



**Poorer without it? The neglected role of the natural environment in poverty and wellbeing**

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**POORER WITHOUT IT? THE NEGLECTED ROLE OF THE NATURAL ENVIRONMENT IN POVERTY AND WELLBEING**

**KEYWORDS**

Sustainable development; Natural environment; Multidimensional Poverty; Human wellbeing; Ecosystem services; Nature

For Peer Review

## ABSTRACT

The relationship between sustainable development's prime goal, human wellbeing, and the natural environment has been narrowly conceived. This paper focuses on the possibility and the implications of treating the natural environment as a 'constituent', or internal element, of wellbeing and poverty, as opposed to a 'determinant', or instrumental, external factor. Our review of philosophical accounts and conceptual frameworks of wellbeing and poverty suggests that treating the environment as a constituent element is philosophically sound, conceptually robust and empirically grounded. We argue that failing to consider these missing environmental aspects can result in an incomplete capturing of the multiple dimensions of wellbeing and poverty, and their underlying drivers. This broader framing of the environment-wellbeing relationship has the potential to inform a new generation of individual level wellbeing and poverty indicators, creating measures of multidimensional poverty that reflect the broadened scope ambitiously articulated in the Sustainable Development Goals.

## INTRODUCTION

The pursuit of human wellbeing is one of the primary goals for society and sustainable development (Helne and Hirvilammi, 2015). Consequently, wellbeing is a main focus of public policies and interventions that are high on the international development agenda, as articulated through the adoption of the Sustainable Development Goals (SDGs) in September 2015. The SDGs, which represent more comprehensive ambitions than the Millennium Development Goals, arguably promote better integration of the environmental, economic and social pillars of sustainable development (Le Blanc 2015). As such, the first SDG aims to eradicate poverty in all its forms and explicitly mentions the need to provide equal access to, and control over, natural resources to all, and to reduce the exposure of the poor to climatic and environmental hazards. This goal highlights the growing recognition that a holistic understanding of poverty, in all its dimensions, requires an appreciation of the importance of nature and ecosystem services (ES). There has been a parallel emphasis within the environmental policy community on understanding the multifaceted links between people's livelihoods and the natural environment (Mebratu, 1998; WCED, 1987), more recently often expressed in the form of ES (Díaz et al., 2015a; MA, 2005; TEEB, 2010).

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4 In recent years, the importance and complexity of the links between the natural environment  
5 and human wellbeing have been increasingly stressed in the development, environment, and  
6 sustainability literatures (Daw et al., 2016; Helne and Hirvilammi 2015; Hopwood et al.,  
7 2005; Mace, 2014). However, the percolation of these ideas into international development  
8 policy circles and the incorporation of environmental aspects into mainstream poverty  
9 alleviation strategies have been more limited for various reasons (Bojö et al., 2004; Nunan et  
10 al., 2012; Vira, 2015). This has implications for the development of effective policies and  
11 interventions for society and the environment. Failing to consider environmental aspects of,  
12 and links with, human wellbeing and poverty may have led to an incomplete capturing of  
13 wellbeing and poverty, and their underlying drivers and mechanisms. Consequently, the  
14 identification of the poor, and an understanding of what makes them poor, risks being  
15 incomplete, thereby posing a challenge to addressing poverty adequately in development and  
16 poverty alleviation strategies. Furthermore, in some instances, mainstream development  
17 projects put forward in the name of poverty alleviation and development may result in  
18 environmental degradation, and have negative impacts on poverty (e.g. Shrivastava and  
19 Kothari, 2012). The trade-offs involved, and potential for synergies, in meeting development  
20 and conservation goals have been extensively debated in the literature (e.g. Adams et al.,  
21 2004). Damage to natural ecosystems from development projects can undermine peoples'  
22 livelihood bases, cultural identity and sense of belonging, and can thereby exacerbate human  
23 deprivations (Anguelovski and Martinez Alier, 2014). Recent work has reiterated the need for  
24 interdisciplinary approaches and better integration of the insights gained from environmental,  
25 sustainability and poverty literatures to further understand the synergies and trade-offs  
26 between these agendas (Agarwala et al., 2014; Milner-Gulland et al., 2014; Helne and  
27 Hirvilammi, 2015) and to develop better-informed development policies.

