SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

SDSN TG7 Issue Brief: Goals, Targets, and Indicators for Sustainable Agriculture

Prepared by the Thematic Group 7
Sustainable Agriculture and Food Systems

In the pursuit of sustainable agricultural development, no two countries will take the same path. Each will face distinct challenges and will have different priorities according to local agricultural, economic, social and cultural contexts. However, the process of setting specific, achievable targets with evidence-based indicators can help countries track their progress toward meeting the new Sustainable Development Goals (SDGs) at local, national, regional and global levels.

Defining Goals for Sustainable Agriculture

Agriculture has the most direct impact on development aims related to poverty, food and nutrition security, rural development, natural resources and the environment, but it also indirectly affects many other sectors. Rather than define an SDG to encompass all agriculture-related issues, these development aims are significant enough to merit separate, specific goals or targets within goals.

Extreme poverty and extreme hunger must be eradicated within the next generation. Eliminating this most basic form of human suffering is an urgent need of its own, and it is also fundamental to achieving all other progress toward sustainable development. Moreover, hunger and malnutrition fall under extreme poverty because all are challenges that affect rural and urban areas; hunger is not only a function of food availability; stunting and malnutrition are key dimensions of extreme poverty; and a single poverty/hunger goal ensures full continuity with the first Millennium Development Goal (Eradicate extreme poverty and hunger).[1] Therefore, the SDSN proposes a stand-alone Goal 1, "End extreme poverty, including hunger", including key targets for agriculture.

Sustainable development also requires a re-thinking of rural development and smallholder agriculture to bring greater benefits to the poor. Structural transformations of farming systems, technologies and business models are needed to enhance productivity and market participation and to create new job opportunities.[2] This is linked to Sustainable Agricultural Intensification (SAI), which aims to reduce agriculture's environmental footprint while meeting all its other productivity, social and economic goals. To address this need, the SDSN proposes Goal 6, "Improve agriculture systems and raise rural prosperity", as a central goal in the new development agenda that provides an integrated approach for improving agricultural productivity and protecting the environment within the context of overall rural development.

The Ten Sustainable Development Goals Proposed by the SDSN:

1. End extreme poverty including hunger*
2. Achieve development within planetary boundaries
3. Ensure effective learning for all children and youth for life and livelihood
4. Achieve gender equality, social inclusion, and human rights for all
5. Achieve health and wellbeing at all ages*
6. Improve agriculture systems and raise rural prosperity*
7. Empower inclusive, productive, and resilient cities
8. Curb human-induced climate change and ensure sustainable energy*
9. Secure ecosystem services and biodiversity, and ensure good management of water and other natural resources*
10. Transform governance for sustainable development*

*Includes agriculture-related targets & indicators

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Each **goal** should be an ambitious commitment that presents a single challenge with great impact. It should be universal, comprehensive, operational, and easy to understand.
A **target** is a specific, measurable, attainable, time-bound outcome that contributes to the achievement of a goal. It should be defined at global and national levels to reflect each country's ambitions and capacities.
An **indicator** is a meaningful, simple, and quantifiable metric used to assess progress toward meeting a target. It should be easily and quickly measurable and should allow for disaggregation.

Both of these goals include targets related to food and nutrition security, as adequate and nutritious food is a universal human right. Particular attention is paid to the availability and quality of food during the first 1,000 days of life, as proper nutrition during this crucial period determines a child's mental and physical development for the rest of her life.

Agriculture equally touches on and is influenced by each of the four dimensions of sustainable development: economic development, social inclusion, environmental sustainability, and good governance.[3] Indeed, agriculture is intimately tied to progress in many other areas of development, such as gender equality and social inclusion, health, climate change and energy, peace and security, disaster prevention and mitigation, ecosystem services, natural resources and good governance. As such, six of the ten SDGs proposed by the SDSN include targets and indicators related to sustainable agricultural development (see Figure 1).

