinkage Analysis:  
Synergies AND Tradeoffs

Synergies

Tradeoffs

➤ **This view is increasing**

- Sustainable development community
- Increasing number of businesses
- Some governments (green new deal)

➤ **But many governments, political leaders are not persuaded**

- Some sectors, companies are disadvantaged
- Some greenwashing

Main  
Argument

- Environmental Sustainability is the Foundation of Econ. Sustainability
- Interpret SDGs to eliminate tradeoffs and shift to synergies

# The Concept of "Tradeoff"

7 AFFORDABLE AND CLEAN ENERGY  
8 DECENT WORK AND ECONOMIC GROWTH  
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE  
10 REDUCED INEQUALITIES  
11 SUSTAINABLE CITIES AND COMMUNITIES

**"Economic" SDGs**

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

**Both?**

VS.

13 CLIMATE ACTION  
14 LIFE BELOW WATER  
15 LIFE ON LAND

**"Environmental" SDGs**

**However: Need to look at TARGETS, not just HEADLINE GOALS**

**Especially SDG 8 Target 8.1 (Econ. Growth)**



**Past data show tradeoffs**

**But need future viewpoint**

**OWG used an integrated approach to create SDGs**

## Key Points

- Key environmental targets are incorporated in "social" & "economic" SDGs
- Env. targets in "economic" SDGs are key means to achieve "environmental" SDGs

# Environment & Economy in the SDGs (1)

<b>“Economic” (&amp; “Social”) SDGs</b>	<b>Environmental Target</b>
<b>2. Agriculture/food</b>	<b>2.4 Ensure sustainable food production systems</b>
<b>3. Health</b>	3.3 Combat water-borne diseases <b>3.9 Death &amp; disease from pollution</b>
<b>4. Education</b>	4.7 Education for sustainable development
<b>6. Water</b>	6.2 Universal & equitable access & safe water 6.3 Sanitation 6.4 Improve water quality by reducing pollution, etc. 6.5 Implement integrated water management <b>6.6 Protect &amp; restore water ecosystems</b>
<b>7. Energy</b>	<b>7.2 Renewable energy</b> <b>7.3 Energy efficiency</b>
<b>8. Economic growth &amp; decent work</b>	<b>8.4 Decoupling econ. growth from env. degradation</b> 8.8 Labor rights & <b>safe working environment</b> 8.9 Sustainable Tourism
<b>9. Industrialization</b>	<b>9.1 Sustainable &amp; resilient infrastructure</b> <b>9.2 Inclusive &amp; sustainable industrialization</b> <b>9.4 Sustainability upgrading &amp; resource efficiency</b>

**The most important one:**

# Environment & Economy in the SDGs (2)

“Economic” (& “Social”) SDGs	Environmental Target
<b>11. Cities</b>	11.1 Adequate, <b>safe</b> , affordable housing <b>11.2 Sustainable transport</b> 11.3 Inclusive and <b>sustainable urbanization</b> 11.4 Protect & safeguard cultural & natural heritage <b>11.6 Environmental impacts, air quality, waste mgm’t</b> 11.7 Green & public spaces
<b>12. Sustainable Consumption &amp; Production</b>	<b>All (8 targets + 3 means of implementation), especially:</b> <b>12.2 Achieve sustainable management &amp; efficient use of natural resources</b> <b>12.4 Achieve environmentally sound management of chemicals &amp; waste throughout their life cycles</b>
<b>Means of Implementation Targets</b>	5.a Women’s equal rights to econ. resources, property, natural resources 6.a Capacity building (water related) 6.b Local participation (water related) 7.a Energy related investment 7.b Energy related infrastructure & technology 11.a National & regional development planning <b>11.b Integrated policies on inclusion, resource efficiency, climate mitigation &amp; adaptation, resilience, disaster risk management</b>

**Environment is in  
NEARLY ALL  
SDGs!**



# “Environmental SDGs” (selected environmental targets)

<b>13</b>	<b>Climate</b>	<ul style="list-style-type: none"><li>➤ Real targets are in the UNFCCC</li><li>➤ <b>13.2 Integrate climate measures into national policies, etc.</b></li></ul>
<b>14</b>	<b>Oceans</b>	<ul style="list-style-type: none"><li><b>14.1 Prevent &amp; significantly reduce marine pollution of all kinds, in particular from land-based activities</b></li><li><b>14.2 Sustainably manage, protect marine, coastal ecosystems</b></li><li>14.3 Ocean acidification</li><li>14.4 Effective regulation of fishing</li><li>14.5 Conservation of coastal &amp; marine areas</li><li>14.6 Fisheries subsidies</li></ul>
<b>15</b>	<b>Land</b>	<ul style="list-style-type: none"><li><b>15.1 Ensure conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems</b></li><li>15.2 Sustainable management of forests</li><li>15.3 Combat desertification, restore degraded land</li><li>15.4 Conservation of mountain ecosystems</li><li>15.5 Biodiversity</li></ul>

