

Green Growth Indicators

Session 1a

Welfare measurement and performance metrics

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Presentation

- 1. Background
- 2. OECD Green Growth measurement framework
 - -- how it relates to welfare and sustainable development
 - -- criteria for monetary measures of natural assets
- 3. Measurement agenda



1. Background

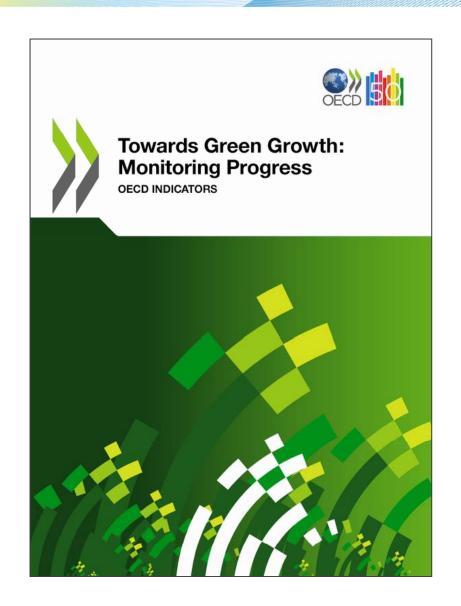


Background

- Mandate to OECD in 2009
- Report to Ministerial meeting in 2011
 - Green Growth Strategy
 - Green Growth Indicators
 - Tools for Delivering on Green Growth
 - Special reports on
 - Agriculture
 - Energy
- Follow-up work under way



... indicators report





1. OECD Green Growth measurement framework



...to start with, a definition of Green Growth

Green growth is about fostering economic growth and development while ensuring that the natural assets continue to provide the resources and environmental services on which our well-being relies. To do this it must catalyse investment and innovation which will underpin sustained growth and give rise to new economic opportunities.



Link to simple welfare model

Welfare change/sustainability =

$$\underbrace{p_{K}\Delta K}_{produced\ capital} + \underbrace{p_{N}\Delta N}_{natural\ capital} + \underbrace{p_{T}\Delta T}_{productivity} + \underbrace{p_{N}\Delta H}_{human\ capital} + \underbrace{p_{N}\Delta S}_{social\ capital}$$

= Comprehensive net investments, valued at social shadow prices

Underlying this simple reduced relation are structural relations describing

- Production
- Utility
- Interaction production, consumption, natural

Sustainability and Green Growth

- Sustainability provides context to OECD work on Green growth
- GG more narrowly focused (human, health and social capital are picked up by OECD work on societal progress)
- Strong policy component
- Measurement:
 - Emphasis on structural relations
 - Emphasis on natural and produced capital
 - In particular, 4 types of indicators



OECD GG indicators focus on:

- 1. Production processes: Indicators of environmental and resource productivity
- 2. Natural asset base (ΔN)
- 3. Environmental assets in the utility function: *Indicators of environmental quality of life*
- 4. Indicators of *economic opportunities*: innovation, investment competition and overall productivity
 change (ΔΤ)

Indicator groups and topics

- The environmental and resource productivity of the economy
- Carbon and energy productivity
- Resource productivity: materials, nutrients, water
- Multi-factor productivity

The natural asset base

- Renewable stocks: water, forest, fish resources
- Non-renewable stocks: mineral resources
- Biodiversity and ecosystems
- The environmental dimension of quality of life
- Environmental health and risks
- Environmental services and amenities

- Economic opportunities and policy responses
- Technology and innovation
- Environmental goods & services
- International financial flows
- Prices and transfers
- · Skills and training
- Regulations and management approaches

Socio-economic context and characteristics of growth

- Economic growth and structure
- Productivity and trade
- · Labour markets, education and income
- Socio-demographic patterns



Monetary valuation of natural assets

- From perspective of NSOs, 3 criteria to be considered when trying to measure p_N
- Criterion 1: is asset inside the national accounts asset boundary?
 - Yes: should be amenable to monetary valuation
 - Example: land, subsoil resources, some biological resources, produced (orchards, fish from acquaculture) and non-produced (other fish, natural timber)



Monetary valuation of natural assets

- Criterion 2: private or social valuations?
 - Private values:
 - Market prices can be invoked (after some adjustments) → useful for balance sheets
 - Private shadow prices can sometimes be computed eg to measure effects of regulations
 - But externalities not valued → not useful for tracking sustainability
 - Social values:
 - Conceptually right measures to value assets and track (weak) sustainability
- But vast differences in existing monetary estimates raises question about readiness for official statistics

Monetary valuation of natural assets

- Criterion 3: individual or combined assets?
 - Individual natural assets (e.g. timber, sub-soil minerals, water,...)
 - Ecosystems as a combined asset
 - Conceptually important to recognise ecosystem assets and services
 - But major issues of quantification in physical terms (multi-dimensional, non-linear, space-dependent)
 - Even more complex: monetary valuation → research subject but probably not ready for official statistics



3. Measurement Agenda



Measurement agenda (1)

1. Implementing environment-economy accounting framework SEEA

- Key for consistent information
- Key for the construction of indicators
- Standard adopted, now implementation



Measurement agenda (2)

2. Advancing measures for key natural assets

- Accounts on land
- Other natural resources, such as non-energy and energy mineral resources, and timber resources
 - → Both areas inside the asset boundary of the SNA and the SEEA: useful for both the SNA and the SEEA implementation



Measurement agenda (2)

- 3. Demand-based estimates of environmental productivity/decoupling
- Account for environmental pressures or natural resource use embodied in imports and exports
- First set of results for CO2 available
- Update and other environmental pressures



Measurement agenda (4)

4. Extended growth accounting

- Better capture growth contribution of natural assets and growth effects of abatement activity
- Draw on work on valuation of natural resources
- Adjusted multi-factor productivity measures

5. Advance physical measures

- Nitrogen/Phosporus balances (beyond agriculture)
- Biodiversity



Join the discussion!



- International Green Growth Dialogue online community
- A secure site for sharing your perspectives and initiatives, and discussing the development of the Green Growth Strategy.
- To register, email your contact details to: green.growth@oecd.org



Thank you!

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