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Synopsis: Economy-wide impacts of the Productive Safety Net Programme (PSNP)

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Ethiopia has long suffered from chronic food security issues, most dramatically revealed in the tragic 1983-84 famine. The Productive Safety Net Programme (PSNP), launched in 2005, is a large-scale, long-term coordinated effort to fight food insecurity throughout the country. It gives cash to poor and vulnerable households and provides cash payments to able-bodied beneficiaries in return for labor on public works projects.

PSNP is the largest program of its kind in Africa, reaching more than 8 million Ethiopians or about 10 percent of the population. The program creates public goods—roads, irrigation, soil and water conservation, schools—that impact both beneficiaries and local non-beneficiaries, making farmers and other local producers more productive. The economic spillovers from the program from increased local spending and trade has potentially far-reaching impacts. This study evaluates the local and national economy-wide impacts of PSNP using a unique combination of econometric and economy-wide modeling methods at local and national levels. It adds a new, economy-wide dimension to the rich set of existing PSNP evaluations, which to date primarily have focused on impacts in PSNP-beneficiary households. This study provides new insights into the full economic benefits of PSNP, which we find exceed the costs of the program substantially.

INTRODUCTION

The coordinated effort of PSNP to fight food insecurity in Ethiopia has two components: Social Cash Transfer (SCT) programs which provide payments to poor and vulnerable households, and payments for labor on Public Works projects. Both types of payments help to stimulate local economies. As local incomes increase, so does trade between the *kebeles* (sub-district local area) in which PSNP is implemented and the rest of Ethiopia. The impact of PSNP on local economic productivity add to the income spillovers that have been documented in SCT programs in Ethiopia as well as elsewhere in Africa (Davis et al., 2016).

METHODOLOGY

We make use primarily of data from the Ethiopia Food Security Survey (EFSS), a panel dataset collected specifically in PSNP zones. Our methodology involves three steps:

Step 1 – Use econometric methods to estimate the impact of PSNP public works projects on grain yields in PSNP areas. This enables us to use economy-wide models to simulate the way PSNP affects agricultural output, and to understand its full impact on the economy when combined with simulations of the PSNP cash transfer.

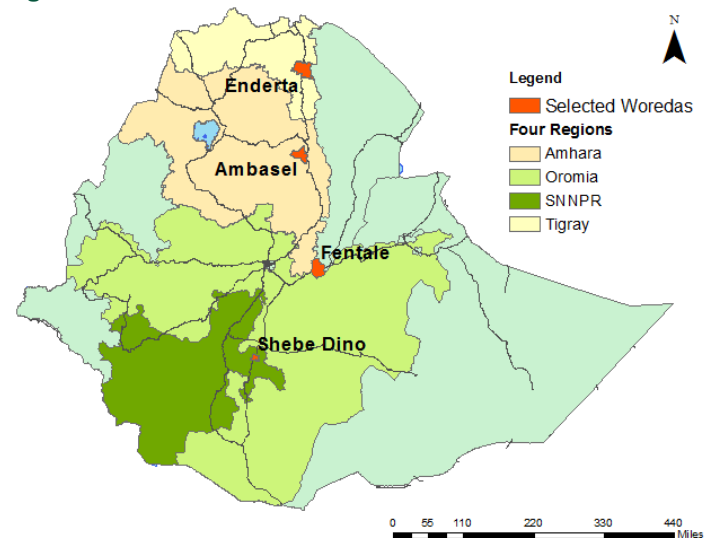
Step 2 – Perform economy-wide simulations at the local scale. This enables us to examine how PSNP affects not only beneficiary households, but also the economies around them.

Step 3 - Repeat the above at national scale in a Computable General Equilibrium (CGE) economy-wide model. This enables us to evaluate the full impact of PSNP at national scale, including the economic spillovers of the program into non-PSNP areas.

LOCAL ECONOMY-WIDE IMPACTS

PSNP's economic benefits vary widely across *kebeles*. We constructed local economy-wide impact evaluation (LEWIE) models for 8 *kebeles* located in 4 *woredas* (districts) in four regions, Tigray, Amhara, Oromia, and Southern Nations, Nationalities, and People's (SNNP) (Figure 1), and used them to simulate PSNP impacts for the local *kebele*-level economy.

Figure 1: Sites of PSNP Kebele Case Studies

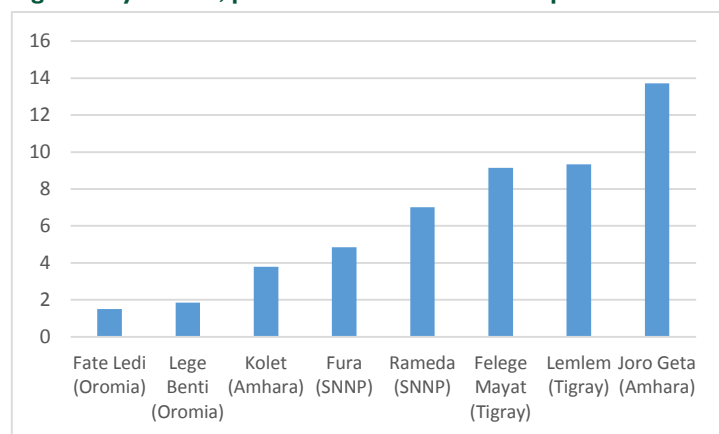


Source: Created by author using public data files from the Central Statistical Agency

The *kebeles* we studied are in diverse agro-ecological settings, from well-watered tropical to highly drought-prone zones facing severe ecological constraints. The mix of PSNP projects varies among these *kebeles*. All eight *kebeles* had PSNP soil and water conservation projects, and two had irrigation projects. All eight had road projects, and two had school-construction, tree planting, or water harvesting projects. For the latter projects, however, our econometric analysis was not able to identify significant impacts on agricultural productivity over the time period covered by the data, 2006-12.

