

E-Paper

## On the Value of Nature

### **The Merits and Perils of a New Economy of Nature**

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# On the Value of Nature

## The Merits and Perils of a New Economy of Nature

Green economy is the new hope, putatively offering a response to the major ecological crises. As a concomitant, a *new* economic school of thought concerning nature and nature's "services" is gaining ground. The economic utilization of nature and natural resources is part and parcel of the relationship between humankind and nature and nothing new as such, although this relationship is in constant flux and plays out in quite disparate types of markets and social systems. What is new about the new economy of nature is that we are not just harvesting from nature and converting the harvested resources into a product or good. Instead, the services provided by nature – for instance, water filtration through peatland or the CO<sub>2</sub> storage capacities of a forest – are now expected to become a source of profit. Along with water, air, food and the natural raw materials that humankind needs, the focus is thus turning to other, indirect ecosystem services.<sup>1</sup> The proponents of such a view argue that, with this economic motive, nature will be protected more effectively than by conventional nature conservation policy. The working hypothesis of the advocates of the new economic perspective on nature is, in brief: all that nature provides for humans goes unnoticed, and the public and private values of its services have not so far been captured. That is then the reason for the destructive overuse of nature. The value of nature and its "services" should not only be cherished and given greater visibility as elements of the economy, but should be assigned a monetary value in order to protect them. That is the new mantra. Key concepts in the new paradigm of green economy are *natural capital* and *payments for ecosystem services* (PES). These are finding their way into climate and nature conservation policy and into international development cooperation. Although the idea is becoming more popular – the World Bank counts as one of the major protagonists of the new paradigm, for instance, and the private sector also seems to be warming to PES – it is also highly contentious.

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1 Naturkapital Deutschland – TEEB DE defines ecosystem services as follows: they "refer to direct and indirect contributions of ecosystems to human well-being; that means services and goods that bring human beings a direct or indirect economic, material, health or psychological benefit." See: Naturkapital Deutschland – TEEB DE (2012): DER WERT DER NATUR FÜR WIRTSCHAFT UND GESELLSCHAFT – EINE EINFÜHRUNG. Munich, ifuplan; Leipzig, Helmholtz-Zentrum für Umweltforschung – UFZ; Bonn, Bundesamt für Naturschutz, p. 80.

Is it a matter of cherishing nature, just calculating the value of nature, making "natural capital" visible as a means of encouraging political action? Or is it merely an attempt to incorporate nature and its monetarizable services into our capitalist market logic? Are we already on the way to monetarizing nature and its services in the form of tradable certificates and derivatives, to such an extent that even nature conservation and environmental protection become commodified for financial markets, as many critics fear?<sup>2</sup> Where does valuing nature or, one step further, PES make sense? Where do the new approaches lead in the wrong direction? What is the political background to this new wave of valorization of nature?

Nature and biodiversity conservation are foundering politically. Among nature and ecosystem conservationists, a deep-seated frustration prevails. Never has loss of biological diversity and degradation of forests, marine ecosystems, soils and water occurred on such a massive scale as today. And rarely has nature conservation been this unpopular. It barely has a political lobby. Unfortunately, classic nature conservation and biodiversity policy – at both national and international levels – are running out of options. It is not only international climate policy that is stagnating. A look at the UN Convention on Biological Diversity, the second major convention to emerge from the 1992 Earth Summit in Rio de Janeiro, is revealing: where there are political directives and multilateral commitments – like the 20 Aichi targets,<sup>3</sup> which were adopted in 2010 under the umbrella of the Convention – implementation of them is very halting. The target of the seventh Millennium Development Goal (MDG) to halt the loss of biodiversity by 2010 has been spectacularly missed. There is too little money for old, let alone new protected areas, and insufficient staff or equipment to police the areas under protection. Of course, there is progress too: in Germany the wolf is returning, sparking fears among the population and reviving old goal conflicts between nature conservation and agriculture and forestry. Internationally, new protected areas are being designated here and there. The dominant trend remains, however:

