

## Sustainable Agriculture and Food Security in the New Sustainable Development Goals

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The advent of agriculture was, in many ways, the advent of civilization as we know it. It was also the beginning of human manipulation of natural systems at large scales. The adoption of agriculture led to increased population growth, the consolidation of people into city-states where power was held in the hands of a few elites, and the harnessing of land and water resources to serve the needs of humanity.

It is from this transformation, occurring gradually over thousands of years, that many of our modern challenges originate. What is needed to address these challenges is an equally dramatic transition in how mankind produces, processes, and consumes food and other agricultural products, but on a significantly shorter time frame than ever before.

The Millennium Development Goals (MDGs) were a striking step in the right direction. Societies have always struggled to create a more just, prosperous, and beautiful world. However, until the MDGs, we had not come together at the global level to voice our commitment to a unified agenda that would promote economic development, food security, health (especially of mothers and children), education, gender equality, and environmental sustainability. The MDGs are a laudable milestone, and they have seen several successes. In 1990, over a third (36%) of the global population was living on less than US \$1.25 a day. By 2010, that number had declined by 50% to 18%.<sup>1</sup> From 1990 to 2013 the percentage of underweight children declined from 25% to 15% and stunting fell from 40% to 25%.<sup>2</sup>

However, progress has been uneven. The majority of improvements took place in Asia, while Africa saw increases in the number of stunted children.<sup>3</sup> Further, despite being a broad and ambitious agenda for the 2000 to 2015 period, the MDGs left significant gaps and only focused on less developed countries. A new sustainable development agenda needs to cover climate change, biodiversity loss, and other environmental issues, while simultaneously promoting health, education, economic empowerment, and equal access to services to all people, in all countries. We also desire an agenda that will spur rapid progress with an even emphasis on social, economic, and environmental issues. We look for an agenda that is transformative and will encourage new ways of thinking and models of development, rather than business-as-usual. It must be ambitious and it must inspire people of all ages and at all levels to act.



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<sup>1</sup> United Nations, The Millennium Development Goals Report 2014, accessed 31 July 2015 at <http://www.un.org/millenniumgoals/2014%20MDG%20report/MDG%202014%20English%20web.pdf>.

<sup>2</sup> World Health Organization, *MDG 1: eradicate extreme poverty and hunger*, accessed 31 July 2015 at [http://www.who.int/topics/millennium\\_development\\_goals/hunger/en](http://www.who.int/topics/millennium_development_goals/hunger/en).

<sup>3</sup> World Health Organization, *MDG 1: eradicate extreme poverty and hunger*, accessed 31 July 2015 at [http://www.who.int/topics/millennium\\_development\\_goals/hunger/en](http://www.who.int/topics/millennium_development_goals/hunger/en).

The Sustainable Development Goals (SDGs) address many of the weaknesses of the MDGs; they push the envelope by expanding the agenda dramatically and bringing together a greater diversity of issues. This strengthens the new agenda, as a growing body of evidence supports the interconnectedness of seemingly disparate issues. The SDGs are also ground-breaking as they are the most inclusive agenda that the UN has delivered to-date, with millions of people submitting input from around the globe. The box below highlights some areas where the SDGs differ from the MDGs, and encourage a transformation of agricultural systems to be both environmentally sustainable and supportive of vibrant rural communities.

Box 1

**How do the SDGs expand on the MDGs and support an agricultural transformation?**

Besides the need to increase agricultural productivity for food security and better nutrition, the SDGs will place significant emphasis on issues such as:

- Healthier diets to also address under- as well as over-nutrition
- Reducing food losses and waste
- Increasing the resilience of agricultural systems
- Preserving crop and livestock genetic diversity
- Ensuring rural communities have access to infrastructure, water and sanitation, modern energy, and more
- Addressing inequalities in access to markets, financial services, land tenure, and more
- Reducing trade distortions
- Increasing resource use efficiency and sustainable use of resources
- Reducing nutrient losses
- Restoring degraded land and halting future degradation

*For more information see*

*United Nations, Transforming Our World: The 2030 Agenda for Sustainable Development, accessed 3 August 2015 at <https://sustainabledevelopment.un.org/content/documents/7891TRANSFORMING%20OUR%20WORLD.pdf>*

Both the MDGs and SDGs place hunger at the front of the agenda, and the SDGs build on the MDG agenda by taking a more human-centered and complete view of hunger and nutrition. For example, they will continue the fight against both insufficient caloric consumption as well as micronutrient deficiencies, but also address overconsumption through the targets on non-communicable diseases. They also contain language on reducing food loss and waste across the food chain, from production to consumption. They apply to all countries, not just poor countries, and emphasize that there are both challenges and solutions equally in all nations. Finally, the great deal of attention put on ensuring that all sub-populations benefit from the SDGs, and that inequalities are addressed rather than exacerbated should make a big difference.

However, the SDGs could be more ambitious in supporting the kind of rural prosperity that is needed to both support agriculture as a provider of critical human resources and a dignified profession for many. There is much emphasis on sustainable cities and urban communities, but we should think in a similar way about building and supporting sustainable, flourishing rural communities. A transformation of the global food system will largely depend on whether rural places can become attractive places to live and work, particularly for entrepreneurial and technologically savvy younger generations.

