Code RED for biodiversity

October 14 2010

While not an outright failure, a 2010 goal set by the Convention on Biological Diversity (CBD) for staunching the loss of the world's species fell far short of expectations for "The International Year of Biodiversity."

What does this mean for the 20 proposed 2020 goals being considered by the 10th conference of parties at the Convention on Biological Diversity in Nagoya, Japan, on Oct. 18-29, 2010?

In the article "Ecosystem Services for 2020," published Oct. 15, 2010 in the journal *Science*, some of the world's foremost biodiversity experts assembled by the Paris-based international program of biodiversity science DIVERSITAS offer a strategic approach to the 2020 goals -- one that incorporates trade-offs, timing and complexity.

Feasible goals

"While there is still time, it is critical to design the 2020 targets and their indicators in ways that give them a reasonable chance of success," argues ecoservices expert Charles Perrings of Arizona State University. The DIVERSITAS team, led by Perrings, includes ASU scientist Ann Kinzig and 16 other leading biodiversity experts from the United States, Argentina, Sweden, Chile, Japan, England, France and Germany.

The team lauds the convention for increased efforts to address the most serious aspects of global change, climate and biodiversity, through pursuit of 20 "SMART" (specific, measurable, ambitious, realistic and

time-bound) targets to be achieved by 2020. However, the group also argues that it is not enough for the targets to be SMART.

"The 2010 CBD goal was unrealistic," says Perrings, a professor in ASU's School of Life Sciences and co-director of the ecoSERVICES group in ASU's College of Liberal Arts and Sciences.

"And while the 20 proposed goals for 2020 are more specific about where to go to reduce the rate of loss of biodiversity, there are critical oversights that need to be considered by the Nagoya conference delegates."

For example, the 2020 target that "all people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably" seems unrealistic. In addition, a 2020 target for the sustainability of agriculture, aquaculture and forestry asserts that doing this will automatically assure conservation of biodiversity, yet scientific evidence does not support this, according to the authors. Both the extensive and the intensive growth of agriculture —expansion of the area committed to the production of crops or livestock, increased use of pesticides and herbicides—come at a cost to non-farmed species.

One issue with the 2020 targets, the authors point out, is that many of them are interdependent. Some are likely to be mutually inconsistent, meaning achieving one compromises achievement of another. Others are contingent, meaning achieving one is conditional on achievement of another. It will be important to adopt indicators that recognize the interdependence of targets.

"We are also fishing out oceans, one stock at a time. Often there are no real instruments for protection and those that do exist have no teeth. There are lots of reasons, reasonable ones, for people making private decisions that lead to biodiversity loss, but they cost us all collectively."

The journal article points out that the proposed 2020 CBD goals also need also to tap into the benefits that biodiversity provides to humanity, in addition to recognizing trade-offs between benefits.

Codes for success

The DIVERSITAS team assessed the 2020 targets and challenges to their implementation using the ecosystem services framework developed by the Millennium Ecosystem Assessment, an effort led by the United Nations in 2001-2005 to "analyze the capacity of the world's ecosystems and assess the consequences of ecosystem change for human well-being."

The authors' resulting roadmap for 2020 recommends a hierarchical approach, one that is sensitive to the timing and sequence of targets. Some targets concern issues that need to be addressed before 2020 (DIVERSITAS codes urgent targets "red"), and other targets concern issues that need to be implemented in sequence ("enabling conditions" are coded "blue"). Moreover, many of the traditional conservation targets (coded "green") involve trade-offs with red and blue targets that will play out over much longer timescales.

The 2020 targets to be negotiated at the Nagoya convention are a significant improvement over the 2010 target. They address the international community's traditional conservation goals – to reduce the pressures on biodiversity and to safeguard ecosystems, species and genetic diversity. But they also address the underlying causes of biodiversity loss, its sustainable use, and the capacity and knowledge building that need to be done to if the targets are to be successfully implemented.

The scientists argue that while the 2020 targets could be strengthened, Nagoya could well be a turning point for the Convention on Biological

Diversity. "The development of a strategic plan supported by targets, indicators and actions is a very positive step," Perrings says.

The convention, together with the United Nations Framework Convention on Climate Change (UNFCCC), also established in 1992, represent the commitment of nations to secure global commitments to address the most serious aspects of global change: climate and biodiversity. The UNFCCC was the focus of much attention in 2009. Combined with the establishment of an Intergovernmental Science Policy Platform for Biodiversity and Ecosystem Services (IPBES), to be brought before the U.N. General Assembly this session, Perrings and his team believe that the convention in Nagoya, Japan, may mark the first serious attempt by the international community to deal with the second of the world's two greatest environmental problems: biosphere change.

Provided by Arizona State University