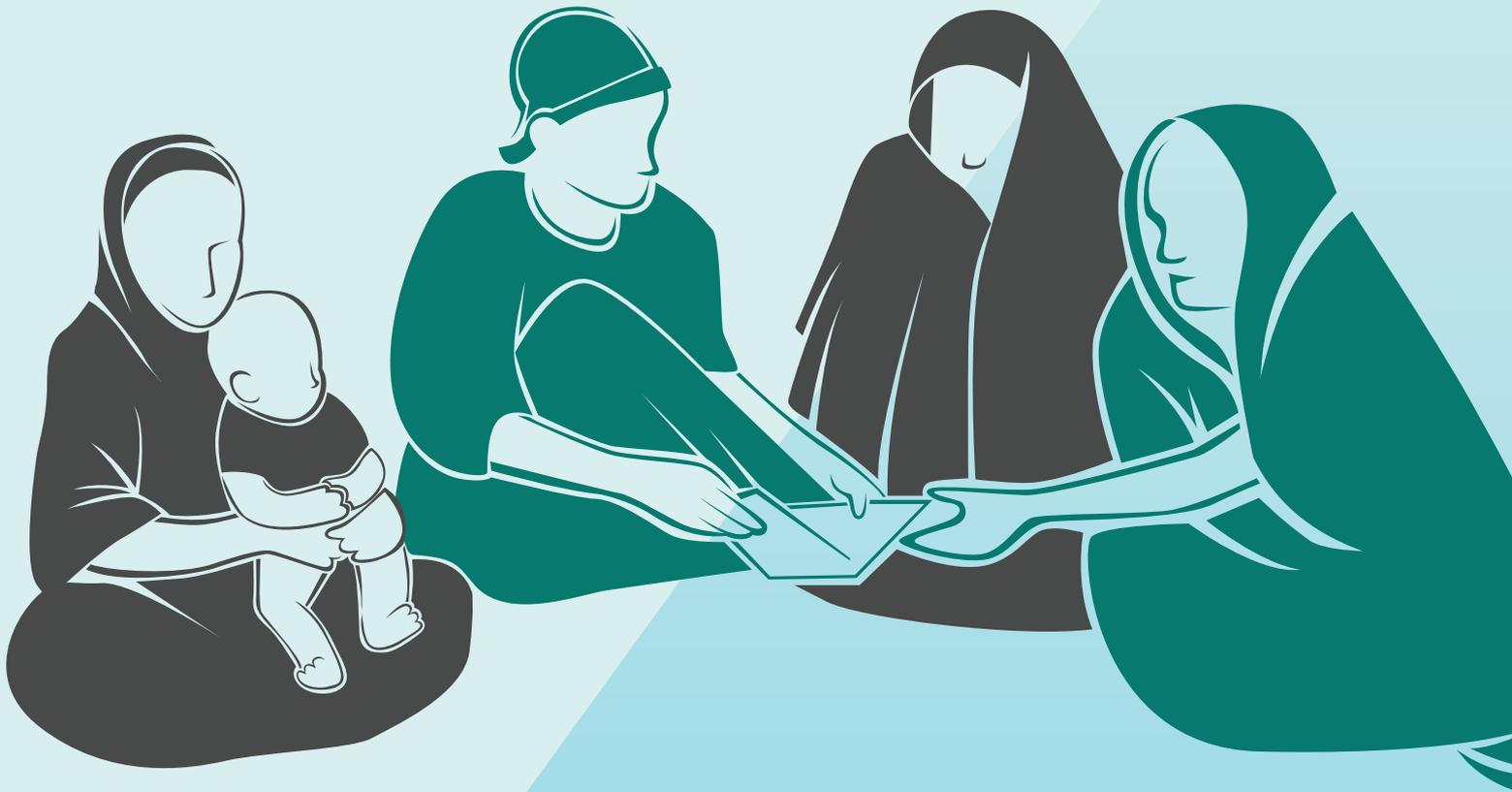


# COMPARATIVE COST-BENEFIT ANALYSIS OF PROGRAMS FOR THE ULTRA-POOR IN BANGLADESH

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Benefits and costs of programs for  
Bangladesh's ultra-poor



SMARTER SOLUTIONS FOR  
BANGLADESH





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# Comparative Cost-Benefit Analysis of Programs for the Ultra-Poor in Bangladesh

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## Introduction

With a quarter century of sustained poverty reduction, the rate of extreme poverty in the world is lower than ever. Global extreme poverty rate<sup>1</sup> has declined by almost two-thirds of what it was in 1990 (37%) (Ferreira, 2015). Much of this progress was driven by the stable economic growth in East Asia, and to a lesser degree, in South Asia. Progress in Latin America and Caribbean on the other hand has slowed down while the reductions in extreme poverty remain traditionally and consistently low in Sub-Saharan Africa. It would be practically impossible to reach the target of eradicating extreme poverty by 2030 through growth alone as it would require accelerating growth rates to unprecedented levels for most of the countries while keeping inequality unchanged (Yoshida et al, 2014).

Ensuring sustainable livelihood opportunities for the 900 million people who are still caught in extreme poverty is accepted as one of the major challenges for achieving the new Sustainable Development Goals (SDG). Majority of these extreme poor are living in Sub-Saharan Africa and South Asia where the rates vary between 43% and 19% respectively. Strengthening the social protection programs in these countries through effective allocation of resources will, therefore, be one of the key drivers of success. Evidence generated over the last decades on the impacts of different social protection tools are expected to play a stronger role in this social protection agenda.

The various social protection tools currently being implemented are heterogeneous in nature. Devereux and Sabates-Wheeler (2004) make conceptual distinctions in these approaches as protective, preventive, promotive and transformative. In reality, the specific programs often combine these objectives. This paper focuses on comparing three strands of social protection tools that primarily take the promotive approach with the specific objective of directly reducing poverty. The first is a 'Graduation' model which combines transfer of assets with several other promotive and protective components to create pathways out of poverty. With a strong focus on reaching the extreme-poor, this model is also known as 'Targeting Ultra-Poor' program. The second is a generic 'livelihood' program that varies substantially in the specific intervention(s) and target groups. Examples of typical livelihood programs include training and extension service promoting new agriculture technologies (such as farmer field schools), value chain initiatives to create market linkages for specific commodity (such as access to seeds or marketing services), or business development

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<sup>1</sup> Based on revised 1.9 dollar in purchasing power parity (PPP) terms.

services for micro-entrepreneurs. These programs sometimes also include credit or input packages (such as seeds or fertilizers). However, these programs are usually less intensive in than the Graduation model and have relatively less focus on targeting ultra-poor. Finally, the third is 'unconditional cash transfers' that adopts the simpler approach of transferring lump sum cash without any conditionality attached. Despite the differences in the composition of interventions, all three strands of programs have the similarity in objective to reduce poverty through sustainable increase in participants' income. The paper presents this comparative analysis at two levels. Firstly, conclusions are drawn based on global evidence of cost-effectiveness of the three types of model. Secondly, since a core objective of this paper is to reflect on Bangladesh priority, specific examples of interventions from the country are discussed followed by a benefit-cost analysis.

Based on the global evidence, the paper finds that the Graduation model is the most effective tool in terms of creating impacts that are sustained over longer periods. While livelihood interventions have comparable impact-cost ratios overall, the evidence is more diverse and does not yield a clear policy suggestion. Unconditional lump-sum cash transfers, on the other hand, have the highest impact-cost ratios among the three. However, they are less successful in creating impacts for the ultra-poor since the less poor micro-entrepreneurs benefit disproportionately more. Lastly, the evidence thus far does not demonstrate long-term sustainability of these impacts.

In the context of Bangladesh, the Graduation program has already been scaled up through various programs by several government and non-government agencies. For continued reduction of ultra-poverty in the country, such initiatives need to continue. While there are many livelihood programs in the country, their impacts at the household level are much more limited, especially for the ultra-poor households as beneficiaries. The literature on targeting suggests that participation of ultra-poor in such livelihood programs is lower than the moderate poor or vulnerable non-poor (e.g. Rahman and Razzaque, 2000). Unconditional transfer programs in the country on the other hand are primarily implemented by the government. There are several stipend programs that make regular cash transfers as a 'non-contributory pension scheme'. These stipend programs often reach the ultra-poor who are not economically active (such as disability allowance), and hence not comparable to Graduation or livelihood model in terms of the (sustainability of) impacts. Review of the evidence also does not show any strong impacts of these programs on livelihood outcomes.

Based on the cost-benefit analysis, we find that Graduation programs in Bangladesh have benefit-cost ratios of between 2 to 3. These are relatively high rates-of-return for investment in poverty reduction. Evidence from outside Bangladesh similarly show these ratios to be comparable. While the findings

indicate that Graduation initiatives should continue being an important tool for eradicating ultra-poverty in Bangladesh, there is a need for generating more evidence directly comparing alternative approaches.