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2 Cf.: Sian Sullivan (2012): FINANCIALISATION, BIODIVERSITY CONSERVATION AND EQUITY: SOME CURRENTS AND CONCERNS, Environment & Development Series 16, Third World Network, Penang, Malaysia; Antonio Tricarico and Heike Löschmann (2012): FINANZIALISIERUNG – EIN HEBEL ZUR EINHEGUNG DER COMMONS, in: Silke Helfrich and Heinrich Böll Foundation (eds), Commons – Für eine neue Politik jenseits von Markt und Staat, Berlin, pp. 184–195; Altvater, Elmar (2012): ZERSTOBENE VERHEISUNG: FINANZ- UND NATURKRISEN 20 JAHRE NACH RIO, in: Informationsbrief Weltwirtschaft und Entwicklung, W&E-Hintergrund, February 2012.

3 In Nagoya, Japan in 2010 (COP10) the Contracting Parties to the Convention on Biological Diversity set themselves the objective of halting the loss of biodiversity by 2020. A "Strategic Plan" to this end was adopted, with 20 targets known as the "Aichi targets", cf. <<http://www.cbd.int/sp/targets/>>.

governments lack the political will to accord any political priority to nature and ecosystem conservation over infrastructure development or resource extraction.

The same is true for Germany: nature conservation authorities are severely affected by personnel and financial sclerosis. Understaffing affects every level of conservation officialdom. In a statement issued by Friends of the Earth Germany (BUND) for a hearing of the German Bundestag on the theme of forest conservation, BUND emphasised the vital role of forest conservation for biodiversity conservation. What was necessary, it said, was an adequate pool of skilled staff in the regional forest administrations; only then could conservation tasks be performed professionally. It therefore called for an end to staff cuts, which have been drastic in some cases.<sup>4</sup> These examples are symptomatic of the plight of nature conservation. The unavailability of public funds for nature and environmental conservation adds weight to the outcry for new economic instruments which might compensate for the failure of public nature conservation and biodiversity policy. Consequently, all eyes look to the private sector to fill the gap. To do so it requires market-compatible instruments and new business models like public-private partnerships designed to make it attractive to invest in biodiversity conservation. Thus the World Business Council for Sustainable Development (WBCSD) has provided its members with their own manual on the entrepreneurial valuation of ecosystem services, which points out the specific options for earning money with ecosystem services.<sup>5</sup>

Given this frustration about multilateral processes and the lack of political will among national governments, it is no wonder that even some of the large environmental organizations are giving their backing to this line of argument and singing the praises of the new instruments for payments for ecosystem services. Large and influential nature conservation organizations like The Nature Conservancy (TNC) or Conservation International (CI) have even issued classic nature conservation with its death certificate. The head of TNC, Mark Tercek, makes it clear in his book “Nature’s Fortune – How Business and Society Thrive by Investing in Nature”: nature is to become a business case.<sup>6</sup>

Large environmental and conservation organizations are themselves participating in the new *investing-in-nature* business models. They, too, need to generate funding streams so

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4 Statement by BUND für Umwelt und Naturschutz Deutschland e.V. – Friends of the Earth Germany (Prof. Dr. Hubert Weiger) to the 61<sup>st</sup> session of the German Bundestag Committee on Food, Agriculture and Consumer Protection for the public hearing on the theme of “Forest Strategy”, 8 February 2012.

5 Cf.: World Business Council for Sustainable Development, <[www.wbcsd.org](http://www.wbcsd.org)>. The German version of the manual was published by: econsense – Forum Nachhaltige Entwicklung der Deutschen Wirtschaft e. V. (2012): HANDBUCH ZUR UNTERNEHMERISCHEN BEWERTUNG VON ÖKOSYSTEMDIENSTLEISTUNGEN (CEV), Berlin.

