Human Well-Being

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Introduction and rationale for dealing with human well-being

Human well-being (HWB) is a central component of the ecosystem services (ES) framework and in fact its major endpoint in terms of what the ES concept aims at.[2] It has become a major topic in policy on ES which has been taken up in the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets which aim, among others, to enhance the benefits to all from biodiversity and ecosystem services (Perrings et al., 2011) or the European Biodiversity Strategy to 2020. Already the Millennium Ecosystem Assessment (MA, 2003) put the relation between ecosystems and HWB at the core of its framework[3]. It further emphasised that HWB goes beyond economic wealth but that it also comprises other dimensions such as health (see Kretsch and Keune, 2016) or good social relations. The concept of HWB is a pivotal link between human society and nature, especially as it allows considerations of how environmental issues relate to other factors that influence individual and societal well-being such as infrastructure, culture, or even the financial system. Further, linking ES to HWB clarifies the dependence of ES on societal choices that are determined by the needs and interests of individuals and societal groups. This proposition leads inter alia to the assertion made by Polishchuk and Rauschmayer (2012, p. 109) who argue that 'identifying the ways in which ES contribute to human well-being essentially depends on how we define human well-being in the first place'. Thus, the question of what is meant by, and what specifically constitutes, HWB, is of major importance in any application of the ES concept (Summers et al., 2012).

The concept of HWB – and with it especially the social component of the ES concept – still remains rather vague and not elaborated in sufficient detail within the literature on ES. In other fields beyond the environmental sciences such as psychology, philosophy, social, and political science, however, there are extensive and interrelated debates on what HWB means, how it could be measured, and how these insights could be made operational, especially in development research. These debates have, however, only rarely been linked to ES. In addition, empirical studies explicitly linking ES in a differentiated manner to the multiple dimensions of HWB (see below) have rarely been carried out, according to our knowledge. Studies that relate HWB to ecosystem services instead focus on a restricted set of HWB aspects, especially economic aspects or health.

Human well-being and ecosystem services: state-of-the-art

The MA characterised HWB by means of/using five major components: materials for a good life, security, health, good social relations, and freedom of choice and action. These categories were derived from an empirical study commissioned by the World Bank ("Voices of the Poor"; Narayan et al., 2000) in which (poor) people from 23 developing countries were asked about their ideas of a good (and bad) life (MA, 2003, p. 74). However, the MA did not discuss or develop the literature on this issue further, and this situation has not changed much in later publications on ES. Most of the existing treatments of HWB in fact do not deal with environmental concerns but were developed from perspectives emerging from psychology, sociology, economics, anthropology, ethics, and/or in the context of human development and poverty reduction, with poverty sometimes broadly defined as the "inverse" of HWB.

HWB is both an ambiguous term and a multifaceted concept (Gasper, 2007). Good overviews on the different ideas involved in describing HWB have been given by Alkire (2002) and Gasper (2007). Gasper

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discusses and further develops a classic distinction of three conceptions of HWB: hedonism ("well-being seen as pleasure"), desire theories ("well-being as preference/desire fulfilment"), and so-called "objective list theories" (providing lists of the "elements that make a life well-lived"). These HWB conceptions face different challenges. Preferences are much affected by the degree of information but also on the present situation a person finds himself in: people can be happy when they really should not be regarding their living conditions or unhappy when they do well, but friends and neighbours are doing better (adaptive preferences, e.g., Gasper 2005). Both preferences and pleasure can be based on injustice, e.g. pleasure can be felt in somebody else's pain. In contrast, objective well-being impose values from outside and therefore lose the connection between the flourishing life and the subject of life (Tiberius & Hall, 2010). Objective lists are rather influenced by cultural, social and political factors.

