

FARMING FOR THE FUTURE:

Agroecological Solutions to Feed the World

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There is no doubt that eliminating hunger worldwide is one of humanity's greatest challenges in the 21st century. However, there are radically divergent visions for how to achieve this goal. Many people equate "feeding the world" with the need to produce more food, but this simplistic analysis leaves fundamental facts about world hunger out of the picture. In fact, the mandate to produce more food to feed the world is often invoked to justify food and farming policies and practices that exacerbate the conditions of hunger and undermine our ability to feed future generations.

Feeding the world sustainably requires that we protect the ecological resources that are essential for producing food now and in the future. As this report documents, four decades of scientific evidence show that agroecological farming, including diversified organic agriculture,¹ is the most effective agricultural response to the environmental challenges that threaten our future food security, such as climate change, soil erosion, water scarcity and loss of biodiversity.

Feeding the world sustainably requires that we protect the ecological resources that are essential for producing food now and in the future.

Furthermore, research consistently demonstrates that world hunger is not primarily a problem of overall supply of food, but rather of poverty, lack

of democracy and unequal access to land, water and other resources, especially for women.^{2,3} As a systemic approach to food and farming, agroecology addresses the social and economic drivers of chronic hunger endured by nearly 800 million people around the world.⁴

Research consistently demonstrates that world hunger is not a problem of supply, but rather of poverty, lack of democracy and unequal access to land, water and other resources.

Meanwhile, today's dominant industrial food system is rapidly depleting and degrading the world's soil, water and biodiversity; intensifying climate disruption; consolidating wealth and power over food-related resources; and accelerating world poverty and hunger. Environmental harm caused by industrial agriculture costs the world three trillion dollars each year according to the [United Nations Food and Agriculture Organization](#).⁵

Despite this evidence, a chorus of agribusiness leaders, lobbyists and policymakers insists we need more of the same to feed a growing population of up to ten billion people by 2050. Agrichemical companies and their allies spend vast amounts to spread misleading messages about the safety and necessity of chemical-intensive industrial agriculture. This narrative — along with a political process captured by corporate interests — bolsters

a system that delivers billions of Euros a year in profits to agribusinesses from fossil-fuel-intensive production and costly inputs — including pesticides, synthetic fertilizers, antibiotics, growth hormones and genetically engineered seeds.

This report debunks three dominant myths about food, farming and hunger that keep society on the path of business as usual. We broadly characterise this as the path of “industrial agriculture” and introduce the principles of agroecology as a more sustainable and just foundation for our food future. While industrial agriculture is chemically-intensive and biologically-simplified, agroecology works with nature as a powerful ally, adapting to and regenerating nature’s resources.⁶ Agroecological farming methods include intercropping, cover cropping, crop rotation, conservation tillage, composting, managed livestock grazing and combined animal and plant production. These methods foster biodiversity, natural soil fertility, water conservation and biological control of insects.

We conclude by discussing policy priorities for advancing agroecological farming. Since farming conditions and realities are very different globally, it will take a diversity of approaches and innovations at both local and global scales to transform our food and farming systems. Policy recommendations in this briefing, however, focus only on actions needed in the European Union.



Increasing the proportion of agriculture that uses sustainable, organic methods of farming is not a choice, it's a necessity. We simply can't continue to produce food far into the future without taking care of our soils, water and biodiversity.

In the face of climate change and rising demand for resources, the need for ecologically sustainable and resilient food production is more urgent than ever. Increasing the proportion of agriculture that uses sustainable, organic methods of farming taking care of soils, water and biodiversity is seen by many researchers as a necessity.⁷

Agroecology is a central pillar of food sovereignty, increasing the democratic control of our food production and challenging corporate power in our food system in order to combat poverty, inequality and hunger.⁸ The research is clear: world hunger is caused primarily by poverty, lack of democracy and unequal access to land, water and other resources and infrastructure, especially among women.^{9,10} Rather than simply producing more food under unequal conditions, the solution to hunger hinges on creating more democratic and fair political and economic systems that expand access to resources.

Countering Food Industry Myths with Facts

Addressing the Root Causes of World Hunger

Myth: We must significantly increase food production to feed the world.