The following section provides a brief contextual description of ultra-poverty in Bangladesh. Section 3 describes the Graduation model followed by a summary of evidence of the program's impacts in Bangladesh and in several other countries in Section 4. Section 5 presents the results of a comparative meta-analysis conducted using evidence from the developing countries. Section 6 reviews several programmes and projects from Bangladesh including cost-benefit analysis. Section 7 concludes the paper.

## Ultra-poverty in Bangladesh

Although the notion of ultra-poverty refers to the households living far below the national poverty line, there is no uniform definition of ultra-poverty in Bangladesh. There are sometimes distinctions made based on direct calorie intake measures. According to household income expenditure survey of 2010, individuals consuming less than 1805 and 1600 Kcal a day are defined as hard-core poor and ultra-poor respectively. Sen and Ali (2015) note that a number of terms such as 'extreme poor', 'poorest of the poor', 'hardcore poor', 'ultra-poor' are used to roughly refer to the same group who are at the bottom of the consumption groups below the lower poverty line. Although the report does not provide the national statistics of these poverty rates based on direct calorie intake, the correlation between household expenditure and calorie intake are quite strong. For example, the bottom 12% of the household expenditure group has average per capita intake of less than 1805 kcal per day. The households below the lower poverty line, which is lower than the international 1.25 dollar a day cut-off, are in general considered to be ultra-poor.

The decline in poverty headcount ratio was greater than population growth during 2005-2010 period, which led to a decline in the absolute number of the poor people. The number of people crossing the upper and the lower poverty lines during this period are 8.58 million and 8.61 million respectively. The level and distribution of consumption among the poor improved as well. The real per capita consumption expenditure during the 2005-2010 increased at an average annual rate of 16.9 percent, with a higher rate of increase in rural areas compared to urban. This shows that the economic conditions and incomes of rural people, especially the poor, have improved significantly as a result of the pro-poor and pro-rural policies of the government (GED, 2015). Despite this progress, 17.6% of

the population of the country was living below the national lower poverty line in 2010 with much higher concentration of poverty in rural areas (Table 1).

**Table 1. Decline in poverty headcount ratio (by lower poverty line) between 1991 and 2010**

	National	Rural	Urban
1991-92	41.1	43.8	24.0
1995-96	35.2	39.5	13.7
2000	34.3	37.9	20.0
2005	25.1	28.6	14.6
2010	17.6	21.1	7.7

Source: BBS (2011)

As in most other countries, the extent of dynamic poverty in Bangladesh has been consistently higher than chronic poverty both in the short-term and in the long-term (e.g. Sen and Begum 1998, Sen 2003, Nargis and Hossain 2006). Dispersion from the expected value of expenditure at any point of time can result in overestimation of dynamic poverty. However, the chronic poor are usually found to be at disadvantaged position compared to the descending or ascending households in terms of different household endowment characteristics. Nonetheless, understanding the association between chronicity and severity of poverty is of utmost importance for effective policy formulation. Chronic poverty, which may exist even without any poverty trap, calls for promotional approach. On the other hand, dynamic nature in severity of poverty requires protective measures.

**Table 2. Profile of the ultra-poor in Bangladesh**

	Ultra-poor (Rural)	Ultra-poor (Urban)	National (Rural)
Female headed households (%)	28	24.5	11
HH head without any schooling (%)	72.5	72	27
Secondary school enrolment (%)	35	23	80
Housing: straw/plastic as roof material (%)	24	0	5
Open defecation (%)	47	14	56
Have only one or no source of income (%)	31	19	-
No electricity (%)	86	12	51

Source: Sen and Ali (2015)

Although the chronic and extreme poor in Bangladesh do not completely overlap, the extreme poor are more likely to be chronic poor (Sen and Hulme, 2004). Over half of the chronically income poor are also extreme poor. However, there are a few distinguishable features of chronic and extreme poverty in Bangladesh. Firstly, the chronic poor are not necessarily a static group and, in fact, about 60% of them observed change in their income. Secondly, the extent of non-income based (e.g. education or child nutrition) chronic poverty is higher than income based chronic poverty. Thirdly, the association between chronic and extreme poverty is stronger in asset based estimates. Osmani (2006)

demonstrates a conceptual framework for such patterns and emphasizes the need for looking at chronic poverty as a composition of household endowments rather than income or expenditure. Empirical investigations also corroborate such conclusions since households with limited asset base have a high vulnerability ratio and a very low exit ratio (Sen, 2003).

As it is often highlighted, ultra-poor in Bangladesh “are not only poorer than the poor but differently so”. A profile comparison from HIES 2010 shows that incidence of extreme poverty is about three times higher among the households with the head being illiterate compared to those with the head being literate. Land ownership continues to be one of the most important determinants of extreme poverty. In terms of occupation, the extreme poor are caught in low return activities of day labourers. Ultra-poverty also has strong association with other household endowment and wellbeing characteristic (Table 2).

A more recent contextual review of the ultra-poverty in Bangladesh by Sen and Ali (2015) makes an important conclusion that growth alone cannot attain the goal of eradicating ultra-poverty. Firstly, the ultra-poor are not able to reap the benefits of economic opportunities because of their lack of assets (physical, financial and human) and voicelessness. Secondly, they are often caught in a complex multi-dimensional trap which they cannot break free with a simple income transfer and they often need a ‘mini big-push’. Finally, their economic lives are marked by high vulnerability to shocks, which require combining protection with livelihood promotional interventions. Even under the best economic growth projections with no increase in inequality, about 7.5 million people would require support from social protection programs for the country to achieve the new SDG of eradicating extreme poverty.

## Graduation Model: Targeting Ultra-Poor Program

Microfinance has long been one of the key tools of livelihood development programs for the government and most NGOs in Bangladesh. Because of the attractiveness of microfinance as a cost effective means to reaching millions of poor, rapid expansion of microfinance in Bangladesh during 1990s had been geared towards financial best practices. Despite considerable depth in poverty outreach of microfinance, it has bypassed the extreme poor. Greater concentration of microfinance participation among the moderate poor is well documented (e.g. Wood and Sharif 1998, Zaman 2005) along with both demand and supply side constraints faced by the ultra-poor to participate and benefit from microfinance (Hasehmi, 2001).

Although the limitations of microfinance have been a subject of continuous discussions, dominance of microfinance as a successful development intervention has failed the ultra-poor in two important ways. Firstly, there have been fewer innovative approaches by different NGOs specifically for the extreme poor. Secondly, it has caused exclusion of the extreme poor in non-financial interventions. When the microfinance groups are taken as the basic foundation of other interventions, the already outsiders have remained excluded. Rahman and Razzaque (2000) argue that the social interventions, such as health or education, are often designed to support microfinance operations resulting in exclusion of the ultra-poor. Targeting ultra-poor program emerged in Bangladesh as an amalgamation of experiences from microfinance and gradually spread in a number of other countries. In this section we narrate the background of developing the program in Bangladesh and its adoption in many developing countries. It is important to consider these contextual factors before describing the approach adopted.

## Emergence of targeted programs for the ultra-poor in Bangladesh: IGVD to TUP

Though the focus on extreme poverty has received strong attention in Bangladesh since early 2000 with the new understanding of microfinance and its trade-offs, there has been programs targeting the ultra-poor since mid-1980s. The Income Generation for Vulnerable Group Development (IGVD) program in collaboration among the Government, the World Food Program (WFP) and BRAC<sup>2</sup> is an important example that envisioned creating a strategic pathway out of poverty for the most vulnerable women. Since microfinance was considered not to be a suitable direct entry point for this group, this program took a 'laddered approach' (Matin and Hulme, 2003). Food transfer is the overriding priority for these extremely food insecure households. BRAC initiated the IGVD program as an extension of WFP's Vulnerable Group Feeding (VGF) program where the beneficiary household received a monthly ration of 31.25 kg of wheat for a two-year period. It had been found that the VGF members were not better-off at the end of the support phase than at the onset of the program. Direct food transfer was not enough to put them on an accumulative trajectory. In the IGVD, the beneficiaries received additional skill training on income earning activities and financial services to engage in those activities. Initial success of the IGVD approach was inspiring since the beneficiaries

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<sup>2</sup> BRAC is an NGO originating in Bangladesh who played a pioneering role in developing the ultra-poor model. For more information, visit [www.brac.net](http://www.brac.net)

were able to attain an increase in income which was higher than the amount of food subsidies they received. Thus addition of skill training and customized credit and savings scheme with the original food stamp, turned the *protective* program (VGF) into a *promotional* one.

