

# Field experiment finds a simple change that could boost agricultural productivity by 60%

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Raising tenants' share in crop-sharing contracts between landlords and tenants in developing countries can boost agricultural output, by providing tenants with the right incentive to raise agriculture productivity. Bocconi University's Selim Gulesci and colleagues came to this conclusion making use of a field experiment in Uganda.

Crop-sharing rules that assign 50% of the crop to the landlord and 50% to the tenant are common in developing countries and have often been blamed for low agricultural productivity. In a famous proposition, Alfred Marshall, in 1890, argued that "when the cultivator has to give to his landlord half of the returns to each dose of capital and labor that he applies in the land, it will not be to his interest to apply any doses the total return to which is less than twice enough to reward him".

Thanks to the cooperation of the NGO BRAC, which used to run a crop-sharing program in Uganda, Prof. Gulesci and his colleagues were able to design a field experiment (a randomized controlled trial) that proved Marshall's insight correct. Fifty-fifty sharing agreements are indeed inefficient and raising tenants' share to 75% could raise the output by 60%, thanks to more investment and more risk-taking.

The scholars randomly divided 304 tenants, located in 237 villages, into three groups: one group maintained the 50-50 agreement, the second moved to 75-25 and a third group kept the 50-50 contract, but tenants were provided with some cash, in order to control whether any change in productivity was caused by an income effect.

The output of the 75-25 group was 60% higher than the 50-50 group, while the output of the third group was similar to the 50-50 group, thus confirming that the effect was due to the incentives introduced by the sharing rule. Furthermore, the hike in productivity neither came at the expense of other income-generating activities at household level, nor resulted in soil degradation.

According to the scholars, the effect is to be credited in equal parts to higher investment in capital inputs (120% more fertilizers and 29% more agricultural tools) and to higher risk-taking (crops more profitable, but more susceptible to rainfall).

The crop-share increase translated into a 140% increment in tenants' income, with a sharp gain in overall welfare, but with a 20% drop in landlords' income.

"Our experiment proves that the provision of incentives is the right way to boost agricultural productivity and incomes in developing countries. On the other hand, the reduction in landlords' [income](#) suggests that the change can only be sponsored by [policy-makers](#), perhaps in combination with policies that compensate for this loss", Prof, Gulesci concludes.

**More information:** Konrad B Burchardi et al, Moral Hazard: Experimental Evidence from Tenancy Contracts\*, *The Quarterly Journal of Economics* (2018). [DOI: 10.1093/qje/qjy023](https://doi.org/10.1093/qje/qjy023)

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