

Supplementary Material

Supplementary Material S1. Nussbaum's central capabilities list (Nussbaum 2000) .

Central capabilities	Definition	Probing components
Life	Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.	Have a long life
Bodily Health	Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.	Good health
		Enough food
		House
Bodily Integrity	Being able to move freely from place to place; having one's bodily boundaries treated as sovereign, i.e. being able to be secure against assault, including sexual assault, child sexual abuse, and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.	Security
Senses, Imagination, and Thought	Being able to use the senses, to imagine, think, and reason – and to do these things in a “truly human” way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing self-expressive works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to search for the ultimate meaning of life in one's own way. Being able to have pleasurable experiences, and to avoid non-necessary pain.	Express criticism
		Education
		Practice a religion
Emotions	Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by overwhelming fear and anxiety, or by traumatic	Family

	events of abuse or neglect. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)	
Practical Reason	Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience.)	Plan your own life
Affiliation	A. Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another and to have compassion for that situation; to have the capability for both justice and friendship. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.) B. Having the social bases of self-respect and non-humiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails, at a minimum, protections against discrimination on the basis of race, sex, sexual orientation, religion, caste, ethnicity, or national origin. In work, being able to work as a human being, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers.	Good social relations
		Be respected
Other Species	Being able to live with concern for and in relation to animals, plants, and the world of nature.	Nature / environment
Play	Being able to laugh, to play, to enjoy recreational activities.	Laugh / enjoy
		Free time
Control Over One's Environment	A. Political. Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association. B. Material. Being able to hold property (both land and movable goods), not just formally but in terms of real opportunity; and having property rights on an equal	Participate in decision-making in the village
		Have land
		Secure income
		Trust in the government

	basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure.	
--	---	--

References

Nussbaum, Martha C. 2000. *Women and Human Development: The Capabilities Approach*. Vol. 3. Cambridge university press.

Supplementary Material S2. Detailed workshop outline.

At the start of each workshop, we explained the goals and sought verbal consent for participation, audio recordings, and photographs.

(1) As a means of conceptualizing well-being, participants were asked to offer examples of how they define a "good life" in their village, with the aim of capturing "well-being components" needed to support such a good life locally. Recognizing potential methodological limitations in attempting a comprehensive identification of all crucial components for human well-being through entirely open questions (Abunge et al. 2013), we subsequently used additional probing questions derived from Nussbaum's list of ten central capabilities.

(2) In Madagascar and Laos, after incorporating all the components deemed essential by participants for sustaining a good life in the village, we directed participants to assign relevance scores to these well-being components. Each participant was provided with five stickers and instructed to place them on the well-being components that they perceive as being the most important. This prioritization exercise defined which well-being components would be discussed in the subsequent phase. Due to time limitations, only five to eight well-being components could be discussed during each workshop, with the higher-ranked components being discussed first. In Myanmar, no such prioritization was done and all well-being components were discussed.

(3) During the in-depth discussions about the most important well-being components, participants were prompted to elucidate why a specific well-being component held significance for a good life in the village, exploring the value this component added to their well-being. Participants provided responses, which were recorded on a dedicated flipchart with distinct columns for each question. To delve deeper into the fundamental reasons behind the perceived importance of a particular component, we employed "iterative questioning" techniques (Schleicher et al. 2018), e.g. asking participants the "why of the why" (Alkire 2002; Finniss 2011) until further detailed explanations could no longer be provided.

(4) Next, the discussion shifted to have participants articulate the requirements for fulfilling the identified well-being component. (5) Participants were then prompted to deliberate on whether meeting a specific component's requirements was currently more, less, both more and less, or equally challenging compared to recent decades. Participants were asked to envision the well-being situation approximately 20 years ago, sometimes using well-known local and/or national events to help make sense of this time span, e.g., the moment that Masoala National Park was created in Madagascar (1997). (6) In order to complete the final column on the flip chart, participants were prompted to articulate and elucidate the reasons behind any change in their satisfaction with specific well-being components. (7) Finally, the workshop concluded by distributing three red and three green stickers to each participant. These stickers were designated for placement on the components deemed "most difficult to satisfy at the present time" and those currently perceived as "most satisfied at the present time", respectively red and green stickers.

