



A man affected by drought in Kenya receives a cash transfer, enabling him to purchase a goat. Cash transfers often allow beneficiaries to build up assets that could lead to good nutrition and health. (Aidan O'Neill)

## 10

# Safety Nets for Agriculture and Nutrition

**Daniel O. Gilligan\***

*International Food Policy Research Institute (IFPRI), Washington, DC, USA*

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\* [d.gilligan@cgiar.org](mailto:d.gilligan@cgiar.org)

## Introduction

Safety nets – including conditional and unconditional cash and in-kind transfers, school meals, public works, social pensions, and targeted subsidies – are a leading strategy for governments and their partners to reduce poverty and inequality. Many safety net or social protection programs provide monthly or quarterly payments of cash, food rations, or other in-kind transfers targeted to poor households, sometimes under the requirement that households meet certain ‘conditions’, including minimum school attendance for school-age children, completing health check-ups for children under the age of 3, or meeting work or training requirements such as on public works projects.

A primary objective of safety net programs is to transfer resources through government fiscal policy or from international humanitarian aid sources to poor households in order to reduce poverty and inequality. Although safety nets sometimes aim to place a floor on the level of wellbeing below which no household should fall, in practice the size of safety-net transfers rarely varies according to the severity of a household’s poverty (other than increasing by household size). Thus, safety net programs can be better understood as providing an income transfer that moves a targeted household from the lower tail of the income distribution up to a somewhat higher level. Safety net programs also often include objectives and program designs to address sources of poverty by fostering investment in agriculture or other sectors that provide an income; or investments in the human capital of children through education and nutrition, in order to reduce the intergenerational transmission of poverty.

The past two decades have seen massive expansion of safety nets to address poverty and its manifestations in education, health, employment, and income growth in low- and middle-income settings. The World Bank reports that 99 countries currently provide unconditional cash transfers; 61 provide conditional cash transfers; 114 provide school meals; and 95 provide some form of public works (World Bank, 2018). Far fewer countries had significant programs in the early 2000s. Estimates vary, but indicate a consistent pattern of growth in safety net programs with the number of people receiving cash transfers or

vouchers growing from 1–1.5 billion in 2013–2014 (Fiszbein *et al.*, 2014; ODI and CGD, 2015) to 2.8 billion in 2016 (CaLP, 2018).

Based on evidence of the success of early conditional cash transfer programs in Latin America and the Caribbean (LAC) in the 2000s (Fiszbein and Schady, 2009), governments and their partners in sub-Saharan Africa (SSA), South Asia, and East Asia and the Pacific (EAP) began experimenting with pilot programs and, in many cases, developed national safety nets. For example, national transfer programs were started between 2005 and 2008 in Ethiopia, Ghana, Indonesia, the Philippines, and Tanzania and in a second wave from 2014 to 2015 in Egypt, Mali, and Senegal. With this growth in safety nets, program modalities and objectives became more diverse as designs were tailored to the local context. In SSA, for example, it is less common for cash transfers to be conditioned on primary school attendance than in Latin America. One reason is that the need for broad improvements in school participation in SSA made free universal primary education a more effective policy for this objective. In addition, SSA and South Asia face much higher rates of malnutrition than Latin America. As spending on social protection grew, reaching 1.5% of gross domestic product (GDP) in SSA in 2015 (World Bank, 2018), governments and their partners wanted to see impacts on malnutrition from their massive investment in social protection for the poor. Therefore, national social protection programs in Ethiopia, Mali and elsewhere in SSA now have explicit nutrition objectives.

Recent efforts by governments, donors, implementation partners and the research community have emphasized the potential to improve the nutrition impact of agriculture, making value chains more nutrition sensitive. The promise of these initiatives could be enhanced by harnessing the resources provided by cash or food transfer schemes and the safety net delivery systems. However, designing effective programs with safety net, agriculture, and nutrition components raises challenges for coordinating service delivery across these sectors in order to determine how transfers and agriculture will work together to improve nutrition. This chapter explores the potential for such a partnership. It presents selected evidence on the impact of safety nets on agriculture and nutrition separately, examines

trends in the development of more integrated programs, and outlines key areas of potential and challenges to better harnessing safety nets for agriculture and nutrition.