6 See Mark R. Tercek and Jonathan S. Adams (2013): NATURE’S FORTUNE: HOW BUSINESS AND SOCIETY THRIVE BY INVESTING IN NATURE, New York.

they are getting involved in implementing numerous projects which are financed on the basis of PES or certificate trading.<sup>7</sup> In November 2013 the Scottish Wildlife Trust in cooperation with the UN Environment Programme (UNEP), the International Union for Conservation of Nature (IUCN), the World Business Council for Sustainable Development and the TEEB for Business Coalition hosted the first World Forum on Natural Capital in Edinburgh. This gathering was advertised as the first global conference addressing the theme of natural capital. "Let's get down to business!" was the tenor of the conference, which was sponsored by Royal Bank of Scotland, among others. Coca-Cola, Rio Tinto and KPMG were among the more than 500 participants. According to the Director-General of IUCN, Julia Marton-Lefèvre, who spoke at the opening of the World Forum, it is aimed at "bringing together all sectors of society to present their views, concerns and hopes around the concept of natural capital". She added that the Forum was "an opportunity [...] towards a sustainable future economy that values and conserves nature".<sup>8</sup> Those words clearly outline what the current debate and controversy is all about: in view of empty public coffers and political logjams on the multilateral level, are economic approaches in global nature conservation unavoidable and the new beacon of hope? Not *politics first* but *market first* in climate change mitigation and nature conservation?

#### From appreciation to valorization and financialization

Valuing ecosystem services is nothing new in the environment and conservation debate. The concept was originated in the 1970s and 1980s by important theoreticians of environmental and nature conservation.<sup>9</sup> Society's awareness of nature's services has been dulled in the course of the modern industrial age, and it is high time to re-sharpen it. The goal, therefore, has been and remains to make the value of nature's services for human well-being visible, and to show how very dependent human beings are on nature and on functioning biological diversity. This appreciation for the value of nature and ecosystems should then foster the political will to protect it vigorously. The impetus for *valuing nature* was thus political in nature rather than economic.

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7 Jutta Kill has dealt extensively with the subject of payments for ecosystem services and summarized it in an article entitled "TRADE IN ECOSYSTEM SERVICES: WHEN 'PAYMENT FOR ENVIRONMENTAL SERVICES' DELIVERS A PERMIT TO DESTROY", to be published in March 2014 by the World Rainforest Movement (<[www.wrm.org.uy](http://www.wrm.org.uy)>).

8 Quoted after Maxim Combes (2014): VALUING NATURAL CAPITAL OR DEVALUING NATURE, 21 January 2014, <<http://www.boell.de/en/2014/01/21/valuing-natural-capital-or-devaluing-nature>>.

9 Kurt Jax, David N. Barton, Kai M.A. Chan, Rudolf de Groot, Ulrike Doyle, Uta Eser, Christoph Görg, Erik Gómez-Bagethun, Yuliana Griewald, Wolfgang Haber, Roy Haines-Young, Ulrich Heink, Thomas Jahn, Hans Joosten, Lilin Kerschbaumer, Horst Korn, Gary W. Luck, Bettina Matzdorf, Barbara Muraca, Carsten Neßhöver, et al. (2013), ECOSYSTEM SERVICES AND ETHICS, Ecological Economics, Volume 93, September 2013, pp. 260-268.

This thought was taken up in the Millennium Ecosystem Assessment, which Kofi Annan commissioned in 2000. In March 2005 the *Millennium Ecosystem Assessment Synthesis Report* was published by the United Nations.<sup>10</sup> One of its key findings was this: in the last 50 years, humans have changed the Earth's ecosystems more rapidly and extensively than in any other period of human history. This has led to significant and largely irreversible losses of the diversity of life on Earth. Like so many UN reports, this comprehensive inventory of the loss of ecosystems and biological diversity prompted no sweeping political shift towards enhanced conservation of nature and biodiversity.

