

SDG 2

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

Towards the transformation of our agricultural and food systems

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The world faces numerous problems related to agriculture and food. Among these are persistent undernourishment and malnutrition for some while others are obese and overweight; environmental degradation and pollution that threaten the very resource base that agriculture is dependent on; the loss of agricultural biodiversity; high levels of greenhouse gas emissions that contribute to climate change; inequalities in access to food; and policies and laws that marginalize small farmers, their practices and rights – all symptoms of a broken food system.

However, instead of addressing the systemic problems, policy-makers are focused on technical fixes and so-called solutions that further entrench and extend the dominant global industrial, corporate-controlled food and agriculture system.

That system, perhaps embodied best in the Green Revolution, has enabled increased yields, but at a tremendous cost to the environment and greater social equality, while doing little to address the root causes of persistent hunger.¹ In 2015, the number of people who go hungry, while declining at a slow pace, was still unacceptably high, at 795 million.²

From industrial agriculture to agroecological systems

For the world to meet the Sustainable Development Goal (SDG) 2, no less than a transformation of our agricultural and food systems is needed. This entails a paradigm shift from specialized industrial agriculture to diversified agroecological systems, as most recently articulated by the International Panel of Experts on Sustainable Food Systems.³

These two systems, of course, represent two ends of a wide spectrum, with most farms somewhere between the two. The vast majority of farms in the global South are small farms, with many family farmers, most of whom are women, cultivating plots of less than two hectares. Yet, small-scale farmers provide over 80 percent of the food consumed in the developing world.⁴ In contrast, industrial agriculture systems occur largely in the global North (with some notable exceptions) and tend to be devoted to large areas of specialized commodity crops or industrialized feedlots for livestock. Whatever the starting point, the transition to diversified agroecological systems is necessary; however, countries in the global North bear a particular responsibility to change their practices.

1 Cf. IAASTD (2009).

2 Cf. FAO (2015b).

3 Cf. IPES-Food (2016).

4 Cf. IFAD/UNEP (2013), p. 6.

Specialized industrial agriculture is a model characterized by monocultures, genetically uniform varieties, intensive use of external inputs, maximization of yield from a single or limited number of products, and production of large volumes of homogenous products typically within long value chains. Agroecology, on the other hand, applies ecological principles to the design and management of agricultural systems. Its practices diversify farms and farming landscapes, increase biodiversity, nurture soil health and soil biodiversity, and stimulate interactions among different species, such that the farm provides for its own soil organic matter, pest regulation and weed control, without resort to external chemical inputs.

As early as 2009, the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) called on the international community and national governments to systematically redirect agricultural knowledge, science and technology towards sustainable, biodiversity-based ecological agriculture and the underlying agroecological sciences. Agroecology has consistently proven capable of sustainably increasing productivity, ensuring adequate nutrition through diverse diets and has far greater potential for fighting hunger and poverty, particularly during economic and climatically uncertain times.⁵ Evidence is particularly strong on the ability of agroecology to deliver strong and stable yields by building environmental and climate resilience.⁶

Agroecology draws on the knowledge and experiences of farmers. Many answers lie in farmers' fields and in farmers' knowledge; for example, how to create healthy soils that store more water under drought conditions and how to grow a diversity of crops to create the resilience needed to face increased unpredictability in weather patterns. Critically, agroecology also bypasses the industrial food and agriculture system, with food sovereignty promoting more localized food systems and farmer participation.⁷ Agroecology is not simply about changing agricultur-

al practices, but is also about promoting fundamentally different farming landscapes and livelihoods, and radically reimagined food systems.⁸

Agroecology is also ideally placed to meet some of the key targets for SDG 2. For example, the UN Special Rapporteur on the Right to Food demonstrated in his report to the UN Human Rights Council 2010,⁹ that agroecology, if sufficiently supported, can double agricultural productivity in entire regions within 10 years,¹⁰ thereby helping to advance the objective of Target 2.3, to "double the agricultural productivity and income of small scale food producers". Agroecology is also specifically designed to achieve Target 2.4, to "ensure sustainable food production systems and resilient food production practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality".¹¹ Because a key pillar of agroecology is agricultural biodiversity, aiming to enhance species and genetic diversification of the agroecosystem in time and space at the field and landscape levels,¹² it is able to maintain, in situ, "the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species," as specified in Target 2.5.

