

THEME 02

# Food is the key to achieving Sustainable Development Goals

FOOD

AGRICULTURE

SUSTAINABILITY

Recently, Wageningen University and Research organized the latest international Sustainable Development Goals (SDGs) conference. Although the focus was on the goal of reaching zero hunger, reaching the SDGs is largely about changing the food system. How is fixing our agrofood systems by making them more secure and sustainable a fundamental prerequisite for meeting the SDGs?

## Our observations

- Almost three years ago, 193 countries adopted the 2030 Development Agenda, outlining 17 [Sustainable Development Goals](#) (SDGs) that build on the Millennium Development Goals (MDGs). They tackle a wider range of issues and are more specifically defined in 169 targets. Although a lot of progress has been made on a number of issues, countries are not on track when it comes to reaching most goals by 2030. For example, the 2017 Hunger Index shows SDG 2 “Zero Hunger” is [under threat](#) and recently, during the World Water Week, it was concluded that [insufficient progress](#) has been made on SDG 6, “Clean Water and Sanitation”.
- For multiple SDGs, whether or not they will be achieved depends directly or indirectly on the transformation of food systems. [It has been argued](#) that every single one of the 17 SDGs can be linked to food. SDG 2 on achieving zero hunger clearly demands a change in the food system, and hunger and food security, in turn, are connected to poverty (SDG 1: No Poverty), since many farmers live in poverty, and to health (SDG 3: Good Health), since poor diet is the biggest cause of early death and disability.
- Besides a strong institutional and political approach, innovation and R&D are vital to reaching SDGs related to food. As the 2017 [Global Food Security Index](#) shows, since 2016, food security in over 60% of all countries has declined. Taking into consideration the impacts of climate change, it may drop even further in some countries. The main explanation for the decline is the reduced public expenditure on agricultural R&D. Innovation is thus crucial to food security. Agricultural technology, such as precision farming technology, which helps to produce more efficiently, is rapidly advancing. And as Berenberg research shows, farmers are adopting technology increasingly quickly: it took 25 years for tractor adoption rates to reach 80%, 19 years for hybrid corn adoption and only 13 years for genetically-modified corn adoption.
- The Netherlands, and especially Wageningen University and Research (WUR), is taking an active role in the discussion and knowledge-sharing on SDGs regarding food. Last month, WUR organized the SDG conference “[Towards Zero Hunger](#)”. The small country shows potential to be a trailblazer in the path to achieving SDGs related to food. During the conference, the top five agrofood universities in the world (A5) – UC Davis, Cornell University, China Agricultural University, University of Sao Paulo and Wageningen University and Research – [agreed to cooperate](#) in developing new educational and research programs to bring about the necessary transformation of food systems.



## Connecting the dots

The 17 Sustainable Development Goals are highly ambitious, but necessary goals to improve the state of the world before 2030 and secure progress instead of allowing the world to revert to a less developed state. The goal of reaching zero hunger is exemplary in this regard. After a decade of progress, hunger is [on the rise again](#). The development goals are clearly interlinked and multiple goals depend on a transformation of the food system. Aside from SDG 2 to end hunger and all forms of malnutrition by 2030, many SDGs are linked to progress in the food system. One can distinguish two groups of SDGs linked to food, one with a humanitarian perspective and a second with a focus on the planet.

The first group strives for humanity to live in a world without poverty and excessive inequalities, hunger and where good health is the norm. SDG 1 is about reaching a world without poverty. This goal has been called the [unifying thread](#) of the 17 goals. Currently, more than 75% of all farmers globally live in poverty, with massive migration from rural areas to cities as a consequence. China is currently focusing on [rural poverty](#) by investing in agricultural modernization to reach a “strong agriculture sector and full realization of farmers’ wealth” by 2050. The tenth SDG, the goal to reduce inequalities, can also be associated with food. Nutritional deficits in the early years of life can cause lifelong damage, as they may lead to stunting and impaired cognitive development, deepening inequality cycles as malnourished children are unable to participate in the labor force. During the SDG conference in Wageningen, Akinwumi Adesina, president of the African Development Bank, therefore named access to good food the “investment in grey matter” as a critical infrastructure of Africa. SDG 3 explicitly wants to achieve good health for all. Presently, 2 billion people globally are undernourished, while 2 billion are obese and at risk of contracting diabetes, heart disease, and cancer. Good nutrition is key to being in good health. A less visible link is the one between agricultural emissions and health, as agriculture worldwide is a substantial source of air pollution.

This takes us to the second group of goals, which focus on the planet. SDG 12 is about ensuring sustain-

able consumption and production patterns. Agriculture is currently a domain producing almost a third of the greenhouse gases globally and among the main reasons for land degradation and inefficient water usage. The subsequent SDG 13 aims at combating climate change. Researchers have [estimated](#) the costs of even missing the set climate goal of preventing temperatures from rising more than 1.5 °C, at \$20 trillion. Agriculture is both a cause of climate change, through the emissions it produces, as well as a victim of it, as changes in temperature and rainfall impact crop growth and agricultural productivity, as we [wrote](#) before. During the SDG conference, much emphasis was therefore placed on [climate-smart agriculture](#) or the move towards more energy-efficient protein sources (and away from energy- and resource intensive meat production). Finally, SDG 14 and 15 are about the protection of marine and terrestrial ecosystems. For example, deforestation related to food production and the use of harmful chemicals in agriculture should be managed in order to reach this goal. Relatively new techniques in precision farming can aid farmers to use only the necessary amount of pesticides and novel growing facilities such as vertical farming enable farmers to “stack” food production and reduce the use of resources.

It can be concluded that food security and sustainability are inextricably linked in most of the SDGs. The complexity of reaching a sustainable food system is a serious problem involving societal and political issues and which cannot be solved solely by means of a technological solution. The connections between the SDGs and the way we have organized our food system clearly show that the ecosystems which sustain life on earth by feeding us are also the ones that bear the impact of unsustainable agriculture. This implies that economies and societies are to be seen as embedded parts of the biosphere. This view changes our paradigm for development, moving away from the current sectorial approach wherein social, economic, and ecological development are seen as separate parts. These SDGs demand that we see the different kinds of developments evolving within the operating space of the biosphere.

## Implications

- **Climate-smart agriculture (CSA) is on the rise.** During the SDG conference, multiple financials presented their investment in CSA initiatives as they had lower climate risks and showed good long-term financial results.
- **With the perspective on SDGs as being embedded in the biosphere, the concept of natural capital gains relevance:** this represents the stock of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soils, and minerals) that, combined, provide benefits to people. Arjan Ruijs, environmental and resource economist of the Dutch Environmental Assessment Agency (PBL), states that [natural capital accounts](#) can highlight synergies between the different SDGs.