

A Switch to Ecological Farming Will Benefit Health and Environment

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An organic cotton farm near Djembala village in Mali. Intensive farming with excessive use of fertilisers and pesticides has disastrous consequences on human and animal health, and ecosystem, study says. Photograph: Michael Dunlea/Alamy

[John Vidal](#)

The world needs to move away from industrial agriculture to avoid ecological, social and human health crises, say scientists

A new approach to farming is needed to safeguard human health and avoid rising air and water pollution, high greenhouse gas emissions and biodiversity loss, a group of 20 leading agronomists, health, nutrition and social scientists [has](#) concluded.

Rather than the giant feedlots used to rear animals or the uniform crop monocultures that now dominate farming worldwide, the solution is to diversify agriculture and re-orient it around ecological practices, [says the report \(pdf\) by the International panel of experts on sustainable food systems](#) (IPES-Food).

The benefits of a switch to a more ecologically oriented farming system would be seen in human and animal health, and improvements in soil and water quality, the report says.

The new group, which is co-chaired by Olivier De Schutter, former UN special rapporteur on food, and includes winners of the World Food prize and the heads of bio-science research groups, accepts that industrial agriculture and the global food system that has grown around it supplies large volumes of food to global markets.

But it argues that food supplies would not be greatly affected by a change to a more diverse farming system.

The group's members, drawn from rich and poor countries with no affiliations to industry, say that industrial agriculture's dependence on chemical fertilisers, pesticides and antibiotics to manage animals and agro-ecosystems, has led to ecological, social and human health crises.

"Today's food and farming systems led systematically to negative outcomes and vulnerabilities. Many of these problems can be linked specifically to the industrial-scale feedlots and uniform crop monocultures that dominate agricultural landscapes, and rely on chemical fertilisers and pesticides as a means of managing agro-ecosystems," the group says.

In place of an intensive global food system they propose that agriculture diversifies production and optimises biodiversity to build fertile, healthy agro-ecosystems and secure livelihoods.

De Schutter said: "Many of the problems in food systems are linked specifically to the uniformity at the heart of industrial agriculture, and its reliance on chemical fertilisers and pesticides." He said that simply tweaking industrial agriculture will not provide long-term solutions and a fundamentally different model was needed.

"It is not a lack of evidence holding back the agro-ecological alternative. It is the mismatch between its huge potential to improve outcomes across food systems, and its much smaller potential to generate profits for agribusiness firms."

"There is growing evidence that these [agro-ecological] systems keep carbon in the ground, support biodiversity, rebuild soil fertility and sustain yields over time, providing a basis for secure farm livelihoods," says the report.

Diversified agroecological systems can also pave the way for diverse diets and improved health.

The panel argues that industrial agriculture locks in farmers, subsidies, supermarkets, governments and consumers to the point where food systems are in the hands of very few companies and people.

"Food systems in which uniform crop commodities can be produced and traded on a massive scale are in the economic interests of crop breeders, pesticide manufacturers, grain traders and supermarkets alike," says the report.

"Industrial agriculture has occupied a privileged position for decades and has failed to provide a recipe for sustainable food systems. There is enough evidence now to suggest that a shift towards diversified agro-ecological systems can dramatically improve these outcomes."

The panel identifies three disastrous consequences of intensive farming. These include the fact that global food systems linked to industrial modes of farming or deforestation generate one-third of all greenhouse gasses.

In addition, the excessive application of fertilisers and pesticides in crop monocultures, and the waste generated by industrial animal feedlots, have resulted in severe water pollution.

[Pesticide exposure](#) in industrial farming systems has been linked to a [possible range of human health problems](#) such as Alzheimer's disease, birth defects, cancers and [developmental disorders](#). Additionally, the preventative use of antibiotics in industrial animal production systems has exacerbated the problem of [bacterial resistance to antibiotics](#), creating health risks for human populations.