'Lock-ins' supporting the dominant industrial model

Nonetheless, the odds are still stacked against those seeking alternatives. According to the International Panel of Experts on Sustainable Food Systems (IPES-Food), an interdisciplinary initiative to inform the policy debate on how to reform world food systems, the challenges facing agriculture and food systems are generally perpetuated in vicious circles

5 Cf. Altieri et al. (2012), UNCTAD (2013), FAO (2015a).

6 Cf. IPES-Food (2016).

7 Cf. Altieri/Nicholls (2008).

8 Cf. IPES-Food (2016).

9 Cf. De Schutter (2010).

10 See 'Eco-Farming Can Double Food Production in 10 Years, says new UN report', 8 March 2011 (www.srfood.org/images/stories/pdf/press_releases/20110308_agroecology-report-pr_en.pdf).

11 Cf. Altieri et al. (2015).

12 Cf. Altieri/Nicholls (2004).

that act to lock in the dominant industrial model.¹³ A series of powerful feedback loops extending well beyond the world of farming serve as ‘lock-ins’: current incentives in food production and consumption systems unfortunately keep farmers (and consumers) locked into the structures and logics of industrial agriculture, while locking out the reforms that are needed. It is therefore imperative that the power imbalances running through food systems, which reinforce the power of dominant actors, and consequently, decision-making, are exposed and addressed.¹⁴

In its 2016 report, IPES-Food identifies eight such lock-ins:

- I Path dependency**, by which industrial agriculture becomes self-reinforcing through the investments it requires, and the need to see a return on those investments;
- I Trade and export orientation**, which are major drivers of highly-specialized and industrial modes of agriculture, kept in place by policies and incentives;
- I Expectations of cheap food**, which industrial agriculture is uniquely positioned to provide, encouraging farmers to further specialize and industrialize their production in order to supply large volumes of specific commodities at low costs;
- I Compartmentalized thinking** that governs the setting of priorities in politics, research and business but are ill-equipped to respond to the cross-cutting challenges facing food systems;
- I Short-term thinking** dominating political and business cycles, thereby pushing short-term solutions to the forefront and keeping these actors firmly wedded to existing systems – even as they generate increasing problems;
- I ‘Feed the world’ narratives** that claim that the same systems and same actors driving the Green Revo-

lution-style productivity increases of the past must remain at centre stage, while deflecting attention away from the failings of industrial agriculture;

- I Measures of success** that undervalue the benefits of agroecology; and
- I Concentration of power** that reinforces all the lock-ins. Food systems, in their current forms, allow value to accrue to a limited number of actors, reinforcing their economic and political dominance, and thus their ability to influence the policies, incentives and imperatives guiding those systems.

One key lock-in that deserves further discussion goes to the question of indicators. Unfortunately, the benefits of diversified agroecological farming are systematically undervalued by classical measures of agricultural productivity.¹⁵ It would be therefore essential to adopt and systematically use a broader range of indicators in assessing the performance and success of agriculture and food systems. These indicators should reflect what matters in the longer term and for society at large, such as long-term ecosystem health; total resource flows; sustainable interactions between agriculture and the wider economy; the sustainability of output; livelihood resilience; true food and nutrition security; and the economic viability of farms with respect to debt, climate shocks and so on.

In other words, what are needed are indicators for *sustainable food systems*.¹⁶ Measures such as nutritional quality, resource efficiency, impact on biodiversity, provision of ecosystem services and impact on livelihoods and equity, are highly relevant. These need to be reflected in the discussions on indicators for the targets in SDG 2. A failure to incorporate a more holistic set of indicators than those presented to the UN Statistical Commission in March 2016¹⁷ risks, once again, privileging industrial agriculture at the expense of agroecology.

¹⁵ Cf. IPES-Food (2016).

¹⁶ Ibid.