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45 At least three main issues may have hindered this integration. Firstly, the natural  
46 environment, human wellbeing and poverty are understood and referred to in many different  
47 ways, without a consensus of how to define these concepts<sup>1</sup> (Milner-Gulland et al., 2014;  
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52 <sup>1</sup> Without going into the definitional subtleties entailed in these different terms, here we refer to (1) human  
53 wellbeing as *a multidimensional concept that aims to capture diverse ideas about what a good life is*; (2)  
54 poverty as *multidimensional deprivations or disadvantages that prevent people from attaining a certain level of*  
55 *wellbeing*; and (3) the natural environment as *a multidimensional concept of the non-human physical*  
56 *environment, landscapes and ecosystems, including the living and non-living components*; we exclude the  
57 human-built environment from this definition, but include human-modified and non-human-modified systems,  
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3 Ruggeri-Laderchi et al., 2003). This is in part because these concepts are experienced and  
4 conceived in diverse ways by different people (e.g. Misturelli and Heffernan, 2011). In  
5 addition, the concepts themselves and the approaches for measuring them are evolving. While  
6 initially unidimensional (monetary) approaches dominated poverty indicators (Ruggeri-  
7 Laderchi et al., 2003), wellbeing and poverty are now widely conceived as multidimensional  
8 (Alkire, 2007). Secondly, the main framing of the environment-wellbeing relationship in the  
9 global North has evolved from an initial focus on environmental protection and biodiversity  
10 conservation as independent goals from the pursuit of human wellbeing and poverty  
11 alleviation, to seeing the environment as an input to wellbeing (MA, 2005; Mace, 2014).  
12 Thirdly, the empirical relationships between the environment and wellbeing are not yet well  
13 understood. Discussions continue over the precise pathways through which ecosystem  
14 functions and different components of biodiversity affect human wellbeing. Indeed,  
15 synergies, trade-offs and independent relationships have been found between types of ES and  
16 different aspects of wellbeing (Bennett et al., 2015; Howe et al., 2014; Suich et al., 2015).  
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27 Behind these empirical assessments lie conceptual differences in how human wellbeing and  
28 the natural environment are seen to relate to one another. To advance our understanding of  
29 the environment-wellbeing relationship, here we draw attention to the distinction between  
30 accounts that treat the natural environment as a ‘determinant’ of human wellbeing and  
31 poverty, and those that treat the environment as a ‘constituent’ element of these concepts  
32 (Dasgupta, 2001). Much of the ES literature has treated ES and the natural environment as a  
33 determinant, instrumental factor, or external driver, which can influence human wellbeing in  
34 both positive and negative ways (MA, 2005; TEEB, 2010). However, alternative wellbeing  
35 accounts may conceive of the natural environment as being a ‘constituent’ aspect of the  
36 concept of human wellbeing itself (Dasgupta, 2001). In these accounts, the natural  
37 environment is understood as internal to, or part of, how human wellbeing and poverty are  
38 defined. This can be as a sub-component or as a stand-alone component or dimension that is  
39 constitutive of the concepts of wellbeing and poverty (Smith et al., 2013; Stiglitz et al., 2009;  
40 Summers et al., 2012).  
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51 In this paper, we focus on the choice and implications of treating the natural environment as a  
52 ‘constituent’ and/or a ‘determinant’ of wellbeing and poverty. This conceptual distinction has  
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55 as well as both inhabited and uninhabited places. We further recognise that physical and socio-cultural  
56 environments intersect, and these intersections vary across philosophies and cultures (Dunlap and Catton, 1983).  
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not been addressed in existing reviews of frameworks that link the natural environment and wellbeing or poverty (Agarwala et al., 2014; Fisher et al., 2013; King et al., 2014). More specifically, we aim to address the question of whether there is a philosophical and conceptual basis for treating the natural environment as a constituent of wellbeing and poverty. This leads to important questions about how wellbeing and poverty accounts should treat the natural environment, what the conceptual basis for such a treatment might be, and what, specifically, such an extended wellbeing account would include. Following Dolan and Metcalfe (2012), we suggest that such a wellbeing account should be theoretically rigorous (grounded in philosophical theories), policy relevant (socially and politically acceptable and understood), and empirically robust (practically measurable). In the subsequent sections of this paper, we will therefore in turn: (1) discuss philosophical, political and practical considerations influencing the choice over whether to treat the natural environment as constitutive or determinant of wellbeing and poverty; (2) review key existing conceptual frameworks of wellbeing and poverty, and how they incorporate the environment; and (3) discuss the practical implications of this expanded understanding of the relationship between the natural environment and wellbeing for policy and future research.

## **WELLBEING ACCOUNTS AND CONCEPTUAL FRAMEWORKS**

Whether the natural environment is considered to be a determinant or a constituent element of the concepts of wellbeing and poverty is dependent on individual and societal values, beliefs, attitudes and worldviews. Large bodies of literature have gone into discussing these relationships, providing perspectives from psychology, political science, environmental philosophy, ethics, and anthropology, among others (e.g. Callicott, 1984; Langton, 2007; O'Neill, 1992). In this section we will highlight some key aspects in this discussion. We will first consider the treatment of the natural environment in contemporary philosophical theories. Second, we will draw on a number of alternative philosophical approaches and worldviews, which address the role of the environment beyond its determinant contribution to wellbeing. Third, we will discuss political and practical issues associated with the implementation of these conceptual ideas, emphasising the need to be conscious of power dynamics and political economy considerations in the choice of wellbeing indices and measures.

## Contemporary philosophical accounts of wellbeing and the natural environment

The philosophical account of wellbeing that underpins one's values, beliefs and worldview, has important implications for the role of the natural environment in human wellbeing, and is therefore worth exploring further. In contemporary analytical philosophy, a person's wellbeing is most commonly understood as what is good for that person (Crisp, 2015) and it is one of the fundamental topics in moral philosophy. The three main broad philosophical theories of human wellbeing, initially highlighted by Parfit (1984), are particularly relevant in this respect. This 'tripartite' division includes (1) hedonism, (2) desire fulfilment or satisfaction, and (3) objective list theories.

To understand the positioning of the environment in these theories, we first briefly summarise their key principles. Hedonism conceives of wellbeing in terms of the balance of an individual's pleasures and pains. Therefore, hedonistic theories contend that one's life goes well to the extent that one experiences a surplus of pleasure over pain. What constitutes pleasure and pain is up to the individual, be it contentment or joy, and is often thought of as sensations characterised by their intensity and duration (Bentham, 1789).

For desire satisfaction theories, which are widely adopted in mainstream development studies (Dolan et al., 2006), a person's wellbeing depends on the satisfaction of one's desires, preferences or wants (Griffin, 1986; see Schulz, 2015 for a discussion of the distinction between these), rather than on experiencing net pleasure. Consequently, from this point of view wellbeing is a matter of attaining one's desires, with the detailed content of the desire(s) being determined by the possessor.

According to 'objective lists' theories (e.g. Nussbaum, 1992; Sen, 1985), wellbeing consists in obtaining a set of 'objective' goods, which in combination constitute wellbeing. These theories therefore contend that a list of certain goods can be defined that are widely regarded as good for people and are worthwhile pursuits, such as good health, education, friendships and material comforts. A person's wellbeing depends on meeting certain items on the list, independent of what the person thinks or feels about them – in contrast to hedonistic and desire satisfaction accounts, which are based on personal experience or preferences.