However, there have been some further key lessons from IGVGD, which guided a new and more comprehensive approach called Challenging the Frontier of Poverty reduction/Targetting Ultra-Poor(TUP for short). It had been observed that there were relatively high levels of errors in targeting by IGVGD programme. More importantly, the beneficiaries could not sustain all the gains that they had made during the intervention period (Hashemi, 2001). All the beneficiaries did not necessarily reap the benefits of each of the components, partly for the programme design (Marin and Hulme,2003) and partly for the incentive characteristics of the beneficiaries (Webb et al, 2002). On the part of the program design, there were flaws in targeting, service packaging and in the orientation of staff. Table 3 shows the programmatic lessons learned from IGVGD and the responses in CFPR/TUP.

On the part of the ultra-poor, the true potential of the approach was not realized since they (a) had low aspirations because of high discount rate for future and over-dependence on the food aid, (b) could not derive peer and NGO officials’ support because of limited belief in microfinance group meetings, (c) lacked confidence in skills acquired through trainings, (d) disliked the types of activities that they were trained in and (e) lacked entrepreneurship because of their risk averse nature. New understanding of IGVGD in the fronts of targeting, program components and the service delivery process shaped TUP.

It had become clear that to bring a meaningful and sustainable change in the livelihood of the ultra-poor, there was a need for a comprehensive approach with multiple interventions working simultaneously on different constraints that they live with. In TUP, enterprise development has been taken up as the major entry point and all other components are fitted in to ensure success of their enterprise. BRAC experience of working with the ultra-poor under TUP program since 2002 indicates they require a boost in their entrepreneurial ability and a clear path to demonstrate their ability.

**Table 3. Lessons learned from the IGVGD and ways in which the CFPR / TUP responded**

<b>Topic</b>	<b>Lessons learned from the IGVGD</b>	<b>CFPR design features</b>
Targeting	Access to IGVGD is not seen as “fair” by villagers and local government officials can use VGD cards for patronage.	BRAC staff will play an active role in client selection and geographical targeting.

Program components	The provision of food aid, skills training, savings scheme and microcredit is not sufficient to assist many very poor households to improve their situation.	Commence the program with social development training. Include asset transfer, basic health services and shock/emergency fund to the “package” for clients.
Role of staff	Having existing microfinance staff take on training and microfinance services for IGVDG did not provide clients with the intensive and customized support they needed.	A separate cadre of staff to be developed for CFPR work only. More intensive interaction with clients, follow up and participatory impact monitoring.
Income generating activities	Providing training (and loans) only in sectors that BRAC had pre-existing course modules is too narrow a range of activities.	Extend the range of sectors and assets/enterprise types that are supported. Include wage employment as an activity and allow different regions to vary their range of activities.
Assimilation and graduation	Not all IGVDG clients can be rapidly assimilated into VOs according to a rigid timetable. Some clients will “fall behind” and need additional support.	Customized assimilation and graduation timings to client needs and client progress. Clients do not have to take on microcredit and support for “failing” clients is a program component.

Source: BRAC’s CFPR program document phase I

## Graduation Approach: A story of south-south collaboration

There have been numerous new initiatives in the last decade that utilize a core model of directly generating employment by the ultra-poor as a pathway out of extreme poverty. To cite a few examples from Bangladesh that recognized a ‘trap-centric’ view of ultra-poverty to combine promotional and safety-net aspects of social protection programs are – Char Livelihoods Program (CLP), Strengthening Household Abilities for Responding to Development Opportunities (SHOUHARDO), Urban Partnerships for Poverty Reduction (UPPR), Economic Empowerment of the Poorest Program (EEP/Shiree), Rural Employment Generation for Public Assets (REOPA), Food Security for the Ultra-poor (FSUP). This range of programs for the ultra-poor has emerged with a general increase in focusing on ultra-poor. While some of these initiatives have emerged independently of each other, there has also been cross-learning and inspirations from early evidences of impacts. Collectively these programs have reached over a million ultra-poor households in the last decade. Most of these programs are generally found to be successful in creating sustainable impacts (see Sen and Ali, 2015 for a review).

Besides these examples of scale in Bangladesh, there has also been an important contribution by development practitioners in the country in taking this model to a global scale. A Graduation Program led by Consultative Group to Assist the Poorest (CGAP) with financial assistance from Ford Foundation has played a catalytic role in fostering this south-south collaboration. Under this overall initiative of

advocating 'Graduation Approach', 10 pilots have been implemented in eight different countries - Ethiopia, Ghana, Haiti, Honduras, India, Pakistan, Peru and Yemen – since 2006.<sup>3</sup> This program has not only fostered the cross-sharing of lessons learned through periodic workshops with partners, organizing exposure visits to Bangladesh and facilitating technical assistance, but also took an active strategy of generating rigorous evidence of the impacts of these pilots. These have been instrumental in subsequent scale up of this approach in a number of countries – often led by the national social protection programs. While each pilot has customized the model based on the contextual realities relevant for the approach, often with smaller innovations to increase efficiency and effectiveness, the key principles have been rigorous targeting with sequencing of interventions for creating a pathway out of ultra-poverty. The next section describes the key distinguishing features of Graduation approach.

## Description of the Graduation approach

The main features of Graduation approach are – rigorous targeting, a carefully sequenced and comprehensive set of interventions, and creating a time-bound exit path out of ultra-poverty. The overarching objective of this approach is to create a sustainable livelihood for the ultra-poor so that they are able to continue on a growth path by breaking free from poverty trap and are able to cope with (at least minor) shocks without further support after graduation.

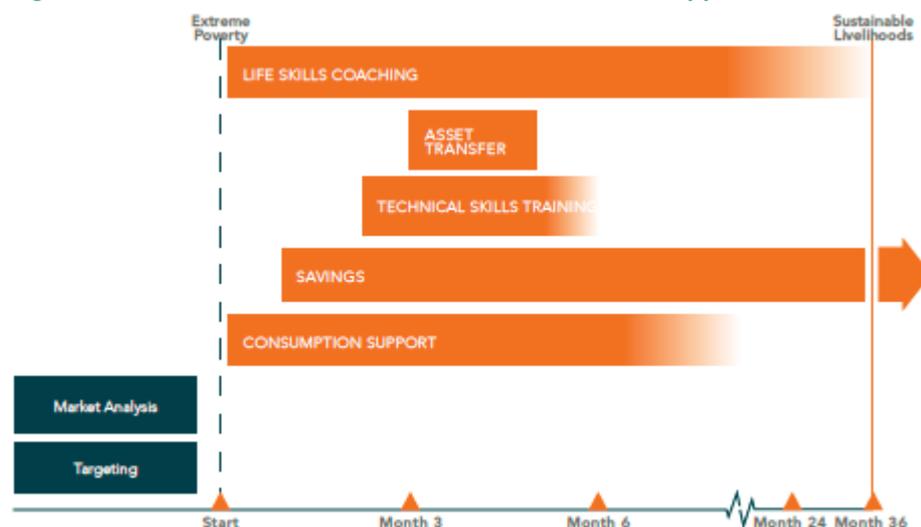
## Targeting

Targeting is one of the hallmarks for Graduation approach. Rigorous targeting by combining different targeting tools – spatial targeting, community based participatory wealth ranking, and proxy-means tests – has been the general approach for all the Graduation initiatives at pilot and scale. The importance of targeting comes from mainly two facts. Firstly, because of the comprehensive nature of the interventions, it is relatively costly and hence has relatively higher costs of inclusion error. Secondly, effective targeting has been found to have strong association with community buy-in, which is one of the key success factors for this approach. Figure 1 gives a generic description of the approach.

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<sup>3</sup> For more information of this Graduation Program, visit <http://www.cgap.org/topics/graduation-sustainable-livelihoods> and the resources therein.

**Figure 1. The Graduation into Sustainable Livelihoods Approach**



Source: de Montesquiou et al (2014)

## Intervention Components

*Consumption support:* Soon after participants are selected into the program, they start receiving consumption support in the form of a small cash stipend or foodstuffs. This support gives them “breathing space” by easing the stress of daily survival. It can be offered through a pre-existing government or other safety net program, in contexts where this is available. This component reflects the important lessons derived from the field of social protection.

*Savings:* Once people’s food consumption stabilizes, they are encouraged to start saving, either semi-formally through self-help groups (SHGs) or more formally through an account with a formal financial services provider. In addition to building assets, regular savings instils financial discipline and familiarizes participants with formal financial services. Most Graduation Programs have seen the need to offer financial literacy training, teaching participants about cash and financial management, and familiarizing them with savings and credit. This feature draws on emerging lessons about the importance of savings from the field of financial inclusion.