¹⁷ Cf. UN Doc. E/CN.3/2016/2/Rev.1 (<http://unstats.un.org/unsd/statcom/47th-session/documents/2016-2-SDGs-Rev1-E.pdf>).

¹³ Cf. IPES-Food (2016).

¹⁴ Cf. IPES-Food (2015).

Another lock-in that deserves deeper scrutiny is that of the concentration of power, which can be viewed as the ‘mother of all lock-ins’ as all the identified lock-ins are reinforced by this. It is no secret that in the realm of food and agriculture, corporate concentration is the order of the day:¹⁸ The world’s top three commercial seed corporations (Monsanto, DuPont and Syngenta) control over half (53%) of the world’s commercial seed market; the top 10 control over three-quarters (76%). Just six firms hold 76 percent of the global agrochemical market and the top ten pesticide companies control almost 95 percent of the global market. The top 10 firms control 41 percent of the global fertilizer market. These corporations wield a disproportionate amount of power, essentially deciding what we grow, where and how we grow it, what we buy, what we eat and how much we pay for it.

It is clear then that to achieve SDG 2, tinkering around the edges is not going to help much. While the UN claims that the proportion of hungry people in developing countries has been “almost” halved, thus achieving the MDG target on hunger, it will be extremely difficult to eliminate the remaining proportion of people living in extreme poverty and hunger. What makes countries think that they can end hunger and ensure access to sufficient nutritious food by 2030 so long as the same structures that support the same failed agriculture models remain in place? Powerful feedback loops operate to shut out the alternatives and keep food systems aligned to industrial agriculture. Therefore, what is needed is to agree on a systemic transition that would shift the incentives, thereby empowering farmers to step firmly off the treadmill of industrial agriculture.¹⁹

Steps towards sustainable food systems

Given that many industrialized food systems are in countries of the global North, largely propped up by massive agricultural subsidies, these countries have a particular responsibility to embrace such a transition. In addition, rich countries need to reduce their

demand for animal products and biofuels, as large areas of farmland in the South are used to cultivate these biofuels or to feed the livestock that will satisfy burgeoning meat consumption.²⁰ In rich countries, moreover, food is wasted in huge quantities – the average European or North American throws away more than 100 kg per year – because food expenditure is mere sliver of their household budgets. The sad state of affairs in our globalized food system today is that wealthy consumers can command the resources that will allow their lifestyles to continue unchallenged, even as others are deprived of basic calories.²¹

While for their part, developing countries can do much to support small-scale farmers with the land, credit, technology and market access they need, including to transition to diversified agroecological systems, these reforms cannot be made in a vacuum and will not succeed fully without the corresponding action in the North.

The type of change envisaged would lead to the emergence of what are essentially new food systems with new infrastructures and new sets of power relations. The key is to establish *political* priorities, namely: to support the emergence of alternative systems that are based around fundamentally different logics centred on agroecology, and which, over time, generate different and more equitable power relations. The 2016 report by IPES-Food gives seven pragmatic recommendations for this shift:

1. Develop new indicators for sustainable food systems;
2. Shift public support towards diversified agroecological production systems;
3. Support short circuits and alternative retail infrastructures;
4. Use public procurement to support local agroecological production;

18 Cf. ETC Group (2013).

19 Cf. IPES-Food (2016).

20 Cf. De Schutter (2014).

21 Ibid.

5. Strengthen movements that unify diverse constituencies around agroecology;
6. Mainstream agroecology and holistic food systems approach into education and research agendas;
7. Develop food planning processes and ‘food policies’ at all levels.

Finally, because food security and sustainable agriculture are cross-cutting goals, it is worth noting that progress in achieving the other SDGs will also be important in realizing Goal 2. SDG 5 on gender, SDG 6 on water, SDG 12 on sustainable consumption and production, SDG 13 on climate change and SDG 15 on biodiversity are particularly relevant in this respect.

Targets for SDG 2

- 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
- 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
- 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
- 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
- 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed
 - 2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries
 - 2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round
 - 2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

2.2 Towards the transformation of our agricultural and food systems

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