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3 The tripartite division has important implications for whether the natural environment can be  
4 considered as a constituent or a determinant of wellbeing. Although maximizing net pleasure  
5 and meeting one's desires may be contingent on, and influenced by, other factors, such as  
6 good health and the quality of the surrounding natural environment, these influencing factors  
7 remain external to the core account of wellbeing in hedonistic and desire satisfaction theories.  
8 For objective list theories, however, the natural environment can be listed as an objective  
9 good that is a constituent element and helps define the concept of wellbeing in these  
10 philosophical accounts. The environment therefore plays a determinant role in hedonistic and  
11 desire satisfaction perspectives, while for objective lists theories it can be conceived as both a  
12 constituent and determinant of wellbeing.  
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### 20 **Alternative approaches to a determinant role of the environment**

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23 Besides the mainstream contemporary philosophical theories, there are alternative views to a  
24 purely determinant role for the natural environment in relation to wellbeing. One possible  
25 avenue emerges from adopting a virtue-ethical tradition within moral philosophy. Hill, for  
26 instance, argues that "a person's attitude toward nature may be importantly connected with  
27 virtues or human excellences" (1983: 221). This opens up the possibility that an appropriate  
28 attitude toward the natural environment may be constitutive of the good life. Indeed, Hill  
29 seems to take this possibility seriously when he writes that "a proper valuing of natural  
30 environments is *essential* to a broader human virtue that we might call 'appreciation of the  
31 good'" (2006: 331).  
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40 Furthermore, the environmental ethics literature has long debated the instrumental and  
41 intrinsic (or final) values of nature. Theories that value nature only for its instrumental value  
42 and contribution to human wellbeing tend to have a different view of the relationship between  
43 people and the environment than those that also acknowledge the intrinsic value of nature; the  
44 standpoint that nature has value in itself, even without people (Craig et al., 1993; Hedlund-de  
45 Witt, 2012; Trainor, 2006). Instrumental values are more often associated with  
46 anthropocentric worldviews, whilst intrinsic values tend to be associated with more holistic  
47 perspectives, such as biocentric (putting living individuals central) and ecocentric (putting  
48 ecosystems central, including non-living components; e.g. deep ecology) worldviews. These  
49 worldviews in turn influence how wellbeing is understood (Hedlund-de Witt et al., 2014) and  
50 what societal changes are perceived necessary (Hopwood et al., 2015).  
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4 In anthropocentric approaches (particularly those with a more individualistic ethic),  
5 relationships between humans, the environment and/or other beings are assessed according to  
6 their impact on individuals (Deneulin, 2014). Alternative anthropocentric approaches  
7 recognise that interpersonal relationships are constitutive of human life, and focus more on  
8 the social context that inextricably links people, and on collective aspects of wellbeing (e.g.  
9 Cloutier and Pfeiffer, 2015). Others have extended this thinking to emphasise the importance  
10 of relationships with the natural environment (Deneulin, 2014), including recognizing the  
11 interconnectedness between wellbeing and healthy ecosystems (Hilne and Hirvilammi, 2015).  
12 Chan and colleagues (2016) consider the relationship between people and nature to give rise  
13 to another category of the value of nature, namely relational values. The sense of relational  
14 embeddedness in the environment captures something that is fundamentally constitutive of  
15 the human condition (Larson et al., 2013).  
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25 Similarly, some worldviews adopt more holistic approaches to understanding and  
26 characterising relationships between humans, and between humans and the environment. The  
27 Southern African concept of Ubuntu, for example, refers to humanness or humanity towards  
28 others and hence, has a more explicit emphasis on relational values, collective wellbeing and  
29 the connectedness between human beings (Le Grange, 2012). While most contemporary  
30 anthropocentric discussions of wellbeing are based on a distinct self, Buddhist philosophy  
31 contends that there is no such thing as a self or a person with a distinct identity through time.  
32 Instead, the self is nothing but “a causally related series of impermanent mental and physical  
33 elements or aggregates” (Gowans, 2003: 6). The concept of selflessness lies at the very heart  
34 of Buddhist enlightenment. Such approaches extend the notion of wellbeing to other beings,  
35 at times implicitly treating the natural environment as a constituent element of the non-self-  
36 regarding concept of wellbeing. Similarly, in certain Amazonian and Central African  
37 traditions, humans and other beings are perceived as being intrinsically interconnected, as  
38 humans can change into animals and *vice versa*. In the Andean indigenous traditions, the Inca  
39 deity of Pachamama, meaning Mother Earth or World Mother, is the fertility goddess  
40 presiding over planting and agricultural harvest. La Pachamama symbolises the  
41 interconnectedness of humans with nature. In 2008, Ecuador famously became the first  
42 country in the world to recognise the rights of nature explicitly in its constitution (Gudynas,  
43 2009), suggesting that these environmental worldviews can be converted into practical ways  
44 of operationalising collective and society-wide perspectives on wellbeing. Such worldviews  
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3 may include all aspects of the natural environment as constituent elements of wellbeing.  
4 These worldviews are also compatible with the theoretical position which defines wellbeing  
5 in relation to objective lists, albeit based on principles and value systems that are often very  
6 culturally specific and locally defined.  
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### 10 **Practical and political considerations**

