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Wellbeing economy: an effective paradigm to mainstream post-growth policies? --Manuscript Draft--

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Abstract:	The concept of 'wellbeing economy' (WE), that is, an economy that pursues human and ecological wellbeing instead of material growth, is gaining support amongst policymakers, business, and civil society. Over the past couple of years, several national governments have adopted the WE as their guiding framework to design development policies and assess social and economic progress. While it shares a number of basic principles with various post-growth conceptualisations, the WE's language and concepts tend to be more adaptable to different social and economic contexts, thus penetrating into policy processes and connecting to a variety of cultural traits, not only in advanced economies but also in less industrialised nations. In this paper, we describe the key features of the WE, including its approach to key concepts like work, productivity and technology and several examples of its policy impact. We conclude by positing that the WE framework may be one of the most effective bases to mainstream post-growth policies at the national and global level.		
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Dr. Luca Coscieme, Research Program Manager, Hot or Cool Institute, Quartiersweg 4, 10829 Berlin Germany.

2 June 2021

Dear Editor,

Please consider the revised version of our manuscript titled *Wellbeing economy: an effective paradigm to mainstream post-growth policies?* for publication in *Ecological Economics*.

Following reviewers' comments, the manuscript has been substantially edited in many of its parts, including a modified Title and Abstract, and numerous new references.

We believe we thoroughly answered reviewers' questions and in most cases accepted their suggestions.

We remain available for any further action needed from our side.

With Best Regards,

Luca Coscieme,

on behalf of the co-authors Lorenzo Fioramonti, Robert Costanza, Ida Kubiszewski, Katherine Trebeck, Stewart Wallis, Debra Roberts, Lars F. Mortensen, Kate E. Pickett, Richard Wilkinson, Kristín Vala Ragnarsdottír, Jacqueline McGlade, Hunter Lovins, and Roberto De Vogli.

Manuscript Number: ECOLEC-D-21-00283

Wellbeing economy: a new development paradigm for transformative policy impact?

Dear Dr Coscieme,

Thank you for submitting your manuscript to Ecological Economics.

Reviews are complete and are copied below. The reviewers recommend reconsideration of your paper following major revision. We invite you to resubmit your manuscript after addressing all reviewer comments.

When resubmitting your manuscript, please carefully consider all issues mentioned in the reviewers' comments, outline every change made point by point, and provide suitable rebuttals for any comments not addressed.

To submit your revised manuscript, please log in as an author at https://www.editorialmanager.com/ecolec/, and navigate to the "Submissions Needing Revision" folder.

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Ecological Economics values your contribution and I look forward to receiving your revised manuscript.

Kind regards,

Roldan Muradian Editor Ecological Economics

Editor and Reviewer comments:

Reviewer 1: The survey paper discusses the concept of a 'wellbeing economy' (WE) as an alternative to the current economic growth paradigm. The authors argue that the terminology finds better traction with policy makers and the larger public than 'degrowth' which people associate with contraction and limited progress. The paper is generally well written and provides a good overview of the literature on post-growth concepts in general, including recent examples where a WE has been taken up by governments around the world.

However, WE need to be better compared to other post-growth concepts (e.g., eco-socialism (incl. degrowth), eco-anarchism, a-growth, precautionary post-growth, green growth approaches, etc.) with regard to similarities/synergies and differences. Currently, it is a bit unclear to me what these differences are in detail despite the different naming/terminology? I agree that WE can be more attractive in a policy context and in discussions outside of academia. However, for a journal article, further details and a differentiation to other existing concepts is necessary. For example, a table comparing WE to the other approaches discussed in the literature would help here and make WE more tangible.

Thank you so much for this comment which was very useful for us to track and discuss further post-growth concepts and improve the manuscript (please see edits at lines 260-271). Accordingly, we have also modified the Title, the Abstract, and other parts of the manuscript (lines 87-117, 135-137, 293-300, and others). We have also modified some of the keywords and added numerous new references.

Similarly, it was unclear to me how concrete monitoring would take place and what the differences to many of the SDG indicators on environmental and social progress (indicators without a focus on economic growth but simply the pressures and impacts of human activities do exist here) and associated strategies are?

Thank you for this comment, which highlights a very important aspect. We have not explored the connections between the WE and the SDG indicators here, as we explored this in detail in a number of previous publications, in particular the following ones:

Fioramonti L, Coscieme L, Mortensen LF. From gross domestic product to wellbeing: How alternative indicators can help connect the new economy with the Sustainable Development Goals. The Anthropocene Review 2019, 6(3), 207-222.

Costanza R, Daly L, Fioramonti L et al. (2016) Modelling and measuring sustainable wellbeing in connection with the UN Sustainable Development Goals. Ecological Economics 130: 350–355.

Following this comment, we have added a paragraph at lines 413-418, 455-458, and 492-494.

In conclusion, this paper is a nice addition to the scientific literature and providing the suggested additional details will help to better locate WE against the background of existing approaches for sustainable prosperity. My more detailed comments can be found below:

Page 5, line 120: The sentence on decoupling (economic growth from resource use/environmental impacts) could be refined to highlight that examples of relative and absolute decoupling actually exist at country and regional level, but these are not sufficient to tackle environmental breakdown, and globally there are no signs of absolute decoupling. Terms such as relative, absolute, and sufficient decoupling should be briefly explained as the lack of decoupling highlighted here represent a central point to argue in favor of WE. Recent decoupling reviews by Wiedenhofer and Haberl in Env. Research Letters 2020 could provide useful.

Thank you. We now better explain what we mean by total (or absolute) decoupling also referring to the review indicated in the comment (lines 127-130).

Page 6, line 165: The authors state that "local customized production is viewed as more efficient than economies of scale and mass production... and reduce environmental externelities...". I am not sure this is always correct as in some cases it might be more environmentally/socially benign to import products from other countries? It would be good to provide more details and support with scientific references.

Thank you for the comment. We agree that in some instances global sourcing might generate less environmental and social negative impacts than local production. We have now re-phrased this sentence to reflect this (highlighting how local production is better at the condition that negative externalities are reduced). We now also refer to a review of local vs. global production (Brunori et al. *Sustainability* 2016) which conclude that sustainability has to be assessed on a case-by-case basis, considering the entire life-cycle, and that a general consideration on which scale of production is better cannot be made for all sector and case studies.