Total impacts on local economic production range from less than 2 to nearly 14 percent (Figure 2). Agriculture's share of these impacts ranges from 0 to 80 percent. Higher production, together with income spillovers, create *local income multipliers*, the increase in income per Birr transferred to a poor household. It is equal to one if PSNP does not create additional income, and greater than one if PSNP public works projects plus spillovers create additional income in the local economy.

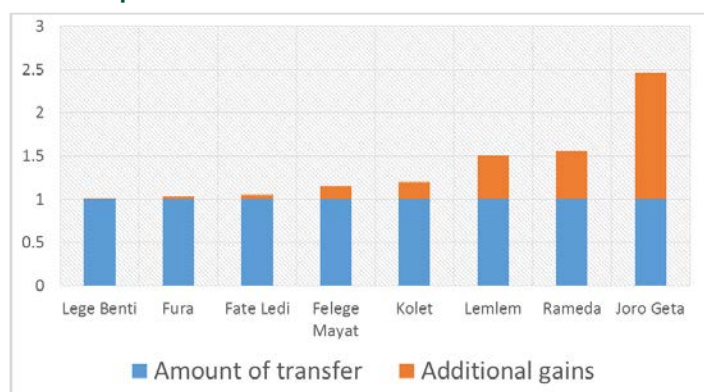
Figure 2: Impacts of PSNP on value of total production in the eight study kebeles, percent increase in total output



Source: LEWIE simulations of PSNP at local scale

PSNP local income multipliers are one or close to one in three of the *kebeles*, but they are considerably larger in the other five *kebeles*. In one of the *kebeles* (Joro Geta), local income increases by nearly 2.5 Birr for each Birr transferred to PSNP beneficiaries (Figure 3). Differences in local income multipliers are due mostly to differences in the mix of PSNP projects and how they affect local production, to agro-climatic constraints, and to integration of *kebeles* with outside markets. Trade with outside markets shifts PSNP benefits to other parts of Ethiopia, which is why our national analysis shows that PSNP increases income outside PSNP regions.

Figure 3: Local income multipliers of PSNP transfers, increase in income per Birr transferred



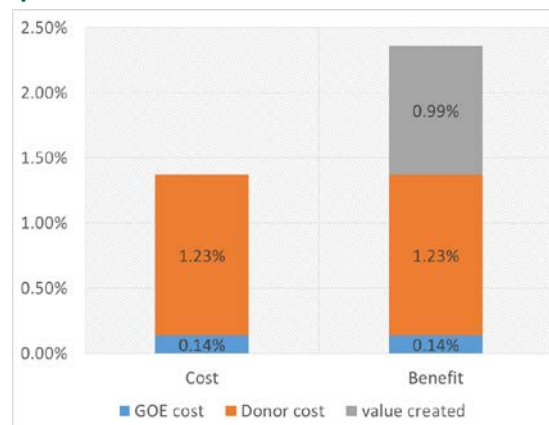
Source: LEWIE simulations of PSNP at local scale

NATION-WIDE IMPACTS

Using a nationwide CGE model we find that PSNP raises the national gross domestic product by about 1 percent. It does this by stimulating agricultural and non-agricultural production as well as demand inside and outside of the *kebeles* that participate in PSNP. National agricultural production increases by 1.33 percent, and total production by 0.76 percent. Our economy-wide analysis reveals that these productivity impacts, together with PSNP transfers themselves, raise household income by nearly 6 percent in PSNP areas and by nearly 2 percent in non-PSNP areas.

These findings highlight the positive income spillovers created by PSNP in Ethiopia's national economy. They demonstrate that the total economic benefits exceed the total cost of PSNP (Figure 4). PSNP transfers were equivalent to 1.37 percent of Ethiopia's GDP in the base year of our model 2006 (left bar in Figure 4). In our assessment, these funds are both a cost and a benefit, because they add to the income of poor and vulnerable households targeted by the program. Productivity increases and income spillovers add the equivalent of 0.99 percent of Ethiopia's GDP to the benefits of PSNP (top of right bar in Figure 4).

Figure 4: National benefits and costs of PSNP, as a percentage of Ethiopia's GDP



Source: CGE Simulations of PSNP at national scale

At national level, PSNP creates more than 1.7 Birr of benefits per Birr transferred to a beneficiary household. Because most of the cost of PSNP currently is covered by foreign donors, there is a 16.9 Birr return per Birr that the Ethiopian government spends on PSNP. Government could increase its share of PSNP costs considerably while still reaping a large economic return.

CONCLUSIONS

The findings from this study reveal that, on an economy-wide basis, the benefits of PSNP significantly exceed the cost of PSNP transfers. New income created by PSNP benefits households that do not receive cash transfers; these non-beneficiaries benefit as markets transmit PSNP impacts to them through local and national markets. Documenting the total benefits, including benefits to non-beneficiaries, is critical to garner support for PSNP. Our analysis shows that PSNP achieves both social and productive goals by raising income in beneficiary households while stimulating local and national production. This should be good news to both finance and social welfare ministries.

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