Key Considerations for Targets and Indicators

Goals and targets for agriculture and food systems must encourage solutions to make food production, processing, trade and distribution more sustainable, equitable and resilient, thus also contributing to proper nutrition and other outcomes.[4] They must also address the consequences of consumption in wealthier countries; when resources are scarce, priority must be given to the needs of the poorest and most vulnerable, many of whom live in rural areas and are engaged in agriculture.

The SDGs set aims for 2030. Yet the diversity and complexity of agriculture and food systems makes setting concrete targets for the next 15-20 years challenging. Moreover, major transformations in food systems will take time and involve many trade-offs that will affect the realistic potential of productivity and efficiency growth rates. Therefore, the targets and aspirational outcomes proposed by the SDSN for sustainable agricultural development should be viewed as a starting point that would in themselves represent a major, welcome departure from the trajectories of the past five decades.

With that in mind, targets should be achievable; they should be specified at the country or sub-national level wherever possible; and they should be defined such that decision-makers can be held accountable for progress made against them. In most cases, indicators should be outcome-oriented measures of success, i.e. tracking progress toward minimum quantitative results that could move over time according to what is acceptable and achievable in each country. These aspirational outcomes will differ among countries, depending on their starting points and their chosen development pathways. Both targets and indicators should be customized as much as possible so that each country can form tailored, practical solutions for meeting the SDGs.

Tracking indicators will require significantly improved data collection and greater investment in monitoring agriculture and food systems. At the same time, the availability of reliable data will determine which indicators can be used. Statistical agencies should promote the use of advanced and

***Goal 1:* End extreme poverty including hunger**

Target 1a: End absolute income poverty and hunger, including achieving food security and appropriate nutrition, and ending child stunting

Possible Indicators:
- Proportion of population with income below $1.25 a day (PPP) (%)
- Proportion of population living below a country's poverty line (%)
- Proportion of population below minimum level of dietary energy consumption (%)
- Share of calories from non-staple foods (%)
- Prevalence of stunting in children under 5 (%)
- Prevalence of anemia in non-pregnant women of reproductive age (%)

Figure 1: Proposed Goal 1, Target 1a, & indicators.

innovative data tools, including remote sensing, real-time monitoring with smartphones, crowd-sourcing, GIS mapping and other techniques. Building more reliable data systems that provide timely, disaggregated indicators to measure progress at all levels (local, sub-national, national, regional, global) will be vital for success.

Examples of Goals, Targets and Indicators

Goal 1 reflects the four dimensions of food and nutrition security: supply, access, utilization and stability (see figure 1). The indicators under Target 1a address the major hunger and malnutrition problems that must be overcome in our generation. Anthropometric data on stunted children[5] and dietary diversity indicators, which are powerful predictors of economic status and malnutrition, best measure true hunger.[6] Stunting is a robust indicator of nutritional status and overall health, and it is linked to child mortality, delayed mental and physical development, and lower wages as an adult.[5, 6] Anemia is linked to maternal mortality and other health risks, and is indicative of nutrient deficiencies and infections.[6]

To demonstrate the potential of Goal 1, each indicator is also linked to an aspirational outcome. Examples include:

- The share of people living on less than $1.25 a day is effectively zero by 2030 in every country
- The share of calories from non-staple foods has increased by 20 percent by 2030.

Agriculture-led growth is essential for ending poverty, food insecurity and malnutrition. GDP growth from agriculture is at least twice as effective at reducing poverty as growth from non-agricultural sectors.[7] Therefore, Goal 6 recognizes that agricultural solutions for reducing poverty and increasing incomes must be nutrition- and equity-sensitive (see figure 2). This includes having a stable and affordable supply of diverse micronutrient dense foods and productivity growth that increases incomes and thereby access to more nutritious foods. Multi-sector interventions, such as those that address household food security and dietary diversity, are most efficient in reducing stunting.[8]

Different regions will face different challenges to achieve SAI: in Latin America and Sub-Saharan Africa it will be important to limit expansion of agricultural area, while in Asia, North America and