Page 10, line 243: It is highlighted that material production and consumption must be reduced to ensure life within planetary boundaries. I am not quite sure the link between materials use in general and environmental impacts is so obvious. Doesn't it depend a lot on the type of raw material used (e.g., fossil fuels will have huge environmental implications while using certain metals used in modern electronics, or wood for construction might have much lower environmental impacts, especially if products are durable and can be disassembled at end-of-life)? I think a careful distinction between material types and uses is beneficial here instead of a very general statement on materials use.

Thank you for the comment. We agree that this sentence might need some specification. However, when taken in its context, this sentence aims at illustrating the language used by degrowth, which advocates in fact for a reduction in energy and resource throughput and environmental pressures, without much specification on which forms of resources or energy (and thus production and consumption) to reduce and which one to (possibly) increase. This is quite evident in the studies we refer to in this sentence (Hickel, 2019; Parrique et al., 2019).

The fact that degrowth scholars are constantly questioned on this and other aspects (for example, is degrowth required in the global North and South alike?) testifies, in our opinion, for the ineffectiveness of the language of degrowth.

There is indeed clarity within degrowth scholars on all of the above, but this is not reflected in a clear message and this is one critical point we want to highlight in this paper, including in this sentence.

Following your comment, we have modified the sentence to the exact wording used in the references attached to it (lines 286-292).

Page 10, line 251: The degrowth-concept is not meant to be implemented across all economic sectors and countries. Some sectors need to grow (e.g., renewable energy or low-carbon mobility) while others need to shrink (e.g., fossil-energy). Similarly, degrowth is not meant to take place across countries of the global south and north equally. I agree that this is not captured well in the term "degrowth" itself, but it is usually communicated within the first couple of paragraphs of degrowth descriptions. Hence, it is unclear to me what the difference between both WE vs. degrowth is despite the different naming (which, I agree, is important especially in policy making).

We agree. However, disclaimers on where to degrowth and what to degrowth are still needed and subjects of debate, in particular when it comes to policy making. Since the concept of degrowth is now several decades old, we believe this reflects some fundamental flaws of the degrowth narrative. We do believe degrowth is an extremely valuable and important area to develop, in particular within academics and the general public, but we do not see it as having the potential to transform policy (at least in the near future). We now make our point clearer in the edited version of section 3 following the reviewers comments.

Page 12, line 291: This is an interesting finding that technological progress is not highlighted enough in degrowth discussions. Would you consider the latest book of Bill Gates "How to Avoid a Climate Disaster" (which focuses almost exclusively on technological innovation) as being compatible with WE? Would there need to be a certain level of degrowth (also through consumption changes and sufficiency) across some sectors?

Thank you for this comment. Here, we wanted to highlight the extremes of how growth and degrowth discuss technology, respectively. The WE instead does not assume any positive or negative extreme position with regard to technology, but recognises its potential for increasing wellbeing if some conditions are met. At this level, we believe that expanding further on this goes beyond the scope of this work. We are currently working on a book chapter where we explore different views on technology (including from growth, degrowth and WE) in much more details.

Page 16, line 381: Many of the indicators of a WE seem to be captured in the UN Sustainable Development Goals and have been implemented (translated to) the national scale in countries' sustainability strategies and monitoring frameworks. Indeed, certain indicators are inherently incorporating aspects of traditional economic growth (e.g., when looking at resource productivity). However, some indicators focus primarily on pressures and impacts associated with human activities and might be directly applicable to WE monitoring? I am missing concrete examples for indicators for WE here and the overlap to SDG monitoring?

Thank you. Please refer to our reply to your comment on the SDGs above and to the revised text at lines 413-418 and 492-494.

Page 18: I like the list of recommendations. What I am missing is how pension systems,

unemployment benefits, and social welfare programs in general would be financed under the WE model? Is it through a redistribution of wealth (then this should be more explicitly mentioned in the list and paper) or any other form? Please specify.

Thank you. Following this comment we have now made more explicit how wealth could be redistributed in a WE at point c. of the list.

Page 19, line 456: One might argue that the concept of economic growth is still at the heart of some SGDs because this growth is to some extent still necessary for some countries of the global south? Here a link to decent living standards (see the work of Julia Steinberger) could be made to highlight that some countries indeed require some economic growth while others (the majority) do not.

Thank you so much for this comment. We have added a reference to decent living standards in this sentence and also added one paragraph on this at lines 130-134, referring as well to the works of Julia Steinberger and colleagues. Following this comment, we have also modified the text at lines 121-122 and 255-257.

Page 19, line 269: How would 'all costs and benefits...throughout society' be quantified? It sounds difficult to implement and capture properly?

We agree. This sentence at the end of our paper is an attempt to describe a vision of the wellbeing economy for the future. We have now re-phrased the sentence in clearer terms. We provide several examples of options for capturing costs and benefits of human activities throughout the paper, and we believe that by placing the WE at the centre of initiatives such as the post-2030 Agenda there will be further stimulus for developing and implementing these and other tools and actions.

Reviewer 2: According to the abstract, the manuscript provides a description of the concept of the "wellbeing economy", and an argument why it should be central in developing the SD agenda post 2030; this relates to the claimed superior potential of this concept to 'penetrate' policy processes.

The manuscript is labelled as an entry to the 'survey' section of the journal. Several the papers that are labelled as 'survey' in ECOLEC have substantive empirical sections, and therefore this paper looks unconventional in relation to them, reading more like a subjective essay than an academic paper. In my view even an unconventional manuscript needs to adhere to quality standards in terms of the argumentation (overall coherence of argument, clarity of claims and reference to compelling evidence for those claims), so I will mainly reflect on the paper using those criteria.

My overall assessment is that the manuscript fails to be convincing. It reads as an advocacy paper for a concept without providing the rigor that in my view is needed. I support this claim below with key examples. Alas, these are not the only instances where evidence for claims made is weak or missing; I would urge the authors to check carefully at what points in their paper further evidence is needed (see for instance, line 98-99: "We argue that the notion of WE is better suited to penetrate policy processes as it builds on a culturally shared value such as wellbeing [...]." This claim is made in a comparison between WE and economic growth; one could quite compellingly make the counterclaim that the notion of economic growth as expressed in terms of GDP is shared very widely, which explains its persistent ability to 'penetrate' [not my favourite term] policy processes worldwide). Dealing with the

issues I list is possible, but will require a substantial reworking of the manuscript.