### Social Protection and Agriculture

One significant development in safety net modalities during the past decade has been the broader inclusion of asset transfers and other co-investments to strengthen the impact of safety net programs on income growth, often through agriculture. This shift was a result in part of two effects of growing budgets for safety net programs. First, as governments gained experience with the cost of running large safety net programs over many years, they saw that graduation was a problem. On average, safety net programs cover only one out of every five poor households (Alderman *et al.*, 2018). The resulting pressure to enroll more poor households in the programs leads to demand from policymakers to remove those households whose incomes have grown sufficiently that they no longer qualify for the transfers – a measure of graduation. In practice, cash transfer programs keep households from falling further into poverty, but less frequently lead to sustained income growth and poverty alleviation for large numbers of beneficiaries. Second, budgets for safety net programs now outstrip budgets for agriculture in many countries (Alderman, 2016). This development has placed pressure on safety net programs to adopt some of the policy objectives of shrinking agricultural spending and to coordinate transfers with complementary agricultural information and technology programming to support agricultural development.

Efforts to improve the impact of social protection programs on agricultural development by adding complementary agricultural information or technology are relatively few and face challenges. First, the poorest beneficiaries of targeted safety net programs may be less productive in agriculture because they face multiple constraints in markets for land, financing, or inputs (Sadoulet *et al.*, 2001; Jack, 2013). Low adoption of agricultural technologies can also be explained in part by heterogeneity in the cost of obtaining those technologies (Suri, 2011), which may

generally be higher for poor, remote households. Poor households also cannot afford the risk of failure in adopting a new technology, a result of missing insurance markets (Feder *et al.*, 2009; Bryan *et al.*, 2014). These concerns may suggest a typology in which social protection is used as the residual intervention for poor households that cannot otherwise benefit from agricultural extension, training and investment, and that public investment in agriculture is reserved for better-off farmers. Such a conclusion would be too simplistic. Combining targeted income transfers with access to agricultural technology and training may have substantial potential to overcome constraints in access to quality inputs, financing, and information.

Evidence on the impact of social protection programs on agriculture has grown substantially, providing lessons on the conditions for social protection to improve agricultural development and identifying promising modalities requiring further study. On their own, social protection programs providing regular transfers reduce poverty (Fiszbein *et al.*, 2014) and contribute to asset formation in the form of live-stock, farm and non-farm productive assets and savings (Hidrobo *et al.*, 2018a). These patterns of transfers contributing to growth in agricultural assets are encouraging, but there is very little evidence that these assets contribute to further agricultural intensification and income growth that leads to large-scale, sustainable income growth and poverty reduction.

The potential for safety nets to contribute to broader agricultural investment and rural income growth depends on the context, including relevant local constraints to agricultural growth and investment and how the social protection program is integrated with complementary agricultural components to address these constraints. One approach to linking social protection transfers to local agricultural development includes public works or productive safety net programs, in which beneficiaries supply work on community projects in exchange for access to transfers. Prominent examples of large national programs include the National Rural Employment Guarantee Act (NREGA) in India and the Productive Safety Net Programme (PSNP) in Ethiopia (see Chapter 16). The labor teams assembled through these programs often build local infrastructure such as roads or dams or implement soil and

water conservation projects that may support agricultural development. However, there is very little rigorous evidence on the returns to these public goods for the productivity of local agriculture; the anecdotal evidence is mixed (del Ninno *et al.*, 2009). Some effects of the labor requirement from these programs are better understood. The work activities are usually implemented during the slack period for agricultural labor and offer a wage rate and labor hours that avoid crowding out of private labor supply (FAO, 2015). In the NREGA scheme, where the wage provided is at or above private-sector wages and the program is open to all, evidence shows that the program has increased wages in the private labor market leading to massive spillover effects with larger welfare gains for workers outside the program than in the program (Imbert and Papp, 2015; Muralidharan *et al.*, 2018). The availability of crèches to care for infants made it possible for more women to participate in the program (Alderman, 2016). The program also led to increased land ownership for NREGA participants. Higher incomes led to increased productive assets and livestock ownership and reduced credit constraints for participants and non-participants (Muralidharan *et al.*, 2018).

Ethiopia's PSNP provides an example of a hybrid program that offers selected households a combination of transfers earned through public works and a package of agricultural support including credit, agricultural extension service, technology transfer, and soil and water harvesting schemes. These agricultural investment packages were previously offered through the Other Food Security Program or Household Asset Building Program and are currently provided through the Livelihoods Program in the PSNP. An early evaluation of the combined program from 2006 to 2008 found that it increased the probability that beneficiaries use agricultural credit, use improved seeds, and operate their own non-farm business activities (Gilligan *et al.*, 2009). Follow-up studies further into the program found that households in the joint program with high earnings from the PSNP had significantly higher use of fertilizer and investments in land, water harvesting, and productive assets (Hoddinott *et al.*, 2012), and larger livestock holdings (Berhane *et al.*, 2014).