Facts: Scientists estimate that farmers already produce enough food to feed 10 billion people — far more than the current population of roughly 7.3 billion.¹¹ Still, nearly 800 million go hungry every day and many more are undernourished.¹² Research consistently demonstrates that world hunger is not a problem of supply, but rather of poverty, lack of democracy and unequal access to land, water and other resources, especially for women.^{13,14}

Solution: Solving world hunger requires policies and programs that democratise access to food, arable land, water, credit and fair markets, particularly for women. To address hunger and poverty sustainably, we must expand public investment in agroecological farming, especially among the small food producers who make up more than 90 percent of all farmers

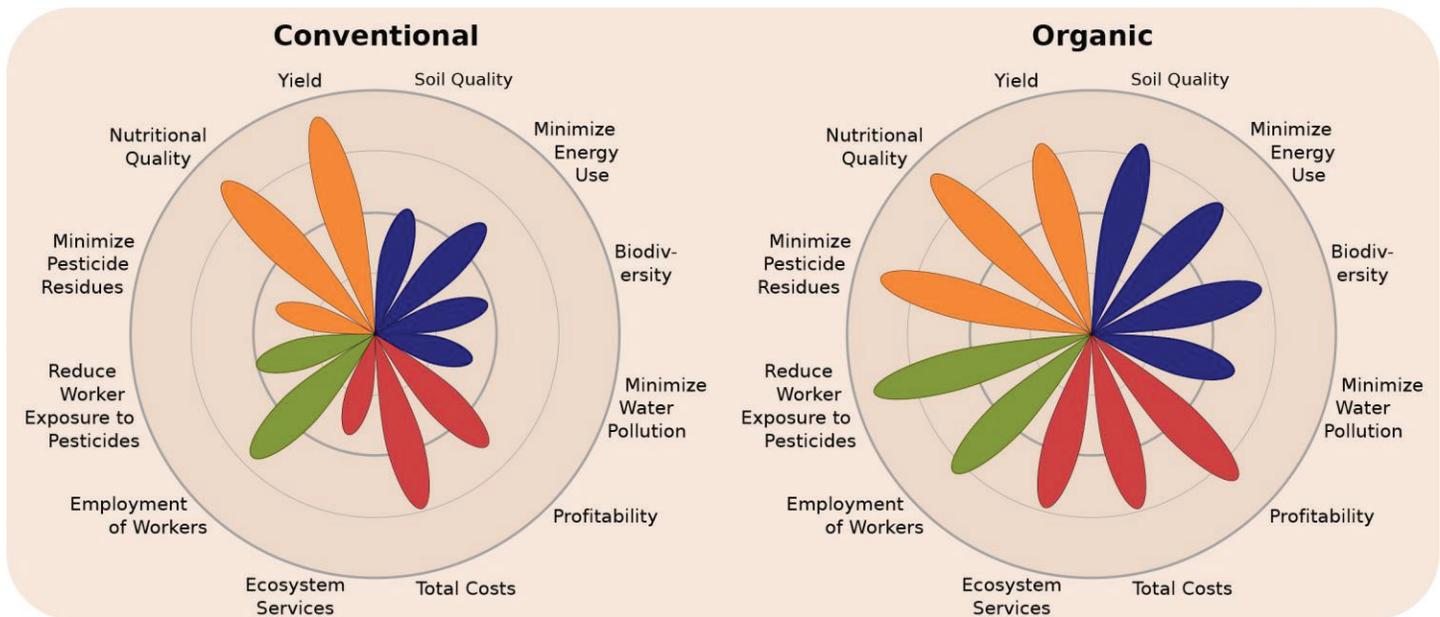


Figure 1. An assessment of organic farming relative to conventional farming illustrates that organic systems provide better balance in the four areas of sustainability: production (orange), environment (blue), economy (red) and well-being (green). Each petal's length represents the level of performance of specific sustainability metrics. Credit: Reganold. & Wachter (2016). Organic agriculture in the twenty-first century. Source: Nature Plants.

worldwide.¹⁵ We must also reduce global food waste and shift consumption towards plant-based foods (particularly in wealthy countries that consume large amounts of meat) and away from growing feed for livestock and biofuels.

Producing Enough Food to Feed the World

Myth: Organic and agroecological farming cannot produce enough food to feed the world.

Facts: A growing body of research shows that organic and agroecological farming yield more than enough food to feed a growing population while generating significant economic, health and environmental benefits.^{16,17} By improving soil, conserving water and protecting biodiversity, ecological farming methods create greater resilience than industrial agriculture to the impacts of climate change.

Solution: To ensure ample yields while protecting natural resources, we must invest more public funds in agroecological farming research, technical assistance, credit access and other incentives to expand organic and agroecological farming systems.

Protecting Human and Ecological Health for Long-term Sustainability

Myth: Large-scale industrial agriculture is more efficient and sustainable than ecological farming and provides the technologies and methods we need to feed the world.

Facts: Measured simply by the production of calories and economic efficiency, industrialised agriculture might seem “efficient,” but this ignores the massive environmental, social and health degradation wrought by industrial food production, processing, distribution, consumption and waste. By all of these measures — costs we all pay — the dominant food system is remarkably expensive and inefficient. Rather than feeding the world sustainably into the future, the industrial food system is cutting off the branch we’re sitting on by degrading the ecosystem functions we rely on to produce food.

Solution: Organic and agroecological farming methods are scientifically proven to be the best path to long-term sustainable food production; they produce ample harvests while protecting human and ecological health. Policymakers must strengthen regulation of industrial agriculture, eliminate subsidies that promote destructive industrial farming practices and invest in diversified, ecological farming systems.