1.To begin with, the concept of wellbeing economy (and related terms such as "wellbeing approach") is not explicitly defined in the article. This might be because of the claim of the authors that this is a "culturally shared value" (line 99), but I would contest that. There is substantial debate about what wellbeing constitutes, and a literature on the cultural specificity of the concept. Moreover, the governments that have adopted the term interpret and operationalize it in different ways. Given the overall aim of the paper this diversity is an important phenomenon and therefore I feel it should be analysed as part of the paper. Examples of academic contributions about the cultural specificity of wellbeing:

Atkinson, S., Fuller, S., Painter, J., Atkinson, S., Fuller, S., & Painter, J. (2016). Wellbeing and place. London/New-York: Routledge.

King, M. F., Renó, V. F., & Novo, E. M. (2014). The concept, dimensions and methods of assessment of human well-being within a socioecological context: a literature review. Social indicators research, 116(3), 681-698.

Thank you for this comment. We have substantially modified the paper to better explain the concept of wellbeing economy and the aim of this work. Please refer to the new Title, Abstract, and edits at lines 87-117, 135-137, 260-273, and 286-300, among others. We agree that wellbeing is culturally specific and, at the same time, a concept that is present (in different connotations) across cultures, including indigenous peoples. In fact, we have explored the multiple understandings of wellbeing in several of our works, such as for example the following one:

Boyce C, Coscieme L, Sommer C, Wallace J. Understanding Wellbeing. WEAll Briefing Papers: Little Summaries of Big Issues, 28 July 2020. Available from: wellbeingeconomy.org

While we believe that an in-deep discussion of this diversity is beyond the aim of this paper, we have modified our manuscript based on your inputs.

2.As an empirical basis, the article draws on four national governments joining the WE network which was established in 2018. First of all, I disagree with the claim that this membership convincingly supports the following claim (lines 80-82): "The concept of 'wellbeing economy' (WE) is thus revealing its high potential to be integrated into official government policy, constituting an effective alternative to the traditional 'growth' policy discourse." This claim in my view needs to be underpinned with more convincing evidence for it to be part of the argument.

Secondly, other governments have used the wellbeing concept as a basis for government; Equador is one of the early examples, adopting it in 2008 (if I am correct). This means two things: (1) the paper fails to include key examples of governments adopting the perspective and (2) the paper fails to take the opportunity to learn from at least one early, well documented example, lessons that could underpin the claims made about the potential of the WE concept (the major point of the paper). From the many examples of articles on Equador I found the following two insightful, but there is much more (recent) material that can be harvested:

>Radcliffe, S. A. (2012). Development for a postneoliberal era? Sumak kawsay, living well and the limits to decolonisation in Ecuador. Geoforum, 43(2), 240-249.
>Williford, B. (2018). Buen Vivir as policy: Challenging neoliberalism or consolidating state power in Ecuador. Journal of world-Systems research, 24(1), 96-122.

I would urge the authors to take a more critical and evidence-based approach to their claim about the potential of the WE as a mobilising concept for government policy.

Thank you so much for this comment that helped us tracking and referring to other initiatives that integrate the concept of wellbeing into policy. While it is essential to refer to these initiatives, we wanted to bring the attention to the more coordinated change that is taking place now with the wellbeing governments, while other cases existed in isolation so far. We already referred to the concept of *buen vivir* (mentioned in the title of the reference you suggest from Willford, 2018) at line 271 (now line 295). Following your comment, we now more explicitly refer to the case of Ecuador, and other cases, at line 293-300.

3.The main claim that the WE concept has high potential to act as a focal point for governmental policy is based on the implicit assumption that policy is a major (the main?) mechanism through which social change can be effected. The paper does not address the role of civil society and business in generating social change. This assumption needs to be looked at critically; in my view social change of the kind the authors are referring to is seldom generated through policy processes alone, and often initiated outside the corridors of governments (at various levels). Again, there is a lot of evidence on this; one could look at the rapid spread of the 'circular economy' concept which was adopted by governments but initiated by civil society and quickly picked up by the business community. There is an interesting question whether certain types of concepts require governmental policy to be a main mechanism, but this requires careful and explicit reasoning, rather than assumptions which are left implicit.

Thank you for the comment. We agree on all the points and in fact we refer to the broader scope of the Wellbeing Economy Alliance (of which the Wellbeing Government Network represents only one component) at lines 345-357. Please also refer to line 87-117.

While it would be of value to explore the concept of wellbeing from a broader perspective, this will require substantially more space and it is outside the aim of this paper. Here, we wish to focus on the effectiveness of the concept of wellbeing to be adopted in policy, compared with other concepts alternative to growth, such as for example degrowth. We are also not comparing the WE with concepts, such as the circular economy, that do not imply a critique to grow but focus their attention on how value chains could be transformed (from linear to circular) to reduce negative impacts, without questioning the overall goal of the Economy.

Highlights

- A wellbeing economy pursues human and ecological wellbeing instead of material growth.
- It implies a forward-looking language and solution-oriented vision.
- Its guiding principles have been adopted by a number of national governments.
- Its policy impact is higher than other alternatives to growth, such as degrowth.
- We propose the wellbeing economy as a framework for the post-2030 agenda.

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Conflict of interest

The authors declare no conflict of interest.

Luca Coscieme,

on behalf of the co-authors Lorenzo Fioramonti, Robert Costanza, Ida Kubiszewski, Katherine Trebeck, Stewart Wallis, Debra Roberts, Lars F. Mortensen, Kate E. Pickett, Richard Wilkinson, Kristín Vala Ragnarsdottír, Jacqueline McGlade, Hunter Lovins, Roberto De Vogli and Enrico Giovannini.