Probably for that reason, the TEEB Study – the acronym stands for *The Economics of Ecosystems and Biodiversity* – goes a step further.<sup>11</sup> The model for the TEEB study was named the Stern Report. In 2006 Sir Nicolas Stern, ex-chief economist of the World Bank, presented his analysis including the core statement that failure to act to protect the climate will be economically more costly than taking action. He thereby reinforced the economic perspective on climate change, at the same time hoping that it would result in more political action. In parallel with the upsurge of attention surrounding the Stern Report, in 2007 the G8 member states met in Potsdam and resolved to engage with the economic value of biodiversity and ecosystems and with the costs of their loss, and to develop incentives for economic action. The then Deutsche Bank staff member, Pavan Sukhdev, was commissioned with the TEEB Study; UNEP assumed a coordinating role.

On the one hand the TEEB study takes up the concept of *valuing nature* – appreciating the value of nature and rendering it visible because, as the TEEB protagonists assume, nothing can be managed which cannot be measured and valued. However, rather than just combining this with a political appeal for (conservation) action, they make economic value, the monetarizability of nature and its services, more explicit than any of the previous paradigms have done.

Payments for ecosystem services (PES) can be purposeful, and even helpful towards achieving social and ecological goals. This is true, for example, if biodiversity or water management (for water catchment areas) is prioritized, in the public interest, over other forms of agricultural or infrastructural (private-sector) use, and to compensate for this "environmental service" payments are made to a community or private individuals who particularly contribute to the conservation of biodiversity or to water management. Here the maintenance and not the destruction of "environmental services" is the priority, and the public sector provides incentives for it in the form of compensation payments (see also the aids

10 Millennium Ecosystem Assessment (2005), ECOSYSTEMS AND HUMAN WELL-BEING: SYNTHESIS, Island Press, Washington D.C.

11 European Communities (2008): THE ECONOMICS OF ECOSYSTEMS AND BIODIVERSITY (TEEB), Interim Report, Wesseling, Germany, <<http://www.teebweb.org>>.

granted under EU agricultural policy). But it is a very different picture when destruction of the environment is to be offset and/or ecosystem services are to be traded in markets.

When individual services like the CO<sub>2</sub> storage capacity of a peatland or of a leaf on a tree is converted into a tradable product (e.g. as a CO<sub>2</sub> certificate), the foundation is laid for new market-based products which can be traded and privately acquired. Here nature and its services are not only valorized for the purposes of conservation, which itself is difficult enough (see below), but commodified so as to make them tradable: "Commodification in the context of ecosystem services means the transformation of ecosystem components or processes into products or services that can be privately appropriated, assigned exchange values and traded on markets."<sup>12</sup>

The problem – according to the logic underpinning the TEEB Study – is that the value of nature is not really cherished because it costs nothing. As Pavan Sukhdev, head of the TEEB Study comments: "There is a lot coming to us free. These are goods and services which are not market goods and services. They're in the nature of public goods. But the problem is that we are not in a situation of plenty anymore. We have been eating into this capital, so to speak, that's providing us free, but valuable, services. We use the nature because it's valuable, but we lose it because it's free."<sup>13</sup>

It is becoming the basic assumption of numerous political, scientific and civil society initiatives that the economic services of nature and its contributions to value creation for the economy can be captured and new ecosystem markets created. In Germany, "Naturkapital Deutschland – TEEB DE" has been founded, a project based on TEEB and implemented by the Helmholtz Centre for Environmental Research (UfZ) in Leipzig, in order to place particular emphasis on the economic significance of nature and its services for human well-being. Analogies with the language of stock markets cannot be overlooked: "Nature forms a 'capital' stock in the economic sense and its services can be conceived of as 'dividends' flowing to society. The preservation of the natural capital stock makes it possible to keep these dividends available over the long term to future generations."<sup>14</sup> Nature then is no longer considered for its own sake but solely in terms of the value that it creates for current and future generations. Representatives of *Naturkapital Deutschland* and TEEB repeatedly emphasize that in no way are they concerned with putting a price tag on nature. They focus on human "well-being" as a good reason for protecting nature for current and future

12 Quoted after Kurt Jax, David N. Barton, Kai M.A. Chan et al. (2013), see footnote 9.

13 Yale Environment 360: PUTTING A PRICE ON THE REAL VALUE OF NATURE, interview with Pavan Sukhdev, 5 January 2012, <[http://e360.yale.edu/feature/putting\\_a\\_price\\_on\\_the\\_real\\_value\\_of\\_nature/2481/](http://e360.yale.edu/feature/putting_a_price_on_the_real_value_of_nature/2481/)>.

