

Agriculture victim of and solution to climate change

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Agriculture holds the double distinction of being highly vulnerable to climate change but also offering a solution to the problem, experts say

Diplomatic wrangling this week will make the headlines in the fight against climate change, but experts say a bigger but largely unseen battle is set to unfold on the world's farms.

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climate change but also offering a solution to the problem, they say.

In a report ahead of the November 7-18 UN [climate talks](#) in Marrakesh, the Food and Agriculture Organisation (FAO) had a blunt warning about the risks to the [food supply](#) from drought, flood, soil depletion, desertification and rising demand.

"There is no doubt climate change affects [food security](#)," the agency's chief, Jose Graziano da Silva, said.

"What climate change does is to bring back uncertainties from the time we were all hunter gatherers. We cannot assure any more that we will have the harvest we have planted."

Crop volatility has been felt acutely this year, partly through El Nino—a weather phenomenon whose impact is seen by many scientists as a reflection of what future [climate change](#) may look like.

Harvests fell sharply in the bread baskets of Latin America, North Africa and Europe, hit by exceptional drought or floods.

Over the coming dozen years or so, according to last month's FAO report, farmers in developing countries will be the ones who bear the brunt of rising temperatures.

Beyond 2030, though, "negative pressures on food production will be increasingly felt everywhere".

At the same time, agriculture is a massive contributor of greenhouse gases, helping to stoke the planetary warming that in turn affects the climate system.

Farming accounts for at least a quarter of world [greenhouse gas](#)

[emissions](#), according to the Organisation for Economic Cooperation and Development (OECD).

By itself, it contributes 17 percent of the warming effect, especially through emissions of methane—a stronger heat-trapper than carbon dioxide—which comes from animal farming and rice paddies.

Deforestation and conversion of virgin land to the plough are also powerful factors in the emissions total.

Farming vision

Ideas abound for fixing the problem, although mustering the finance to do it remains a tricky question.

The compelling vision is of a world where agriculture makes smarter use of less resources, providing more food with less carbon pollution.

Much of the thinking focuses on helping smallholder farmers, especially in Africa, with sustainable techniques.

Crop rotation, drought-resistant seeds and restricted use of water are among the options and low tilling of soil, especially in winter, is favoured.

Agricultural scientists are also big champions of the humble legume—a plant that includes peas, lentils and captures nitrogen from the air and fixes it in the soil, providing a natural fertiliser.

Sebastien Abis, a researcher at the Institute for International and Strategic Relations (IRIS), a Paris thinktank, points to a world population that is expected to reach 9.7 billion in 2050, compared to 3.7 billion in 1970. Demand for meat, a big contributor to carbon emissions, is also expected to surge.

That makes it "dangerous" for people to think there can be a letup in food production, said Abis.

Hans Herren, an award-winning Swiss development expert who is president of the Millennium Institute, a Washington-based NGO, is a little more sanguine.

He believes the quest should be on providing better calories rather than more of them. Slashing waste and encouraging efficiency are the key.

"Today the planet provides twice as much food than it needs—4,600 calories per person per day, whereas we only need 2,300 calories," Herren said in an interview with AFP.

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