## Key Points

- **Tradeoffs are not the focus**
- **Ecosystems should be managed sustainably**

# SDGs Mandate Environmentally Sustainable Economic Transformation

## Basic Principles

- |   |        |
|---|--------|
| 1. Decoupling econ. growth & environmental degradation      | 8.4    |
| 2. Consumption & production should be sustainable           | SDG 12 |
| 3. Manage natural resources sustainably & efficiently       | 12.2   |
| 4. Industrialization & infrastructure should be sustainable | SDG 9  |



Water

Energy



Agriculture

Highlighted Sectors

Transportation



Waste

Sanitation



# Application to Manufacturing, Mining (Incl. Inputs, Production Process, Waste)

**3.3 Death & disease from pollution**  
**3.9 Water-borne diseases**

**6.2 Access & safe water**  
**6.4 Water quality**  
**6.5 Integrated water management**  
**6.6 Ecosystems**

**7.2 Renewable energy**  
**7.3 Energy efficiency**

**8.4 Decoupling**  
**8.8 Safe working environment**

**9.2 Sustainable industrialization**  
**9.4 Sustainability upgrading & resource efficiency**

**Manufacturing**

**Mining**

**12 – All, especially**  
**12.2 Sustainable management & efficient use of natural resources**  
**12.4 Environmentally sound management of chemicals & waste throughout their life cycles**

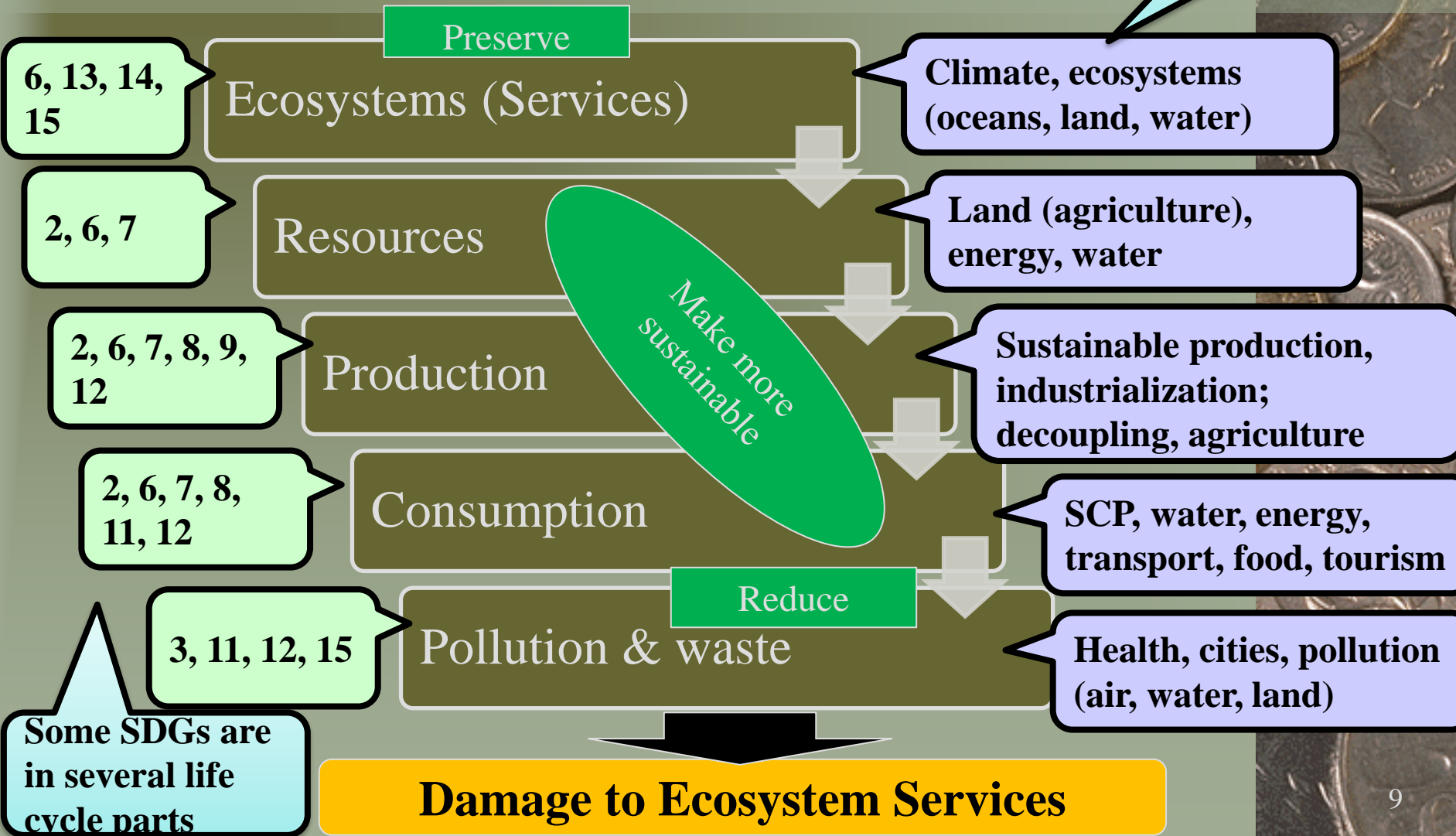
**11.1 Safe housing**  
**11.6 Env. impacts of cities, air quality, waste management**



