

Sustainability Indicators for Agriculture: Implementation of the SDGs for Biodiversity and Ecosystem Services

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The MDGs had proven to be politically workable as a means to garner enthusiasm and consensus on development pathways and poverty eradication for global society. Arguably, the process was well administered in terms of its simplicity of objectives, approach to dissemination and buy-in by signatory nations, as well as efforts to improve measurement of achievements. Although most of the MDGs and indicators were not in fact achieved in full, and many were not feasible to measure under the information constraints present in many nations, the process was nevertheless widely hailed as a success in international diplomacy.

However, at Rio+10 in Johannesburg, the development community had begun to perceive that little progress would be achieved toward the multiple aims of SD, particularly financing and technology transfer, without partnerships on a global scale, both within and among government, civil society organizations and business. By the time of the Rio+20 conference, such partnerships had achieved some traction toward the MDGs, but it had become clear that a new consensus was necessary, linking poverty reduction with the growing perception that planetary constraints to growth would limit further progress. A new development paradigm was needed.

Work on the SDGs began soon after Rio+20 with the creation of several official and academic bodies created to define and delimit the goals and indicators that should be included in such a global consensus. Successive reports and high level debate expanded broadly on the MDGs, with particular inclusion of goals related to environmental concerns (e.g., reducing greenhouse emissions, conserving marine resources and protecting remaining terrestrial biodiversity) as well as amplified targets for human settlements, innovation and infrastructure in line with goals for “inclusive economic growth” (despite internal contradictions with planetary boundaries).

By the time of the 2015 General Assembly, designated to appreciate and ratify the goals, their number had grown from the MDG's 8 to 17 in the SDGs, with 169 indicators for their fulfillment, as compared to 60 in the case of the MDGs. By any account, the achievement of so many goals by the 2030 target would require an enormous effort and measurement capabilities for statistical agencies rarely able to assume this additional set of tasks.

In the area of biodiversity protection and sustainable use, allied with ecosystem service provision and maintenance, these objectives are particularly daunting, a concern that has haunted the implementation of the UN Convention on Biological Diversity (CBD) since its adoption in Rio-92. Goals set by signatory nations in 2000 related to achievements expected by 2015 had been mostly ignored: loss of biodiversity had in fact grown rather than being halved as had been set as a target. In 2010, dismayed with the lack of progress, CBD negotiators meeting in Nagoya, Japan set out a new set of 20

goals entitled the Aichi Goals. They determined to target protection of terrestrial resources at a 17% level globally (Brazil, in its complementary establishment of national goals to fulfill the Aichi targets nearly doubled its goal for the Amazon biome to 30%, which it was not long from accomplishing, at least on paper), while marine resource protection was targeted at 10%, while Brazil had only achieved slightly over 1% (MMA, 2010). Similar difficulties were faced in measuring and validating progress toward reduced emissions from deforestation to trigger resource transfers under the UNFCCC REDD+ guidelines.

A growing conviction shared by many working in this area is that it will be impossible to assure joint progress toward the biodiversity related SDGs, Aichi and REDD+ Goals solely through creation of protected areas or legal fiat. Complementary efforts are prescribed to ensure that actors conserve such resources within productive landscapes, particularly in agricultural areas. This requires that complementary policy measures facilitate their achievement through adoption of best production practices. How to measure progress toward biodiversity and carbon-related SDGs and other goal-setting processes through critical examination of appropriate indicators and causality is the object of this paper.

This paper will concern itself with comprehending the negotiation process which led to the enunciation of goals and indicators in the broad area of sustainable use of biodiversity and provision of ecosystem services including retention and restoration of carbon stocks at a national (emphasizing Brazil) and global scale. Suitable indicators for analysis have been applied to development problems at different scales over the years. Research being conducted in collaboration with the SDSN builds on this experience with the aim of strengthening practical tools for multiscale management of biotic resources and their services in the developing world. The paper will primarily emphasize assessment of the relative effectiveness of goal-setting within public policy and instruments with a focus on retention and enhancement of carbon stocks and biodiversity in tropical forest landscapes as associated with agricultural frontiers.