Wellbeing economy: an effective paradigm to mainstream post-growth policies? Lorenzo Fioramonti^a, Luca Coscieme^{b,*}, Robert Costanza^c, Ida Kubiszewski^c, Katherine Tre-beck^d, Stewart Wallis^d, Debra Roberts^e, Lars F. Mortensen^f, Kate E. Pickett^g, Richard Wilkinson^h, Kristín Vala Ragnarsdottírⁱ, Jacqueline McGlade^j, Hunter Lovins^k, Roberto De Vogli^l. a. Department of Political Sciences, University of Pretoria, South Africa b. Hot or Cool Institute, Berlin, Germany c. Crawford School of Public Policy, The Australian National University, Australia d. Wellbeing Economy Alliance, Glasgow, UK e. Environmental Planning and Climate Protection Department, eThekwini Municipality, Durban, South Africa f. European Environment Agency, Copenhagen, Denmark g. Department of Health Sciences, University of York, UK h. Division of Epidemiology and Public Health, University of Nottingham, UK i. Institutes of Earth Sciences and Sustainable Development Studies, University of Iceland, Iceland j. University College London, UK k. Natural Capitalism Solutions, Longmont, Colorado, United States I. Department of Social Psychology and Development, University of Padova * Corresponding Author -Email: I.coscieme@hotorcool.org

Abstract

The concept of 'wellbeing economy' (WE), that is, an economy that pursues human and ecological wellbeing instead of material growth, is gaining support amongst policymakers, business, and civil society. Over the past couple of years, several national governments have adopted the WE as their guiding framework to design development policies and assess social and economic progress. While it shares a number of basic principles with various post-growth conceptualisations, the WE's language and concepts tend to be more adaptable to different social and economic contexts, thus penetrating into policy processes and connecting to a variety of cultural traits, not only in advanced economies but also in less industrialised nations. In this paper, we describe the key features of the WE, including its approach to key concepts like work, productivity and technology and several examples of its policy impact. We conclude by positing that the WE framework may be one of the most effective bases to mainstream post-growth policies at the national and global level.

Keywords: post-growth, degrowth, wellbeing, sustainability, SDGs

1. Introduction

The global COVID-19 pandemic has brought into sharp relief the crucial importance of human and ecological wellbeing, not only in and of itself, but also as a (pre)condition for any form of social and economic activity. Directly, we have seen the devastating social and economic impacts of the health-related crisis, which have far outweighed any previous financial or economic crisis. Indirectly, we have come to realise the economic consequences of environmental degradation's impact on human health, given that more epidemics are caused by deforestation and biodiversity loss and aggravated by pollution (IPBES, 2020).

In this post-Covid phase, the world is faced with a tremendous window of opportunity for systems change, also demanded by public opinion (Costanza et al. 2020; UNDP, 2021). Yet, time is not on our side. If we want to exert radical policy transformation within the next few years and, reasonably, before 2030, then we need a new paradigm that is able to warm the hearts and minds of citizens, entrepreneurs, professionals, scholars, and intellectuals and rapidly penetrate policy processes with a view to turning theory into practice, not only in the most advanced economies but also in those parts of the world affected by endemic poverty and underdevelopment.

On December 21st, 2020, the Finnish Ministry of Social Affairs and Health announced that Finland was joining Scotland, Wales, Iceland, and New Zealand as a new member of the network of Wellbeing Economy Governments (WEGo) (Finnish Government - Ministry of Social Affairs and Health, 21.12.2020). Since 2018, when it was officially launched, the network has gained rapid support by heads of government and public authorities across the world, indicating a growing inclination to place human and ecological wellbeing – instead of economic growth per se - at the centre of policy making (Fioramonti, 2017b; Coscieme et al., 2019; Hough-Stewart et al., 2019). It is the first time that a variety of national governments, also

with the support of an intergovernmental institution like the Organisation for Economic Cooperation and Development (OECD), which is tasked with informing economic strategies in among advanced economies, openly unite on the basis of a post-growth agenda.

Against this backdrop, this paper argues that the notion of 'wellbeing economy', that is, an economy that pursues human and ecological wellbeing is well suited to travel across cultures and penetrate policy processes because it links with values and concepts that are shared by a number of societies (Atkinson et al., 2016; King et al., 2014). Moreover, the WE paradigm shifts away from material production and consumption as the main purpose of economic development to embrace a wide variety of social and environmental dynamics, which are viewed as fundamental contributors to human and ecological wellbeing. In doing so, it clearly moves 'beyond growth', emphasising the fact that our notion of growth must be completely reimagined not as an increment in material consumption but as an increment in multidimensional wellbeing. In this regard, unlike other critiques of the growth economy that project an image of contraction, parsimony and deprivation, the WE uses a 'positive language' of abundance, wellness and conviviality, with a view to building a forward-looking narrative of opportunities for human creativity, thus inspiring collective action and making governments more amenable to policy change (Costanza, 2020).

In this paper, we describe the tenets of the WE paradigm and analyse how its framework relates to both the conventional approach to economic growth as well as some post-growth conceptualisations, in particular 'degrowth'. We conclude with a discussion of how the WE framework has thus far been effective at triggering change in institutions and in society at large, highlighting the possibility it may become an important channel to mainstream post-growth policies at the national and global level.

2. Beyond growth: the key tenets of a wellbeing economy

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tion is necessary to improve living standards. And although this is true to some extent, especially in societies characterised by massive deprivation, studies have shown that very little correlation exists between growth and wellbeing after a certain threshold of basic needs is met (Easterlin, 1995; Inglehart et al., 2008; Kahneman and Krueger, 2006; Myers, 2000). It is also argued that consumption growth is indispensable to fuel the technological advancements that will free the world of pollution and climate change (IEA, 2017; Schwab, 2018). However, a number of studies have demonstrated that it is impossible to decouple economic growth from resource use and emissions (absolute decoupling) due to the fundamental interdependences between the socio-economic system and its biophysical basis (Ward et al., 2016; Coscieme et al., 2019; Bastianoni et al., 2019; Wiedenhofer et al., 2020). Furthermore, there is growing evidence that it may be possible to ensure decent living standards to everyone within the ecological boundaries of the biosphere, provided that new approaches to production and consumption are put in place as well as a more equal distribution of income and wealth (Millward-Hopkins et al., 2020; Ward et al., 2020). The WE is intimately linked to the academic and institutional literature on the interconnections between wellbeing and economic development (Dasgupta, 2020 and 2021; Fioramonti, 2016, Costanza et al., 2014b, 2016b,c, 2007). From a WE perspective, continuous material growth is not only unsustainable in so far as it takes a heavy toll on natural resources and ecosystems, but also because it has a detrimental impact on social cohesion as well as psychological and physical wellness. Indeed, over the past few years, production chains may have become marginally more sustainable, but more production has also meant more work-

ing hours and more waste. Inequalities have also grown, particularly within countries, while

The defenders of economic growth argue that more material production and consump-

psychological distress has increased exponentially, especially at times of accelerated growth (World Inequality Lab, 2018; Picketty, 2014; Stiglitz, 2012; Wilkinson and Pickett 2018). Modern societies are increasing plagued by anxiety, depression, narcissism, reduction of empathy and other mental disorders (Costanza et al., 2016a).

