

## Inclusive wealth: a tool for the United Nations

ANANTHA KUMAR DURAIAPPAH

*International Human Dimensions Programme, United Nations University,  
UN Campus, Hermann-Ehlers Str. 10, 53113 Bonn, Germany. Tel:  
+49(0)2288150601. Email: duraiappah@ihdp.unu.edu*

PABLO MUÑOZ

*International Human Dimensions Programme, United Nations University,  
Germany. Email: munoz@ihdp.unu.edu*

### **Sustainable development and the United Nations**

The world's leaders, business leaders and the public at large are beginning to question, amidst the multiple social, environmental and economic crises, whether our present trajectory of economic growth is sustainable. We seem to force ourselves to believe that we can grow ourselves out of the multiple crises we face today. The notion of sustainable development and the call for going beyond just material wealth to gauge our wellbeing has long featured in much of the sustainable development, environmental and ecological economics literature. We are afraid the present preoccupation with the green economy will not provide the change we are looking for if we don't address the fundamental problem of what we are aiming to achieve and how we measure our progress towards achieving those goals. We fall into the trap many international agencies have made over the past six decades, where the means become the ends and the ends become an academic exercise (Chang, 2001).

In this paper, we write as economists working for a United Nations body focusing on issues relating to the human dimensions of global environmental change. We shall therefore base our comments on the Arrow *et al.* paper with a critical eye on its theoretical foundations as a framework for sustainable development and its applicability in guiding nations to measure how sustainable their countries are and what needs to be done to move their countries back onto a sustainable path if necessary.

The concept of sustainable development has been around for centuries (Duraiappah, 2003), but the most recent concept and definition can be traced back to 1983. In 1983, then secretary general of the United Nations, Javier Perez de Cuellar, appointed Gro Harlem Brundtland from Norway to head a special commission to address the rapid deterioration of the human and ecological environments. The resolution establishing the commission by the General Assembly in A/RES/38/161 in 1983 stipulates the following

terms of reference:

- (a) to propose long-term environmental strategies for achieving sustainable development to the year 2000 and beyond;
- (b) to recommend ways in which concern for the environment may be translated into greater co-operation among developing countries and between countries at different stages of economic and social development and lead to the achievement of common and mutually supportive objectives which take account of the interrelationships between people, resources, environment and development;
- (c) to consider ways and means by which the international community can deal more effectively with environmental concerns, in the light of the other recommendations in its report;
- (d) to help define shared perceptions of long-term environmental issues and of the appropriate efforts needed to deal successfully with the problems of protecting and enhancing the environment, a long-term agenda for action during the coming decades, and aspirational goals for the world community.

In 1987, the commission published 'Our Common Future'. The report emphasized the notion of sustainable development and defined it as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, 1987). Although the terms of reference given to the commission at first sight might seem to be narrowly confined to the environment, the commission members had the foresight to understand the importance of addressing these issues within an integrated framework, bringing together the social, economic and environmental spheres to address the notion of sustainability. At the end of the day, it is the welfare of humans that we are concerned about, not just the present generation but future generations as well.

The commission calls for a new era of economic growth that is socially and environmentally sustainable. The report does an excellent job of informing us of the state of the planet, emphasizing the need for urgent action, and informing us on what needs to be done and where action is required, both across regions as well as in key focus areas. However, the report falls short in providing guidance as to how to measure progress in a quantifiable way that can provide support to policy makers where interventions and responses are needed. The call for a new era of economic growth without any suggestion for new metrics for evaluating progress left countries with little option but to continue using the gross domestic product (GDP) per capita to track progress.

### **We only manage what we measure**

The affiliation with GDP per capita is understandable. It is easy to compute; it is based on a rigorous and well-tested economic theory. Moreover, the data needed to compute GDP are relatively easy to compile and countries were quick to adopt this system of national accounts. However, to use

GDP per capita as a measure for wellbeing was a mistake. Although some attempts were made by the United Nations to redress this oversight in the form of the Human Development Index, there were still gaping fallacies in accounting for sustainability. Neither indicator gave any indication of whether a country was on a sustainable path (Dasgupta, 2009). Therefore, it is not surprising that we continue to see a degradation of the natural environment. It should also not come as a surprise if we continuously hear of the growth vs. environment debate. We are basically using a wrong measure to guide policy making.

### **The inclusive wealth framework**

The inclusive wealth framework proposed by Arrow *et al.* provides a theoretical framework based on social welfare theory to address the multiple issues which sustainable development attempts to address. First, the authors, by moving away from the arbitrary term of needs, define the objective of sustainable development as a discounted flow of utility, which in this case is consumption. Although some social scientists might argue that consumption is not what individuals aim for (Easterlin, 1995), the authors deflect that criticism by including non-material consumption items such as leisure.

The elegance of the inclusive wealth framework in our view comes from the equivalence theorem whereby the authors are able to move from the constituents of wellbeing to their determinants: the various capital assets a country is able to accumulate. In this way, the framework emphasizes not only the importance of maintaining any one particular asset base but also of maintaining the total capital asset base: what the authors call the productive base of the nation. The productive base forms the basis for sustainable development and provides a tangible measure for governments to keep track of. But, more importantly, the framework provides information for policy makers and in particular planning authorities in developing countries on which forms of capital investment should be directed towards in order to ensure the sustainability of the productive base of an economy. The authors thus make the bridge from theory to practice.

There are a number of issues the Arrow *et al.* paper addresses that are worth highlighting here for implementing the sustainable development agenda. First, the paper addresses the concerns of the environmental community on the economic assumption of nature's ecosystem services substitutability with other forms of capital (Dietz and Neumayer, 2007). Second, the paper also informs about the impact population growth will have on sustainability. Third, the framework accounts for how one country's progress might come at the expense of other countries' progress. This third point brings to the fore the notion of global responsibility for the sustainable development of nations.