A common and important distinction to classify the different expressions or dimensions of HWB (e.g. health, personal satisfaction, basic needs) is that between subjective and objective well-being (SWB and OWB). We here, following e.g. Gasper 2005 (p. 178) refer by these terms to *what* is measured: feelings (subjective) or conditions (objective), but not *how* well-being is measured (self-reported vs. non-self reported).[4]

Looking at these theories and distinctions it becomes evident that there is no simple and general concept and measure for HWB. Even though there are some dimensions (such as basic needs for food or shelter) which are always valid, concepts many dimensions of HWB are dependent on place, culture, and history.

Several indicators for HWB have been developed, sometimes related to efforts to creating overarching metrics for HWB, often as an 'antidote' to classical indices such as Gross Domestic Product (GDP), which are perceived as too narrow from both societal and environmental perspectives (Vemuri and Costanza, 2006, Summers et al., 2012). Prominent examples here are the Human Development Index (HDI or the Genuine Progress Indicator (GPI). The European Commission, together with the European Policy Center has initiated a project ("Well-being 2030") investigating means of measuring well-being and its importance for European social policy-making (Theodoropoulou and Zuleeg, 2009). Other studies on a European level are pursued and collected in the context of the Beyond GDP-initiative[5]. It is important to note that HWB concepts and measures are neither static nor are they simply determined by individually derived values and choices, or the mere summation of these. Values derive also from interactions within social groups, and ideas of HWB within societies (or societal groups) are thus to a large degree the result of shared and even deliberated values (Kenter et al., 2015) and also subject to diverse societal interests. Given the influence of specific cultural and historical circumstances mentioned above, concepts of HWB must be considered as the outcome of a social process, and vary with space and time. Measuring HWB needs to account for this dynamics and variability.

Significant attempts to relate HWB to environmental dimensions have been made by Dasgupta (2001), Costanza et al. (2007), and King et al. (2014). Currently the most comprehensive review of the elements of HWB (dimensions, as we call them here) in the context of ES is provided by Summers et al. (2012) (see also Smith et al. 2013, for a review of existing well-being indexes and the dimensions of HWB considered there). They identify a set of strongly interrelated dimensions of HWB different from the categories used in the MA, namely basic human needs, economic needs, environmental needs, and subjective happiness. Happiness here refers not simply to a hedonistic well-being but to the idea of *eudaimonia*, (a good and flourishing life, not simple pleasure fulfilment as in hedonism), which also includes acting in a self-responsible (and even socially responsible) way. The latter idea has increasingly gained importance in the environmental ethics literature, and is significant because it has moved the discussion away from a dichotomy between a utilitarian vs. an intrinsic perspective on nature (specifically with respect to ES; see Jax et al., 2013) to a more comprehensive understanding of human-nature relationships (see also Chan et al., 2016). In a similar vein, some authors (especially Ballett et al., 2013 and Polishchuk and Rauschmayer, 2012) attempt to use the "capability approach" of Sen and Nussbaum (e.g. Nussbaum, 2011) as a "multidimensional framework" for

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[4] As a caveat, the term "objective" may be misleading. As Gasper (2005: 178) notes: "[T]he concept of OWB is not value-free but depends on what aspects of being are considered as of value, while much research in recent decades indicates that SWB can be reliably, satisfactorily measured".

[5] The initiative is a project organised jointly by European Commission, European Parliament, Club of Rome, OECD and WWF. "The Beyond GDP initiative is about developing indicators that are as clear and appealing as GDP, but more inclusive of environmental and social aspects of progress. " See http://www.beyond-gdp.eu

analysing HWB as "an alternative to mainstream utilitarian and opulence frameworks" (Polishchuk and Rauschmayer, 2012, p. 103)[6]. A eudaimon(ist)ic conceptualisation of HWB is especially important when it comes to dealing with cultural ES (e.g., Chan et al., 2012), because many issues framed as cultural services, e.g. contribution of a landscape to ones personal identity, cannot be conceived as a "resource" but very well as contribution to a well-lived, flourishing life. One ethical problem that requires a better differentiation of HWB relates to questions of justice, namely *whose* well-being is at stake, and how the provision of particular services might affect the well-being of different social groups in different and even opposing ways (Daw et al., 2011). This also relates to the question of power: who defines HWB of a society? Which viewpoints and interests are included and which are excluded? Are also the interests of minorities accounted for? How much are the relations of humans to nature part of well-being concepts? Definitions here become of high practical and even normative relevance.