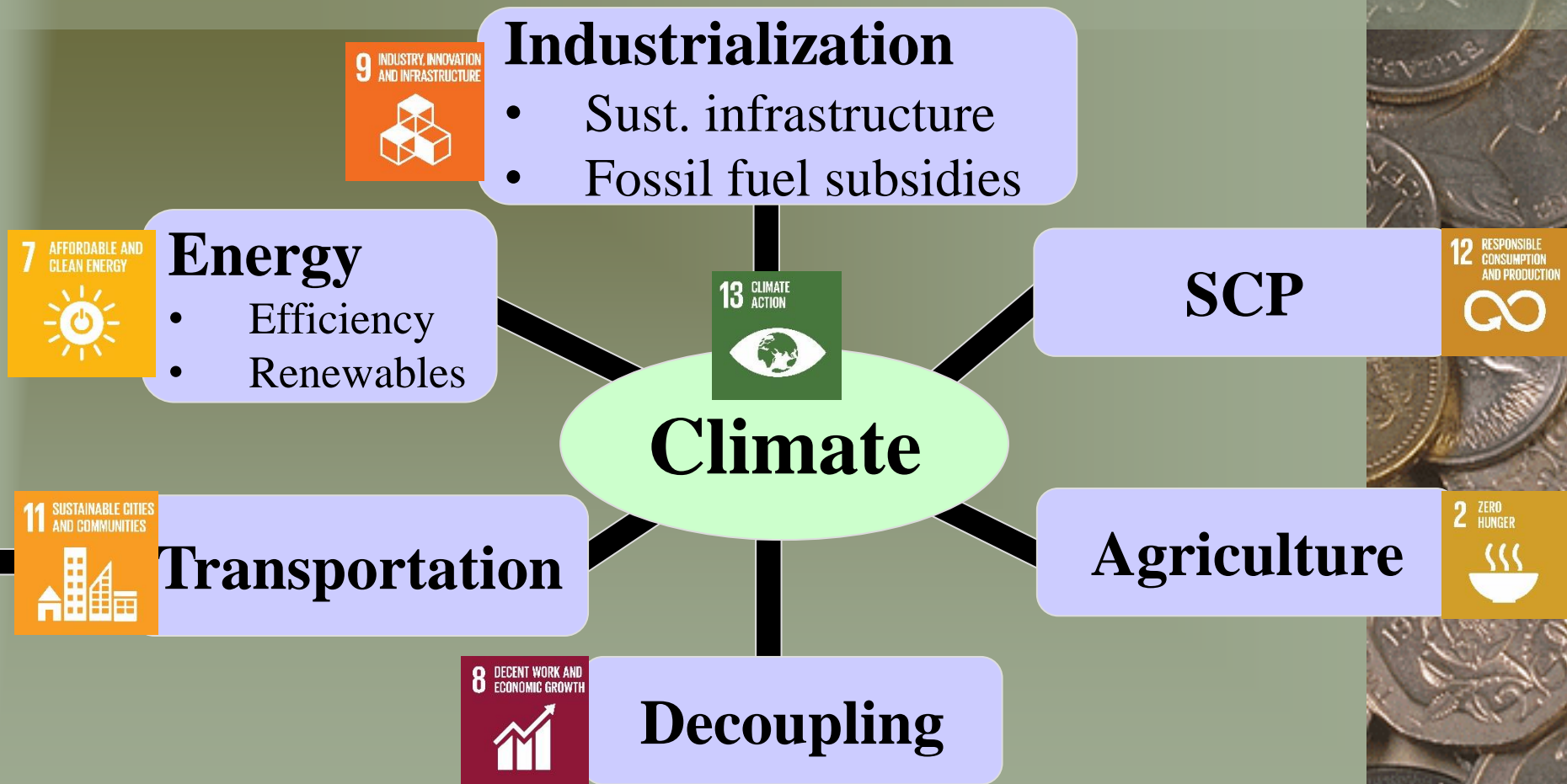


# Life Cycle Analysis of SDGs

Humanity's life support system



# Case Study: Climate, Economy, & SDGs



- No direct climate target in SDGs (in UNFCCC), but
- Important means to address climate were included in SDGs

# Economy, Environment, & SDGs

➤ **Economy  
(Means)**

“Goals” as “Means”

➤ **Environment  
(Goals)**

## Industrialization

- Sust. infrastructure
- Fossil fuel subsidies

## Decoupling

## SCP

Resource efficiency

## Energy

- Efficiency
- Renewables

## Transportation

## Agriculture

## Land Ecosystems

## Oceans

## Fresh Water

## Air Environment

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



8 DECENT WORK AND ECONOMIC GROWTH



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



7 AFFORDABLE AND CLEAN ENERGY



11 SUSTAINABLE CITIES AND COMMUNITIES



2 ZERO HUNGER



15 LIFE ON LAND



14 LIFE BELOW WATER



6 CLEAN WATER AND SANITATION



SDG  
3

SDG  
11

**Environmental damage causes severe health damage and related economic costs**

# Health, Economy, Environment, & SDGs

**8.4 Decoupling**

**8.8 Safe working environment**

**9.2 Sustainable industrialization**

**9.4 Sustainability upgrading & resource efficiency**

**“Economic” targets are key MEANS to achieve HEALTH**

**More sustainable**

**Economy**

**6.2 Access & safe water**

**6.4 Water quality**

**6.5 Integrated water management**

**6.6 Ecosystems**

**11.1 Safe housing**

**11.6 Env. impacts of cities, air quality, waste management**

**Pollution**

**Reduce**

**Health**

**3.3 Death & disease from pollution**

**3.9 Water-borne diseases**

**Improve**



# 1. Environment is the Economy's Foundation

## 2. Economic Costs of Environmental Damage

<b>Planetary Boundaries</b>	Earth's life support system for human civilization