*Market analysis and asset transfer:* A few months after the program starts, each participant receives an asset (e.g., livestock if the livelihood involves animal husbandry; inventory if the livelihood is retailing) to help jump-start one or more economic activities. Prior to that transfer, the program staff

have thoroughly analysed the local market's infrastructure and support services to identify sustainable livelihood options in value chains that can absorb new entrants. Once the staff have identified several viable options, the participant chooses from a menu of assets, based on livelihood preferences and past experience.

*Technical skills training:* Participants receive skills training on caring for an asset and running a business. While rudimentary, such training is essential in managing successful small businesses. The training also provides information on where to go for assistance and services (e.g., a veterinarian, for the many program participants whose livelihood selection involves animal husbandry). The asset transfer and skills training incorporate lessons derived from the livelihood development field.

*Life skills coaching:* Extreme-poor people generally lack self-confidence and social capital. Weekly household visits by staff allow for monitoring and "coaching" over the 18 to 36 months of the program. During these meetings, staff members help participants with business planning and money management, along with social support and health and disease prevention services. In several instances, it has proven valuable to organize social support groups (such as "village assistance committees") or link up with a health care service provider, whether government clinics or nongovernmental options.

*Health support:* Provision for health support for all the household members to avoid distress sales of assets is also made part of the package in a few pilots. While the program in Bangladesh has a direct provision for these supports (including hospitalization and other tertiary care), there has been innovations in other pilots where the ultra-poor households are linked with existing micro-health initiatives.

## Impact Evidence of Targeting Ultra-Poor Program

There have been a number of studies that investigate the impact of BRAC's TUP programme in Bangladesh. Quasi-experimental evaluations of the first cohort of beneficiaries (pilot phase started in 2002) show large effects on income, consumption, assets, access to finance (e.g. Rabbani et al, 2006; Emran et al, 2014). Inspired by the evidence, this program was scaled up and a randomized control trial was conducted for measuring the direct and indirect effects. Bandiera et al (2013) find that the program increased the income of the treatment households by 34% compared to the control group at the end of the 2-year interventions. More importantly, this gain was sustained 2 years after the end

of the interventions with treatment households having 38% higher income than the control group. Similar long-term effects are observed on consumption and savings. For asset ownership, the 4-year impacts are statistically significantly higher than the 2-year effects. These changes take place primarily through an occupational shift of the beneficiary households from casual day labour to self-employment. There is a positive spillover effect on the non-beneficiary ultra-poor through increase in wage rates for housemaid work by women.

Banerjee et al (2015) conducted randomized evaluations of the TUP model in six countries under the CGAP Graduation program. This study showed positive effects on livelihood outcomes in five out of these six pilots at the end of the intervention. Similar to the Bangladesh study, this evaluation also found that these impacts are sustained at least one year after the end of interventions. In their cost-benefit analysis, the return on investment ranged between 133% and 433% in the five sites with positive impacts. The study identified a key implementation failure in the sixth site for the lack of impact.

Out of these seven sites, there has been further follow-up study to see the long-term effects (7 years after baseline) in Bangladesh and India. Early results from both these cases found that the long-term effects are either equal to or higher than the end of intervention.<sup>4</sup> These results indicate that the programme helped the programme beneficiaries attain an accelerate income growth path. Using quasi-experiment approach, two studies (Misha et al, 2014; Asaduallah and Ara, 2016) find that the 2002 cohort of TUP beneficiaries supported by BRAC in Bangladesh had significantly higher income than the comparison group even after nine years. Both studies show that the effects after nine years are smaller than the medium-term effects after six years. One of the reasons of the long-term effect size being smaller was faster income growth by the comparison group due to receiving supports from new programs in this area.

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<sup>4</sup> Research findings presentation at conference <http://www.theigc.org/event/igcbrac-ultrapoor-conference/>, accessed on January 7, 2016.

## Comparative Analysis of Cost-Effectiveness from Global Evidence

This section draws on a work-in-progress meta-analysis comparing three strands of antipoverty programmes, viz. Graduation approach, livelihood programmes and unconditional lump-sum cash grants<sup>5</sup> commissioned by CGAP. In this systematic review of such evaluations, the study includes 31 livelihood programs and 11 cash transfer cases in the meta-analysis to compare with the evaluations of seven Graduation initiatives. While the specific interventions of Graduation approach and cash transfers are fairly similar, the livelihood programs screened in this study vary substantially in the interventions (including agriculture extensions, farmer field schools, market linkages, small scale irrigations etc.), intervention durations, and targeted beneficiaries. Other important variations among the three sets of evaluations are – a) only Graduation programs had exclusive focus on targeting ultra-poor; b) more than half of the livelihood evaluations were conducted to measure impacts either during or at the end of interventions (compared to all Graduation evaluations being done at least a year after end of interventions, and only three cash transfer evaluations measuring effects within a year after transfers); and c) only nine (out of 31) livelihood evaluations used experimental methods with all cash transfers and graduation evaluations being RCTs.

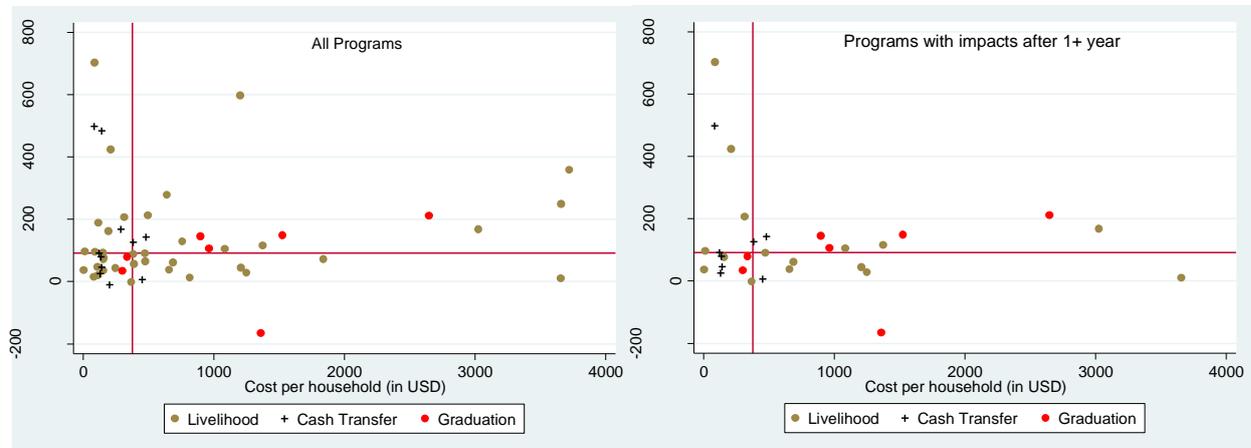
The main objective of this study is to compare the impacts and costs of these programs. Figure 2 gives a summary plot of the cases in terms of the impact estimates and costs. For impact, annual household consumption is used as the preferred indicators although income was included for cases that do not have consumption estimates. The impact on annual household consumption and per household intervention costs are reported in USD using exchange rates. The red lines show the medians of all the studies included in the meta-analysis. Although it can be expected to have a positive correlation between cost and impact, this cost-impact plot does not show a clear pattern. We find that the cash transfer cases, which were primarily research projects, have relatively low per household costs and generally below the overall median. Graduation program generally have high costs and high impacts compared to livelihood cases. In fact, prominence of Graduation initiatives in the high cost-high impact quadrant becomes clearer when cases with impact measured at least 1 year after the end of

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<sup>5</sup> Only lump-sum cash grants were included since the objective is to assess whether a simple one-off cash grant for productive purposes can be an alternative approach of livelihood development than investing in a comprehensive package of interventions.

interventions are considered. Four Graduation cases (out of seven) are in the high-cost high-impact quadrant.

