

“The Value of Forests” – Opinion article by Christian Friis Bach

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Old mistakes in dealing with ecosystems are committed again and again. Mostly this is done out of ignorance.

We can enjoy our forests for free at any time. However, most would agree that the forest and the services that it provides have tremendous value. This value is more a subjective perception than a specific figure - and this is exactly why it is all too often ignored in economic and political decisions.

The forest ecosystem provides many services, from which all benefit. The leaves produce oxygen, soils filter the water and overall the forest offers a habitat for plants and animals. These services are referred to as ecosystem services. It is difficult to attribute a sum of money to them. Nevertheless, the monetary allocation is a way to understand what is at stake when an ecosystem, for example falls victim to construction work.

Recent research assesses the value of the services provided by forests at \$16.2 trillion per year and wetlands' services at \$26.4 trillion per year ([Costanza et al. 2014](#)). Together, this is more than 50% of global GDP! You might think this mostly represents the value of the timber resources. Actually, far more valuable than the timber produced are the services provided by forests - services like the production of fresh air, the purification of water, the protection against erosion or noise.

Better measuring these values can facilitate enabling policies and sustainable management decisions. Certainly this does not mean price tagging every single tree and every drop of water of an ecosystem but rather raising awareness on their multi-dimensional value.

From a global perspective, freshwater renewal is the most valuable ecosystem service, according to the [earth index](#). The water cycle begins with the evaporation of water. The evaporated water rises into the atmosphere and is transported in clouds and fog, before it arrives back on earth in the form of rain, snow or hail. This cycle is strongly influenced by the functioning of forests. The forest floor is used as a natural filter system for water and together with the vegetation as a memory. Rain usually does not hit directly on the forest floor, but on the

treetops. This reduces the bounce and thus also the risk that soil is washed away. Uncontrolled deforestation can have significant negative effects on the water balance and cause flooding, floods and mudslides.

The forest ecosystem provides services that appear in any balance sheet

Healthy forest ecosystems and wetlands are essential for groundwater formation. Wetlands are in the transition zone between permanently wet and arid ecosystems. They are complex and productive and are particularly threatened by the degradation and conversion to other uses. The global decline of wetlands between 1997 and 2011 was estimated to be 142 million ha; this is approximately 4 times the [size of Germany](#) for a cost of \$9.9 trillion/year, which is 2.6 times the [German GDP](#) in 2015! Action is thus badly needed to ensure that long-term public benefits are not destroyed to the short-term profits of individual actors. The compensation of economic loss as applied in payment for ecosystem services schemes could stop single actors from acting at the cost of society and encourage them to consider public interest in their management decisions.

In Germany, the straightening of watercourses and the removal of shore and riverine vegetation to facilitate shipping and hydro energy plants on main river systems like the Rhine, Elbe, Danube, Emscher or Isar led to major destruction of ecosystems with a huge environmental impact. This created new problems such as increased flooding, pollution and loss of biodiversity.

Nowadays, many restoration projects, which sometimes include removing river beds made of concrete and re-establishing inundation areas, vegetation buffer zones and fish passes, are initiated to reverse these negative effects, but at high cost. Nevertheless, many of these projects are a huge success e.g. the restoration of the Isar where residents can enjoy the pretty recreation sites, where flora and fauna started to recover. This shows that we must learn from past mistakes and use all available tools shed light on the value of our ecosystems.

In many regions of the world former mistakes repeated and ecosystems continue to be destroyed and depleted without regard to long-term consequences. This is the reason why it is particularly important to know the cause and effect activities, which have broad implications for our ecosystems. Trees, animals, soil-, water-, nutrition cycles can be harshly affected and we lose not only individual species but also the whole set of services that an intact ecosystem can provide.

Within the 2030 Agenda for Sustainable Development, the international community set a target to “ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountain and drylands” (Sustainable Development Goal 15). A better understanding of the economic value of ecosystems will be an important factor helping policy makers in all countries to take appropriate action. At the World Water Week, which began this Sunday, currently more than come 3000 international experts, decision makers, project managers and entrepreneurs from a number sectors come together to tackle water problems of our time with innovative solutions and developments. Water is one of the most important factors for our future prosperity, so we must now create attention and act.