**Tracking Progress towards Sustainable Development**

**HDI – Ecological Footprint Assessment for Community Empowerment and Enhancing Investment Effectiveness**

***SUMMARY***

*Sustainable human development will occur when all humans can have fulfilling lives without degrading the planet. This is the ultimate goal — and challenge — for humanity. But unless we develop a science-based method to measure sustainable development outcomes, this vision can never be fully realized. A metric that can be applied at the macro level for humanity and nations, to the micro level for projects and communities, will enable all to direct investments toward actions that are truly impactful, and away from those that are not. In short, a metric that will encourage nations and communities to take their fate into their own hands.*

*Social entrepreneur initiatives could be prime candidates for showcasing this possibility. It would both benefit social entrepreneur organizations by providing a framework for effectively communicating impact across various audiences; and it would strengthen the communities they work within by giving them the tools they need to make informed decisions that will lead to better outcomes.*

*This document proposes such a metric – one that is a simple, science-based tracking system of key outcomes, combining the Human Development Index of UNDP and Global Footprint Network’s Ecological Footprint accounting. This approach is not driven by moral obligation, but rather, by a need to fill a crucial gap in sustainable development efforts. By measuring outcomes at the local level, this metric will illuminate risks that affect the community, not just threats to humanity as a whole. Since this approach neither contains conditionality nor depends on international agreements, it encourages and enables immediate local action. The approach recognizes that human development cannot exist without access to ecological assets, and shows options that make both the communities and the world more resilient.*

**The need for specifics**

Over the last decades, there has been much discourse in the area of global sustainable development. While awareness is always a mark of progress, real impact on the issue has been hindered by a lack of clarity and focus. Science-based benchmarks and quantitative tracking can provide the level of specificity and rigor that is needed to transition from awareness to impact. The UN is spearheading a new effort: the Sustainable Development Goals (SDGs). Ideally, this effort will build both upon the theme of the 1972 Stockholm Conference “Only One Earth”, as well as the UN’s original emphasis on economic and social development (as expressed by UNDP, and in the Millennium Development Goals, or the Universal Declaration of Human Rights). We need to focus on both the social goals and the ecological means. Adopting a science-based measurement framework, such as the one described in this paper, can help all – UN, national governments, cities, organizations, villages – to achieve sustainable development.

This proposal shows how. The purpose is simple: the measurement framework described here allows communities to track their progress and steer their development. It also enables social entrepreneurs to assess the effectiveness of their investments.

The proposed metric breaks down sustainable development into its core components: a commitment to human well-being and development within the means of one planet. Being a quantitative and mathematical approach, it tracks development with the UN’s Human Development Index and the “living within the means of nature” portion with the Ecological Footprint accounts. This framework is already being used by organisations like WWF, WBCSD[[1]](#footnote-1), UNDP[[2]](#footnote-2) and UNEP’s Green Economy initiative.

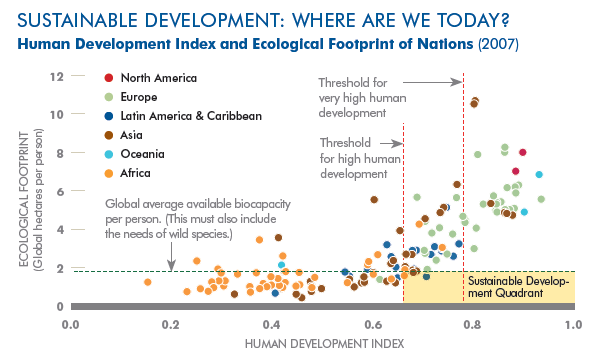
**How the framework measures sustainable development**

Sustainable development. These two words represent the two fundamental dimensions that summarize the dilemma humanity is facing.

Economic and social***development****,* or human well-being, is the goal. It can be approximated with UNDP’s widely recognized Human Development Index (HDI). It is based on three basic outcomes: longevity, literacy (which is key for succeeding an ever-more globalizing economy), and income. UNDP considers an HDI of more than 0.67 to be “high human development.”[[3]](#footnote-3)

***Sustainable*** refers to the need of having adequate access to resources to keep society going. It represents the means or constraints under which the goal must be achieved. Environmental means, or more specifically the degree to which we are living within the means of nature, can be evaluated with “Ecological Footprint” accounting. This widely used resource accounting tool compares a population’s demand on Earth’s resources against the Earth’s or a region’s biocapacity (i.e., its ability to regenerate resources)[[4]](#footnote-4).