14 Naturkapital Deutschland – TEEB DE (2012): DER WERT DER NATUR FÜR WIRTSCHAFT UND GESELLSCHAFT – EINE EINFÜHRUNG. Munich, ifuplan; Leipzig, Helmholtz-Zentrum für Umweltforschung – UFZ; Bonn, Bundesamt für Naturschutz, p. 15.

generations. Nevertheless, with their purely economic school of thought on nature, they are preparing the ground perfectly for monetarizing it.

### Markets for ecosystem services

Numerous new PES instruments have been developed in recent years: REDD+ (Reduction of Emissions from Deforestation and Forest Degradation), ETS (the European Emissions Trading System) or MoorFutures, emissions certificates which give companies the facility to influence their future greenhouse gas balance on a voluntary basis.<sup>15</sup> Their success has been lukewarm. Trading in pollution certificates under the European Emissions Trading Scheme was supposed to protect the climate and oblige companies to purchase emission rights for every tonne of carbon dioxide emitted. The total quantity of emissions was determined by politically imposed caps. But an excess of certificates ensures that pollution remains a cheap option.<sup>16</sup> This climate change mitigation instrument is complex and yet largely ineffectual.

The idea behind REDD+ is to avoid deforestation and thus to reduce global emissions rapidly and at low cost. A mechanism aims to create financial incentives to conserve forests and thereby to reduce emissions. Even if the question of how REDD+ should be financed – by the market or the state – has not yet been clarified conclusively, nevertheless ambition is the driving force that a market mechanism should create what politics cannot. Another scheme is Habitat Banking, an offset mechanism in which certificates are bought for the destruction of habitats so that similar habitats can be created elsewhere, maintaining net biodiversity.<sup>17</sup>

If the social, cultural and ecological multi-functions of a forest or an ecosystem are ignored and reduced to discrete monetarizable functions, it becomes more and more difficult to justify its protection on the basis of holistic criteria. Here the desire to cherish the value of nature and make it visible, e.g. in a country's GDP, is turned on its head: only what is monetarizable actually merits protection. In Germany, for example, some foresters, timber experts (who have their own economic interests at heart in any case) and some scientists voice opposition to any more natural forests in Germany, because old national parks and most particularly new ones would worsen Germany's CO<sub>2</sub> balance. Natural forests store less CO<sub>2</sub> than productive forests. The latter grow faster and therefore store more. CO<sub>2</sub>-certificate

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15 See inter alia MoorFutures, <<http://www.moorfutures.de/de>>.

16 Cf. Fuhr, Lili 2013: ABGESANG AUF DEN EUROPÄISCHEN EMISSIONSHANDEL, <<http://www.boell.de/de/node/277235>>.

17 See also DNR, STUDIE PRÜFT MÖGLICHKEITEN FÜR HABITAT BANKING IN DER EU, 14 February 2013, <<http://www.eu-koordination.de/umweltnews/news/naturschutz-biodiversitaet/1944-studie-prueft-moeglichkeiten-fuer-habitat-banking-in-der-eu>>.

equivalents thus become a further or new argument against natural forest. Practised in this way, climate change mitigation is even at odds with biodiversity conservation. Goal conflicts simply do not become obsolete per se through market-based instruments; they are just displaced elsewhere.