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Medical research has demonstrated that the quality of human relations and the living environment is a fundamental determinant of a person's health (Bowler et al., 2010; Keniger et al., 2013; Ulrich, 1984). Social epidemiologists have shown that growing inequalities have a negative bearing on personal and collective health outcomes, while greater equality seems to improve most objective measures of wellbeing, from child development to life expectancy, from declining violence to improved social cohesion and interpersonal trust (Kasser, 2002, Wilkinson and Pickett, 2009). Sociological research has also indicated that care-based and trust-based activities, especially those of a voluntary nature (thus falling outside the market proper and not counting towards growth), have a fundamental impact on societal wellbeing (Helliwell and Putnam, 2004), while high levels of social capital are critical to counter external shocks, as demonstrated by the countries that dealt better with the COVID-19 pandemic (Coscieme et al., 2020). Additionally, ecological economists have long argued that the free services provided by ecosystems are by far the largest contributors to human wellbeing and help meet the basic needs of the poor (Costanza et al., 1997 and 2014a; Sandifer et al., 2015; Coscieme et al., 2014).

The paradox is that all these factors, which are drivers of wellbeing and without which there could be no economy at all, have been systematically excluded from any conventional notion and measurement of development and growth. As a consequence, societies have encouraged industrial activities that, by and large, are either blind or generally detrimental to the true sources of wellbeing and, therefore, the foundations of economic progress. They

have pursued growth within the rules and structures of an economic system that ignores (and often undermines) the very sources of wellbeing.

In going beyond material growth, the WE recognizes, protects and promotes the contributions of natural, social, and human capital to collective wellbeing. For a WE, development can no longer be measured by composite indicators like the gross domestic product (GDP), which simply add the market value of material production and consumption, but requires a multidimensional approach measuring, for instance, the state of natural ecosystems (i.e. by assessing the benefits that humans derive from the natural environment or the impacts of human activity on ecological dynamics), collective health outcomes and life expectancy, as well as public trust and the quality of social relations (Costanza et al. 2016b, Fioramonti et al., 2019).

The WE approach differentiates between what we want to grow and what we want to decrease, and how we value these effects. A production process that has a negative impact on people's health or the environment is, therefore, considered of negative value for the economy, while any improvement in the quality of work and better work-life balance is considered a positive, in so far as it produces positive wellbeing outcomes. In this regard, local customised production can be more efficient than economies of scale and mass production (Brunori et al., 2016; Fioramonti, 2017a,b), as long as the former reduces negative social and environmental externalities (e.g., waste) while concentrating profits and employment within the local community (two important positive externalities). In terms of wellbeing, humans can indeed be productive in many ways, not only through formal work, but also as volunteers, parents, friends, citizens, and the like. As a matter of fact, the productivity (and, therefore, the public standing and remuneration) of many conventional jobs should be reassessed to gauge the extent to which their positive contributions to the health of people and ecosystems

exceed their negative impacts. A WE approach would ask: is a banker more productive in terms of wellbeing creation than a teacher or a nurse?

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The essential contributions to wellbeing made by natural ecosystems, healthy social practices and better education are recognised by a multitude of scholarly research and policy reports (Dasgupta 2020; Costanza et al. 2014b and 2016b,c). Unfortunately, all these contributions are completely ignored by conventional growth notions. For instance, in GDP terms, natural ecosystems are only valuable to the economy when they are exploited and their produce is sold in formal markets (Carrero et al., 2020). The services they render in terms of climate regulation, natural fertilisation and soil regeneration (which are all essential for human activities, from food production to energy) are completely ignored (Gamfeldt et al., 2013; Chaves et al., 2020). The time we spend in our communities, helping each other, educating children, and building social cohesion is considered wasted, even if it is essential to generate wellbeing and, therefore, to support any form of economic activity (Griep et al., 2015; Thoits and Hewitt, 2001). Similarly, if a society keeps people in good health (for instance, by avoiding long working hours, allowing better work-life balance, promoting healthy food, reducing pollution, as well as addressing and reducing inequalities), these contributions to wellbeing will not count in the perspective of GDP growth, which - by contrast - will assess as positive any increase in medical spending by the population, even if it is due to poor health, stress and the spread of preventable diseases (Fioramonti 2013 and 2017b). This illustrates one of the problems with the growth paradigm: it effectively rewards failure by counting as a positive our spending to deal with avoidable damage. The term 'failure demand' is sometimes used to explain this in social policy terms, just as ecological economists talk of 'defensive expenditure' (see Trebeck and Williams 2019).

From a growth perspective, profitability is the result of economic output exceeding the market costs of production, measured only in terms of capital invested and labor, with no regard for environmental/social costs and gains. In the WE approach the concept of profitability is completely redefined in terms of contributions to wellbeing, with a view to minimising costs for society and the environment (which ultimately are costs for the economy too) and maximising the potential to deliver higher order goals of social justice and health. For example, a better work-life balance may increase profitability insofar as it frees up time for family care and improves non-economic aspects of personal wellbeing, from social cohesion to children's wellbeing, healthy lifestyles, and ecological regeneration (Lunau et al., 2014; Kossek et al., 2014). While GDP growth only recognises formal market-based work and ignores the value of voluntary work and unpaid housework and family care (and welcomes any shift in social production and reproduction that replace informal care-based activities with their formal market-based alternatives: from schooling to elder care, from food preparation to volunteering), in the WE perspective work equals any formal or informal, paid or unpaid contribution to collective human and ecological wellbeing. This 'wellbeing work' should always be supported in economic policy, for instance by dedicated welfare programmes involving remuneration for household and community care (e.g., universal civil service). A WE requires the adoption of multiple indicators and a system of total cost and benefit accounting. For instance, what are the negative impacts on wellbeing generated by the fossil fuel sector, the corporations of processed food, tobacco, or sugary drinks? According to the latest data, the overall cost of the negative impacts generated by industrial production on natural capital (which is only one of several drivers of wellbeing) hovers around at least US\$ 7.3 trillion of value destroyed every year, that is, over 10% of the entire global economy in terms of GDP, with fossil fuel energy and food production being the most destructive sectors