<b>Ecosystem Services</b>	<ul style="list-style-type: none"> <li>➤ USD 125 trillion 2011 (est.)</li> <li>➤ Sea levels?</li> <li>➤ Gulf stream (ocean currents)?</li> <li>➤ Air currents?</li> </ul>
<b>Resource Scarcity</b>	<ul style="list-style-type: none"> <li>➤ Increasing extraction costs</li> <li>➤ Increasing extraction damage</li> </ul>
<b>Economic cost of health damage</b>	<ul style="list-style-type: none"> <li>➤ Air pollution <span style="border: 1px solid black; padding: 2px;">Over 9m deaths/yr</span></li> <li>➤ Climate</li> <li>➤ Other pollution</li> <li>➤ Extreme weather</li> </ul>
<b>Econ. cost of pollution</b>	<ul style="list-style-type: none"> <li>➤ USD 4.6 trillion / year about 6.2% global GDP**</li> </ul>

**Economic growth is undermining its own foundations\***

Beyond GDP: Need new measurement of well-being

- “Prosperity” not growth
- “Sufficiency”
- “Decent work” (jobs)

Note:

- World GDP 2020: \$85 tril.
- World wealth 2019: \$400 tril.

\* UNEP, GEO6, Ch. 1  
 \*\* Landrigan et. al. 2018

# How to Interpret Economy-Environment Interlinkages in the SDGs

Shouldn't interpret econ.-environment interlinkages as tradeoffs

- The “tradeoff” view is still popular, especially in business & government.
- It's a valid argument based on traditional understanding of econ. growth.
- Analysis based on past data will show tradeoffs; need a future perspective

SDGs should be used to promote synergies

- Environmental sustainability should be the starting point
- SDGs should indicate future direction (not just analysis of the past)
- Tradeoffs should be converted to conditions

Examples

- SDG 8: economic growth should be conditioned on decoupling
- SDG 9: future industrialization should be conditioned on sustainability
- SDG 12: natural resources should be managed sustainably

