Workshop on MAES
pilot study on Natural Capital Accounting

European Environment Agency
27-28 June 2013

Frédéric NAUROY
French Ministry of Ecology, Sustainable Development
and Energy
Statistics Department

Introduction

Context:

A lot of works and initiatives on the "beyond GDP" issue:

✓ Rio +20 (WG GDP+), Stiglitz commission report, UNECE/OECD/Eurostat TF, EEA and OECD works,…

✓ In France: Grenelle environnement, National strategy 2014-2020 (in the course of elaboration, need of "extra GDP" indicators);

Objectives:

➢ Elaborating new indicators to complement GDP;

➢ Moving towards inclusive national accounts;

➢ Improving the description of the relations between nature and the economy.

Non paid ecological costs (NPEC): definition

Notion close to the "maintenance costs" concept.

Concept radically different from the "costs of damages"

NPEC : Costs of measures for preventing or restoring environmental deterioration. 5 types are mentioned in SEEA 1993:

- Reduction in economic activities or complete abstention from specific activities;

- Substitutions among the outcomes of economic activities (production of other products or modification of household patterns);

- Substitutions among the inputs of economic activities without modifying the outputs (use of new technologies);

- Activities to prevent environmental deterioration, without modifying the activities themselves (end of pipe technologies);

- Restoration of the environment and measures diminishing the environmental impacts of economic activities.

Two different visions of the relations between nature and the economy

1°) SEEA EEA (volume 2) **vision**

Nature is represented as a supplementary sector beside economic sectors and households.

Its degradation is analysed through the functionning and the capacities of ecosystems.

The valuation of ecosystems services and ecosystems degradation gives rise to an adjusted NDP aggregate. The adjustments are positive for the the non market ES while they are negative for the degradation of ecosystems.

2°) NPEC approach

Nature and economy = 2 separated entities.

The degradation of natural assets coming from human activities is considered on the final demand side.

Two main reasons:

- The final demand includes the emissions resulting from production processes as well as those generated by final uses (residential heating, households transports).

- The domestic final demand includes imports of products which causes residuals abroad.

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

Ministère
de l'Écologie,
du Développement
durable
et de l'Énergie

Final demand at total costs

The purpose is not to raise the level of consumption by adding a new line to the list of consumed products. The volume of consumption and its content do not differ from the national accounts.

The approach consists in a valorisation mode of the final demand to take into account the estimated amount of non paid ecological costs. ⇨ The value of the products may be adjusted by the costs of respecting different ecological standards (but actually not borne).

FDTC = FDPC + NPEC
(Final demand at total costs = Final demand at paid costs + non paid ecological costs)

Consequences:

➢ The domestic final demand includes NPEC ⇨ Final demand at total costs;

➢ The economic production value (GDP) and the national income are left unchanged;

➢ The national saving (gross or net) is reduced by the annual amount of NPEC;

➢ The accounts are balanced by a capital transfer from nature to the economy. ▶

The NPEC approach differs from the "greened economy modelling". It is not preceeded to an internalisation of the non paid costs to establish their potential consequences on the whole economy (new estimates of production, income, consumption, prices, foreign trade,…).

Ongoing project

First step:

Dashboard on NPEC: valuation of the amounts of NPEC for different natural assets. ▶

Second step:

Estimating indicators of the imbalance of the relations between nature and the economy.

Final demand at paid costs / Final demand at total cost (%)

Third step:

(once having a sufficiently complete view of the global NPEC (atmosphere, water, soils)

• Degradation adjusted net saving: NS – NPEC;

• Ecological debt variation.

Dashboard on non paid ecological costs (extract)

Natural asset	Natural environment / Type of pollution	Ecological threshold / norms	State and physical change of natural assets	Valuation mode of non paid costs	Estimated amount of annual ecological cost or debt	Estimation quality / remaining issues
Climate	Greenhouse gases: 6 direct GHGs Kyoto protocol	France: four-fold reduction in emissions between 1990 and 2050 (POPE act 2005) ⇨ *factor 4*	France: emissions are decreasing, but at an insufficiant rythm: - 1 % while – 3 % is required.	Marginal abatement cost of carbon: 32€/t in 2010 (CAS, 2008) ; 36€/t in 2012 ("de Perthuis" committee T30)	€0,6 bn in 2010	Taking account of a specific value for non CO2 GHGs (agriculture). Estimating the cost on the basis of the carbon footprint of the final demand.
Inland water	Surface water, ground water	EU directive on water policy (2000): good quantitative, ecological and chemical status to achieve in 2015.	Good ecological status achieved by 41 % of the bodies of surface water (2009); Good chemical state for 43 % of the bodies of SW; Bad chemical status for 41 % of the groundwater bodies.	Measures programs established by the French water agencies.	€27 bn between 2010 et 2015 (51 Md€ for the total achievement of the mesaures) Sum of the costs of measures programs established by the different water agencies. This amount is similar to an ecological debt	Difficult to know wheter this amount only contains additional cost Possibility to estimate NPEC through the use of interim evaluations.

Simplified representation

Nature accounts (annual variation)

Natural assets degradation: - 50

Capital transfer: 50

Accounts of the economy

Gross domestic product (GDP):	**1000**
Gross operating surplus:	**300**
Gross disposable income:	**1000**
	-
Final consumption:	900
$NPEC_{FC}$	45
	=
Adjusted gross saving 1:	**55**
	-
Gross capital formation:	100
$CENP_{GCF}$	5
	=
Adjusted gross saving 2:	**-50**
	+
Capital transfer:	
$CENP_{CF} + CENP_{FBC}$	50

Liberté · Égalité · Fraternité
RÉPUBLIQUE FRANÇAISE

Ministère
de l'Écologie,
du Développement
durable
et de l'Énergie