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globally (Trucost, 2013). According to the Centre for Disease Control, smoking-related illness in the US costs more than \$300 billion each year, including nearly \$170 billion for direct medical care, and more than \$156 billion in lost productivity (CDC 2020). According to a long-term study published in 2019 that considered over 100,000 men and women in the US, the quantity of sugary beverages people drink is strongly linked with greater risk of premature deaths for cardiovascular disease and cancer (Malik et al., 2019). The costs society is paying for climate change caused by extraction and burning of fossil fuels are estimated on the scale of trillions of dollars annually, only considering impacts such as hurricane damage, real estate losses, and energy and water costs. Furthermore, there is consensus amongst scientists that these costs are largely underestimated (Nuccitelli, 2019). On top of that, the fossil fuel industry is heavily subsidized (with figures above 6 percent of global GDP; IMF, 2019) and its level of unpreparedness when it comes to cleaning up oil spills and mitigating environmental impacts has been consistently reported by scientific studies (e.g., Woolfson and Beck, 2019; Griggs, 2011) as well as investigative reports (e.g., Maddow, 2019). The negative impacts of GDP growth are also unequally distributed, more severely affecting vulnerable people: locally, with air pollution, noise and extreme temperatures mostly impacting people with lower socio-economic status and elderly people (EEA, 2018); globally, with the consequences of climate change being more severe in poor countries, especially among those who have least contributed to it (Bathiany et al., 2018). Overall, the WE approach fundamentally alters our understanding of what creates value and when, and re-focuses economies and societies on a set of key components, maintaining a multi-dimensional approach and being adaptable to diverse contexts (Table 1).

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Table 1. Key components of a Wellbeing Economy

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ADAPTABILITY TO CONTEXT MULTI-DIMENSIONAL APPROACH **PERSONAL** SOCIAL · Work-Life Balance Cohesion · Psycho-Physical Health Equality • Community Engagement Empowerment **ECONOMIC** NATURAL Customization Healthy Ecosystem Functions • Localized Production · Urban-Rural-Wild Balance Prosumer Approach · Total Cost and Benefit Accounting

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3. From degrowth to wellbeing: achieving policy impact

As we have seen, the WE framework shares the overall basis of many post-growth approaches, drawing inputs from ecological economics (Costanza et al., 2020), happiness studies (Helliwell et al., 2021), planetary boundaries and social needs (Rockström et al. 2009; Max-Neef, 2010; Raworth 2017) and the socio-economic determinants of health (Wilkinson and Pickett 2009). Unlike other strands of work that come with strong ideology-based 'labels', such as eco-socialism (Löwy, 2015) or eco-anarchism (Clark, 2020), the concept of wellbeing is generally perceived as post-ideological. Furthermore, its language reflects the intended purpose to overcome "the argument culture" we live in (Tannen, 1998), "where even the most complex problems are cast as polar opposites" (Costanza, 2020). While rejecting any

attempt at making conventional economic growth more socially or environmentally acceptable (as is the case with 'inclusive' or 'green' growth), it calls for completely refocusing the debate away from growth (Van den Bergh, 2011; Jackson, 2021; Petschow et al., 2018).

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In this regard, the WE approach shares a number of similarities and differences with concepts such as degrowth. Both the WE and degrowth agree that material production and consumption cannot grow forever on a finite planet and that wellbeing can improve while reducing GDP. Yet, although there is a growing activist and scholarship movement behind it (Hickel, 2019; Parrique, 2019; Kallis, 2011), the degrowth approach has not yet had much success in influencing policy making (Buhr et al., 2018). There are probably several reasons for this lack of policy impact. Some have pointed out that the overall message of degrowth is unlikely to 'travel' across sectors and cultures, probably because of its implicit reference to contraction (Tomaselli et al., 2021). It is indeed hard to imagine the spread of a new generation of entrepreneurs pushing for a reduction in economic activities, let alone policy makers publicly endorsing a narrative that can be easily represented by the media as one of deprivation and restraint. Furthermore, it is difficult to see how the concept of degrowth could find public support in many poor or middle-income countries, which have hardly seen any material consumption growth over the past decades and cannot be blamed for the increasing social and ecological disasters across the planet (Chiengkul, 2018). It must be noted, of course, that many proponents of degrowth have taken great pains to clarify that "degrowth is not about reducing GDP, but rather about reducing throughput" (Kallis, 2018) and have explained that its principles cannot be universally applied: "Some people worry that proponents of degrowth want to see degrowth universally applied, in all countries. This would be problematic, because clearly many poor countries in fact need to increase resource and energy use in order to meet human needs" (Hickel, 2019).

Unlike degrowth, the concept of wellbeing, in its multidimensionality and simplicity, has no boundaries and requires no disclaimers: it resonates the world over, in all languages and cultures (Boyce et al., 2020). From the Latin-American *buen vivir* to the Swedish culture of *lagom*, from the East Asian values permeated by the Confucian and Buddhist beliefs to the Southern African *ubuntu*, the concept of 'living well' and 'in harmony with society and nature' is inherently global and has already been integrated into state policy and national constitutions in a number of countries, from Ecuador to Bolivia, from Costa Rica to Bhutan (Radcliffe, 2012; Williford, 2018). As observed by Donella Meadows, one of the drawbacks of alternative narratives to growth is the tendency to disregard or take for granted a shared vision and goals (Meadows, 2012). By placing an overall vision at the centre of its discourse, the WE makes room for creativity, innovation, and definition of policy options that should be malleable enough to adapt to different contexts: it is about a plurality of changes, emphasis and pathways, which are critical for adoption by policy makers and impact in society.

Both the WE approach and degrowth highlight the need to downscale economic activity that is harmful to people and ecosystems (i.e., the production of internal combustion engine vehicles, weapons, private transportation, advertising and products with planned obsolescence), while expanding socially productive sectors like healthcare, education, care and conviviality (Hickel 2020). From a WE perspective, however, a reduction in material consumption is no automatic guarantee of expanding human and ecological wellbeing, unless our modes of production are fundamentally transformed, for instance by turning technology into an important enabler of a just transition.

For too long, the proponents of the growth economy have monopolised the language of technology, presenting growth as the necessary condition for technological advancement and considering technology a key driver of growth, including cleaner and greener growth (Bakker

et al., 2017). By contrast, degrowth has generally disregarded technological innovation as a driver of change and has often seen technology as a marginal element in its transformative agenda, sometimes depicting it as a negative factor undermining human development or a threat to humanity's deeper sense of purpose (O'Sullivan, 2019). In turn, this has socialised a new generation of innovative entrepreneurs into thinking that there can be no alternative to growth or that the growth economy is the only ideal terrain for technological progress, potentially antagonising them towards the post-growth narrative.