In Brazil we are already witnessing experiments with market-based instruments. December 2012 saw the launch of Bolsa Verde do Rio de Janeiro. It organizes trading in certificates from nature conservation. Landowners can now buy their way out of the legal obligation to maintain a certain proportion of their land in near-natural condition. Effectively, this also enables corporate groups to buy themselves free from environmental commitments. There are already reports of the first speculative land purchases in remote Amazonian regions. The primary objective is not the use of the land but the sale of forest conservation certificates, reports Jutta Kill. "The forest conservation certificates from remote regions allow landowners in the centres of forest destruction in Amazonia to continue destroying more forest than the law permits. What was previously illegal – the lack of conservation areas on one's own land – is legitimized by the acquisition of forest conservation certificates, even if these originate from areas where no deforestation was planned in the first place."<sup>18</sup> In regions like Amazonia, which is characterized by special, mainly local biodiversity, this mitigation-banking business is particularly questionable.

### A question of private property

Ecosystems, which are by definition constituted of a multitude of natural and sociocultural interactions, are being broken down into individual economizable services. Viewed from this angle, environmental and nature conservation is stripped from the social context. It is a social and societal restructuring of the relationship between humankind and nature, and of power relations. Trading in CO<sub>2</sub> certificates or other monetary ecosystem services generally presupposes private ownership of these "services of nature". For only what has been appropriated as private or state property can be sold. Thus the question arises as to who owns the forest with its CO<sub>2</sub>-storing trees; to whom does soil, peatland or even the air belong? To the general public, to the indigenous community, or to a private owner? Moreover, where fields, meadows and forests are managed as commons, these market-based instruments threaten or actually destroy them. The social and cultural relationships, the multifaceted bonds between humans and nature, are reduced yet more to a purely economic exchange.

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<sup>18</sup> See Jutta Kill 2013: BRASILIEN: NATURSCHUTZ DURCH HANDEL MIT ZERTIFIKATEN?, 11 January 2013, <<http://www.boell.de/de/oekologie/lateinamerika-brasilien-umweltpolitik-bolsa-verde-16415.html>>.

Many of the ecosystems that are still reasonably intact are home to indigenous and traditional groups. In these locations, conflicts within the affected local communities and between them and the outside world are preordained. To whom do the certificates produced in this way belong? Who reaps the benefits of the profits generated? To whom do the "forest certificates" belong – to the indigenous population? To whom do carbon soil certificates belong – to the small-scale farmers? In addition, a host of preconditions must be met in order to cope with the complex quantification and implementation requirements of new market-based instruments like REDD. The risk of exclusion is high. Indigenous and traditional groups' future prospects of accessing CO<sub>2</sub> trading – i.e. the market – are questionable.

The "promise" of REDD+ to advance forest protection is still contingent upon whether the CO<sub>2</sub> certificates can be incorporated into a global emissions trading system. So far no such thing has materialized other than confined to regions. Furthermore, within the given emissions trading systems, trading in CO<sub>2</sub> certificates functions only as offsetting for *business as usual* by the industrialized countries. Whether this contributes anything extra to nature and forest conservation is questionable in the extreme.

#### Nature conservation through offsetting?

Quantifying environmental damage, on the other hand, does make sense. This is already apparent from the underlying philosophy of the polluter-pays principle, which is enshrined in international environmental law. Its intent is to exert a deterrent effect. In Germany the reformed Federal Nature Conservation Act which has been in force since 2010 stipulates that the polluter's paramount responsibility is to avoid substantial degradation of nature and the landscape. So far so good. Unavoidable substantial degradation is to be offset by means of mitigating or compensating measures or, where this is not possible, by means of monetary restitution.<sup>19</sup> If nature is lost as a result of the construction of a motorway, this must be replaced to the same value. The idea is good at first glance – some compensation is better than none. But to quantify and evaluate impacts and their mitigation or compensation is a complex task, yet one which is also hampered by a constricted way of seeing things. Here once again, a tree is not "just" a tree. Money, too, cannot bring back the irreplaceable. To this, the Federal Nature Conservation Act has no answer. Here if not sooner the approach reaches its limits and sometimes conflicts with the actual goal of nature conservation.