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14 There are various interrelated practical and political considerations that may influence the  
15 choice of the philosophical account one adopts in a particular context, and its positioning of  
16 the natural environment *vis-à-vis* human wellbeing and poverty. This choice can depend on  
17 the specific purpose for which wellbeing and poverty are being conceptualised. For example,  
18 if the objective is to identify and understand the factors leading to poverty or wellbeing, a  
19 conceptual framework might focus on capturing all the components that constitute wellbeing  
20 or poverty, and all the external factors that influence them. If the aim is to measure poverty or  
21 wellbeing, considerations associated with the ease of measurement and data availability are  
22 likely to influence how wellbeing and poverty are defined and measured.  
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30 Similarly, if comparisons across people and places are to be conducted, such as cross-country  
31 or cross-regional comparisons, ensuring that meaningful and comparable data are available or  
32 can be collected, has to be taken into account. Consequently, the components that are  
33 included in a wellbeing or poverty framework, may be shaped by data constraints. Indeed,  
34 data availability has repeatedly been referred to by parties when making a case for or against  
35 specific indicators proposed to track the progress of the SDGs (UN, 2015a). A comparative  
36 perspective is also important for meeting donor demands and complying with international  
37 treaties and targets, such as the SDGs (UN, 2015b).  
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45 Furthermore, it is important to recognise the role that politics and power dynamics play in  
46 how the natural environment, wellbeing and poverty are experienced, defined, and measured.  
47 The social context influences an individual's experience of wellbeing, including the complex  
48 set of formal and informal institutions that mediate the differential access to, and rights over,  
49 the environment people have (Leach et al., 1999). Far from being neutral, the above  
50 mentioned technical and practical decisions are embedded within unequal distributions of  
51 power that influence the choice of conceptual framework, the measures adopted, and the  
52 indicators being monitored. It is therefore necessary to consider the political economy of  
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3 knowledge in environment and development policy communities that underpins these  
4 choices: Who has a say in these decisions, in whose interests are they being taken and for  
5 what purpose? What does the choice of particular indicator reveal, and what does it occlude?  
6 How might certain indicators privilege the interests of particular actors over those of others?  
7 For example, in the field of avoided carbon emissions from forestry activities, it has been  
8 argued that the process for measuring, reporting and verifying avoided emissions creates  
9 conditions in which particular types of land management practices are favoured and others  
10 disfavoured, in ways that suit the interest of international consultants and national elites over  
11 those of local actors (Leach and Scoones, 2013). We highlight these political considerations  
12 to signal the need to be cognisant of these wider knowledge-policy contexts. The choice of  
13 specific wellbeing frameworks will inevitably involve compromises necessary due to the  
14 associated technical and practical challenges, and the interrelated power dynamics that shape  
15 the context for which measures are being developed.  
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## 28 **REVIEW OF WELLBEING AND POVERTY FRAMEWORKS**

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31 We now turn to our second objective, to review key human wellbeing and poverty  
32 frameworks that are relevant to characterise the role of the natural environment in relation to  
33 wellbeing and poverty. Based on the discussion and expert judgement of the author team, and  
34 informed by relevant recent review papers (Agarwala et al., 2014; Fisher et al., 2013; King et  
35 al., 2014), we selected what we considered the most influential wellbeing and poverty  
36 conceptual frameworks (as detailed in Table 1) that have been used in environmental and  
37 development literatures, or adopted in relevant international policy circles. We decided to  
38 include conceptual frameworks that deal with human wellbeing or poverty without an explicit  
39 focus on the natural environment, but are particularly relevant to this debate. We excluded  
40 conceptual frameworks that only cover the natural environment without making explicit links  
41 to human wellbeing or poverty (e.g. Rounsevell et al., 2010). Contrary to previous studies  
42 (Agarwala et al., 2014; Fisher et al., 2013), our review was restricted to conceptual  
43 frameworks and did not interrogate entire bodies of literature or communities of practice (e.g.  
44 political ecology), concepts (e.g. vulnerability, resilience) and indices that have been  
45 constructed for the measurement of poverty or wellbeing (e.g. Happy Planet Index). We  
46 compared the resulting twelve conceptual frameworks (see Table 1) against a list of  
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3 evaluation criteria. These criteria were chosen and refined through a deliberative process  
4 during a series of discussion meetings within the multidisciplinary author team, and were  
5 informed by previous comparisons of wellbeing and/or poverty frameworks (Agarwala et al.,  
6 2014; Fisher et al., 2013; Nunan, 2015; Ruggeri-Laderchi et al., 2003). In addition, the lists of  
7 frameworks and criteria were discussed and scrutinised during a workshop, organized to  
8 discuss these issues and which was attended by thirteen experts. This provided some external  
9 validation of our choices. The final list included criteria on definitions, philosophical  
10 accounts, the wellbeing-environment relationship and the purpose of the conceptual  
11 frameworks. These were judged most relevant to the comparison of the different frameworks  
12 concerning the wellbeing-environment relationship.  
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21 Table 1 captures the main findings of the review and summarises our comparison of key  
22 frameworks. The review once again establishes the large variety of conceptual approaches for  
23 wellbeing and poverty, and of the understanding of environment-wellbeing relationships.  
24 With regards to defining the concepts, it is noteworthy that two of the reviewed frameworks  
25 do not provide an explicit definition of wellbeing or poverty. Even more frameworks (six) do  
26 not define the concepts of the natural environment, ES or nature. Furthermore, six of the  
27 frameworks do not specify in detail which philosophical account underpins their work.  
28 Finally, two of the frameworks do not make explicit whether the natural environment is  
29 treated as a constituent or determinant of the notion of wellbeing or poverty.  
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37 The objective list theory is the most widely adopted philosophical account among the  
38 reviewed frameworks, but the constituent dimensions of wellbeing (i.e. the items on that list)  
39 vary. Its widespread use may be because the objective list theory lends itself to breaking  
40 wellbeing and poverty down into constituent components and hence, can facilitate the  
41 development of indicators to measure these concepts. Only one framework, namely the  
42 income-based approach (Ravallion, 1996), adheres to the desire satisfaction theory. In  
43 addition, some conceptual frameworks adopt a mixture of philosophical accounts spanning  
44 objective lists and subjective notions of wellbeing (Scoones, 1998; Gough and McGregor,  
45 2007; Stiglitz et al., 2009). Moreover, not all of the frameworks are explicit about the  
46 philosophical underpinning of the subjective notion of wellbeing adopted (Table 1).  
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54 With regards to the positioning of the environment as either a constituent or determinant, the  
55 majority of frameworks that mention an environment-wellbeing relationship treat the  
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3 environment as a determinant of wellbeing (six out of nine). This is despite the fact that the  
4 objective list theory, which could accommodate environment as a constituent aspect of  
5 wellbeing, is the most widely adopted philosophical account among the reviewed  
6 frameworks. Among the three frameworks that treat the environment as a constituent, only  
7 the Sarkozy Commission (Stiglitz et al., 2009) explicitly attributes to the environment as a  
8 whole the status of being a distinct dimension of poverty. Nussbaum's (2000) version of the  
9 Capability Approach includes aspects of the environment as a dimension of wellbeing,  
10 namely "other species; being able to live with concern for and in relation to the natural  
11 environment". Furthermore, the Wellbeing in Developing Countries framework (Gough and  
12 McGregor, 2007) also allows for the environment to be a constituent element, but does not  
13 specify whether it would be a distinct dimension or part of another dimension of wellbeing  
14 and poverty. In addition, three of the frameworks that treat the environment as a determinant  
15 of wellbeing (i.e. Duraiappah, 2004; MA, 2003; Narayan et al., 2000) could also allow for  
16 certain aspects of the environment to be treated as a constituent element of wellbeing and  
17 poverty, within their existing dimensions of wellbeing.  
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## 30 **DISCUSSION AND PRACTICAL IMPLICATIONS**