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By contrast, new technologies are a critical opportunity to foster a wellbeing-based transition. Innovations based on peer-to-peer, open-source software and hardware, 3D printing, blockchains, decentralised community-based renewable energy systems (microgrids) and precision agriculture have the potential to emancipate consumers from their dependency on mass production, challenging large corporations and the dominance of global markets. By localising and customising production and consumption, these innovations promote shorter value chains and local empowerment, providing economic opportunities for multiple forms of entrepreneurs while reducing overproduction and waste of resources (Fioramonti, 2016). Moreover, these innovations are redefining the very role of producers and consumers, blurring the boundaries between the two and enabling the emergence of prosumer models (EEA, 2019), which increase participation in the economy and contrast the passive consumption mode of contemporary consumerism, which is a significant cause of many social and psychological pathologies. These participatory models, where users play an active role in the design and manufacture of products and services, are also proving effective in helping less industrialised societies to leapfrog to a more sustainable and wellbeing-centred way to meet some basic needs, for instance in the production of renewable energy and food (WRI, 2016). While the growth approach privileges economies of scale, which tend to reward incumbents and monopolies, the WE approach rewards newcomers, disruptors, small enterprises, thus multiplying job creation and employment opportunities.

4. Mainstreaming and measuring the wellbeing economy

The most striking example of the WE's policy impact is the esttablishement of the Wellbeing Economy Governments (WEGo), a G7-like forum made up of countries that have adopted the WE as their economic policy framework and that was instigated by the Wellbeing Economy Alliance (WEAII), a global network of civil society organisations (Trebeck, 2020a). The WEGo was first officially discussed at an institutional conference in Scotland in 2017 and formally launched in November 2018 at the OECD's World Forum in Incheon, South Korea. Within two years from its launch, the network has come to include five national governments (New Zealand, Scotland, Iceland, Wales, and Finland) and it is expected to grow further afield, with a number of other governments both in the global 'North' and 'South' showing interest in being part of the group. Particularly notable is the fact that WEGo members are already implementing policies that aim to replace GDP growth as the main goal of their national economies, in favour of a more holistic approach to delivering wellbeing by taking care of the environment, people's health (including mental health) and social relations.

New Zealand, for example, has launched a 'Wellbeing Budget', a macro-economic framework for designing and assessing policies in a variety of fields, from investment to education, from urban development to healthcare. The Wellbeing Budget stems upon the understanding that GDP growth does not guarantee improvements in living standards and does not measure the quality of economic activities or consider who benefits and who is left out or behind (New Zealand Government, 2019). New Zealand's approach focuses on five priority areas to im-

prove citizens' wellbeing: mental health, child wellbeing, support of indigenous peoples aspirations, building a productive nation through innovation, social and economic opportunities, and transitioning to a sustainable and low-emissions economy.

On July 2019, the First Minister of Scotland Nicola Sturgeon gave a TED Talk titled 'Why governments should prioritize wellbeing', in which she argued that:

"Growth in GDP should not be pursued at any and all cost [...]. The goal of economic policy should be collective wellbeing: how happy and healthy a population is, not just how wealthy a population is."

She committed to moving away from growth as the central goal and shifting away from primarily relying on GDP for assessing economic and social development. Other WEGo governments are rapidly moving in the same direction. For instance, Iceland has adopted a dashboard of 39 wellbeing indicators to guide national economic policies, which include education attainment, mental health, and the environmental costs of economic activities (BBC, 2019). At the international level, the OECD, in its recent working paper "The Economy of Wellbeing", reports how "wellbeing has matured as a statistical and measurement agenda, it has become increasingly relevant as a 'compass' for policy, with a growing number of countries using well-being metrics to guide decision-making and inform budgetary processes" (OECD, 2019).

Finland's Prime Minister has been advocating for a better work-life balance (a key tenet of the WE approach), proposing the introduction of a 4-day work week, whose benefits in terms of better personal health and quality of work, as well as in terms of reducing carbon footprints are increasingly supported by evidence (The Guardian, 4 Nov. 2019; ABC News, 7 Jan. 2020; Knight et al., 2012). The concept of a WE is also spreading fast in academic circles,

with notable economists actively participating in research and outreach activities (see for instance Stiglitz, 2019) as well as into civil society, with over 200 organisations and thousands of citizens having joined the Wellbeing Economy Alliance (www.weall.org).

The positive and forward-looking language we mentioned earlier is well exemplified by WEAll's reference to five crucial elements of dignity, nature, connection, fairness, and participation (Sommer, 2019), which makes the WE approach more effective in aligning with like-minded efforts and initiatives for redesigning the economy away from GDP growth (NEON, WEAll, PIRC and PositiveMoney, 2020). It also provides practical tools for citizens interested in shifting their lifestyles towards improving personal health and mitigating environmental impacts, especially when it comes to modal shifts aimed at optimising wellbeing outputs with the minimum resource input (e.g. adopting plant-based diets, renewable energy self-production technologies, precision agriculture and composting, recycling and reusing, ride sharing and public transport and using software technologies to efficiently organise all these activities) (IGES et al., 2019).

Other societies are also moving in a similar direction. In 2019, the Italian government instituted 'Wellbeing Italy', a coordination unit within the prime minister's office, tasked with ensuring consistency across all governments' policies in line with the key tenets of the WE. A number of cities and regions around the world have adopted policy monitoring tools devised to measure progress towards wellbeing objectives such as better education, health, gender equality, social equity, as well as reduction in air pollution, climate change, land conversion, and biodiversity loss.