**Figure 2. Cost and impact by program types**

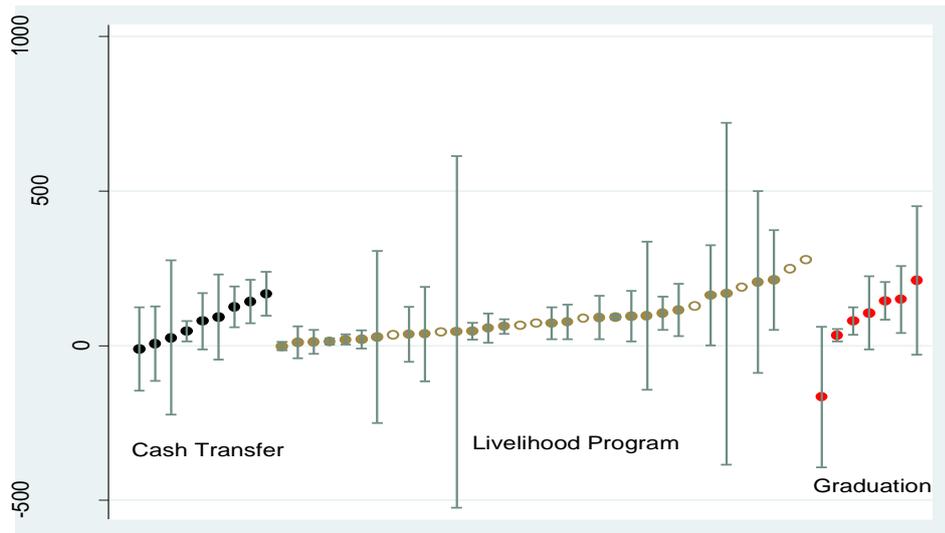


Source: Sulaiman (work in progress)

A cost-effectiveness analysis is conducted among these cases by using impact on annual consumption (or income) for every dollar spent per household as the benchmark indicator. Figure 3 shows the distribution of this indicator for the three types of cases. It clearly shows that the livelihood programs have a wide range in the precision of the estimates – with confidence intervals being very wide at different point estimates as well as very precisely high and low impacts. The blank dots are the studies that do not report the standard errors and could not be included in subsequent meta-analysis.

Figure 4 presents the meta-averages of impact per dollar. Cash transfer programs have the highest impact-cost ratios followed by livelihood and Graduation cases. However, this comparison does not reveal the true effectiveness of these approaches for the ultra-poor. As noted earlier, most of these cash transfer programs generally do not target the ultra-poor. This intervention is found to be more effective when they reach micro-entrepreneurs with existing businesses. There is also concern about the long-term impacts of cash transfers. A number of these studies with impacts measured at multiple points of time show a general decline in the impacts.

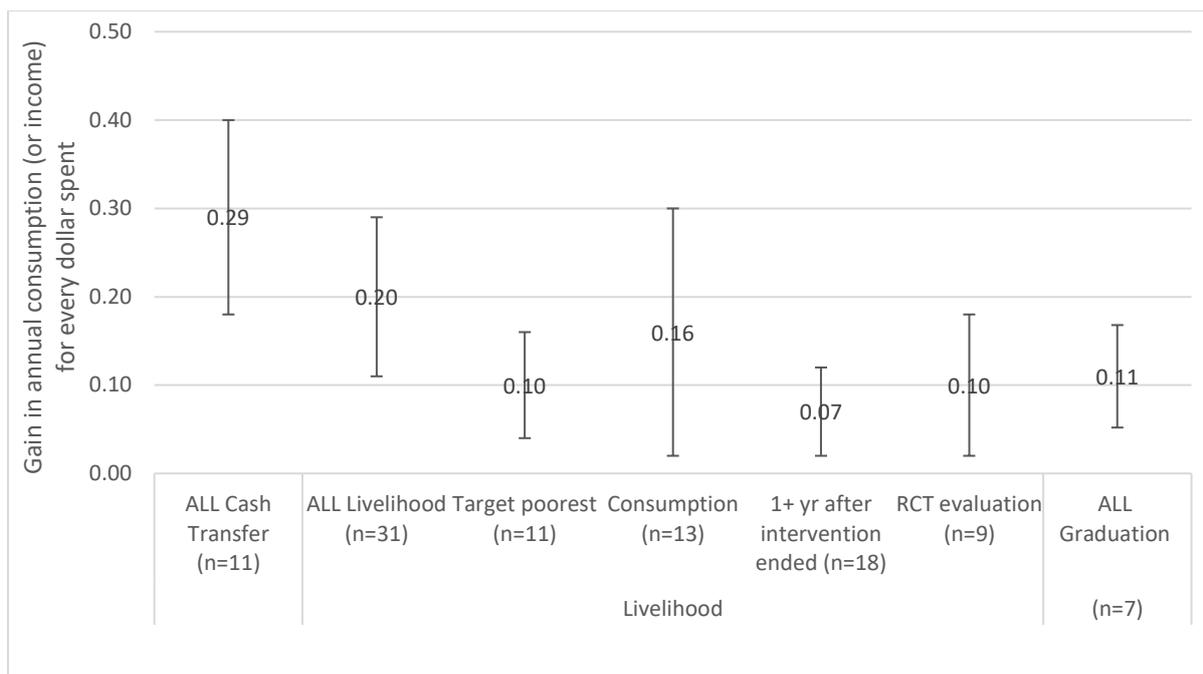
**Figure 3. Impact measures by program type**



Source: Sulaiman (work in progress)

Among livelihood cases, there are a few important determinants of their cost-effectiveness. Although the average of impact-cost ratios for all 31 livelihood cases is 0.21, the estimates are much smaller when the analysis is restricted to programs that target ultra-poor, measure sustainability of impacts and use rigorous impact assessment through randomized control trials. Based on the analysis, the paper concludes that Graduation is a cost-effective approach to make sustainable livelihood development by the ultra-poor. However, given the limited evidence of unconditional cash transfers for the ultra-poor, further studies are required that directly compare long-term effects of Graduation with cash transfers.

**Figure 4. Comparison of cost-effectiveness (meta average)**



Source: Sulaiman (work in progress)

It is important to reiterate that this cost-effectiveness comparison use a simple measure of impacts. While the simplicity is useful to comparing various types of programs across a number of countries using studies that look at different sets of other impact indicators, this is not a benefit-cost analysis.

## Comparing Cost-Benefit of Selected Programs in Bangladesh

In order to conduct a comparative cost-benefit analysis, an additional literature review is conducted to identify a few prominent programs in Bangladesh. This is not a systematic review as such since no specific search protocol was followed for this purpose. Since the purpose is to reflect on the comparative meta-analysis of global evidence in the context of Bangladesh, this review primarily focused on including a few cases in addition to the ones already covered under the meta-analysis presented in the previous section. Therefore, these are not a complete or representative list of anti-poverty programs in Bangladesh. This should be read as a comparative case study of cost-benefit of Graduation type initiatives with a few specific cases. The interventions and impact evidence of these cases are described below before presenting the comparative cost-benefit analysis.

### Description and Impact Evidence of the Selected Programs

While all case studies included in this comparative analysis have the same objective of poverty alleviation, there are important differences beyond the specifics of intervention. The important

differences to consider are – the heterogeneity in targeting performance, quality of impact evidence (due to variations in the rigour of constructing counterfactuals), and the timing of impact relative to the stages of implementation. These aspects are touched upon while presenting these case studies.

## Income generation for vulnerable group development (IGVGD)

As discussed earlier, IGVGD in many ways have been a predecessor of the TUP model in Bangladesh. While there are a number of research reports on this program, the report by Ahmed et al (2009) is one of the more recent ones and widely cited. This impact evaluation compares four social protection programs for the ultra-poor in Bangladesh, all of which are included in this analysis.<sup>6</sup> This is one of the arms of vulnerable group development (VGD) program, implemented by the Government of Bangladesh and WFP, that targets ultra-poor women who receive monthly food ration for two years. Approximately 85% of the 750,000 women (in the VGD program) who were included in the evaluation in 2006, participated through the IGVGD arm. In 2006, the cohort included in the impact evaluation, about 750,000 women were included in VGD program, of whom over 85% participated through IGVGD arm. In addition to the food ration, partner NGOs provided training on income generating activities (mainly poultry and livestock rearing), general awareness training (on social, legal, health and nutrition issues), basic literacy and numeracy skills training, savings promotion, and access to credit.

Although this is a nationwide program, its coverage is generally higher in the relatively food-insecure sub-districts. The beneficiaries are selected by a local committee comprised of government officials, elected representatives of the local government and NGO partners. Several studies have pointed the flaws in targeting for this program including nepotism and elite capture by the local leaders. Ahmed et al (2009) find that only about half of the beneficiaries (54%) in their sample belong to the poorest quintile of the national consumption groups. The evaluation, conducted while the participants were still receiving program supports, finds significant positive impacts on food consumption, assets and savings. Impact on income is not assessed separately, and expenditure is taken as a proxy for income in the evaluation.

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<sup>6</sup> Besides IGVGD, the other three programmes evaluated in this paper are Food Security for Vulnerable Group Development (FSVGD), Food for Asset (FFA) and Rural Maintenance Programme (RMP).

## Food Security for Vulnerable Group Development (FSVGD)

As a second arm of VGD program, Food Security for Vulnerable Group Development (FSVGD) shares the same feature of IGVD. However, unlike IGVD, in this project the beneficiaries received a combination of food and cash transfers. A second difference is that no formal linkage is provided for access to credit for FSVGD beneficiaries. The transfer size was equivalent to IGVD but split in half between food and cash. This project was implemented during 2001 to 2006 with financial support from European Commission (EC). This project also adopted the same targeting criteria as IGVD, and 53% of the beneficiaries are found to be belonging to the poorest quintile. The impact estimates on total expenditure, savings and assets are very similar in magnitudes with the corresponding estimates of IGVD (Ahmed et al, 2009).