Another form of offsetting is the quantification of environmental damage arising from accidents and disasters. When the Deepwater Horizon drilling platform exploded in 2010, an

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<sup>19</sup> A German Federal Compensation Ordinance is intended to set uniform standards and ensure greater transparency and a level playing ground for investment. A draft of the Federal Compensation Ordinance has been tabled since April 2013 but did not reach the statute book during the last legislative period.

estimated 800 million litres of oil flowed into the sea for almost 90 days in one of the most serious environmental disasters of its kind. The resulting damage to nature – flora and fauna – and the fishing industry was immense. Up to 2012, BP had to reimburse a total of 43 billion US dollars for the consequential damage; an example of how important it can be to monetarize the value or the loss of nature.<sup>20</sup> Once again, however, for compensation payments of that kind methodological problems arise: which monetary equivalents provide a sound basis for expressing the destruction of a coral reef or the degradation of the Arctic?

Nature conservation by means of offsetting, as is practised in certificate trading or habitat banking, must open our eyes to the reality that it means allowing destruction of the environment, and accepting mitigation measures in return. The underlying assumption is that the same "unit" of nature or habitat exists somewhere else, and is now being protected or can be reinstated. Often, however, mitigation is accomplished by means of different habitats that do not have the same ecological function and significance. Quantifying this (i.e. setting market values for certificates) involves making assumptions about the value of individual habitats, which are then compared in monetary equivalents using these assumptions. Now suppose that a hectare of high quality bat habitat is offset against a hectare of less valuable bat habitat. According to the contractual terms, the high-quality habitat can then be destroyed, given the undertaking that the less valuable habitat will be protected. This turns offsetting certificates into promises for the future, which can be vehicles not just for trading but also for speculation. As a result, this form of payments for ecosystem services turns into an instrument compatible with financial markets.<sup>21</sup>

Incorporating nature consumption and environmental damage into GDP Demands are increasingly being voiced to incorporate ecosystem services and their degradation into the calculation of gross domestic product (GDP), and to provide data for political decisions in order to heighten political awareness of the value of nature for public welfare. These are good and necessary recommendations which should be implemented. Whether the message of the data will be heard is a different political matter altogether. Public transparency about what nature is worth to us and the actual cost of destroying nature and biodiversity is definitely a better premise for political and civil society intervention. In this regard, a World Bank initiative – Wealth Accounting and Valuation of Ecosystem Services, WAVES – is taking on a relatively concrete form.

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20 Reuters: BP MUSS NOCH IMMER GELD WEGEN ÖLPEST IN USA ZURÜCKLEGEN, 7 February 2012, <<http://de.reuters.com/article/companiesNews/idDEBEE81604P20120207>>.

21 Further details can be found here: FERN (2014): BIODIVERSITÄTS-OFFSETTING: BRIEFING 2, January 2014, <[www.fern.org](http://www.fern.org)>.

Among other things, it sets out to develop and make available new accounting systems with which the value of nature can be captured.<sup>22</sup>

### On the difficulty of quantifying services of nature

In light of the financialization of nature and the new lines of business emerging around PES, TEEB, Natural Capital, REDD+ or MoorFutures, the fundamental questions on the economic quantification of nature are restated ever more acutely.<sup>23</sup> How can environmental damage or mitigation payments be calculated? How can the options and alternatives be quantified in order to arrive at political decisions (building a dyke or restoring riverside meadows)? Which calculation shall we undertake to internalize external costs? Who establishes the societal consensus about this and who organizes the democratic legitimization of such economic "value judgements"?

For all these arenas a further question to be asked is what to include in the calculation? What is of value to whom? Who measures it? Who assesses the value of nature? All PES, TEEB or natural capital schemes must ultimately answer these questions. They are highly political. The same is true of the insistence, familiar to us all, that "prices should tell the ecological truth". This sounds plausible and, for numerous sectors and for many ecological objectives (internalizing external costs, abolishing ecologically harmful subsidies), it is a rightful demand.