Goal 6: Improve agriculture systems and raise rural prosperity

Target 6a: Ensure sustainable food production systems with high yields and high efficiency of water, nutrients, and energy, supporting nutritious diets with low food losses and waste

Possible Indicators:
- Cereal yield growth rate (% p.a.)
- Crop yield gap (actual yield as % of yield potential)
- Livestock and fish productivity growth
- Full-chain nitrogen [phosphorus] use efficiency (%)
- Crop nitrogen use efficiency (%)
- Access to irrigation (%)
- Crop water productivity (tons of harvested product per unit irrigation water)
- Share of agricultural produce loss and food waste (% of food production)

Target 6b: Halt forest and wetland conversion to agriculture, protect soil and land resources, and ensure that farming systems are resilient to climate change and disasters

Possible Indicators:
- Annual change in forest area (% p.a.)
- Rate of change in arable land area (% p.a.)
- Land area without major constraints to agriculture (% or ha, or net rate of change)
- Proportion of farmers covered by flood, drought and heat protection systems (%)

Target 6c: Ensure universal access in rural areas to basic resources and infrastructure services (land, water, sanitation, modern energy, transport, mobile and broadband communication, agricultural inputs, and advisory services).

Possible Indicators:
- Proportion of smallholder farmers with secure rights to land (%)
- Access to improved water source in rural areas (%)
- Access to improved sanitation (%)
- Rural electrification rate (%)
- Access to paved roads (% access within [x] km distance to road)
- Access to drying, storage and processing facilities [to be defined]
- Rural broadband mobile phone subscribers (%)
- Proportion of rural households with access to low-interest credit (%)
- Doing business in agriculture index or indicators
- Agricultural extension professionals per 1000 farmers
- Employment rate of rural youth and women (%)

Figure 2: Proposed Goal 6, Targets 6a-c, & indicators.

Europe more efficient resource management is fundamental. Generally, future growth in crop production must come from existing land whenever possible by increasing yields and animal productivity and by reducing food loss and waste. Conservation policies, land-use planning and adequate governance, included protection of critical natural ecosystems is essential. Any slowdown in productivity growth means that more land, water, energy, fertilizer, pesticides, labor and other inputs will be needed to meet the rising food demand, thus also raising the cost of food.[9]

To achieve equitable, sustainable development, we must recognize the potential of rural areas. SAI is an engine of socially inclusive rural growth for smallholder farmers and rural businesses; it drives rural job creation, particularly for women and youth. Activities that increase access to markets, improved technologies and productive assets help rural communities escape poverty traps and move out of subsistence farming.[10] For this to happen, governments must invest more in rural transport, energy provision, irrigation, water supply, sanitation services, communication, and improved crop storage infrastructure.

Aspirational outcomes for the indicators within Goal 6 include:

- Post-harvest losses and food waste have been reduced by 30 percent by 2030
- Annual yield growth rate of major food crops approaches or exceeds [1.5]% by 2020.
- Crop nitrogen efficiency increased by [30]% relative to current levels in countries with low efficiency.
- Water productivity of crop production has increased by [30]% in countries with high water use for irrigation.
- [0]% annual forest conversion to crop or livestock agriculture by 2030.
- [0]% net land degradation by 2030, i.e., achieve a land degradation neutral world
- At least [80]% of all farmers have secure ownership or affordable long-term leases of the land they farm.
- At least 80 percent of rural households have access to good quality roads connecting them with local markets
- All farmers have access to quality agricultural advisory services

The SDGs and their targets provide opportunities to mobilize action to reverse or mitigate threats to food production, particularly by increasing collaboration across sectors and stakeholders. The SDGs will require transnational cooperation, but all countries, both developed and developing, must take on the burden of responsibility for their success.

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Related SDSN Reports:

Solutions for sustainable agriculture and food systems. Technical report for the post-2015 development agenda. 2013.

An action agenda for sustainable development. Report for the UN Secretary General. 2013.

These reports and more at unsdsn.org/resources.

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