While the recent literature, for example Summers et al. (2012) or Liu and Opdam (2014), has certainly started some useful discussion on conceptualising HWB in the context of ES, this work has in fact just begun and needs further elaboration in an inter- and transdisciplinary discourse. Raudsepp-Hearne et al. (2010) found that HWB increases although ecosystem services decline and conclude that the implications of this decline for HWB is not yet fully understood.

Recommendations to the OpenNESS consortium[7]:

We suggest adopting the following definition for OpenNESS as a working concept. This will be developed further in Del.1.3 "Preliminary guidelines for testing the conceptual frameworks in case study areas…"

Defining "human well-being"

We suggest, following Alexandrova (2012, p. 697), to adopt "*a generic definition of human well-being*" for the project, namely to understand it as "*a state that is intrinsically and not just instrumentally valuable (or good) for a person or a societal group*".

Only from there we will be able to move to more specific definitions. A rigid specific definition of HWB will neither be feasible nor useful. Some characteristics of the concept, based on the above definition should, however, guide the operationalisation of the definition. While the broad definition should be binding for the whole project and be the basis for large-scale applications of the concept of HWB, within place-based applications the specific components of HWB will have to be determined together with the stakeholders. They must not contradict the general idea of HWB but must leave room for place-specific situations and cultural perceptions, such as different cultures, beliefs, and traditions.

Four characteristics of the common OpenNESS understanding of HWB should thus be:

- HWB characterisation and measurement should follow a pluralistic approach, distinguishing and maintaining several different components of well-being, and not reducing them to a single variable and/or number (e.g. GDP). Only in this way it can do justice to the complexity of human well-being and also to the complexity and multiplicity of human-nature relationships.
- HWB should embrace both "objective" dimensions (such as basic material needs) and "subjective" dimensions (e.g., positive emotions, life satisfaction).
- The selection of HWB components should be not *ad hoc*, but done in a systematic way, on a specific, justified, and explicit theoretical basis.

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[6] The "capability approach" is looking at the conditions or opportunities ("capabilities") "of humans to lead a life in dignity, such as "being able to live to the end of a human life of normal length", "being able to have good health" or "being able to live with and toward others" (Nussbaum, 2011, p, 33f.). "It holds that the key question to ask, when comparing societies and assessing them for their basic decency or justice is, 'What is each person able to do and to be?'" (ibd., p. 18).

[7] These recommendations were originally addressed to the OpenNESS consortium at half time of the project time. They have been slightly updated as to ongoing insights derived during the work in OpenNESS.

- Conceptualising and measuring HWB is heavily dependent on specific cultural and social conditions. Especially in place-based applications this variety of conditions has to be taken into account by involving stakeholders into/for the operationalisation of the HWB concept.

To account for these social and cultural characteristics one approach would be to work along the lines of what Gasper (2007) calls "objective list theories". The degree of specification on the general (large scale) level should, however, be rather low.

A suggestion of how do we operationalise HWB for specific tasks of applying the ES concept (as mirrored, for example, in the OpenNESS case studies) and how to properly relate it to other elements of the ES concept will be described in OpenNESS deliverable 1.4 (forthcoming) as part of the so-called ONEX (see also Potschin et al., in prep).

Open problems / Issues to be discussed

1. What are appropriate dimensions of HWB to be used in the context of ES research and application? (to be discussed in a forthcoming paper)

2. How do the different specific services or service categories (provisioning, regulating, cultural) relate empirically to the different dimensions and specifications of HWB?