The resulting global graph provides a high-level snapshot view of countries’ or populations’ current development position. It can also be used to show progress over time, compare the situation of one community with another, or illustrate trends and patterns.[[5]](#footnote-5) Figure 1 depicts countries, and exemplifies the challenge of creating a globally reproducible high level of human well-being without overtaxing the planet’s ecological resource base.

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***Figure 1: Global sustainable development*** *assessed using UNDP’s Human Development Index (HDI) as an indicator of human development, and the Ecological Footprint as a measure of human demand on the biosphere. An Ecological Footprint less than 2 global hectares per person makes those resource demands globally replicable. Despite growing adoption of sustainable development as an explicit policy goal, most countries do not meet both minimum requirements. Since every country contains different amounts of biocapacity, this analysis can also be adapted to each country. Also note that the world as a whole is* [*outside the Sustainable Development quadrant*](http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint/)*.*

**Benefits of framework for Social Entrepreneurs**

Figure 1 shows the sustainable development situation for 2007. It is also possible to show the trends of these dots for the last 40 years.

These trends demonstrate that while the HDI has generally increased, the resource situation has grown ever tighter, potentially putting in question whether development progress witnessed over the last four decades can be maintained without a shift to sustainable development.

This graph provides a clear and powerful message that social entrepreneurs can use when raising awareness about sustainable development, and the challenges we face in trying to achieve it. This graph carries a compelling, universal message: Something must be done – and with the right metric, something *can* be done. This will incentivize nations and communities to act in their own self-interest, as opposed to perceiving the issue as an insurmountable global challenge.

**Applying the Framework with Communities to Celebrate Successes and Support Local Management Efforts**

Ideally, this metric would be applied with the social entrepreneur’s client communities – similar to how it is now done with nations. The key to its success will be in local buy-in and “ownership” of the initiative. It is not the intention of Global Footprint Network to “parachute” into countries and use it in a prescriptive way. Rather, this metric is a tool that will boost communities and nations’ ability to make better-informed decisions, and measure the outcomes of those decisions. To be successful and meaningful, communities and nations must 1) recognize the need for it; 2) be the driving force behind it; and 3) apply it to their own local goals and strategies.

More specifically, the communities would take ownership of the initiative, and determine first whether this approach supports their needs and is congruent with how they see their path to the future. A community that embraces this approach would assess on their own where they are on the HDI[[6]](#footnote-6)-Footprint map and where they want to go. They can also estimate where they would be without their project, either by looking at neighbour communities or by making explicit the sustainable development gains they produced thanks to their initiative.

All the necessary factors can be measured with relatively little effort by the community. Again, to work, it is the community that has to want the metric as a way to have better control over the course of their future.



***Figure 2: Painted on the School Wall: Metric graph for tracking lasting poverty alleviation*** *using UNDP’s Human Development Index (HDI) as an indicator of human development, and biocapacity over Ecological Footprint as a measure of resource availability.*

Figure 2 shows how this metric could be presented. For instance, it could live on the outside wall of the community’s school or community centre. For each population, it is possible to measure the factors that make up human development, biocapacity and the Footprint (e.g., longevity, education, income, population size and fertility, productive area, productivity, consumption, and efficiency). As a result, the population’s current sustainable development position can be tracked by mapping their HDI, Ecological Footprint, and biocapacity in the HDI-Footprint framework. It can be compared to their neighbouring community, their country, their neighbouring countries, or anybody else. (Of course, the metric could also be amended to reflect more specific needs of the community).

Data exist at the national level to track countries. At the project level, all these data points can be assessed through basic information gathering at the village level, by community members.[[7]](#footnote-7)

When the ratio of biocapacity/Footprint = 1, human consumption of biological resources is equal to the amount of resources that can be regenerated. There is no biocapacity reserve: in net-terms, all is used for oneself.

