

From Food Security to Food Sufficiency: Challenging the Narrative

A 70% increase in global food production by 2050 has become an ubiquitous assumption in the European policy arena. This statistic has become the accepted figure that everybody repeats and is playing a significant role in framing current European and international policy debates about food security and the future direction of global agriculture.

This brief challenges the claim that we need to increase global food production by 70% in order to feed the world in 2050 and the dominant framing of the problem of food security.

The baseline data that determined the FAO estimate of a required increase in global production are questionable.

The current trends that form the basis of the Food and Agriculture Organisation (FAO) food demand scenario are taken as a given and expected to persist (e.g. rising consumption of animal products, high levels of food waste and post-harvest losses, biofuel demand; Bernard and Lux, 2017).

Higher productivity globally failed to achieve food security during the Green Revolution. There is no reason why business as usual should succeed now.

In the 20th century, agriculture saw dramatic increases in productivity: Globally, yields rose by 150 to 200% between 1960 and 2010—taking into account marked regional differences (FAO 2011; IAASTD 2009). However, despite this enormous growth in productivity, food security was not achieved on a global level, nor on a local level. According to the FAO, the estimated number of chronically food-insecure and undernourished people increased from 777 million in 2015 to 815 million in 2016. Additionally, two billion people are affected by the hidden hunger of micronutrient deficiencies (Bioversity International, 2014). At the same time, childhood overweight and adult obesity are increasing across the world.

These data show another issue: Food security is not a matter of quantity of food available, regardless of its nutritional properties, but of access to nutritional food.

Productivity is a question of agronomic practices — and time.

Time is the factor often omitted or forgotten when comparing the productivity of soils that are farmed conventionally and those farmed agroecologically. The productivity achieved in the short term through high-yield plants and fertilizers is short-lived: After an initial increase, it is globally decreasing and can only be maintained by ever higher or more concentrated chemical inputs. These, among other factors, drive the decline in soil fertility by contributing to the loss of organic matter. In other words, higher productivity cannot be achieved through practices that lead to the loss of soil fertility in the first place. There is growing evidence that agroecological systems, on the other hand, keep carbon in the ground, support biodiversity, rebuild soil fertility and sustain yields over time (IPES, 2016).



Food security depends on strong local food systems, not on increasing productivity only.

Making domestic food production in developing countries stronger is accepted international policy, confirmed in the Sustainable Development Goals (SDGs) (*Sustainability Now*, 2016). The FAO (2006) also acknowledges that “the interaction between food security and food production potential is very much a local problem in poor and agriculture-dependent societies,” and that “unless local agriculture is developed and/or other income-earning opportunities open up, the food insecurity determined by limited local production potential will persist, even in the middle of potential plenty at the world level. The need to develop local agriculture in such situations as the condition *sine qua non* for improved food security cannot be overemphasised.” In this sense, the conversion of ever more land in the Global South to the cultivation of monocultures to be exported to the Global North goes in exactly the opposite direction: land grabbing, monocultures and export-oriented policies poorly serve local communities who are robbed of their resources (land as well as water) and the possibility of earning an income. They are forced to flee to cities and at times all the way to Europe in search of a decent life. In 2015, there were 244 million international migrants, 40% more than in 2000.

A large share of these migrants come from rural areas where more than 75% of the world's poor and food-insecure depend on agriculture and natural resource-based livelihoods, according to figures from the FAO.

Food security and strong local food systems depend on local agrobiodiversity.

Systems that are uniform or lacking biodiversity are fragile. Genetic uniformity has systematically generated vulnerability to epidemics and, more generally, to biotic and abiotic stresses. Agrobiodiversity is fundamental for the survival of local and sustainable farming systems. Local varieties are the most suited to the given climate and soil, and grow best in the area where they have naturalized over the centuries, thanks to the work of people. They are more resistant and thus require less external intervention. As a consequence, local varieties are both environmentally and economically more sustainable. The same applies to indigenous breeds, which are hardy and have adapted to all terrains and the harshest climatic conditions. Biodiversity is a unique and precious asset genetically, but also culturally, socially and economically. Furthermore, some of the emerging evidence suggests that agricultural diversity contributes to human nutrition by increasing dietary diversity and quality (Powell et al., 2015; Pelligrini & Tasciotti, 2014).

The role of Europe – feeding the world?

In the report *Sustainability Now* (2016), Karl Falkenberg, Senior Adviser for Sustainable Development to the President of the European Commission, writes: “The European Union also needs to revisit its place in the global economy: with demographic growth mainly outside of Europe, does the EU need to feed the world? [...] Strengthening developing countries’ domestic food production is recognised international policy, confirmed in the SDGs. What longer term EU export performance is compatible with this objective?”

There is a widespread recognition that food security is fundamentally a distributional question tied to poverty, social exclusion and other factors affecting access to and utilization of food.

“For almost 400 million people even the projected 70% growth in output of food and feed will not guarantee that they have access to adequate food. Their access to food will require

a proper socio-economic framework to address imbalances and inequalities” (FAO, 2009). The real challenge to address the underlying causes of hunger is the reduction of poverty by increasing smallholders’ incomes, decreasing dependencies and achieving distributive justice (e.g. access to land and seeds, equal access to resources for women and men) as well as to reduce waste and post-harvest losses (IAASTD 2009; EKD 2015; Altieri and Nicholls 2012; De Schutter 2010).

The fact that a third of all the food produced worldwide is wasted is a clear demonstration that the food is there, but distributive justice is not.

The FAO estimates that about one-third of all the edible food produced is lost or wasted each year, in other words about 1.3 billion tons, with an economic cost estimated at about US\$750 billion (excluding fish and seafood). In addition, the environmental impact of food waste and loss in terms of volume and cost is tremendous and represents a huge cost to society in terms of greenhouse gas emissions, water footprint, wastage of agricultural land and biodiversity loss.

Many of today’s food production systems compromise Earth’s capacity to produce food in the future.

As reported in the Third SCAR Foresight Exercise, globally, and in many regions including Europe, food production is exceeding environmental limits or is close to doing so. Nitrogen synthesis exceeds the planetary boundary by a factor of four and phosphorus use has already reached the planetary boundary. Land use change and land degradation and dependence on fossil energy contribute about a quarter of greenhouse gas emissions. Agriculture, including fisheries, is the single largest driver of biodiversity loss. Regionally, water extracted by irrigation exceeds the replenishment of the resource.

Time to drop the common narrative — and strategy — of increasing productivity.

The Third SCAR Foresight Exercise report concluded that “drastic change is needed in regard to both food demand and supply. [...] This transition cannot be met by following the common narrative of increasing productivity. The narrative of ‘sufficiency’ opens opportunities for transition into sustainable and equitable food systems by a systemic approach that deals with the complex interactions of the challenges founded on a better understanding of socio-ecological systems.”



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