



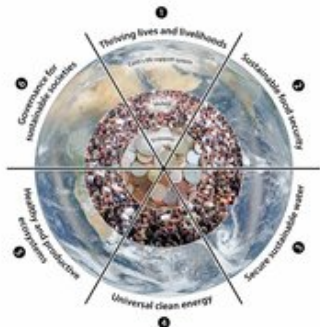
Dot Earth

ANDREW REVKIN

[Sustainability](#) March 21, 2013, 9:27 am [111 Comments](#)

Scientists Propose a New Architecture for Sustainable Development

By [ANDREW C. REVKIN](#)



Sustainable Development Goals for people and planet, David Griggs et al, Nature [Full size](#)

As a United Nations working group negotiates a set of “[sustainable development goals](#),” 10 scientists and development analysts, in [a commentary published today in Nature](#), have proposed a fundamentally different way to frame this concept. (Click here for [relevant Dot Earth posts](#).)

Over the last several decades, sustainable human development has been conceived largely as the outcome of balanced work on [three “pillars”](#) — economic and social development and environmental protection. The authors, building on [arguments that have been brewing](#) for awhile, say that these concepts are instead nested one inside the next, not separate free-standing realms. Here’s how one author put it in [a statement released today](#):

“As the global population increases towards nine billion people sustainable development should be seen as an economy serving society within Earth’s life support system, not as three pillars,” says co-author Dr. Priya Shyamsundar from the South Asian Network for Development and Environmental Economics, Nepal.

[Owen Gaffney](#), an author of the commentary and communications director for the [International Geosphere-Biosphere Program](#) of the Royal Swedish Academy of Sciences, sent a “[Your Dot](#)” contribution offering more background on this proposal:

Here’s Gaffney’s piece:

Redefining Sustainable Development in the Anthropocene

Last week, the UN’s 2013 Human Development Report [issued a stark warning](#): “Environmental inaction, especially regarding climate change, has the potential to halt or even reverse human development progress.”

Thanks to the unstoppable rise of the South, that progress has been spectacular to date. Both India and China have doubled their output per person in less than 20 years.

But how can development continue without it costing the Earth? Air pollution in China is so bad that many cities are permanently shrouded in a toxic cloud, and lung cancer rates have soared in the past decade. There are no easy solutions.

At the United Nations Rio+20 Earth summit last year, 192 countries agreed to create a set of universal [Sustainable Development Goals](#). These are set to follow the [Millennium Development Goals](#), due to end in 2015, which successfully focused significant funds and political energy towards eight poverty-related goals.

New goals could change the playing field for social and economic development in the coming decades. As nations gear up to formulate these goals they need to acknowledge the state of planet and the scale of civilization. We use an area the size of South America to grow our crops. An area the size of Africa is cleared for our livestock. Humans are profoundly altering the face of Earth.

But it goes much further than this. We are altering the carbon, nitrogen, water and phosphorus cycles. We are now the dominant force changing Earth's life support system – the atmosphere, oceans, waterways, forests, ice sheets and biodiversity that allow us to thrive and prosper.

These changes underwrite a whole new understanding of our place in the world. That change is encapsulated in the concept of the Anthropocene – that we have pushed Earth into a new geological epoch of our own creation.

Our number one task as a global species with an almighty footprint is how to maintain Earth's life support system while providing food and a decent quality of life to seven billion people climbing to nine or more.

So now comes the hard part. Somehow the development goals must connect the dots between development and protection of Earth's life support system. Also, very practically, the goals must be simple, easy to communicate and have buy-in from everyone.

Albert Einstein once said that if he had a problem to solve in just one hour, and it was terribly difficult, and his life depended upon it, he would spend the first 55 minutes framing the problem.

The way we define a problem illuminates the solution.

For the past 26 years, a single definition of sustainable development has ruled: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” And a single concept has shaped international policy: the three pillars of sustainable development – economic, social and environmental.

In the Anthropocene we must abandon old thinking.

We need to redefine the problem. By replacing the three pillars with a clear and simple idea: an economy, within society, within Earth's life support system. A healthy planet is a prerequisite for healthy, thriving, prosperous lives. From this we need a new definition for sustainable development: “development that meets the needs of the present while safeguarding Earth's life-support system, on which the welfare of current and future generations depends”.

To deliver on this new definition, we need measurable and achievable sustainable development goals. Moreover, the goals must not stop at the nation state. They need to inspire countries, states, cities, organizations, companies and people everywhere. These should be goals for humanity.

Ultimately the goals are a political decision, but science can help to ensure they meet these core objectives.

This week an international team of scientists and experts including myself produced [an analysis of how it's possible](#). The group identified six universal goals: Lives and Livelihoods, Food Security, Water Sustainability, Clean Energy for All, Healthy Ecosystems and Effective Governance.

Each goal will be met by reaching a set of quantifiable targets beneath the goal such as halving the number of people living on less than a dollar a day, improving the lives of slum-dwellers, or reducing greenhouse gas emissions. Much more work will need to be done to create sound, measurable targets.

Targets for each goal will span economic, social and environmental domains. For instance, food security should seek to end hunger and improve the efficiency of nitrogen and phosphorus fertilizers.

Poverty elimination is addressed by providing food, water and energy – the basic needs – plus, gainful employment through the goal on lives and livelihoods. Energy for all is linked to ending harmful subsidies on fossil fuels and unsustainable agriculture.

And economic growth must be based on sustainable production and consumption: we need to change the global economic playing field.

Success for the universal Sustainable Development Goals is contingent upon two things: bottom-up support from all sectors of our global society plus strong leadership. In our highly interconnected and networked world, we need the power of self organization to drive global leadership.

I encourage you to follow or join the Twitter discussion of Sustainable Development Goals — centered on the hashtag [#SDGs](#):

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About Dot Earth



By 2050 or so, the human population is expected to reach nine billion, essentially adding two Chinas to the number of people alive today. Those billions will be seeking food, water and other resources on a planet where, scientists say, humans are already shaping climate and the web of life. In Dot Earth, which recently [moved from the news side of The Times](#) to the Opinion section, [Andrew C. Revkin](#) examines efforts to balance human affairs with the planet's limits. Conceived in part with support from a John Simon Guggenheim Fellowship, Dot Earth tracks relevant developments from suburbia to Siberia. The blog is an interactive exploration of trends and ideas with readers and experts.

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New Options Needed



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Earth's veneer of millions of plant and animal species is a vital resource that will need careful tending as human populations and their demands for land, protein and fuels grow.

- [Managing Planet Earth](#)
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Slide Show



[A Planet in Flux](#)


Andrew C. Revkin began exploring the human impact on the environment nearly 30 years ago. An early stop was Papeete, Tahiti. This narrated slide show describes his extensive travels.

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Boardroom to Barnyard

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