There is, however, no specific economy that could pass one objective scientific judgement on what something is *worth* to us. There can be no "true value" of an ecosystem. And nevertheless, countless debates unfold, seminars are held and papers written with a view to determining a clear methodology for the economic valuation of nature and its services. So although it is argued that many services of nature elude monetarization (e.g. its cultural and spiritual functions), economists merrily continue to gather data and use assumptions for their calculations, applying their approach to everything deemed to have potential as an economically convertible and tradable commodity. This economization of nature changes how it is viewed and ultimately undermines political action, which really ought to be committed to public welfare and all nature's functions.

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22 See also Thomas Fatheuer (2014): NEW ECONOMY OF NATURE – A CRITICAL INTRODUCTION, Heinrich Böll Foundation, Berlin, p. 57.

23 On the critique of the financialization of nature, see e.g.: Barbara Unmüßig, Thomas Fatheuer, Wolfgang Sachs (2012): CRITIQUE OF THE GREEN ECONOMY – TOWARD SOCIAL AND ENVIRONMENTAL EQUITY, Heinrich Böll Foundation, Berlin; Thomas Fatheuer (2014): NEW ECONOMY OF NATURE – A CRITICAL INTRODUCTION, Heinrich Böll Foundation, Berlin; Others who have published on this theme are Sian Sullivan, Jutta Kill and Ulrich Brand.

### Natura oeconomica – a risky wager

The debate about the *valuing nature* paradigm – attaching value to nature and ecosystem services – is complex and beset with complications because the catchword masks a plethora of disparate issues. Different values need to be captured for different purposes; these must be kept discrete and separate. Valorization of nature can make sense if its values are made visible and its degradation is made a part of macroeconomic accounts. It is clear that valorization is not synonymous with putting a price tag on nature's services. Valorization can make sense and be useful if we want to calculate monetary offset payments for the destruction of nature. Appreciating the value of nature's services can be helpful in making important political decisions and protecting an ecosystem.

Yet it is a fine line indeed between appreciating the value of nature and financializing nature, once individual functions of nature are selectively monetarized and turned into tradable goods and even financial market products. This amounts to the commodification of climate change mitigation, environmental protection and nature conservation for financial markets. As past experience shows, the market can fail. Handing over nature to market forces is a high-risk undertaking, for if the market fails, we lose nature – irretrievably. Economic incentives and market mechanisms confer no automatic protection of biodiversity and ecosystems.

The new economy of nature places too much faith in economic rationality to the exclusion of other concerns. It pushes *homo oeconomicus* to the new length of *natura oeconomica*. Even if one does believe in the economic potential, this is an extremely risky wager. Experience with the flagship of market-based economic instruments, emissions trading, shows that a colossal amount of regulation is needed in order to implement such an instrument. In that regard, it is not so very different from the implementation of other instruments like ecological tax reform, particularly when certificate trading has to be combined with ambitious emissions reduction targets if it is to exert any governance function.

The new run on market-based instruments in nature conservation and climate change mitigation will exacerbate the trend for states to withdraw from responsibility for setting regulatory policy frameworks for nature conservation and climate change mitigation. The role of the economy in social and ecological transformation is a key question for all societies. The fact that the recent paradigm of a green economy could herald a new phase of the valorization and financialization of nature should unleash a critical yet nuanced debate, drawing a fine but clear dividing line between the appreciation of nature, which we so urgently need, and the social and ecological risks of monetary valorization.

## Abbreviations

CI	Conservation International
ETS	Emissions Trading System
IUCN	International Union for Conservation of Nature
MDG	Millennium Development Goal
PES	Payments for Ecosystem Services
REDD	Reduction of Emissions from Deforestation and Forest Degradation
TEEB	The Economics of Ecosystems and Biodiversity
TNC	The Nature Conservancy
UNEP	United Nations Environment Programme
WAVES	Wealth Accounting and Valuation of Ecosystem Services
WBCSD	World Business Council for Sustainable Development

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