## Food for Assets (FFA)

As one of the key component of integrated food security program (IFS), Food for Asset (FFA) combines public works with skill training and financial services. Although named as food for asset, the participants received a combination of cash and food as wage for their work. The FFA aimed to protect existing livelihoods and assets by providing short-term employment during the lean seasons and to reduce the risk and exposure of vulnerable groups to shocks by building assets that generated income and for disaster preparedness purposes. Communities were encouraged to identify their own needs and priorities and make decisions on the activities to be implemented. This was thought to be a means to increase community ownership of the assets created and subsequent maintenance of these assets through 'users committees'.

FFA aimed to create community wide benefits by preventing flood damage, improving the natural resource base of communities, and improving access to markets as a means of improving livelihoods. The areas of interventions of the FFA schemes were highly concentrated in water management, flood protection and access infrastructure. Assets were selected for their high potential to protect communities from disasters such as raised homesteads, ground raising, embankments and roads-cum-embankments to prevent the loss of community assets and household assets due to flood damage. In 2006, the cohort surveyed in the evaluation by Ahmed et al (2009), over 39,000 individuals participated from 38 sub-districts. In the second phase, between 2009 and 2011, about 55,000 participants were supported with 70 percent of the participants being women.

The FCFA activities targeted the ultra-poor people living in the most food-insecure areas of Bangladesh and vulnerable households living in disaster-prone areas. Assets were identified by participants through local level planning according to their needs and priorities in order to build ownership and sustainability of the assets created. In the FFA, the participants are provided with a combination of food ration and cash wage for two years. In each year, the participants would engage in asset construction for six months for 90-95 days and for the remaining six months, they would receive a standard package of training for five or six days each month. Jahan et al (2013) conducted an evaluation of the FFA in the second phase, which find significant impacts on reducing food insecurity of the participating ultra-poor and community wide benefits from the assets created. The study found significant impacts on income, savings and assets of the beneficiaries compared to a matched comparison group. This study also found positive impacts on a number of indicators related to women empowerment. However, the study found limited evidence of impact on food security and dietary diversity after one year from the end of two-year intervention cycle.

In terms of targeting effectiveness, this program was found to be more successful in reaching the ultra-poor with about 80% of the beneficiaries belong to the bottom quintile and 72% having household expenditure comparable to the poorest decile. For the purpose of the cost-benefit analysis, we use the findings from the evaluation conducted by Ahmed et al (2009). Similar to both IGVD and FSVGD, the study finds statistically significant positive impacts on expenditure, savings and assets although the effect sizes were relatively smaller.

**Table 4. Summary of program case studies**

<b>Program</b>	<b>Approach</b>	<b>Targeting</b>	<b>Interventions</b>
IGVD	Promotional	Moderate	Food transfers, IGA training, life-skill training, access to credit
FSVD	Promotional	Moderate	Food and cash transfers, IGA training, life-skill training, savings
FFA	Promotional	Ultra-poor	Food and cash for work, training, savings
RMP	Promotional	Moderate	Cash for work (as monthly salary), savings and training
FSUP	Promotional	Ultra-poor	Cash transfer for asset purchase, training, food stipend, healthcare, coaching, self-help groups
FFS	Livelihood	None	Integrated farm management training (in groups)
PCVFC	Livelihood	None	Training and access to credit for commercial vegetable and fish cultivation
PLDP	Livelihood	None	Training livestock rearing, technical support, access to credit, and strengthen veterinary services.
DSAP	Livelihood	None	Training on low cost aquaculture, demo farms, and yearly refreshers
AWDD	Safety Net	Ultra-poor	Monthly stipend of Tk 350

## Rural Maintenance Program (RMP)

Initiated by Care International in early 1980s, the RMP is a cash-for-work initiative with road maintenance as the main form of public work. In 2006, the cohort covered by the evaluation, over 40,000 rural women participated from almost all districts of the country. RMP provides a four year employment contract to destitute women for road maintenance work. The daily wage rate in 2006 was Tk 51, of which Tk 10 was required as mandatory savings. Wage is paid for 30 days per month with full employment throughout the year. After the end of four-year cycle, the savings accumulated by the participants are expected to enable them to start new income generating activities. To facilitate the migration from wage to self-employment, the program also provides business skills training. Additional training on their rights, and health and nutrition are provided from the program. Targeting effectiveness of this program is found to be slightly better than IGVD and FSVG with about 60% of the beneficiaries belonging to the bottom quintile based on their per capita expenditure. Impact assessment shows positive impacts on expenditure and asset, which are largely of the same size as IGVD and FSVG. However, the impact is about four times higher than the other two programs. This large impact on savings is understandable considering the fact that the beneficiaries are eligible to withdraw their savings after completing the full four year cycle, and the evaluation was conducted during the intervention phase.

## Food security for the ultra-poor (FSUP)

This project is an example of various initiatives in Bangladesh that follow the Graduation approach to reach the ultra-poor. Launched in 2009, this project by WFP has reached 30,000 households in three northern districts of Bangladesh by 2012. The specific interventions of this project contains the usual elements of Graduation approach, viz. training on an income generating activity (IGA), a one-off cash transfers (Taka 14,000) to purchase the assets related to the IGA, consumption allowance (TK 500-1,000 per month), healthcare supports, nutrition training, and a hands-on coaching for 24 months. To facilitate access to financial services, the project also supported creation of self-help groups.

Impact evaluation of this project is done by comparing a sample of beneficiaries from 2009 cohort with a comparison group (Jahan et al, forthcoming). Four rounds of surveys were conducted on these households between 2009 and 2015. The evaluations find significant positive impacts on income through increased engagement in livestock rearing (primarily beef fattening enterprise) both during and at the end of interventions. Moreover, the positive impacts are sustained three years after the

end of the interventions although the size of impact went down. Similar trend of sustained positive impacts is observed on consumption and savings. More importantly, the beneficiary households are found to have further diversified their activities by acquiring land and other household assets, and impact on total value of assets increase further from the end of intervention.

## Farmer Field School (FFS)

As part of Agriculture Sector Program Support (ASPS) by DANIDA, this FFS initiative started in 2000 and continued into second phase during 2006-2011. With a total grant size of DKK 610 million (about USD 110 million), FFS initiative reached 500,000 beneficiary households. FFS used an integrated farm management curriculum to train on agriculture, horticulture, poultry, livestock and aquaculture. These trainings were rolled out in 20-40 sessions over a period of 5 to 18 months. An evaluation was conducted in 2011 by surveying about 1,250 households (750 participants - 500 completed and 250 current participants, and 500 comparison villages). Although the report concludes that the impacts on income are almost twice the size of per household costs (about TK 4,500), the evidence is not robust. Their point estimates of impact become much smaller and statistically not significant after they control for differences in household characteristics between the participant and comparison groups. Impact estimates on income varies between TK 1,700 and 10,000. Estimates of impacts on total expenditure ranged between TK 3,300 and 4,900; and are not statistically significant. Given this imprecisely estimated zero effect, a cost-benefit analysis is considered to be inappropriate for this case study.

## Promoting Commercial Vegetable and Fish Cultivation

In Bangladesh, there are numerous programs by NGOs that promote adoption of vegetable and fish cultivation primarily through credit and training (Ahmed and Khondkar, 2011). International Food Policy Research Institute (IFPRI) undertook an impact evaluation of such initiatives by three different NGOs in the districts of Manikganj, Mymensingh and Jessore (Bouis, 2000). Based on a four wave panel data of participants and non-participants in 1990s, the study finds mixed evidence of their impacts.

The study finds that participation in training programs increased their engagement in (and income from) fish production compared to the comparison groups, which also reflected an increase in total farm income (by USD 3.5 per capita per month). However, there was a negative impact on the total off-farm income by USD 1.8 per capita per month. Moreover, this net positive impact of USD 2.3 monthly income did not reflect in any positive gain in consumption although one of the core objectives

of these programs was nutritional improvement. The study did not find any positive impacts on fish or vegetable consumption from own production, or per capita total expenditure<sup>7</sup>. There is also no indication of change in household savings. The results suggest that the marginal improvement in income was crowded out by a larger decline in food transfers received by the participants compared to the non-participants.

The study also found that the interventions were not pro ultra-poor since the participants had more education and better access to land than the non-participants. While several implementation failures are identified for the lack of impacts, these specific cases do not support any policy conclusion of such training reaching or benefiting the ultra-poor. The study does not report cost data for these programs to conduct a cost-benefit analysis.