### 31 **Approaches to considering the natural environment as a constituent of wellbeing**

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34 Our review suggests that although most existing conceptual frameworks treat the natural  
35 environment as a determinant factor of wellbeing and poverty, a few regard it as a constituent  
36 element; a position that also has grounding in the philosophical literature. While the  
37 frameworks we reviewed have a predominant anthropocentric focus, our earlier discussion  
38 highlights that alternative, more holistic accounts have scope to treat the environment as  
39 constituent of wellbeing and poverty. This shows that there is a conceptual basis to develop  
40 broader human wellbeing frameworks that include aspects of the natural environment as  
41 constituent of wellbeing and poverty.  
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51 This raises the question whether such an extended account of human wellbeing, inclusive of  
52 the natural environment as both a determinant and a constitutive element of wellbeing, should  
53 be developed, and in which contexts. Although a review of all available empirical studies is  
54 beyond the scope of this paper, there are empirical examples that demonstrate that in some  
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3 cultures human wellbeing definitions include environmental aspects as constitutive (e.g.  
4 Walker, 2011). Several of the reviewed frameworks adopted an objective list theory, which,  
5 in principle, is compatible with the role of the environment as a constitutive element, and  
6 could incorporate some of these wider worldviews and beliefs. As we have seen, some  
7 objective lists in the literature do in fact include ES and the environment in their definitions  
8 of wellbeing. However, if the items on the objective list (i.e. the components of what  
9 constitutes wellbeing) are determined top-down without sufficient consideration of the  
10 context to which the list is applied, the approach may be perceived as paternalistic (Deneulin,  
11 2002). This might appear to override personal thoughts and feelings and can be seen to  
12 impose external perceptions of what matters to wellbeing. While the objective list can be  
13 determined within particular cultural, religious and historical contexts, some accounts instead  
14 claim to be based on transcendental or global values (Nussbaum, 1999). These can be  
15 challenged on the grounds of cultural relativism. As they do not emerge from all of the  
16 societies that they are applied to, they might lack social legitimacy. Therefore, in assessing  
17 wellbeing and poverty in any particular setting, it is important to consider the prevalent  
18 worldviews and cultural context that influence which aspects of the natural environment  
19 matter (and for whom) (Deneulin and McGregor, 2010). Including the environment as  
20 constituent of wellbeing and poverty has political and distributional implications and presents  
21 further conceptual as well as practical challenges, as we have elaborated in this paper.  
22 However, ignoring the environment in wellbeing and poverty assessments, in contexts where  
23 the environment is important for people's wellbeing, could lead to considerable  
24 misidentification of poor people, and undermine their own understanding of the conditions  
25 and processes that contribute to their poverty.  
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42 What might be plausible methodological approaches to determine if the environment should  
43 be a constituent of wellbeing in an objective list, in a specific context? At least three methods  
44 suggest themselves for such analysis, as they have been used for similar purposes. The  
45 standard methodology in moral philosophy is 'reflective equilibrium': the weighing of  
46 general moral principles, specific moral judgments and any additional relevant information  
47 (e.g. Daniels, 1979; Rawls, 1971). Nussbaum applies this to construct her list of the  
48 constitutive components of a life of minimal dignity (Nussbaum, 2000). An alternative  
49 approach would be to understand practical reasoning through iterative questioning about what  
50 is perceived constitutive of wellbeing and poverty. Alkire's methodology for identifying  
51 basic or fundamental constituents of wellbeing is a specific kind of practical reasoning  
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3 (Alkire, 2002). The fundamental or non-derivative reasons that people cite for their actions  
4 are identified via (actual or hypothetical) iterated questioning of the motives for which they  
5 act. These fundamental reasons (e.g. to stay alive, to have fun, to help their children) are  
6 taken as a guide to their fundamental values. An 'objective list' consists in the capabilities to  
7 realise these values.  
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12 Both of the above methodologies – reflective equilibrium and iterative questioning – begin  
13 with the evaluative judgments of individuals (whether those of the investigator, or those  
14 whose wellbeing is at issue). An alternative process is via public reason, or participation in  
15 broadly democratic discussion. Constituents of wellbeing are identified as those features that  
16 survive this process. This is the approach that, in outline, Sen (1999) comes closest to  
17 endorsing for determining the components of wellbeing.  
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#### 24 **Policy relevance and empirical implications**