Each project or target population needs to define its sustainable development goal. This means achievements in both human development and “optimal resource consumption” (e.g., choosing to be biocapacity-rich, which will be an advantage in a resource-constrained world. This means biocapacity to Ecological Footprint ratio of more than 1).

If the ratio of biocapacity/Footprint, for example, is 10, the country or population is more like a rich farm. In this case, the “farming family”, the country or the population consumes much less (i.e., 10 times less) than the “farm” can produce. In other words, the population has more ecological assets than it takes to feed them. They are biocapacity-rich.

If the biocapacity/Footprint ratio is, for instance, 1/3, then the country or population runs a biocapacity deficit. Population is using in net terms 3 times more than what the available biocapacity can provide. This means that they are biocapacity-poor.



***Figure 3:*** *The community can find out where it is, and choose a goal for the next generation (25 years) where it wants to get to. Every year, the community can track its new position – compared to initial, and compared to goal.*

An effective way to mobilize action is to then set a goal to reach within a generation or two: How high an HDI? More particularly, what areas in human development are they looking to improve? How biocapacity or resource rich? What is the target population’s optimal resource consumption? How big of an ecological deficit is in their best interest? The population needs to answer for themselves, driven by their own self-interest.

In determining “optimal resource consumption”, communities must consider: What level of resource consumption is in your country’s best interest as the world is moving into an ecologically constrained future? The community needs the opportunity to live flourishing lives. But continuously increasing the community’s resource demand may mean increasing its ecological deficit. Running such a biocapacity deficit in a resource-constrained world is becoming an increasing risk factor. Just as economists now ponder the optimal inflation or unemployment rate, each region may need to consider its ideal level of resource consumption – compared to its own ecological assets. Also note, if your income is below world average, it is more likely the world will buy more from you than you will be able to buy from the world (with the exception of emitting fossil-fuel based CO2 which still has no market cost).

The diagram needs to be complemented by a table that lists the various components of biocapacity/Footprint as well as the HDI factors.

With this graph, the community can track where it is, and what kind of progress they are making. They can negotiate with a donor agency, and drive the development discussion within their own community, and also within the donor agency, perhaps even within the global community because it depicts the universal challenge humanity is facing.

In essence, communities, committed to providing the pathway for a better life for the next generation, can drive sustainable development in specific and compelling ways.

Such a metric would allow to more effectively communicate the success of the communities working with the social entrepreneurs, in a way consistent with UNDP’s development approach (the world’s “gold standard” for comparing national development achievements), while introducing also the sustainability dimension.

**How to Get Involved**

By definition, social entrepreneurs seek and offer innovative solutions to address the world’s most pressing problems. For this reason, they are the ideal candidates to implement this metric and bring them to communities that can benefit from it the most. It is no longer enough to devote countless, precious resources to numerous sustainable development initiatives if there is no way to measure the outcomes of these efforts. **Good intentions or quantity of actions cannot be a proxy for the quality of outcomes.**  While not capturing everything, this metric summarizes key outcomes that are core to sustainable development, in a way that can be compared against any community at any scale across the world.

Everyone deserves the opportunity to live a fulfilling life; let’s give them a tool that will make this a reality. Resource budgets are not a long-term concern. They are affecting people here and now. Getting it right is not just a benefit for future generations. It is an investment present generations’ ability to have thriving lives.

Join us. Work with us to assess your investments. Together, we can shape the future we want. Please contact us at [jill@footprintnetwork.org](mailto:jill@footprintnetwork.org) if you are interested to learn more, or want to pilot this approach with your initiatives. It will not only help you to be more effective and substantiate your impact in more comparable and universal ways, but you will also help to make development more effective in the development community.

**APPENDIX I:**

**Benefits of Introducing such a Measurement Framework**

**Easy to understand.** The Footprint provides a visual image and communicates easily. Everybody understands that nature provides us with resources and that this takes space. Like a garden or a field. Also the Human Development Index is widely used and understood.