Evidence on the impact of transfers combined with other agricultural interventions such

as input subsidies, micro-credit or agricultural extension is relatively limited, but results suggest promising areas for additional research. For example, Duflo *et al.* (2011) found that discounts on the cost of future fertilizer delivery for the next season offered during the current harvest period had substantial effects on fertilizer use next season and were more welfare-improving and cost-effective than large fertilizer subsidies. It would be useful to test whether combining this 'nudge' intervention with targeted transfers to poor households to improve their access to complementary inputs such as hybrid seed or herbicide would increase impacts or expand take-up of the approach by poor farmers.

We can also learn from evidence on how differences in transfer modalities may also shape impacts on agriculture. Haushofer and Shapiro (2016) experimented with alternative modalities for unconditional cash transfers through Give Directly, an organization that gives cash donations directly to the ultra-poor, and found that monthly transfers have larger impacts on food security while lump-sum transfers have larger impacts on durables, suggesting evidence of credit constraints and a trade-off between current and future consumption. In a follow-up study, these differences in impacts by transfer modality dissipated, and most impacts were not sustained with the exception of a large effect on asset holdings (Haushofer and Shapiro, 2018). Transfer programs that promote agricultural development face a similar trade-off in modalities.

One response to the demand for more sustained income growth from social protection programs has been growth in graduation model social protection programs, like those implemented by BRAC (the international non-governmental development association based in Dhaka and originally known as Bangladesh Rehabilitation Assistance Committee, later Building Resources Across Communities), which include multifaceted program components including transfers, assets, and trainings. Experiments with the BRAC graduation model across six countries found impacts on consumption, food security and productive asset holdings, but also increased agricultural income, livestock revenue and time spent working in agriculture and livestock (Banerjee *et al.*, 2015). The BRAC graduation model programs, however, were expensive, equivalent to 100% of the value of consumption on average,

whereas many transfer programs provide between 15% and 20% of consumption. It is challenging to measure cost-effectiveness of a program with such a wide array of outcomes. The case for the cost-effectiveness of these 'big push' programs will be strengthened if further evidence shows that they put beneficiaries on a sustainable path to higher income and higher status across outcomes.

More evidence is needed on improved designs and impact of social protection programs with focused agricultural objectives in which transfers are combined with technologies to promote income growth. Successful programs may be more cost effective than graduation models, but a persistent challenge will be to identify agricultural technologies with the potential to sustain income growth when combined with transfers targeted to the poor. Other models for including agriculture components in social protection come from the UN agencies that provide development assistance. Because of the cost burden of carrying large caseloads under a humanitarian development program, for example, the Food and Agriculture Organization (FAO) of the UN has designed the 'From Protection to Promotion' project to focus the attention of all involved on the need to stimulate growth in beneficiary incomes and room for graduation. Also, the World Food Programme operates the Purchase for Progress intervention, which includes agricultural technology transfers in addition to cash or food transfers, in support of government social protection programs.

### Social Protection and Nutrition

Social protection can improve nutrition through three pathways: (i) increased income; (ii) subsidies and price supports; and (iii) changes in preferences and behaviors (Alderman, 2016). Recent reviews present the evidence for social protection to improve diets and nutrition outcomes. Hidrobo *et al.* (2018a) summarized the impact of income from social protection programs on diets in a meta-analysis of 46 social protection programs in 25 countries across SSA, LAC, and EAP. Results showed that the programs, with transfers equal to roughly 18% of the value of baseline consumption, improved household food security, increasing the value of food consumed by 13%,

and calories consumed by 8%, while boosting consumption of animal-source foods. Impacts were generally larger in SSA than in EAP or LAC.