Achieving a transformation of agriculture and food systems at the global scale is a massive challenge because of the huge diversity of agriculture. It will require a menu of solutions, good choices that are tailored to the specific environmental and socioeconomic conditions. Today, over one third of the Earth's land is used in food production.<sup>4</sup> There is a growing consensus that agriculture will need to be transformed to address a diverse array of threats, including climate change, unsustainable consumption of water resources, inefficient use of fertilizers, the overuse of herbicides and pesticides, degradation of soils, and a number of other issues. In addition, there is a social transformation that must occur. Farmers, both men and women, need equal access to farm inputs, banking services, secure land tenure, education, healthcare, and more. Agroecological systems need to produce safe, nutritious, high-quality, and culturally-desirable food; take a holistic approach to nutrition and food security; and address the twin issues of over- and under-nutrition.

In the coming decades, we need to see a shift towards a sustainable agricultural intensification (SAI). In brief, SAI is producing more food and other agricultural products on the same amount of land, while also using natural resources efficiently and preventing their degradation. As the world population grows, we will need to produce a greater volume of food, as well as more nutritious food, and we also need to explore new opportunities for how agriculture can contribute to growing the bioeconomy as a whole. We also need to limit the expansion of agriculture into forests, wetlands, and grasslands, and halt the loss of farmland to urbanization. We cannot continue current practices of overusing inputs like water and pesticides, and must reverse soil degradation and make agriculture more resilient to climate shocks. We need to ensure that generations of farmers will be able to carry out their fundamental role feeding humanity, while also supporting their own families and communities. Solutions to accomplish these multiple goals exist, and include practices such as using cover crops to improve soil, using improved seed, and the precise use of fertilizers to increase efficiency. However, as agroecological systems are so diverse, each farming community will need a customized set of solutions tailored to their specific contexts. The SDGs were an immense opportunity to raise awareness of this need, set national targets for sustainable ecological intensification, and kick-start a new green revolution. Unfortunately, it appears we have missed this opportunity.

<sup>4</sup> AO, FAOSTAT, accessed 31 July 2015 at <http://faostat3.fao.org/browse/R/RL/E>.

The real test of the SDGs will be in their implementation, monitoring, and evaluation. Governments, international organizations, and other stakeholders need to be pragmatic about how to implement policy and monitor progress. Agreement on global goals and targets, as with all policy decisions, is inevitably a political as well as technical process, even with input from a diverse group of stakeholders (NGOs, academia, the private sector, communities, and governments). The tension between the political and technical has to be managed for goals and targets to become implementable and for it to be possible to track and monitor implementation across all UN Member States. Further, there is a communication challenge, as all stakeholders need to understand their role in implementing the new agenda, and how to work together.

It is possible that by setting good indicators and tracking their achievement, we will encourage improvements in agricultural systems and rural communities. Fifteen years of targeted investments could move us away from business-as-usual, and support the eradication of hunger and extreme poverty. Discussion of the indicators to be used and how to finance the SDGs is ongoing. The Sustainable Development Solutions Network (SDSN, [www.unsdsn.org](http://www.unsdsn.org)) has proposed a framework of indicators for the SDGs.<sup>5</sup> Indicators need to be clear and straightforward, selected with consensus from a diverse group of stakeholders, and pull from existing data sources. They should measure outcomes as much as possible, and be disaggregated by a wide range of socioeconomic variables, including age, gender, urban/rural, etc., to ensure equal achievements across populations.

In addition, governments should support calls for a “data revolution” and move as much as possible toward annual reporting and making data publicly available. New technologies such as mobile phones and remote sensing make it increasingly easy to rapidly collect and analyze robust data, and the post-2015 agenda must take advantage. It is also important to find ways to integrate data from non-traditional sources, including academia and the private sector, into the data that national statistical offices collect and report. Efficient, result-oriented multi-stakeholder processes will need to determine how these kinds of data should be used to protect both intellectual property and the privacy of individuals, but unlocking how to use this data could revolutionize monitoring and evaluation.

We have been given an opportunity to establish an ambitious, equitable development agenda for the next 15 years. Global political processes are on track to deliver a meaningful outcome, which could also be transformative for agriculture and food security. This will require that countries develop their own roadmaps for setting and achieving targets that are directly linked to the new global goals. The SDSN will continue to provide strong support to the implementation of the new SDGs, including new initiatives such as a recently launched project on National Transformation Pathways for Sustainable Agriculture and Food Systems. This initiative aims to provide support to countries in two important methodological areas: (i) choosing realistic targets that are congruent with the new SDGs and (ii) developing technology and policy roadmaps for the agricultural sector that provide sound choices to countries for implementing a sustainable development strategy and meeting selected targets.

Box 2

**Selected Indicators Proposed by the SDSN**

Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

- Percentage of women of reproductive age (15-49) with anemia
- Prevalence of stunting and wasting in children under 5 years of age
- Percentage of infants under 6 months who are exclusively breast fed
- Percentage of women, 15-49 years of age, who consume at least 5 out of 10 defined food groups
- Crop yield gap (actual yield as % of potential or water-limited potential yield)
- Number of agricultural extension workers per 1000 farmers [or share of farmers covered by agricultural extension programs and services]
- Nitrogen use efficiency in food systems
- [Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed

*For more information see [www.unsdsn.org/indicators](http://www.unsdsn.org/indicators)*

<sup>5</sup> To learn more about the SDSN's work on indicators, visit [www.unsdsn.org/indicators](http://www.unsdsn.org/indicators). For more information on the SDSN's work on financing the SDGs, visit [www.unsdsn.org/financing](http://www.unsdsn.org/financing). Launched by UN Secretary-General Ban Ki-moon in August 2012, the Sustainable Development Solutions Network (SDSN) mobilizes scientific and technical expertise from academia, civil society, and the private sector in support of sustainable development problem solving at local, national, and global scales.