The Common Agricultural Policy (CAP) has a crucial role in this transition. It should be reformed fundamentally to support a re-localised food system which puts small-scale sustainable farmers and farming businesses at its heart, as well as community supported food projects which link producers and consumers.

Bridging Sustainability and Food Sovereignty

Agroecology is central to food sovereignty. Food sovereignty asserts that the people who produce, distribute and consume food should be the primary drivers of food production and distribution policies – rather than the corporations, neoliberal trade regimes and market institutions that dominate today’s global food system.¹⁸

Food sovereignty is fundamentally different from food security. Nations can meet food security targets without addressing the environmentally destructive and economically exploitative conditions of the dominant food system.¹⁹ In contrast, food sovereignty advances the capacity of indigenous peoples, peasant farmers, fishers, pastoralists and forest dwellers to produce for themselves, their local communities and wider society using sustainable methods.²⁰

The rising food sovereignty movement – backed by more than 300 million small-scale food producers and agri-food workers, as well as consumers, environmentalists and human rights groups –

recognises the potential for agroecological farming systems to create more jobs, return higher profits to farmers and produce diverse nutritious crops that can improve income and health in farming communities.²¹ Investing in regional sustainable food systems can be a win-win for small-scale food producers, families and local economies by spurring jobs and economic growth. By producing a variety of foods for local processing and marketing, farmers generate local employment and expand community economic activity, according to the 2008 [IAASTD report](#).²² Farmers’ markets and local food marketing can also provide important economic benefits for farmers and local economies.²³

The Path Towards a Major Reform

Friends of the Earth Europe believes that shifting to an agroecological approach to our food system involves policy changes at a European, national and local level. Policy changes are needed to support improvements in the supply and demand of local sustainable foods, including the production of appropriate foods for local markets, improved infrastructure, such as small-scale food processing

Table 1: Environmental Benefits of Organic Agriculture

Organic farming practice	Environmental benefits
Crop rotation	Enhances soil quality, disrupts weed, insect and disease life cycles, sequesters carbon and nitrogen, diversifies production
Manure, compost, green manure use	Enhances soil quality, sequesters carbon and nitrogen, contributes to productivity
Cover cropping	Enhances soil quality, reduces erosion, sequesters carbon and nitrogen, prevents dust (protects air quality), improves soil nutrients, and contributes to productivity
Avoidance of synthetic fertilizers	Avoids contamination of surface and ground waters, enhances soil quality, sequesters carbon, mitigates salinization (in many cases)
Avoidance of synthetic pesticides	Enhances biodiversity, improves air quality, enhances soil quality, assists in effective pest management, prevents harm to pollinators, reduces costs of chemical inputs, and reduces exposure of farmworkers and rural communities to harmful pesticides
Planting habitat corridors, borders, and/or insectaries	Enhances biodiversity, supports biological pest management, provides wildlife habitat
Buffer areas	Improves water quality, enhances biodiversity, prevents wind erosion

Source: Adapted from Organic Farming for Health and Prosperity. OFRF Executive Summary 2011

facilities, farmers' co-ops and co-ordinated marketing initiatives. Support is also needed for more research into local agroecological production and local food economies.

Trade and development policies need to be refocused on benefiting local communities. And there also needs to be changes to health and safety, food hygiene, environmental health, and labelling regulations so that they do not disproportionately affect smaller producers and enterprises. Changes are also needed to traceability and labelling regulations to include compulsory information about the origin of ingredients and distance travelled.

At a local level, authorities can help through their own purchasing policies and practices; provide support through planning policies which can be used to revitalise local shops; and, fiscal measures to support local sourcing and specific initiatives to develop farmers' markets, community-supported agriculture, fair trade schemes and other similar initiatives. Policy makers need to develop appropriate national, regional, and local strategies to support agroecology – the development of sustainable food economies, covering the whole food chain.

Conclusion

There is increasing international recognition that the current industrialised food and agriculture system is unsustainable. We need a radical overhaul of our approach to food and farming in order to feed a growing world population, protect our natural resources, rural communities and nature. By putting food sovereignty and agroecology at the heart of our approach, we can focus agroecology on re-localising the food system. Action is needed at all levels – locally, nationally, internationally – by consumers, communities, NGOs, government officials and politicians to bring about change.

Our solutions to climate change, environmental destruction and world hunger must focus on reviving rural economies and advancing food sovereignty, democratising governance and power in the food economy and raising incomes for small and mid-scale producers, especially women. To feed the world while also confronting climate change, we need policies, incentives and public investments that promote agroecology, diversified small- and mid-scale farmer livelihoods. By transitioning away from industrial agriculture, we can produce enough food to feed the world, reduce poverty and restore essential natural resources to feed the planet for generations to come.



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