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27 Beyond the evaluative impact of identifying who is poor, treating the natural environment as  
28 a constituent element also has further implications for informing, designing and targeting  
29 policies to address poverty. It could facilitate the mainstreaming of the environment into  
30 other policy areas of the sustainable development pillars and goals, as doing so would be a  
31 required element of policy objectives to reduce poverty. However, mainstreaming the natural  
32 environment into poverty agendas may be met with opposition. It may be perceived as  
33 detrimental to other development and wellbeing considerations, for example (1) if  
34 environmental agendas are perceived to be dominating other aspects of poverty reduction  
35 (e.g. social equality), or (2) among those who might benefit from ongoing environmental  
36 exploitation. Including the natural environment into measures of wellbeing and poverty  
37 therefore has important political implications regarding whose perceptions and interests  
38 influence decision making.  
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48 Our review has highlighted that some of the conceptual frameworks of wellbeing and poverty  
49 are not explicit about their underpinning philosophical principles, or of the definitions of key  
50 concepts, including human wellbeing, poverty and the natural environment. In this respect,  
51 policy and practice could benefit from greater clarity in our conceptual engagement with  
52 poverty and wellbeing. However, it is also worth recognising that, in certain circumstances,  
53 not providing explicit definitions and boundaries to concepts can be a strategic (political)  
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3 decision (Montana, 2017). It may be expedient to circumvent difficult conversations about  
4 epistemic differences and a lack of conceptual clarity might help forge consensus where there  
5 may be widely differing positions in relation to a particular issue (e.g. Hulme, 2009).  
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9 Our analysis also has practical implications for the measurement of wellbeing and poverty. In  
10 cases where the environment is considered a constituent element of wellbeing or poverty, this  
11 will require a careful appraisal of ways to empirically measure these relationships. This  
12 would include critically evaluating (1) whether existing environmental data can be integrated  
13 with data on other aspects of wellbeing and poverty (including data derived from remote  
14 sensing and machine-based learning, e.g. Jean et al., 2016), and (2) whether and how the  
15 natural environment would be incorporated into the relevant survey tools that have been  
16 designed for the assessment of multidimensional poverty at household level. While  
17 considering questions of aggregation, further decisions need to be made about which aspects  
18 of the natural environment are treated as constituents, and which are determinants, to avoid  
19 the risk of double counting.  
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### 29 **Future directions: exploring constituent aspects of the natural environment**

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31 This final section discusses some aspects of the natural environment that might feature as  
32 constitutive dimensions in wellbeing and poverty accounts, and how these might be included.  
33 One likely fruitful direction is related to considerations of ‘cultural ES’. While the  
34 instrumental value of provisioning ES may already be captured by objective lists, there may  
35 be scope for a better recognition of cultural values, going beyond aesthetics and including  
36 concepts of sense of place, belonging and rootedness. Work on cultural ES focuses on the  
37 relations between people and places, including the environment. Examples include links to  
38 ancestors, gods and spirits that are associated with particular places and features of the  
39 natural environment. These links define the spiritual and religious life of certain groups, and  
40 memories and connections with particular places. These are part of the collective heritage of  
41 societies, and the sense of solace, contentment and fulfilment that is enjoyed by people who  
42 feel at ‘home’ in their natural environment, but uprooted and displaced when translocated to  
43 other places (Baviskar, 1995). Be it for cultural, recreational or other reasons, having access  
44 to green and natural spaces might therefore be an important constitutive element of wellbeing  
45 for some people (Cloutier and Pfeiffer, 2015).  
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3 Another avenue is the ways in which exposure to nature creates a sense of physical  
4 (in)security, which may be fundamentally constitutive of the individual or collective self.  
5 Natural hazards are usually beyond the control of individuals and greater attention to  
6 vulnerability, insecurity and adaptive capacity may be a useful starting point in defining an  
7 environment-related dimension of poverty (Sumner and Mallet, 2013). The perpetual sense of  
8 environmental insecurity due to exposure to the forces of nature, and the adaptive measures  
9 that human societies might adopt in response to such perennial danger, are themselves  
10 constitutive of a contemporary 'risk society' (Slovic, 2010). These shape the human  
11 experience in important ways. For those who are exposed to environmental vulnerability,  
12 inclusion of this dimension might be a very important aspect of their own perceptions of  
13 wellbeing. However, it is worth recognising that this dimension of the environment might be  
14 important for very particular groups of people, in particular places, but less applicable in  
15 other contexts.  
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25 Among the existing philosophical approaches and frameworks we have reviewed here, the  
26 Capabilities Approach (Sen, 1999) and other objective list theories offer one avenue for  
27 developing wellbeing concepts that are inclusive of the environment as a constitutive factor.  
28 This would complement the existing ways in which the Capabilities Approach currently  
29 addresses the environment. For instance, both Nussbaum (2000) and Alkire (2002) put  
30 forward itemised objective lists based on the Capabilities Approach, which refer explicitly to  
31 the natural environment. Alkire (2002) includes the beauty of the environment, alluding  
32 mainly to aesthetic considerations that enhance wellbeing. Nussbaum's list of central  
33 capabilities includes the capability to engage with the natural environment and other species.  
34 However, some debate exists around whether this emphasises the instrumental value of  
35 nature for determining human flourishing (Deneulin, 2014) or covers various people-nature  
36 relationships as a constituent aspect of wellbeing (Walker, 2011). It is worth exploring further  
37 to expand how the environment features in wellbeing accounts within the Capabilities  
38 Approach.  
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## 51 CONCLUSION