## Participatory Livestock Development Project (PLDP)

With financial support from Asian Development Bank (ADB), this project was implemented from 1998 to 2010, in two phases. The project reached 360,000 households in the first phase with training on livestock rearing, technical assistance, and access to credit and veterinary services. The project mentions targeting 18% of poor HHs. Training participants were selected based on eligibility to participate in microcredit groups leading to exclusion of the ultra-poor (Iqbal et al, 2011). Overall budget of the project was USD 42 million, of which USD 12.7 million was earmarked for a separate sub-component of institutional capacity building.

ADB (2005) reports very high impacts of the project on income, consumption and savings. However, the assessment is done based on a pre-post comparison of the project participants. Because of this major weakness in the evaluation methodology, the estimates from this report are not used for our cost-benefit analysis. Nielson et al (2003), in a different evaluation of this project, conducted surveys on a sample of beneficiary and a comparison group between 1998 and 2003 for their impact measurements. Their study was focused on assessing impacts on food diversity and nutrition from poultry production. Although they found positive impacts on income from egg production, the effects on consumption indicators were not significant.

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<sup>7</sup> Point estimate of the difference in total expenditure is USD -0.22 and statistically not significant.

## Development of sustainable aquaculture project (DSAP)

This project designed by WorldFish Centre was implemented by 48 NGOs with financial support from USAID. The intervention was 3-day training on low-cost pond-management technologies, demonstration farms and informal group discussions adopting participatory adaptive learning (PAL) approach followed by annual refreshers for 2 years. With a total budget of USD 5.5 million, this program reached 35,000 demonstration farmers in 57 districts between 2001 and 2005.

The beneficiaries were primarily better-off households since ownership of ponds is skewed to the richer households in rural Bangladesh. Moreover, the impact evaluation by Murshed-e-Jahan et al (2010) finds that the adoption of improved fish farming practices is concentrated among the rich landowners. Using a sample of 225 training participants and 123 comparison farmers, the study finds significant positive impacts on total income, largely from net additional income from fish culture. The evaluation was conducted in 2005-06, one year after the training was rolled out to the intervention group. The study also finds positive impact on frequency of fish consumption, and impact on other livelihood outcomes (savings and assets) are not reported. In a separate evaluation of the same project, Mandal et al (2004) found that an additional component of cash grants to the demo farmers did not result in further improvement in their productivity or income.

## Allowance for widowed, deserted and destitute (AWDD)

In our search for evaluations of unconditional lump sum cash transfer programs, we did not find any example from Bangladesh. While there are programs with cash transfers, these grants are included as part of a package of interventions. For example, WFP's FSUP project provides lump sum cash along with other interventions. On other hand, there are a number of cash stipend programs as part of government social safety net. These programs operate as a non-contributory pension schemes, and do not necessarily have any exit strategy. The AWDD is one of such program with effective targeting to reach the ultra-poor (Barkat et al, 2013). Implemented by the Ministry of Social Affairs, this program reached over a million women with monthly stipend of Tk. 350 (about USD 5) in the fiscal year of 2013-14. Begum et al (2014) used propensity score matching with national household income expenditure (HIES-2010) data to measure impact of the program on several livelihood indicators. The study does not find any statistically significant effects on any indicator. The point estimates are found to be positive impacts for income, and negative impact for expenditure and agricultural assets. Given the continuous nature of the program and the lack of any significant effects, this program is not found to

be suited for cost-benefit analysis. Irrespective of the impact findings, such programs are important as a safety net for ultra-poor who are not economically active.

## Cost-Benefit Analysis

Using the findings from the respective impact evaluations of these case studies, we conduct a cost-benefit analysis for eight cases from Bangladesh. Since the purpose is to compare the benefit-cost ratios of BRAC's TUP vis-à-vis the other projects and it has the most rigorous impact evaluation among all the cases, we first present the different estimates under alternative assumptions of key parameters of calculating benefits. A comparison with the benefit-cost ratios of other cases is presented.

**Figure 5. Benefit-cost ratios of BRAC's TUP program**

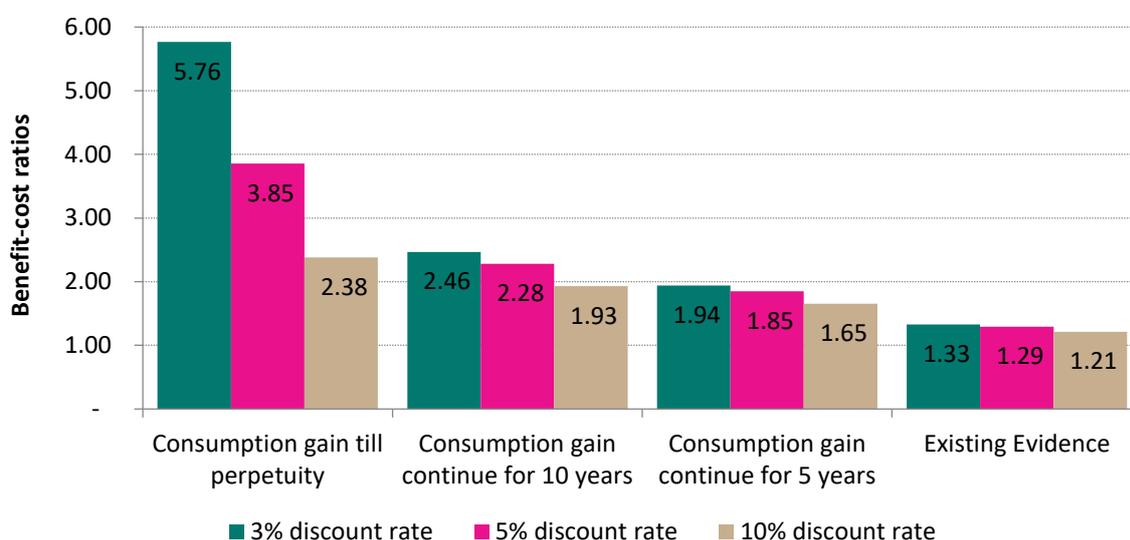


Figure 5 shows the benefit-cost ratios for TUP with the three discount rates (3%, 5% and 10%), and assuming different length of continuation of the consumption gain. The estimates range between 1.21 and 5.76 with a median of 1.93. Details of these calculations are presented in Annex A. The benefits included in these calculations are annual consumption gain, and savings and asset gains in year 4. This follows the benefit-cost calculations for the six RCTs conducted under the CGAP's Graduation Program by Banerjee et al (2015). Assumption on the continuation of consumption gain is obviously one of the key determinants of the benefit-cost estimates. Continuation of this consumption gain for 10 years is a reasonable assumption. In fact, the subsequent survey of the same cohort shows that the impact on all three benefit indicators (consumption, savings and income) increase further by seventh year, which

is five years after the end of any programmatic interventions. Other benefits on health and nutrition status of the children are not included, which would increase the ratios.

Comparison of the benefit-cost ratios of the case studies shows that Graduation model performs better than livelihood interventions (Table 5). Both TUP and FSUP, which are well-targeted to reach the ultra-poor, have benefit-cost ratios of between one and two. Only these cases have adequate evidence supporting the assumption of continuation of consumption gains after the interventions are completely phased out. The long-term benefit-cost ratios for these two programs change less drastically compared to the rest. One obvious observation from the benefit-cost ratios is that the sustainability of impacts beyond the intervention period is the biggest driver of the long-term benefit-cost ratios for other programs. Both IGVGD and FSVGd have very high benefit-cost ratios if we assume that the impacts observed during the intervention will sustain at post-intervention period. However, as discussed earlier, existing evidence indicates much of the gains are lost after the intervention - two-year cycle - is completed. FFA is the other cases with successful targeting of the ultra-poor and has the lowest benefit-cost ratio. However, as discussed earlier, this project has other evidence besides the paper used in this review indicating some long-term benefits on income assets although not on consumption. Among the two livelihood programmes, PLDP's benefit-cost ratio is much lower than the Graduation and DSAP has a comparable ratio.

Benefit-cost estimates of cash transfer, which are taken from the meta-averages of international evidences presented in Section 5, lack the most in terms of longer-term impact evidence. With experimental evidence on very high short-term impacts of unconditional cash transfer by GiveDirectly in Kenya (Houshofer and Shapiro, 2013), there have been a lot of attention of this simple intervention model. Therefore, we do a benefit-cost estimate of this particular program since our aggregate estimates for cash transfers do not include assets and savings because of lack of impact estimates on these indicators. The GiveDirectly evaluation measured the impacts within a year of transfers, and found significant positive impacts on food consumption, expenses on household durables, assets and savings. In estimating benefits, we only use food consumption since the impact on total assets also includes household durables and inclusion of durable expenses would lead to double counting. By adding food consumption, assets and savings, we find the benefit cost-ratios to be higher than meta-average of cash transfer programs, but slightly lower than Graduation model. It is clear that the sustainability of these short-term effects will be the key factor for unconditional cash transfers to be as effective a solution to ultra-poverty as the Graduation model.

