

CIESM

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- *‘The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium’*
 - Analysis of the wealth accounts 1995-2005 signals that the composition of the wealth shifts away from Natural Capital towards Produced Capital and, increasingly Intangible Capital (pag. 17)
 - The changing composition of wealth plays a crucial role on how can countries develop sustainability and therefore points the need for a **compreheensive wealth accounting** (pag. 17)



Comprehensive wealth accounting: pillars

- Economic actors:
households, firms and governments
- Wealth of nations:
natural, produced and intangible capital
- Measurement over time:
present and future generations

Looking at indicators of output growth, such as GDP growth rates, will not suffice.



Comprehensive wealth accounting: statistical methodology

- Hamilton and Clemens, 1999, World Bank;
- Wealth accounting is now institutionalized in 30+ countries
- UN Statistical Commission
- London Group on Environmental Accounting
- UN Committee of Experts on Environmental Accounting
- Handbook of National Accounting: Integrated Environmental and Economic Accounting – SEEA (UN, 2003)
- Stiglitz-Sen commission that wrote a report for President Sarkozy (2009)

Proposes ways to modify and extend conventional national accounts.



Comprehensive wealth accounting (1)

OK, if and only if there the behaviour of the economic agents leaves a market trace.

The missing Natural Capital and Ecosystem Services values are **incorporated/embedded** in the present Statistical Systems and our mission is to **disentangle/decouple** the value of the ES component and make it explicit within the Natural Capital dimension.



Comprehensive wealth accounting (2)

Of significant importance if we agree that the **passive-use value component of the ES is relevant.**

The missing Natural Capital and Ecosystem Services values are **not incorporated/embedded** in the present Statistical Systems and our mission is **to to extend the present valuation architecture** that make explicit the Natural Capital (and intangible capital) dimension.



The need for a 'Biodiversity and Ecosystem Service' dimension

- **Micro perspective**

Households/governments: final consumption

Prices of the output (shadow price); virtual/extended income
(Cornes and Sandler, 1994, *Journal of Public Economics*)

Firms: output production

Prices of the inputs, stocks of resources, technology, institutions and/or governance.

- **Macro perspective**

Households, firms and governments interact with feedbacks (GEM). There is the need to recognize a basic mechanism for feedbacks between economic activity and the BES sector
(Carbone and Kerry Smith, 2008, *Journal of Public Economics*)



- **Micro perspective**

Spatially explicit valuation models, focus on redistribution of welfare, who wins who loses, focusing on a protocol that explores the potential of value transfer as well possible scaling-up valuation exercises



**Flight patterns / essays by Cornelia H. Butler, Lee Weng
Choy, Francis Pound (Moma, New York)**



- **Micro perspective**

Spatially explicit valuation models, focus on redistribution of welfare, who wins who loses, focusing on a protocol that explores the potential of value transfer as well possible scaling-up valuation exercises



- **Macro perspective**

General-equilibrium, sectoral based macro economic models with GES sector focusing on the evaluation of policy interventions



Compreheensive wealth accounting

- To synthesize and develop comprehensive estimates of the ES benefits for a broad set of economic activities (micro);
- To set up a detailed environmentally extended (EE) Input-Output (I-O) framework, with links to other socio-economic models, in which as many of these estimates as possible are included (macro)
- This will allow for the estimation of the impacts of different economic sector activities, final consumption activities and resource consumption on ES (bridging the macro and micro dimensions)
- To apply the results of the estimates of ES and EE I-O analysis for addressign policy questions of importance, e.g- evaluating the impact/costs of ES policy-inaction.



Discussions



Thank you.

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