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54 The relationships between the natural environment and human wellbeing and poverty are  
55 complex and multifaceted. This paper explores whether the natural environment should be  
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3 included in multidimensional accounts of poverty and wellbeing. In particular, we have  
4 drawn on philosophical accounts and conceptual frameworks to elaborate on both the  
5 rationale for, and the implications of, treating the natural environment as a ‘constituent’  
6 element as opposed to a ‘determinant’ of wellbeing and poverty concepts. We argue that  
7 focussing only on the determinant role of the environment misses the opportunity for a more  
8 fundamental consideration of the natural environment as a constituent of wellbeing and  
9 poverty. Neglecting these environmental dimensions risks missing some critical elements of  
10 how some people understand and experience poverty and wellbeing. We therefore argue for  
11 developing an expanded account of wellbeing and poverty that allows for including  
12 environmental dimensions, which are currently missing from existing approaches.  
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21 Operationalising these ideas will require more detailed engagement with the specificities of  
22 people and places to determine what aspects of the environment are most relevant and for  
23 whom, while being cognisant of the potential political and distributional implications for  
24 different groups of people. We suggest that this should involve talking to people, whose  
25 wellbeing is at issue, about their understanding and experience of wellbeing and poverty, to  
26 give them a voice in the discussion and to ensure that any expanded account of wellbeing and  
27 poverty is grounded in local realities, rather than being externally defined. At the same time,  
28 in the context of the SDGs and public policies more broadly, engaging directly with national  
29 statistics offices and other relevant organisations is important to determine national priorities,  
30 identify relevant national datasets and monitoring systems (Schoenaker et al., 2015), and  
31 determine where new data collection efforts are needed to better reflect the diverse ways in  
32 which the environment contributes to wellbeing and poverty.  
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42 Developing such an expanded approach has the potential to inform a new generation of  
43 individual level wellbeing and poverty indicators, creating measures of multidimensional  
44 poverty that reflect the broadened scope of the SDGs. It would provide national governments  
45 with an option to include the natural environment when reporting on progress against one  
46 core focus of the SDGs, on eradicating poverty in all its forms (SDG 1). To facilitate this  
47 process, we suggest to (1) determine whether and what specific aspects of the environment  
48 are constitutive of wellbeing and poverty in different contexts, including the environmental  
49 aspects we have outlined, namely cultural ES, access to natural spaces, and the resilience and  
50 vulnerability to natural hazards, (2) develop qualitative and quantitative indicators that  
51 capture these environmental dimensions, (3) develop methods for integrating spatially  
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3 explicit environmental data with other datasets into multidimensional indices of poverty and  
4 wellbeing, and (4) identify what relevant environmental data already exist at national,  
5 regional and global level among the multitude of existing monitoring systems, to ease  
6 reporting at country and global scales. These are important considerations if the aspirations  
7 that have been articulated in the SDGs are to be taken seriously. This broader consideration  
8 of the environment in shaping wellbeing and poverty is a step towards a more holistic  
9 assessment of our collective progress towards these ambitious global goals and the potential  
10 for a more sustainable development.  
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Table 1. Comparison table of key conceptual frameworks of wellbeing and/or poverty.

Frameworks:	Sen's Capability approach	Nussbaum's capability approach	Income-based approach	Basic Needs
<b>Definition of wellbeing, poverty or related concepts</b>	Poverty as a deprivation of basic capabilities; capabilities are substantive freedoms to choose a life one has reason to value (i.e. perform functionings, which are doings or beings that one values). Capabilities are a set of achievable functionings.	Poverty as a deprivation of basic capabilities; capabilities are substantive freedoms to choose a life one has reason to value (i.e. perform functionings, which are doings or beings that one values). Capabilities are a set of achievable functionings.	Measured as people living below a certain monetary income line. Income/expenditure as sufficiently correlated with other dimensions of poverty.	Basic needs as goals that must be achieved if any individual is to achieve any other goal, i.e. preconditions for participation in social life.
<b>Wellbeing account *</b>	Objective list	Objective list	Desire theory	Objective list
<b>Definition of nature, environment, ES or related concepts</b>	Not explicit. The environment is mentioned as a resource, and environmental issues as resource allocation and social responsibility or environmental ethics problems.	Animals, plants, and the world of nature	n.a.	n.a.
<b>Distinction made between environment, nature and/or ES?</b>	Not explicit	Not explicit	n.a.	n.a.
<b>Environment-wellbeing relationship **</b>	Determinant	Sub-component and dimension	Determinant	Excluded
<b>Description of the environment-wellbeing relationship</b>	Environment is listed as one of the factors that can affect income inputs, and conditions that can affect the use of income to generate wellbeing outcomes.	'Other species' as one of the 10 dimensions: Being able to live with concern for and in relation to animals, plants, and the world of nature.	Natural resources as a potential input to production	n.a.
<b>Stated purpose of framework</b>	Broaden thinking of what is meant by wellbeing/capabilities and development; highlights multidimensional nature of wellbeing; considers the opportunities that people have to choose a life one has reason to value.	Identify capabilities as central requirements of a life with dignity - and has a legal/political focus on justice, as items that governments must provide	Measuring poverty headcount	Focus development strategies on satisfaction of some elementary needs of the whole population, particularly in education and health.
<b>Main references</b>	Sen, 1999	Nussbaum, 2000	Ravallion, 1996	Streeten et al., 1981

\*: Wellbeing accounts: hedonism, desire satisfaction, objective lists and others;

\*\* : Different forms of the environment-wellbeing relationship: the environment is (a) excluded from the framework or has no relationship with wellbeing; or is (b) a determinant (i.e. the source is unimportant); (c) a sub-component; or (d) a dimension of wellbeing.