Nowadays there are a number of wellbeing indicators that can be effectively adopted to support policy making towards realising the principles of the WE. Some of these include the

Genuine Progress Indicator, the so-called 'doughnut', the Social Progress Index as well as various measurements of social, natural, and human capital produced by a number of international institutions. Dashboards of indicators are often inspired by notions of wellbeing (as is the case with the OECD's. Better Life Index), which reflects an increasing understanding and measuring of progress in its complexity, away from conventional approaches to economic growth. When taken together, these indicators can capture different contributions to wellbeing, including ecological, social, and economic factors (Costanza et al., 2016; Fioramonti et al., 2019). Having a variety of measurement tools is useful to ensure that wellbeing principles can be adapted to the specific needs of each and every community where they are applied. Should however policy makers prefer a certain level of standardisation, we suggest using the following approach to develop an all-encompassing tracking system for the WE, which we have called the 'sustainable wellbeing index' (SWI) (Costanza et al., 2016b):

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$$SWI = f(E, N, S)$$
 (1)

Where: E = Net economic contribution (adding and subtracting externalities)

N = Natural capital/Ecosystem services contribution

S = Social capital/Community contribution

In line with the complex interaction of all dimensions of wellbeing, these three elements do not add to each other in a simple linear combination, given that the absence of any one of these factors would lead to zero SWI, neither do they follow a purely multiplicative dynamic. For example, it is clear that increases in material standards make a major difference to well-

being in poorer countries where many people lack basic necessities, yet they diminish as production and consumption reach higher levels, where the impacts on natural and social capital may be a critical limiting factor. Thus, the calculation should take this principle into consideration as follows:

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$$SWI = L_{max} * (E/(k_e + E)) * (N/(k_n + N)) * (S/(k_s + S))$$
 (2)

Where: L_{max}= the maximum achievable SWI when all factors are simultaneously at their max-

imum.

 k_e = the "half saturation constant" of E – the value of E where the result of this term

achieves ½ its maximum value

 k_n = the "half saturation constant" of N

 k_s = the "half saturation constant" of S

In this equation (2), each of the terms approaches 1 as the variable approaches infinity. As all the terms approach 1, SWI approaches L_{max}. The larger the half saturation constant relative to the size of the variable, the slower is the approach to 1. Any one of the variables can be the 'limiting factor.' For example, if E is very large its term in the equation will be close to 1. But if S is small its term will be a small fraction that will reduce and limit the SWI. This approach is based on the idea that the best system is one that achieves the overarching goal of a *simultaneously* prosperous, high quality of life that is equitably shared and sustainable. In this vein, the goal is no longer growth, but balanced sufficiency, equity, and sustainability as drivers of wellbeing.

From a policy perspective, WE proponents have recommended focusing on a multilevel agenda of reforms, starting from rethinking macroeconomic indicators and incentives with a

view to affecting the fiscal system, business practices and social behaviours (Fioramonti et al.,
2019). In particular, they have proposed:

- a. An overhaul of the System of National Accounts (SNA), which is intimately anchored on the traditional approach of the growth economy, by developing multidimensional well-being indicators for economic policy planning (Fioramonti 2017a).
- b. Incentivise wellbeing-driven businesses characterised by social and environmental goals (e.g., benefit corporations), requiring them to apply total cost accounting in exchange for tax rebates (Fioramonti et al., 2019).
 - c. Redistribute wealth and incomes by shifting taxes from 'flows' (value-added, labour) to 'harms' (pollution, waste) and 'stocks' (wealth, land). For instance, payment for ecosystem and community services should be encouraged through direct transfers or at least through tax breaks. Societies that support small holding farmers, household-based activities, and community care, experience less crime, lower inequality levels and better public health (Wallace, 2016; Fioramonti 2017b and 2020).
 - d. Develop a labour reform based on an all-encompassing definition of work, which includes not only formal professional activities but also a variety of wellbeing-enhancing services rendered to society, which are an implicit contribution to economic development. Some of the areas of intervention should therefore include: short working week, extended parental leave, decent pay, autonomy, home office and a better work-life balance (Fioramonti 2017b and 2020).
 - e. Support sustainable consumption alternatives, including on nutrition, housing, and mobility, enabled by appropriate policy instruments (not limited to taxation and subsidies), and enabling non-proprietary technologies accessible to all (Wiedenhofer et al.,

487 2018; IGES et al., 2019; Mao et al., 2020).

4. Conclusion: the WE as a unifying post-2030 agenda

In 2015, the United Nations agreed on a new development agenda based on 17 sustainable development goals (SDGs) to be attained by 2030 (UN, 2017). Despite attempting to comprehend a large number of aspects of sustainable development (including environmental, social and economic dimensions), the SDGs have lacked coherence (Coscieme et al., 2021; Mortensen and Petersen, 2017). Notwithstanding the successful promotion campaign and the innovative communication strategy, a number of trade offs amongst the goals and their targets have emerged, limiting their efficacy and the possibility to identify clear policy tools for change (Lu et al., 2015; Le Blanc, 2015; Pham-Truffert et al., 2020; Gennari and Navarro, 2020; Moyer and Hedden, 2020). As a matter of fact, the concept of economic growth is still at the centre of the SDG agenda, which reveals the lack of a truly transformative and inspiring vision for the future, capable of concretely putting people and the planet at the centre of a new development paradigm.

As we have shown in this paper, there is some evidence that the narrative presented by the WE is well-suited to penetrate policy making and travel across countries and cultures. In this regard, 'wellbeing' may be a powerful concept to ensure that the post-2030 resonates with cultural and socio-economic traits of everyone around the globe while promoting radical change in a timely fashion. In this regard, the UN system is the perfect venue to support cross-cultural dialogues on the main pillars of a wellbeing-centred economic and social system, capable to take into account the diversity of needs as well as their inherent unity.

A wellbeing-based economic system would develop new tools to monitor all contributors to human and ecological wellbeing, while accounting for *all* costs and benefits associated with

any form of human activity, not only in the market but throughout society. It would reveal the inefficiencies and losses generated by wasteful production and would show that many large corporations, which today we consider an asset to the global economy, are actually taking wealth away from society. At the same time, the wellbeing focus would highlight the contributions of forms of production that the conventional growth approach either downplays or ignores. In doing so, it would give prominence to a wide variety of actors that have been traditionally marginalised, from small business to new technology companies, from households to cooperatives, whose impact on local economic development, social connectivity, empowerment, sustainable production and consumption far exceeds what is usually considered in terms of GDP growth.

An economy designed to promote wellbeing should be adaptable, integrative, and empowering. Adaptable because it needs to operate like a network, abandoning the conventional top-down structure of the current economy, which is increasingly dominated by a concentration of wealth and power, to expand horizontally and build resilience against external shocks through a system of nodes. Integrative because it must locate systems of production and consumption within the broader biosphere, given that our wellbeing depends on a variety of factors relating to the quality of the environment and the social relations in which we live. Empowering because the passive role of consumers is one of the main drivers of dissatisfaction across societies, making all human beings (often) unaware accessories in a destructive process fuelled by manufactured wants and a rat race of competition that puts human beings against each other and the environment, stifling their creativity through alienation and isolation (Trebeck, 2020b).

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