Other evidence shows that payment modalities influence program impact on diets but often in unexpected ways, with cash transfers generally doing better than food rations at improving diet quality (Hidrobo *et al.*, 2014; Gilligan and Roy, 2016; Alderman *et al.*, 2018). Experiments to test the relative impact of cash transfers, food rations, and food vouchers across four countries indicate that, even in areas with relatively thin food markets, cash transfers or vouchers perform at least as well as food transfers for improving food security. A multi-country randomized study for the World Food Programme compared cash and food transfer modalities in Ecuador, Niger, Uganda, and Yemen. Results from Ecuador (which included food vouchers) found that all three modalities increased food consumption, with food transfers leading to larger increases in calories consumed and food vouchers leading to larger increases in dietary diversity (Hidrobo *et al.*, 2014). Cash transfers also improved dietary diversity relative to food transfers in Uganda (Gilligan and Roy, 2016). This pattern differed only in Niger (Hoddinott *et al.*, 2018), where providing food rations led to greater dietary diversity than cash transfers. A related study provided further support for cash transfers, concluding that cash assistance was 13–23% less costly to deliver than food rations (Margolies and Hoddinott, 2015).

Despite these improvements in diets, targeted cash transfers or food rations have not been shown to consistently improve the nutritional status of children and adult women. One meta-analysis calculated the impact of cash transfer program on child height-for-age z-scores (HAZ) using data from 21 research papers and 17 projects. The analysis concluded that the estimated average impact of transfers on HAZ was positive, but small and not statistically significant (Manley *et al.*, 2013). A review of programs in Latin America showed uneven impacts on child anthropometry (only for some subgroups) and weak impacts on micronutrient status (Leroy *et al.*, 2009). This failure stems from the fact that modest income growth alone is not sufficient to address the multisectoral constraints to improved nutrition, including knowledge and behaviors around breastfeeding and complementary feeding, sanitation

and hygiene, and exposure to infection. One example with more favorable impacts found that conditional cash transfers in the Philippines reduced severe stunting (Kandpal *et al.*, 2016).

Conditional cash transfer programs commonly include conditionalities around clinic visits and vaccinations supported by larger transfers to address objectives related to child health, but until recently few safety net programs included explicit nutrition objectives. A possible exception is school feeding programs, though conventional school feeding programs may not include explicit nutrition objectives but may focus on schooling outcomes alone. Designing social protection programs to improve nutrition often requires improved targeting to households with young children, using conditions to increase the use of healthcare, strengthening the program's nutrition objectives, and including features to improve women's nutrition knowledge, time use, and empowerment (Ruel *et al.*, 2013). It is not practical to condition transfers on child nutrition outcomes like weight gain, as this may create perverse incentives to restrict child growth in order to maintain access to the transfers. Instead, safety net programs with nutrition objectives can condition the transfer on activities that contribute to improved nutrition, like prenatal care visits and child health checkups and vaccinations. However, if the quality of local health services is low, the benefits of such a conditionality may not exceed the cost to the household to fulfill it. Other approaches condition transfers on a related outcome. A recent study (Buchmann *et al.*, 2017), for example, showed that paying incentives to young women to delay marriage in Bangladesh led to a significant 16 percentage-point decline in the probability of giving birth before 20. This likely improves nutrition, as early childbearing is associated with poorer nutrition outcomes.

During the past 10 years, several countries have begun to incorporate explicit nutrition objectives and nutrition programming into their national safety nets. In Mali, for example, the national safety net program Jijisemejiri has included targeted nutrition interventions since 2016 (Hid-robo *et al.*, 2018b). For various reasons, initiation of the nutrition components was delayed for more than 1 year as the government prepared to implement the new nutrition component. Bangladesh has a large number of safety net

programs and also operates pilot programs for learning purposes. One example is the Transfer Modality Research Initiative (TMRI) in Bangladesh, a research project that undertook a randomized controlled trial to compare cash and food transfers with and without nutrition behavior change communication (BCC) trainings. Results of an impact evaluation of TMRI found that only the cash+BCC treatment arm improved nutritional status, leading to a sharp decline in stunting prevalence (Roy *et al.*, 2015).

### Integrated Agriculture–Nutrition Safety Net Programs

Few social protection programs include additional complementary components in both agriculture and nutrition. The graduation model social protection programs with the strongest evidence combine cash transfers with investments in agriculture but do not also include substantial nutrition components. The experiments with the BRAC graduation model included some level of training in health, nutrition and hygiene, but impacts on child nutritional status were not reported (Banerjee *et al.*, 2015). In addition, popular nutrition-sensitive agriculture programs like homestead gardens, and programs to promote crop diversification for consumption are not often combined with targeted transfers for the poor. Homegrown school feeding programs, however, source their food locally, with the objective of improving the nutrition of school children while also supporting local agriculture. It is harder to fortify locally sourced school meals with additional nutrients, a process that is usually done centrally when fortification is a priority.