Frameworks:	Sustainable Livelihood Approach	3D Wellbeing / WeD framework	Quality of life (QOL)	Voices of the Poor
<b>Definition of wellbeing, poverty or related concepts</b>	Adopts Sen's capability approach and refers to Chambers' (e.g. 1997) notion of wellbeing; this can allow people to define the sustainable livelihood outcome criteria important to them, such as self-esteem, security, happiness, material concerns, stress, vulnerability, power and exclusion.	Wellbeing as an individually defined and achieved but socially constructed, constituted within political and cultural context, concepts with three dimensions, material, relational and subjective; aiming towards human progress.	No explicit definition of QOL, but operationalised as being constituted of several 'domains'.	Wellbeing/illbeing seen as good and bad life that can be described in five or ten dimensions, while recognising their individual and location-specific nature.
<b>Wellbeing account</b>	Objective list and subjective notions (not explicit which)	Objective list and subjective/self-evaluative notion	Not explicit, but seems to imply objective list	Not explicit, but seems to imply objective list
<b>Definition of nature, environment, ES or related concepts</b>	Not explicit; but refers to natural capital as natural resource stocks (e.g. soil, water, air, genetic resources) and environmental services (e.g. pollution sinks) giving rise to resource flows and services for livelihoods.	Not explicit	Not explicit	Not explicit
<b>Distinction made between environment, nature and/or ES?</b>	Not explicit	Not explicit	Not explicit	Not explicit
<b>Environment-wellbeing relationship</b>	Not explicit, but seems to imply determinant	Sub-component or dimension	Excluded	Determinant (and possibly sub-component)
<b>Description of the environment-wellbeing relationship</b>	Natural capital seen as a livelihood resource that interacts with institutional processes and livelihood strategies in a given context to lead to wellbeing outcomes; people may also define their own wellbeing dimensions.	Environmental quality as material indicator	n.a.	Different environmental aspects mentioned under the different dimensions of wellbeing/illbeing (e.g. water quality, environment hazards & vulnerability), but not explicit if these are determinants or sub-components of these dimensions.
<b>Stated purpose of framework</b>	Provide 'a holistic and integrated view of the processes by which people achieve (or fail to achieve) sustainable livelihoods' (Scoones, 1998: 13).	Understanding of how poverty is created and reproduced through interaction of the three dimensions.	Propose a specific number and scope of domains of QOL; determine if headings of QOL in literature can be grouped into seven domains; determine the empirical relationship between domains and to other measures of QOL.	Understand what constitutes wellbeing/illbeing for poor people around the world, identify common dimensions of wellbeing/illbeing and cross-cutting problems that keep people trapped in poverty; explore the priorities of the poor.
<b>Main references</b>	Chambers and Conway, 1991; Scoones, 1998	Gough and McGregor 2007; McGregor and Sumner 2010; Milner-Gulland et al. 2014	Cummins, 1996; Schmidt and Bullinger, 2007	Narayan et al., 1999, 2000

Frameworks:	Duraiappah's Framework	Sarkozy Commission	Millennium Ecosystem Assessment	IPBES Conceptual Framework
<b>Definition of wellbeing, poverty or related concepts</b>	No explicit definition of wellbeing; but comprising ten key constituents and/or determinants that are closely linked to ecosystems.	Wellbeing or quality of life seen as multidimensional comprising nine dimensions, including material living standard, health, education, political voice and governance, social connections and relationships, environment (present & future) and insecurity.	Wellbeing has multiple, situation-dependent constituents, including basic material, freedom and choice, health, good social relations and security; how experienced and perceived reflects local geography, culture, and ecological circumstances; poverty is at the opposite end of a continuum.	Good quality of life includes human wellbeing and refers to achieving a fulfilled life, which is a context-dependent, multidimensional state of individuals and human groups; includes material, immaterial and spiritual components, e.g. access to food, livelihood security, health, good social relationships, cultural identity, and freedom of choice and action.
<b>Wellbeing account</b>	Not explicit	Objective list & subjective notion	Not explicit	Not explicit
<b>Definition of nature, environment, ES or related concepts</b>	The natural environment defined as ecosystems; adopts the ecosystem and ES definition of MEA; ecosystem refers to a spatially-explicit part of the Earth, including people and all other organisms and the abiotic environment.	Not explicit	'Ecosystem services are the benefits people obtain from ecosystems' (MA, 2003: 3). It includes provisioning, regulating, cultural and supporting services.	Nature refers to the natural world emphasising the diversity of living organisms and their interactions among themselves and with their environment; in science includes biodiversity and ecosystems; in other knowledge systems includes 'Mother Earth' and 'systems of life'; Nature's benefits to people refers to benefits humans obtain from nature.
<b>Distinction made between environment, nature and/or ES?</b>	Natural environment = ecosystem; no explicit definition of nature	Not explicit	Does not explicitly define nature or environment; but it differentiates between ES and biodiversity.	Differentiates between 'nature' and 'nature's benefits to people'; no explicit definition of 'environment'
<b>Environment-wellbeing relationship</b>	Determinant (and possibly sub-component)	Dimension	Determinant (and possibly sub-component)	Not explicit, possibly all.
<b>Description of the environment-wellbeing relationship</b>	ES influence wellbeing (determinant); the wellbeing component 'Being able to continue using natural elements found in ecosystems for traditional cultural and spiritual practices' could imply 'sub-component'	At the national level, the environment is seen as one dimension of wellbeing/quality of life in a list of nine dimensions.	ES influence wellbeing (determinant), but potentially also a sub-component of health (e.g. access to clean air and water), although ES might be replaceable (i.e. determinant).	Context-dependent as 'different societies espousing different views of their relationships with nature'
<b>Stated purpose of framework</b>	Demonstrate the poor's dependence on ES for their wellbeing; identify barriers and drivers that prevent the poor from using ES; identify policy response options; and ensure policy coherence among policy frameworks at local to international levels.	Aims to 'identify the limits of GDP as an indicator of economic performance and social progress' (Stiglitz et al., 2009: 7); to consider what additional information may be required for developing more relevant social progress indicators.	Provide a framework for the MA, which aims to make available an integrated assessment of impacts of ecosystem change for wellbeing and evaluate options to enhance ecosystem conservation and their benefits to meet human needs.	Provide a tool for 'a shared working understanding across different disciplines, knowledge systems and stakeholders' (UNEP, 2014: 39) of IPBES; provide a basic common ground for coordinated action to achieve IPBES' goal of 'strengthening the science-policy interface for biodiversity and [ES] for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development' (Diaz et al., 2015a: 3).
<b>Main references</b>	UNEP, 2003; Duraiappah, 2004	Stiglitz et al., 2009	MA, 2003, 2005	UNEP, 2014; Diaz et al., 2015a, 2015b

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