Measuring Progress towards Sustainable Development

National Academies Sustainability Science Workshop

November 30, 2020

UN Sustainable Development Goals

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Each of the 17 goals has multiple targets and indicators

169 targets

232 indicators

Issues with targets and indicators

- Lists are lengthy and somewhat arbitrary
  - Indicators of what can be measured not necessarily what is most important to measure
- Difficult to aggregate and summarize
  - How can we evaluate tradeoffs among indicators?
- Measures are backward looking
  - What are the trend to date?

Inclusive wealth

- Inclusive wealth is the aggregate value of all capital assets (human, manufactured, natural, and social)
- Value of a capital asset: the present value of the flow of net benefits created by the asset
  - Example: land value is the present value of land rents

Inclusive wealth and sustainable development

- Sustainable development = non-declining inclusive wealth
- Leave the next generation with assets that give them the capability to live as least as well as the current generation

https://commons.wikimedia.org/wiki/File:Kaj_Family_reunion_group_1988.jpg#/media/File:Kaj_Family_reunion_group_1988.jpg

Inclusive wealth and sustainable development

"The nation behaves well
if it treats its natural
resources as assets
which it must turn over
to the next generation
increased, and not
impaired, in value."
Theodore Roosevelt
26th President of the US

Advantages of inclusive wealth approach

- Comprehensive
- Coherent
- Aggregate measure
- Simple rule for determining sustainability
- Forward looking

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- BUT…severe measurement issues

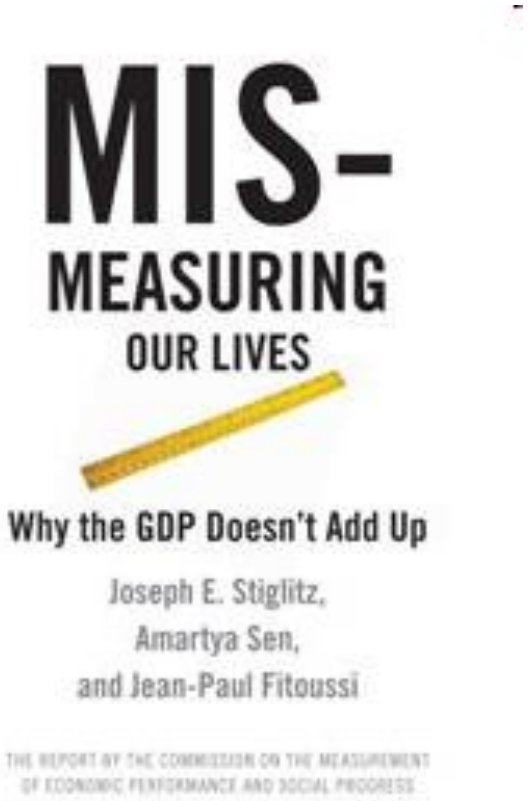
Measurement issues

- Complex social-ecological system dynamics including potential tipping points
- Uncertainties
- Aggregation issues
- Inequalities in the distribution of benefits and risks
- Spatial connections (trade and externalities)

Measurement issues for inclusive wealth

- "…we need to convert all the stocks of resources passed on to future generations into a common metric, be it monetary or not…such a goal seems overly ambitious."
- "The aggregation of heterogeneous items seems possible up to a point for physical and human capital or some natural resources that are traded on markets."
- "But the task appears much more complicated for most natural assets, due to the lack of relevant market prices and to the many uncertainties concerning the way these natural assets will interact with other dimensions of sustainability in the future."

  (Mis-measuring our lives, pp. 98-99)



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