### *Substitution*

The inclusive wealth framework allows substitution across the different forms of capital and refrains from asserting any specific interest of any

particular constituency. Therefore natural capital is not preserved for its own sake but for its overall contribution to the overall productive base of the country. For example, a country with extensive forest stocks will, according to the inclusive wealth measure, be able to convert some of these forest stocks to other forms of capital assets which it might need to increase the inclusive wealth of the country and to maintain a sustainable path. The degree of substitutability is determined by the ratio of the shadow prices of the capitals in question. The shadow prices hold the key to the degree of substitution or transformation in the country.

#### *Health and other forms of capital*

One of the important features of the inclusive wealth framework the authors present is the importance of not just one form of capital but all capitals for ensuring sustainability and improvement of human wellbeing. One of the interesting results shown by the authors is the importance of health and education in wealth accounts. However, the use of health through the value of a statistical life (VSL) does bring with it a load of issues related to morality and ethics. The fact that the authors find this dimension to be significantly larger than the rest of the other capitals is understandably not surprising. However, if the authors extend the equation on health to include it as a function of the other capitals and in particular natural capital directly, this might change the results. We do understand that the authors at the very beginning state that the shadow prices of an asset are a function of the stocks of all assets. If this is the case, we would have expected higher shadow prices in natural capital, which might not be reflected in the proxy prices, used in computing the values in the paper. Examples of how the mental health of populations has changed with the state of natural capital can be used in computing the shadow price of nature (Duraiappah *et al.*, 2012). This shows again the importance of the shadow prices in making the inclusive wealth framework workable.

#### *Population change*

The other useful and important inclusion in the inclusive wealth framework proposed by the authors is the explicit treatment of population. By including population, the framework acknowledges growing population as an important variable in determining a country's sustainable track. This is demonstrated strongly by comparing the RESULTS of changes in natural capital in table 2 and table 5. The United States, which had a positive growth rate in natural capital of 0.13 per cent, showed a negative growth rate of 5.52 per cent when population growth was factored in. The rapid decline in natural capital in Venezuela which, unlike the other countries, was not compensated adequately by increases in the other capital and only managed to have a very low positive growth rate of 0.05 per cent (table 5) in its inclusive wealth per capita, highlights the need for policy makers to introduce policies to increase the marginal rate of transformation of natural capital to human, reproducible and health capital, so as to ensure the country is on a sustainable track. These are important investment guidelines that the inclusive wealth framework proposed by the authors provide, not

only for national policy makers, but also for the international organizations responsible for development.

#### *Interconnected externalities*

The growing frequency of global environmental problems such as climate change, nitrogen deposition and biodiversity loss, among others, has impacts on a country's wealth prospects and its ability to adopt a sustainable path. Therefore, even if a country adopts all the right measures to follow a sustainable path to maintain or increase its productive base, there are some external variables beyond its control that can either increase or reduce its inclusive wealth. The authors in this report take climate change as one key externality and improve on the World Bank's approach to capturing these off-site impacts. They rightly point out that the damage caused by carbon emissions should be based on global emissions and not just on the country's emission. But we are a bit puzzled as to why they then use the Tol estimates to get global damage and then appropriate that across the five countries based on the Nordhaus and Boyer study. This would mean that the United States will always bear the greatest cost of climate change *vis-à-vis* the other countries. Our suggestion would be to use global carbon emissions and then not use the Tol global average estimates of US\$50 per ton but to use country-specific damage estimates for each ton of carbon and compute the damage cost directly. This might change the figures we see in table 5. But the sensitivity analysis the authors carry out provides valuable information and might form useful guides for international climate change negotiations. Information on these cross-border externalities might also be useful in determining international compensations either in the form of financial or technology transfers, which has been a controversial issue in the international negotiations on climate change.

#### **Shadow price: the strength and the Achilles heel**

Much of the strength of the inclusive wealth framework lies in the shadow price. The shadow price captures the degree of substitution across the different forms of capital. It also reflects the contribution to intergenerational wellbeing at each time period by each capital asset in each time period. The shadow price also reflects the future scarcities expected. It moreover also captures the externalities produced in the use of the capital. For example, the shadow price of manufactured capital also reflects the environmental externalities it caused in the transformation process.

However, just as the shadow price is the strength of the framework, it is also its Achilles heel. This is when we have to move from theory to practice. In many cases, the market prices we observe for many of the capitals are adequate for the exercise. However, in many other cases, as the authors rightly highlight, especially for natural capital and to a lesser extent human and social capital, it becomes a bit more problematic. The fact that many of the prices are not observable suggests different approaches to finding the shadow prices of these capitals. There are many papers in the economic literature describing the many ways these prices can be computed but, as

the Millennium Ecosystem Assessment (2005) demonstrated, the studies are fragmented, using different methods to compute similar values, and are therefore difficult to use in computing the value of these capital assets.

### Conclusion

The inclusive wealth framework presented in the Arrow *et al.* paper no doubt provides a model that can provide the missing theoretical framework sustainable development urgently needs. The framework can provide the United Nations with a tool and methodology which it can use to help countries adopt investment policies to improve the wellbeing – and we emphasize wellbeing and not just economic growth – of present and future generations. It also provides the mechanism to be used in international negotiations to resolve cross-border externalities, in particular environmental externalities such as climate change and biodiversity loss. However, in order to make the framework operational, the United Nations and its agencies will need to take the leadership to:

- (a) provide the institutional support for countries to establish wealth accounts in addition to the production accounts presently used to compute GDP;
- (b) mobilize a systematic effort to compile the shadow prices for the various assets where market prices are not available or misrepresent the true social costs of the asset.

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