One prominent example of the integration of agriculture and nutrition into social protection has been the PSNP in Ethiopia. The government of Ethiopia recently added improved maternal and child nutritional status as goals of the PSNP after more than 10 years of its operation. It also changed the design of the program to help achieve these nutrition objectives, including: (i) automatically transferring a female beneficiary of the public works component of the PSNP to temporary direct support payments for a period of 12 months if she becomes pregnant; and (ii) allowing work requirements to be partly fulfilled for mothers with young children by

attending regular nutrition BCC training. Programs combining transfers with agricultural investment and BCC training in nutrition should account for the local context and availability of food markets to determine the optimal transfer modality and whether an agriculture-led strategy to promoting nutrition gains would be effective.

## Lessons

Evidence from the existing literature and recent experience of social protection programs with added agriculture or nutrition objectives leads to several lessons about how to better design programs for the blended objectives of maintaining consumption and food security in the short run, increasing agricultural development and income, and improving maternal and child nutrition outcomes.

**1.** The best design for a national social protection program depends on policy priorities. If the policy objective is to extend the progress in improving household food security and schooling already realized and further build human capital by improving child nutrition through the program, existing evidence identifies some promising strategies and programming modalities to improve the nutrition impacts of social protection programs. These include effective targeting of the programs to at-risk pregnant women and households with young children, on-time delivery of regular transfers and complementary BCC and nutrition interventions. There is much more to learn on these types of program designs, but many promising studies are under way. Alternatively, if the policy priority is on agricultural development and increasing incomes for the (rural) poor, then more work is needed to find an analogous approach to twinning transfers with information and technology to improve agriculture outcomes, as has been done for nutrition. Here similarly, there is much more work to do, in part because the strategies needed to boost agricultural development are far more diverse and contextually based than for nutrition.

**2.** Designing national social protection systems for agriculture and nutrition involves several complications. First, ministries of social welfare, agriculture and health are often not accustomed

to working together. Effort will be needed to support coordination in implementation across the ministries. Neither agriculture nor safety net transfers alone will eliminate stunting, so coordination is needed. The primary benefit of a more coordinated approach involving social protection plus agriculture and nutrition is sustainability: programs that provide short-term transfers, add access to quality agricultural technologies, improve the hygiene and sanitation environment, and provide support for optimal child feeding and caring practices are likely to have much more sustainable impacts.

**3.** Integrated safety net programs must address several other challenges to be effective and sustainable:

- Competition in funding: limited budgets will lead to competition across ministries for funding. Ministries will need to coordinate their service delivery to be cost-effective and avoid duplication of costs. It may be necessary to retrain front-line service providers so that health workers can integrate agricultural tips into their messages on child feeding practices and agriculture extension agents can better understand basic nutrition, for example.
- Targeting: one of the most challenging issues for an integrated social protection, agriculture, and nutrition program will be to decide how to target the program. Targeting to very asset-poor households may weaken the impacts on agricultural growth yet be effective at poverty reduction. Similarly, transfers need to be designed to reach pregnant women and women with young children. This consideration often means providing transfers directly to women, but that approach may interfere with the objective to use part of the transfer to invest in agriculture if men are not included.
- Designing programs for urban areas: agriculture will be a less prominent component of the program in urban areas as beneficiaries must obtain most of their food from the market. Variation in types of foods available and exposure to poor sanitation and hygiene environments will also need to be factored into designs.
- Layering interventions in transfers, nutrition, and agriculture could become very expensive. It will be necessary to find and test

narrow interventions that might make the overall approach more cost-effective.

**4.** Broad and sustainable improvements in the impacts of social protection on child nutrition, on women's status, and potentially on inequality require designing programs to be better at improving outcomes related to underlying rights, gender norms, and local institutions. The results of the BRAC graduation experiments showed an impressive breadth of impacts on consumption, incomes and savings, but no effects on women's roles in decision making. Nutrition impacts are likely to be limited over time without making improvements in women's control over resources

in the home. Hidrobo *et al.* (2016) found that transfers from social protection programs provided to women increased their control over decision making and reduced the incidence of intimate-partner violence. These impacts likely reflect thought that went into designs for these outcomes, such as targeting transfers to women. But there is likely substantial room to increase these impacts through additional complementary interventions. For example, more equitable access to land for women in poor households may boost agricultural productivity by reducing the inefficiencies documented from a gender-based inequity in distribution of land and cattle (Hoel *et al.*, 2017).

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