3. Whose well-being is at stake? In which way is well-being related to different stakeholder groups? Which issues of justice may arise (see e.g. Daw et al., 2011)?

4. By which means do we also capture the shared value dimensions of HWB and how does it differ in comparison to HWB measures based only on individual value expressions (see inter alia Kenter et al., 2015)?

5. How can stakeholders be involved in determining components and measures of HWB (in an ES context)?

6. What are the reasons for an increase in HWB in spite of a degradation of ecosystems (cf. Raudsepp-Hearne et al., 2010)?

Significance to OpenNESS and specific Work Packages[8]:

WP1 (Key challenges and conceptual frameworks): The relation of ES to HWB constitutes one of the four key challenges formulated for OpenNESS; this challenge is related closely to all the others. The specific place of HWB in the conceptual framework of OpenNESS was explored in more detail as described in OpenNESS Deliverable 1.2 (2016).

WP2 (Regulatory frameworks and drivers of change): Regulatory frameworks have a decisive influence on the provision of ES and hence on HWB, and also influence other factors contributing positively or negatively to HWB. WP to analyse which policy drivers refer to HWB. (How) should HWB be considered within OpenNESS scenarios?

WP3 (Biophysical control of ecosystem services): The interrelations between the management of ES and the different dimensions of HWB have to be scrutinised, taking into the account the multiple dimensions of HWB.

WP4 (Valuation of the demand for ecosystem services): Evaluation must take into account the multiple dimensions of HWB in order to capture the full array of values associated with ES, also/far beyond monetary values.

WP5 (Place-based exploration of ES and NC concepts): Case studies will aid in defining and testing the multiple dimensions of HWB, their context-dependent specifications, and possible tradeoffs (how does the provision of different ES affect different dimensions of HWB, synergistically or antagonistically?)

WP6 (Integration: Synthesis and Menu of Multi-Scale Solutions): Does HWB in its multiple dimensions need to be the final endpoint in OPPLA?

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[8] For a brief description of the OpenNESS Work Packages see: http://openness-project.eu/about/work-packages

Relationship to four challenges[9]

Human well-being:	Sustainable Ecosystem Management:
self-evident	Sustainable ecosystem management must be in accordance with the aim of fostering HWB
Governance:	**Competitiveness:**
Good governance must reflect the aim of enhancing HWB and harmonise different interests and ideas of HWB involved	Competitiveness affects HWB in different ways. The role of competitiveness for HWB needs to be explored.

Suggested Three 'Must read papers'

Daw, T., Brown, K., Rosendo, S. and R. Pomeroy (2011): Applying the ecosystem services concept to poverty alleviation: the need to disaggregate human well-being. *Environmental Conservation* **38**: 370-379.

Gasper, D. (2007): Human well-being: concepts and conceptualizations. In: McGillivray, M. (Ed) 'Human well-being. Concept and measurement'. Houndsmill, Basingstone, Hampshire: Palgrave MacMillan, pp. 23-59.

King, M. F., Renó, V. F. and E. M. L. M. Novo (2014): The concept, dimensions and methods of assessment of human well-being within a socioecological context: A literature review. Social *Indicators Research* **116**: 681-698.

Further cited papers in this text

Alexandrova, A. (2012): Well-being as an object of science. *Philosophy of Science* **79**: 678-689.

Alkire, S. (2002): Dimensions of human development. *World Development*, 30: 181-205.

Ballet, J. et al. (2013): Environment, justice and the capability approach. *Ecological Economics* **85**: 28-34.

Costanza, R. et al. (2007): Quality of life: An approach integrating opportunities, human needs, and subjective well-being. *Ecological Economics* **61**: 267-276.

Chan, K. M. A. et al. (2012): Where are cultural and social in ecosystem services? A framework for constructive engagement. *BioScience* **62**: 744-756.

Chan, K. M. A. et al. (2016): Why Protect Nature? Rethinking Values and the Environment. *Proceedings of the National Academy of Sciences of the United States of America* **113**, 1462-1465.

