

'Grabbed' land has potential to feed millions

Ethically controversial land deals could improve food shortages in poor countries.

Quirin Schiermeier

27 June 2014



Wade C.L. Williams/Inter Press Service/Getty

The land by Boegbor, Liberia, has been leased by the government to Equatorial Palm Oil for 50 years.

International investors have over the past 15 years or so acquired about 22 million hectares of land in developing countries for agricultural purposes — an area larger than Uganda. Now, researchers have calculated that the controversial sell-off of land could let those countries increase their food production enough to feed an extra 100 million people worldwide.

Although it is too early to say whether the global 'land-grabbing' experiment will bear such positive fruits, the report's authors argue that foreign agricultural businesses could help to close the 'yield gap' between developed and developing countries. Almost 1 billion people worldwide are chronically underfed, and people in many developing countries use antiquated farming practices with insufficient irrigation and few chemical fertilizers. International investors could raise the productivity of farms by bringing in modern advanced technologies.

But poor countries will not reap the benefits unless the farms produce food that reaches local markets rather than being exported, warn the authors, whose findings are published today in *Environmental Research Letters*¹.

"It depends on how land deals are being handled," says Paolo D'Odorico, an environmental scientist at the University of Virginia in Charlottesville, who co-authored the study. "If they occur without transparency, in violation of human rights or with no involvement of current land users, they are unethical. But this is not necessarily the case for all these deals." Mexico and Peru, for example, have rules to ensure a high degree of community participation in land transactions.

D'Odorico and Cristina Rulli, a hydraulic engineer at the Polytechnic University of Milan in Italy, analysed data compiled by [Land Matrix](#), an international land-monitoring initiative, on deals for parcels larger than 200 hectares since 2000.

Using estimates of typical yields from traditional farming practices and industrialized agricultural methods, D'Odorico and Rulli calculated that if all acquired land were farmed to its full capacity, annual yields of maize (corn) and rice would rise about threefold and the production of wheat would more than double relative to yields in 2000.

Foreign-owned agricultural land in developing countries is often used for the production of biofuels such as palm oil. The researchers assumed that only 50% of sugar cane and oil palm crops grown on acquired land would be consumed as food. Even so, food produced on acquired land could support between 300 million and 550 million people, depending on yield efficiency and diet.

If subsistence agriculture had continued on the land it would have fed only 190 million–370 million people, the researchers estimate. Five countries — Indonesia, Malaysia, Papua New Guinea, Sudan and South Sudan — account for more than 80% of the calories from food that could be produced on the acquired land.

Land Matrix also collects information on how acquired land is actually used by its new owners. The data are incomplete, but in many known cases the land is not yet being farmed, or its yields are not up to their full potential. It is also unknown how much of the land has been used for growing biofuel crops rather than food.

But the land rush is highly controversial for ethical reasons. The World Bank and the Food and Agriculture Organization, both United Nations organizations, have proposed guidelines for land acquisitions to ensure that local farmers' customary-use rights to the land are respected. Even so, local people are often not sufficiently represented in negotiating land deals, says Kristian Toft, an environmental ethicist at Aalborg University in Denmark. "Sometimes they lack the competence to do so, but more often they are excluded," he says.

Just last week, human-rights groups accused the London-based company Equatorial Palm Oil of making plans to expand its production in Liberia without consent from local communities. The company rejects claims that its operations in Africa are violating human rights and that they helped to fuel unrest in Liberia, which is one of the poorest countries in the world.

The dispute over how to approach land deals is far from settled. "If land grabbing means violation of customary property rights, additional yields are a bad excuse," says Thomas Herzfeld, head of agricultural policy at the Leibniz Institute of Agricultural Development in Halle, Germany. "A better strategy would be to identify factors of malnutrition in regions where land acquisitions take place."

Nature | doi:10.1038/nature.2014.15471

References

1. Rulli, M. C. & D'Odorico, P. *Environ. Res. Lett.* **9**, 064030 (2014).