Here again, we would emphasize that this comparison in Table 5 should be read with the caveat of important differences across the cases in terms of target groups, evidence on sustainability of the impacts and the quality of impact estimates.

**Table 5. Benefit-cost comparisons**

Type	Case Study	Cost per HH (in USD)	B-C ratios						Notes
			Based on existing evidence			Assuming consumption gains last for 10 years			
			3%	5%	10%	3%	5%	10%	
Graduating ultra-poor through self-employment	TUP	300	1.33	<b>1.29</b>	1.21	2.46	<b>2.28</b>	1.93	Benefits include savings and assets at endline (year 4 for TUP and year 5 for FSUP) and annual consumption gains till endline. Continuity of consumption gain of the last year assumed after endline.
	FSUP	525	1.80	<b>1.69</b>	1.44	2.44	<b>2.22</b>	1.80	
	IGVGD	150	2.13	<b>2.10</b>	2.05	9.36	<b>8.52</b>	6.92	Benefits include savings and assets at year 2, and consumption gain in year 1 and 2. The impact evaluation was conducted when the beneficiaries were yet to complete intervention cycle. For RMP, costs are estimated for 2-year cycle although its intervention cycle is 4 years.
	FSVGD	124	2.46	<b>2.44</b>	2.38	11.67	<b>10.62</b>	8.59	
Graduating ultra-poor through wage employment	FFA	288	0.45	<b>0.44</b>	0.43	1.97	<b>1.80</b>	1.46	Benefits include net income from fish cultivation measured in year 3. The same amount is assumed for year 1 and 2 as existing evidence.
	RMP	515	0.70	<b>0.69</b>	0.67	2.58	<b>2.36</b>	1.94	
Livelihoods	DSAP	157	1.43	<b>1.40</b>	1.34	5.36	<b>4.83</b>	3.82	Benefits include net income from poultry measured at year 4. The same amount is assumed for year 1, 2 and 3 as existing evidence.
	PLDP	81	0.57	<b>0.55</b>	0.52	1.73	<b>1.55</b>	1.21	
Cash	11 cases	232	0.86	<b>0.84</b>	0.81	3.19	<b>2.87</b>	2.28	Average from meta-analysis of consumption gain from 11 pilots.
	Give-Directly	316	1.05	<b>1.03</b>	1.00	5.93	<b>5.42</b>	4.44	Food consumption gain, savings and assets within first year.

Notes: The costs are estimated in dollars at the exchange rates prevailing at the time of interventions.

The cost for cash transfer is the average amount of transfers done in the 11 pilot studies, none of which was conducted in Bangladesh.

All benefits estimates 'with existing evidence' take impact evidence available till their respective endline surveys. Timing of endline survey varies across the programmes from during intervention to 3 years after end of intervention.

For cash transfers, the meta-average of consumption gain per dollar spent from the pilot studies is used for year 1, 2 and 3 which are 0.36, 0.23 and 0.29 respectively. For GiveDirectly, which is also one of the 11 cash transfer cases, consumption gain is for 9 months (existing evidence), and annualized (10 years).

The purpose of this benefit-cost comparison is not to come up with a conclusion that one approach is better than the other, especially given the lack of comparable robust evidence across the intervention types. Rather the review intended to assess whether the Graduation approach is a sensible investment among the alternatives of livelihood program and unconditional cash transfer. Besides the evidence of reaching the ultra-poor and evidence of long-term impacts as a pathway out of ultra-poverty, the benefit-cost analysis also supports the effectiveness of Graduation approach as a social protection tool to eradicate extreme poverty.

## Conclusion

Despite the laudable successes in reducing ultra-poverty in Bangladesh through scaling up innovative initiatives by development agencies in the last two decades, eradication of extreme poverty remains a challenge. Graduation approach that combines promotional and safety net elements of social protection programs with a time bound exit strategy has been found to have significant effects on sustainable livelihood developments. However, the comprehensive nature of such interventions makes this model relatively expensive and calls for a comparative cost-benefit analysis with alternative approaches. This study compares the cost-effectiveness of Graduation with generic livelihood and cash transfer programs with evidence from both Bangladesh and beyond. Overall, Graduation initiatives are found to have benefit-cost ratios that are comparable to livelihood programs that target the ultra-poor and measure post-intervention impacts. However, similar comparison could not be done with cash transfers given the lack of long-term evidence of such interventions on ultra-poor. While the Graduation approach needs to be continued as an important tool for eradicating ultra-poverty, there should be more focus on generating better evidence of livelihood and cash transfers as alternative approaches.

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## Annex A. Benefit-cost ratio for BRAC's TUP program

Discount Rate	3%	5%	10%
<b>Benefits (inflated/deflated to year 4)</b>			
(a) Annual consumption in year 1	2,757	2,921	3,358
(b) Annual consumption in year 2	2,677	2,782	3,053
(c) Annual consumption in year 3	2,804	2,858	2,995
(d) Annual consumption in year 4	2,921	2,921	2,921
(e) Total household assets in year 4	16,991	16,991	16,991
(f) Total household savings in year 4	1,051	1,051	1,051
(g) Annual consumption in year 5+			
1. Persists in perpetuity	97,382	58,429	29,215
2. Persists for 10 years	24,921	22,559	17,951
3. Persists for 5 years	13,379	12,648	11,075
4. Existing evidence (4 years)	-	-	-
<b>(h) Total benefit (a+b+c+d+e+f+g)</b>			
1. Persists in perpetuity	126,583	87,953	59,584
2. Persists for 10 years	54,122	52,083	48,320
3. Persists for 5 years	42,580	42,172	41,444
4. Existing evidence (4 years)	29,201	29,524	30,369
<b>Costs: per beneficiary</b>			
Cost in year 1 and 2	20,700	20,700	20,700
(i) Cost inflated to year 4	21,961	22,822	25,047
Benefit-cost ratio (h/i)			
<b>1. Persists in perpetuity</b>	<b>5.76</b>	<b>3.85</b>	<b>2.38</b>
<b>2. Persists for 10 years</b>	<b>2.46</b>	<b>2.28</b>	<b>1.93</b>
<b>3. Persists for 5 years</b>	<b>1.94</b>	<b>1.85</b>	<b>1.65</b>
<b>4. Existing evidence (4 years)</b>	<b>1.33</b>	<b>1.29</b>	<b>1.21</b>

Annual consumption gains (a-d) are taken from impact evaluation paper by Bandiera et al (2013) where per capita food and non-food consumption are reported separately. These gains have been added and multiplied by the average household size, which was 3.5 at baseline. The evaluation has impact estimates for year 2 (at the end of the intervention phase), and at year 4 (2 years after the end of interventions). For year 1 (a), the same consumption gain of year 2 is assumed. For year 3 (c), the consumption gain is interpolated from year 2 and year 4 gains. For the impacts on value of total assets owned (e), the estimate has been done using the same data and not directly taken from the impact evaluation paper since the paper does not report this indicator. Bandiera et al (2013) report the impacts on value of livestock owned and the likelihood of owning land. All the costs and gains are inflated/deflated to year 4 using the three discount rates. All the estimates are using the monetary values in Taka, and the impact assessments adjusted for the price inflation.

Bangladesh, like most nations, faces a large number of challenges. What should be the top priorities for policy makers, international donors, NGOs and businesses? With limited resources and time, it is crucial that focus is informed by what will do the most good for each taka spent. The Bangladesh Priorities project, a collaboration between Copenhagen Consensus and BRAC, works with stakeholders across Bangladesh to find, analyze, rank and disseminate the best solutions for the country. We engage Bangladeshis from all parts of society, through readers of newspapers, along with NGOs, decision makers, sector experts and businesses to propose the best solutions. We have commissioned some of the best economists from Bangladesh and the world to calculate the social, environmental and economic costs and benefits of these proposals. This research will help set priorities for the country through a nationwide conversation about what the smart - and not-so-smart - solutions are for Bangladesh's future.

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## C O P E N H A G E N C O N S E N S U S C E N T E R

Copenhagen Consensus Center is a think tank that investigates and publishes the best policies and investment opportunities based on social good (measured in dollars, but also incorporating e.g. welfare, health and environmental protection) for every dollar spent. The Copenhagen Consensus was conceived to address a fundamental, but overlooked topic in international development: In a world with limited budgets and attention spans, we need to find effective ways to do the most good for the most people. The Copenhagen Consensus works with 300+ of the world's top economists including 7 Nobel Laureates to prioritize solutions to the world's biggest problems, on the basis of data and cost-benefit analysis.