Dasgupta, P. (2001): *Human well-being and the natural environment*. Oxford: Oxford University Press.

EU FP7 OpenNESS Project Deliverable 1.2, Potschin, M. et al. (2016a): *Final Conceptual frameworks for the analysis of ES and NC in relation to the challenges of HWB, SEM, governance and competitiveness., and how these issues can be communicated and resolved in different place-based context*. European Commission FP7.

EU FP7 OpenNESS Project Deliverable 1.4, Potschin, M. et al. (2016): *Guidelines for testing the draft conceptual frameworks in case study areas using methods and data resources developed in WPs 2, 3 and 4.* European Commission FP7

Gasper, D. (2005): Subjective and objective well-being in relation to economic inputs: puzzles and responses. *Review of Social Economy* **63**: 177-206.

Jax, K. et al. (2013): Ecosystem services and ethics. *Ecological Economics* **93**: 260-268.

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[9] There are certainly more societal challenges; the reduced number presented here is due to the four major challenges mentioned in the work programme of FP7 to which OpenNESS responded.

Kenter, J. O. et al. (2015): What are shared and social values of ecosystems? *Ecological Economics* **111**: 86-99.

Kretsch, C. and H. Keune (2016): Ecosystem Services and Human Health. In: Potschin, M. and K. Jax (eds): *OpenNESS Ecosystem Services Reference Book*. EC FP7 Grant Agreement no. 308428. Available: www.openness-project.eu/library/reference-book

Liu, J. and Opdam, P. (2014): Valuing ecosystem services in community-based landscape planning: introducing a wellbeing-based approach. *Landscape Ecology* **29**: 1347-1360.

Millennium Ecosystem Assessment (2003): *Ecosystems and human well-being: A framework for assessment.* Washington D.C.: Island Press.

Narayan, D. et al. (2000): *Voices of the poor: Crying out for change*. New York: Oxford University Press.

Nussbaum, M. (2011): *Creating capabilities. The Human Development Approach*. Cambridge, Massachusetts: Belknap Press of Harvard University Press.

Perrings, C. et al. (2011): Ecosystem services, targets, and indicators for the conservation and sustainable use of biodiversity. *Frontiers in Ecology and the Environment* **9**: 512-520.

Polishchuk, Y. and F. Rauschmayer (2012): Beyond "benefits"? Looking at ecosystem services through the capability approach. *Ecological Economics* **81**: 103-111.

Potschin, M. et al. (2013): *Conceptual Frameworks – Briefing Paper*. OpenNESS WP1, draft Version 1_March 2013. EC Grant Agreement No. 308428.

Potschin, M. et al. (2017): The Ecosystem Services concept; meeting societal challenges. *Ecosystem Service* (forthcoming OpenNESS special issue)

Raudsepp-Hearne, C. et al. (2010): Untangling the Environmentalist's Paradox: Why Is Human Well-being Increasing as Ecosystem Services Degrade? *Bioscience* **60**: 576-589.

Smith, L. M. et al. (2013): Relating ecosystem services to domains of human well-being: Foundation for a U.S. index. *Ecological Indicators* **28**: 79-90.

Summers, J. K. et al. (2012): A review of the elements of human well-being with an emphasis on the contribution of ecosystem services. *Ambio* **41**: 327-340.

Theodoropoulou, S. and F. Zuleeg (2009): *What do citizens want? Well-being measurement and its importance for European social policy-making*. EPC Issue Paper No. 59. Europe's Political Economy Programme.

Tiberius, V. and A. Hall (2010): Normative theory and psychological research: Hedonism, eudaimonism, and why it matters. *Journal of Positive Psychology* **5**: 212-225.

Vemuri, A.W. and R. Costanza (2006): The role of human, social, built, and natural capital in explaining life satisfaction at the country level: Toward a National Well-Being Index (NWI). *Ecological Economics* **58**: 119-133.

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