# Economic Prosperity & Jobs Needed to Secure Political Support for Sustainability

- \* The sustainability community needs to prioritize figuring out how to produce jobs through sustainability.
- \* Concepts like “degrowth” or “sufficiency” are difficult for many political leaders and ordinary citizens to accept
- \* Focus on “decent work” instead of economic growth (growth doesn’t necessarily produce decent work).
- \* Many people skeptical about “green” jobs like renewable energy esp. older, less educated workers. Worry about wages.
- \* Jobs need to be realistic, easy to believe.
- \* Need enough jobs with modest education & training requirements and in specific geographic locations
- \* Might be difficult to produce jobs solely through markets

# “Economic” Elements of Targets in “Environmental” SDGs

<b>14</b>	<b>Oceans</b>	14.4 Effective regulation of fishing 14.7 Increase economic benefits to Small Island Developing States and least developed countries 14.b Access for small scale artisanal fishers to marine resources & markets
<b>15</b>	<b>Land</b>	15.1 Includes “sustainable use” of ecosystems 15.2 “Sustainable management of forests” includes use 15.4 Conservation of mountain ecosystems to “enhance their capacity to provide benefits” 15.6 Sharing benefits of genetic resources

## Key Points

- **Economic benefits of ecosystems are included**
- **We should consider how conservation of ecosystems could provide jobs**



# Examples of Green, Sustainability Jobs

## Renewable Energy

- Construction
- Maintenance

## Circular Economy

- Recycling
- Waste treatment

## Ecosystem Services

- Ecosystem management
- Pollution cleanup

## Environment

- Monitoring
- Enforcement

## Sustainable Transport

- Public transportation
- Construction

## Lower Environmental Impacts

- Education (including early childhood)
- Child/elder care

## Need To Find Jobs For

- People who are “left behind”
- People losing jobs in unsustainable industries (eg. fossil fuels)

Consider as “jobs” not “costs”

Environment ministries, departments understaffed

# Conclusion

- \* The concept of “tradeoff” between environment and economy is based on analysis of past trends
- \* Environment is the foundation of the economy
- \* SDGs show the way to a sustainable economy based on environmental sustainability. Tradeoffs should be resolved.
- \* SDGs call for an integrated approach; SDGs integrate environmental, economic, and social dimensions.
- \* The SDG paradigm: human well being provided by an environmentally sustainable economy with decent work
- \* To gain political support for SD, we need to show how environmental sustainability can create jobs

# Selected References

- Elder, Mark, and Simon Høiberg Olsen. 2019. “The Design of Environmental Priorities in the SDGs.” *Global Policy* 10 (S1): 70–82. <https://doi.org/10.1111/1758-5899.12596>.
- Elder, Mark, and Peter King, eds. 2018. *Realising the Transformative Potential of the SDGs*. Hayama, Japan: Institute for Global Environmental Strategies. <https://pub.iges.or.jp/pub/realising-transformative-potential-sdgs>.
- Elder, Mark, Magnus Bengtsson, and Lewis Akenji. 2016. “Making SDG Implementation Easier: Thinking about Goals as Means.” IISD SDG Knowledge Hub. 2016. <http://sdg.iisd.org/commentary/guest-articles/making-sdg-implementation-easier-thinking-about-goals-as-means/>.
- Elder, Mark. 2020. *Assessment of ASEAN Countries’ Concrete SDG Implementation Efforts: Policies and Budgets Reported in Their 2016-2020 Voluntary National Reviews (VNRs)*. Hayama, Japan: Institute for Global Environmental Strategies. <https://www.iges.or.jp/en/pub/asean-sdg-vnrs/en>.
- Elder, Mark, and Anna Bartalini. 2019. *Assessment of the G20 Countries’ Concrete SDG Implementation Efforts: Policies and Budgets Reported in Their 2016-2018 Voluntary National Reviews*. Hayama, Japan: Institute for Global Environmental Strategies. <https://iges.or.jp/en/pub/assessment-g20-countries'-concrete-sdg>.
- Elder, Mark, and Christian Loewe. 2019. “Introduction and Context.” In *Global Environment Outlook - GEO6: Healthy Planet, Healthy People*, edited by UNEP, 4–19. Nairobi, Kenya: United Nations Environment Programme. <https://wedocs.unep.org/handle/20.500.11822/27653>.
- Landrigan, Philip J, Richard Fuller, Nereus J R Acosta, Olusoji Adeyi, Robert Arnold, Niladri (Nil) Basu, Abdoulaye Bibi Baldé, et al. 2018. “The Lancet Commission on Pollution and Health.” *The Lancet* 391 (10119): 462–512. [https://doi.org/10.1016/S0140-6736\(17\)32345-0](https://doi.org/10.1016/S0140-6736(17)32345-0).



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