References

- Abunge, Caroline, Sarah Coulthard, and Tim M. Daw. 2013. "Connecting Marine Ecosystem Services to Human Well-Being: Insights from Participatory Well-Being Assessment in Kenya." *AMBIO* 42 (8): 1010–21. <https://doi.org/10.1007/s13280-013-0456-9>.
- Alkire, Sabina. 2002. "Dimensions of Human Development." *World Development* 30 (2): 181–205. [https://doi.org/10.1016/S0305-750X\(01\)00109-7](https://doi.org/10.1016/S0305-750X(01)00109-7).
- Finnis, John. 2011. *Natural Law and Natural Rights*. OUP Oxford.
- Schleicher, Judith, Marije Schaafsma, Neil D. Burgess, et al. 2018. "Poorer without It? The Neglected Role of the Natural Environment in Poverty and Wellbeing." *Sustainable Development* 26 (1): 83–98. <https://doi.org/10.1002/sd.1692>.

Supplementary Material S3: Additional land use changes.

Land use change forest to shifting cultivation in Madagascar

In Madagascar, the land use change forest to shifting cultivation had a negative effect on eight out of 19 well-being components. Only the well-being components of social relations was positively affected. Four well-being components experienced a trade-off with both positive and negative effects from the land use change: nutrition, religion/traditions, agriculture, and income. The land use change thereby most negatively affected regulating ecosystem services and cultural ecosystem services, followed by provisioning ecosystem services. No direct impacts of the land use change on well-being were recorded.

This land use change negatively affected all regulation and maintenance ecosystem services, except for the regulation of soil quality. The most pronounced negative effect was on agriculture through decrease in erosion control, regulation of the hydrological cycle, temperature regulation, and wind protection. Nevertheless, the change also had a positive effect on agriculture by increasing the provision of fodder for livestock. Another important negative effect was on water, through the decrease in regulation of the hydrological cycle, temperature and water purification. Regulation of air quality and temperature negatively affected both health and recreation. Furthermore, the environment was negatively affected through the decline of wild animals for lifecycle maintenance and security was negatively affected through a reduction in erosion control. The land use change negatively affected provisioning ecosystem services linked to income through a decline in construction wood, firewood, honey, medicinal plants, wild animals, and wild animals for processing. The decline of medicinal plants also affected health, and the decline of honey affected nutrition, which was in turn affected by the decline of wild animals. Furthermore, the decrease in the availability of construction wood impacted on work and job opportunities. However, trade-offs were observed as nutrition and income were positively affected through an increase in fruits, vegetables, and rice. Four well-being components worsened due to a decline in the supply of cultural ecosystem services. This was mostly the case for the environment, through the decline in bequest value, existence value, aesthetic experience, and observing/experiencing nature, as well as for recreation through the latter two ecosystem services, as well as through a decline in recreational activities and places for recreation/enjoyment. Furthermore, religion/traditions were negatively affected through the declining cultural/traditional and spiritual value, and the bequest to descendants was negatively affected through a decline in bequest value.

Land use change paddy rice fields to other cash crops in Laos

Only a few impacts on well-being were recorded via ecosystem services for the land use change paddy rice fields to other cash crop plantations (commercial banana and sugar cane plantations) in Laos. Three dimensions were clearly negatively affected, one positively, and one mixed. Income experienced a trade-off as on the one hand, a decrease in rice had a negative effect (as rice from paddy fields is also commercialized), while an increase in cash crops had a positive effect (the latter is also true for work opportunities). A negative effect occurred on agriculture as livestock declined. Due to this decline in rice and livestock, nutrition also worsened. The increased use of fertilizers, pesticides, and herbicides negatively affected health, environment and agriculture (as soil quality strongly decreases in intensive monoculture banana plantations). Additionally, air pollution from burning plastic waste

(banana wrappings) worsened health and degraded the environment. As with the land use change shifting cultivation to rubber, the decrease of available agricultural land and increase in land rent negatively affected the well-being component of having land. The opportunity to lease out land to investors for banana plantations had a positive effect on income (additional income from lease) and recreation (less labor had to be invested). Similarly, land users who turned paddy rice fields into sugarcane plantations, which they continued to plant themselves, also observed positive effects on income and recreation (as lower labor inputs are required compared to paddy rice).