**Media effective**. This approach has produced large and positive media success for WWF. It is the Footprint story, among all the messages they prepare, that gets picked up most vigorously and distributed widely. Backlash has been nonexistent to minimal. Nobody questions that a “Footprint” exists.

**Outcome based**. The framework does not prescribe a process, or strategy. It does not take a position on how the economy needs to be organized, just measures results.

**Rewards innovative leaders.** This approach makes apparent that nations do not need to wait for global consensus. The panel can emphasize that early movers will be winners.

**In support of a universal goal – and core to each entity’s success.** Without investing in lasting gains, no economic unit will succeed.

**Potential Difficulties for Introducing this Framework**

**Resistance to becoming specific.** The undefined nature of sustainable development has kept the debate unspecific – which is not supportive to determined action. Making sustainable development measurable will, by its nature, provoke resistance and conflicts. This is unavoidable and necessary for meaningful action.

**Other sustainability measures**. The most prominent resource measures today are carbon emissions. The Footprint goes further: as carbon accounts, it is an accounting system with a clear research question, and it comprehensively includes all ecological services competing for bioproductive space. Thus, it puts climate change into the larger biocapacity context. The HDI-Footprint approach links human development to biophysical limits.

While other sustainability measures exist, none is as all-inclusive as the HDI-Footprint approach. For instance, Material Flow Analysis tracks mass flows, as does Ecological Footprint accounting, but by adding them up kg by kg, it is not possible to compare the results to limits. The World Bank’s Adjusted Net Savings is a great measurement that emphasizes the importance of wealth generation tracking to what extent wealth increases or decreases. However, the results are not as stable and predictive being a monetary measure. They depend on valuation of many aspects of capital (including natural capital) and are exposed to rapidly changing prices. Other comprehensive approaches are indices without a clear scientific basis or a research question.

**APPENDIX II:**

**Footprint and biocapacity examples**

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***Figure 2: Footprint and biocapacity in global hectares per person since 1961: Switzerland, Sri Lanka, Costa Rica, and Senegal.*** *The national Footprint represents the biocapacity needed to provide for the average consumption of a resident. The biocapacity is the productive area available within a specific country. The red surface between the lines shows a growing biocapacity deficit. If the green biocapacity line is above the Footprint line, the country has a biocapacity reserve. Biocapacity deficits can be compensated by overusing local biocapacity (i.e. using domestic resources at a rate faster than they regenerate) or by using biocapacity from abroad, for instance through net-import. More country comparisons are available at* [*www.footprintnetwork.org*](http://www.footprintnetwork.org)*.*

1. WBCSD’s Vision 2050, <http://www.wbcsd.org/vision2050.aspx> [↑](#footnote-ref-1)
2. UNDP’s Human Development Report 2013 – see for instance figure 1.7 “Few countries show both the high HDI and low ecological footprint required for sustainable human development” <http://hdr.undp.org/en/reports/global/hdr2013> [↑](#footnote-ref-2)
3. UNDP slightly updated its HDI method in 2010. [↑](#footnote-ref-3)
4. What is an Ecological Footprint? Ecological Footprint accounts track the biologically productive land and water area a human population requires to produce what it consumes and to absorb its waste, under prevailing technology. Plainly stated, it measures how much nature we have, compared to how much we use. This tool helps decision-makers to navigate through tough policy choices, manage competing objectives and position themselves best for the future. National Footprint accounts use over 6,000 data points per country and year, mostly from UN statistical datasets. The accounts have been reviewed by a number of countries, including Switzerland, France, the United Arab Emirates, Luxembourg, and Japan. The appendix includes a few national Footprint examples. [↑](#footnote-ref-4)
5. Note that the comparison against global average biocapacity provides a global overview. Local applications may also require comparison to local biocapacity. For many countries, local availability of biocapacity (and financial means to access biocapacity from elsewhere) are a more significant determinant of resource access than the global average. [↑](#footnote-ref-5)
6. HDI for communities is calculated using number of life-years lost as a measure of longevity. [↑](#footnote-ref-6)
7. A pilot study in Orissa, India with 9 villages is planned with GramVikas and IDE-India, in collaboration with Global Footprint Network and Escuela Nueva. [↑](#footnote-ref-7)