

Is the concept of 'Natural Capital' useful?

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Abstract: With growing political momentum and a keen enthusiasm to engage business and finance in environmental management, it is useful to review the merits and pitfalls of a 'natural capital' approach to ensure that a sensible trajectory is being pursued. Outlined in this chapter are some recommendations for a nuanced approach to the conceptualisation of 'natural capital' which takes into account the benefits and potential risks.

Keywords: natural capital in an international context, payments for ecosystem services, monetisation of biodiversity, green finance.

Natural Capital can be defined as the world's stocks of natural assets which include geology, soil, air, water and all living things. It is from this Natural Capital that humans derive a wide range of services, often called ecosystem services, which make human life possible (World Forum on Natural Capital 2015). There is growing momentum behind a 'natural capital approach'; for example, in the UK reflected in the UK government's Natural Capital Committee, the Office for National Statistics' *Natural Capital Ecosystem Service Accounts* and the DEFRA 25 Year Environment Plan (DEFRA, 2018). With growing political momentum and a keen enthusiasm to engage business and finance in environmental management, it is useful to review the merits and pitfalls of a natural capital approach to ensure that a sensible trajectory is being pursued. Below is a non-exhaustive list of considerations, along with recommendations for a nuanced approach to the conceptualisation of 'natural capital' which takes into account benefits and potential risks.

Benefits of the conceptualisation of 'natural capital'

1. Defining and quantifying natural capital promotes awareness of our natural heritage and allows us to monitor whether it is being effectively protected. This also includes the ecosystem services that flow from natural capital, thereby maintaining key components underpinning human well-being. Note, that the quantification of natural capital and its benefits does not necessarily require monetisation of the benefits provided (e.g see UN System of Environmental-Economic Accounting; SEEA 2017).
2. The framing of the natural environment in terms of 'capital' puts it on an equal footing with other forms of capital (e.g. financial, manufactured, social, human capital), thereby highlighting its importance for the economy as well as our entire livelihoods. Using the language of economists is useful so that nature's values can be integrated into our macro-economic frameworks.
3. Payment for ecosystem service schemes have been demonstrated to work in many cases (for examples see DEFRA 2013). These schemes rely on the quantification and valuation of natural capital and ecosystem services. For example, some water

companies pay land owners to reduce nutrient inputs into watercourses. Both parties benefit financially from the arrangement, and there are also benefits for the environment, i.e. a win-win-win situation facilitated by a natural capital approach.

4. The focus on natural capital and ecosystem services is a practical approach to environmental management. It is of course based on a utilitarian perspective (i.e. instrumental values) and ignores the 'intrinsic' value of nature. But can things really have an intrinsic value devoid of someone valuing them? Furthermore, species are just transitory phenomena (i.e. based on the 'background' extinction rate in the absence of humans each species only lasts between around 1 and 10 million years), so they will all disappear at some point anyway.

Disadvantages of the conceptualisation of 'natural capital'

1. Some aspects of natural capital are harder to quantify and value than others. For example, valuing aspects of nature that provide cultural ecosystem services is notoriously difficult, whilst for provisioning services, such as timber, simple market prices can be used. Supporting services are very difficult to quantify, yet potentially underpin the basis of all natural capital benefits. As a consequence, these tend to get ignored in ecosystem accounting and consequent environmental management advice. As sociologist William Bruce Cameron once stated: "*Not everything that can be counted counts, and not everything that counts can be counted.*" Such constraints are well recognized by organisations such as TEEB (The Economics of Ecosystems and Biodiversity) that have been seminal in developing valuation approaches for natural capital. However, despite clearly acknowledging our limited ability to accurately quantify aspects such as biodiversity value, in many cases they proceed to attempt monetary valuation of biodiversity anyhow, integrating it with other natural capital values to inform major environmental decisions (e.g. the Durban Metropolitan Open Space System in which a valuation of different aspects of natural capital proceeded the development of an extensive international trade port). In other cases, less tangible aspects of natural capital such as biodiversity are simply ignored in monetary valuations.
2. Referring to nature as 'capital' implies it is equivalent to other forms of capital; yet it is fundamentally different. Some natural assets are not substitutable for other assets, i.e. they are not *fungible*. Furthermore, with financial capital, we can invest it, or spend it to derive benefits, even borrowing capital to go into debt. But we cannot do the same for natural capital. Treatment of natural assets in identical ways to other capital would be catastrophic for the environment.
3. Beyond a narrow subset of economists and policy makers, people do not engage with technical terminology such as 'natural capital' and 'ecosystem services'. Thus, using such phraseology is not a good way to convince people to adopt pro-environmental behaviours or justify environmental decisions to citizens.
4. Natural capital lends itself to financialization of nature. In some cases, there may be benefits of economic incentives (e.g. rewarding farmers to provide public goods or providing insurance products to protect farmers and associated industries from pro-environmental practices that are more risky financially). However, there is danger in financialization of nature in large open markets. For example, natural capital offsetting

