

- Implementation of Experimental Ecosystem Capital Accounts in Europe
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The degradation of ecosystems' capability to deliver biomass, freshwater and natural cycles regulation or socio-cultural services is not recorded in companies' accounting books and national accounts. Therefore depreciation is not charged in the price of our consumption. Consuming ecosystem capital without paying is equivalent to creating ecological debts that are transmitted to others, to our present and future generations or to those countries from which we import products produced under unsustainable conditions.

Ecosystem capital simplified accounts are currently being implemented in Europe by the European Environment Agency. Their objective is to measure the ecosystem resources that are accessible without degradation, the actual intensity of use of this accessible resource and the change in the capability of ecosystems to deliver their services over time. These accounts are based on currently available data from nature observation by satellite or and on socioeconomic statistics. They cover all ecosystems types (forests, wetlands, agricultural and urban systems, sea ...) of the European Union 27 countries. The results are aggregated by watersheds or administrative regions, but most data are collected or disaggregated according to the European standard grid of 1 km x 1 km. This geographic data management is required firstly to analyze short-term degradation of different ecosystems. In a second step, it will articulate programs of national, regional or local initiative with the assessment made at European level.

In physical accounts, measurements are made in basic units (tons, joules, m³ or ha) and converted to a special composite currency named ECU for 'Ecosystem Capability Unit'. The price of one physical unit (e.g. 1 ton of biomass) in ECU expresses at the same time the intensity of use of the resource in terms of maximum sustainable yield and the direct and indirect impacts on ecosystem condition (e.g. contamination or biodiversity loss). Loss of ecosystem capability in ECU is a measurement of ecological debt. To territorial debt, it should be added the consumption of non-paid ecosystem capital that is embedded in international transactions. The ecological debt in ECU (and symmetrically credits when improvements are verified) could be incorporated into portfolios of financial instruments. Physical degradation or ecological debts can be recovered in a second time into euros on the basis of the costs necessary to restore ecosystems capability.