

Interim findings

Weather insurance for Ethiopian farmers

The research project ‘The cost effectiveness of integrating weather index agricultural insurance into the Productive Safety Net Programme (PSNP) in Ethiopia’ investigates whether or not weather index insurance (WII) can be a form of social protection and integrated cost effectively into existing national social safety net interventions. The project aims to evaluate the effects and cost effectiveness of three different social protection scenarios among poor rural households in Ethiopia: 1) the Productive Safety Net Programme (PSNP) alone (control group); 2) the PSNP with Ethiopian birr (ETB) 300 (USD 13) of WII and ETB 200 (USD 9) of Agricultural Input Coupons (AIC) (WII + AIC group); and 3) the PSNP with ETB 400 (USD 18) of AIC (AIC group). The following are the midline findings and policy messages.

Interim findings

- The households in our sample study (about 1,150 rural households randomly selected from 32 different rural villages in the Tigray region) are poor smallholder farmers who mainly depend on rainfed agriculture and are beneficiaries of the PSNP.
- Our sample households have low-level per capita food consumption. The average household owns about 1.6 tsmdi of farmland (about 0.4 hectare) and the average per capita value of food consumption is about ETB 64 (USD 2.8) per week.
- Livestock are the main assets owned by rural households in the study area. The average household in the sample group owns livestock worth about ETB 5,660 (USD 250) and has cash savings of about ETB 430 (USD 19).
- Farmers from our sample study reported spending a small amount of money on agricultural technologies. On average, in an agricultural season, farmers spend about ETB 770 (USD 34) on chemical fertilizer and about ETB 250 (USD 11) on hybrid seeds.
- We used difference-in-differences estimation techniques to estimate the effect of the two types of intervention. Our midline results show that the AIC intervention significantly increased both the purchase and use of hybrid seeds (by about ETB 45 or USD 4 per ETB 200 of AIC). We also found evidence that the AIC intervention increased the purchase and use of chemical fertilizer (positive estimates, but statistically insignificant).
- The AIC intervention also helped rural farmers to increase their agricultural activities through renting/sharing more farmland (0.06 tsmdi per ETB 200 of AIC), renting/sharing out less farmland (by 0.07 tsmdi per ETB 200 of AIC), and hiring more farm labour during the agricultural season (by 3.7 labour days per ETB 200 of AIC).
- We did not find statistical evidence of any positive effects of the ETB 300 of WII: the estimated effect of the WII intervention (net of AIC) on the purchase and use of hybrid seeds and chemical fertilizer are both statistically insignificant. The rainfall in the past agricultural season was above average and most WII households did not receive any post-season insurance pay out.
- We believe that, despite in-depth trainings, rural households (which have two years of education on average) may not fully understand the features and benefits of WII. With no prior experience of WII and with the existence of social protection offered by the PSNP, rural farmers still lack the knowledge and sufficient incentive to use WII as a risk management strategy in making agricultural decisions.
- Our results differ from studies such as by Karlan et al. (2014) published at the *Quarterly Journal of Economics*, which found that maize farmers in Ghana are more risk-constrained than cash/credit-constrained. Our sample farmers are much poorer and likely to be more heavily cash/credit-constrained

than the farmers in that study. As such, providing rural farmers with capital for making agricultural investments may produce more direct positive effects.

Policy messages

- **Consider interventions such as AIC to supplement the PSNP:** The midline results show that members of the PSNP are generally poor and have a low level of consumption. Innovative additional interventions such as AIC can play a significant role in boosting investment in agricultural inputs and help PSNP members to improve their productivity, which, in turn, will help them to graduate from the programme. Policies aimed at integrating AIC with the PSNP in a cost-effective way can help to speed up graduation and self reliance.
- **Further evaluate whether or weather index insurance could be part of social protection policies:** In our first round of intervention, weather index insurance was not found to improve the adoption of technologies by farmers, nor increase agricultural yields. It is possible that farmers in rural Ethiopia are much more cash/credit-constrained than risk-constrained. With the presence of PSNP, which also acts as a social protection/insurance programme, further evaluation efforts are needed to examine the demand and effects of WII among rural households.

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