schemes, whereby damage to nature in one location is offset by habitat restoration elsewhere could in theory be translated into large, even transnational, markets. However, such global markets are subject to huge volatility, especially when financial innovations extend beyond simple useful products (e.g. providing capital and insurance) to highly complex structures with no clearly defined social benefits (e.g. collateralized debt obligations responsible for the sub-prime mortgage crisis and 2008 financial crash). The irreversibility of many natural assets make unstable markets highly dangerous. Despite, this, many entrepreneurs see potential profit in such marketization of nature, and they may strongly lobby for its development.

5. National natural capital approaches need consideration of international context. A limited focus on accounting and development of national markets may lead to offshoring of social and environmental impacts (e.g. protecting cultural ecosystem services locally through extensive habitat restoration whilst importing unsustainably produced food and energy from overseas). Even if natural markets are globalised, consideration needs to be taken of the inequity in spending power between countries. Not all ecosystem services are equally essential for humans; for example, cultural ecosystem services are arguably less immediately essential than food provision (cf Maslow's hierarchy of needs). In completely free markets there is a danger that wealthier countries might satisfy non-essential needs at the expense of essential needs in poorer countries.

A nuanced approach to the conceptualisation of 'natural capital'

Taking into account the above advantages and disadvantages, rather than solely reject or wholeheartedly embrace the concept of natural capital, one may consider its useful application in certain contexts. Some points for consideration of such a nuanced position are outlined below:

1. The effectiveness of a given message depends on the audience. There is no need to use the same message for all audiences. For policy-making audiences, economic costs and the benefits of alternative options are most useful, whilst for engendering behaviour change in the general public, positive emotional messages may be most effective (e.g. see Futerra 2015).
2. A natural capital approach can be adopted to a limited degree without wholesale marketization of nature. So, for example it might be used for national accounting, and valuation might be used for local closed markets (e.g. auctions within individual water catchments, where land owners bid to devote land to provide nature-based water purification or flood protection in return for monetary payments). However, large markets for natural capital with higher risks need to be avoided and caution may be needed that vested interests may try to push for a broader application.
3. If a natural capital approach is adopted, goods that cannot be adequately quantified and valued in monetary terms must not be ignored; they need to have an equal footing in decision-making processes. For example, they may act as constraints (e.g. 'no net loss of biodiversity') or other non-monetary valuation approaches may be used, such as deliberative participatory approaches or using multi-criteria decision analysis.
4. Adoption of market based solutions under a natural capital approach should not cancel out or overshadow other approaches to environmental protection (such as new environmental regulation and improved policing of existing regulation). The academic community could be more active in voicing concerns that if demands on the

environment continually ratchet upwards, then no amount of valuation and optimisation of ecosystem service delivery can fully solve environmental problems. Therefore, spatial information approaches to the management of natural capital (cf. DEFRA, 2018) are only half of the solution, and more systemic approaches to reducing environmental impacts (e.g. energy efficiency and waste reduction) are equally essential.

5. More attention should be given to international context and the potential offshoring of environmental and social problems through a natural capital approach. These approaches have been arguably been lacking in recent policy approaches (e.g. DEFRA 2018).

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