Cost-Benefit Ratio Study on Effects of Social Protection Cash Transfer

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Social Security Policy Support (SSPS) Programme
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Cost-Benefit Ratio Study on Effects of Social Protection Cash Transfer
(This study is a part of a group of studies published as *A Compendium of Social Protection Research*)

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ADB	Asian Development Bank
AIDS	Acquired Immune Deficiency Syndrome
APS	Average Propensities to Spend
ATM	Automated Teller Machine
AWDDW	Allowances for the Widow, Deserted and Destitute women
BAU	Business as Usual
BBS	Bangladesh Bureau of Statistics
BCR	Benefit Cost Ratio
BDT	Bangladeshi Taka
BFP	Bolsa Familia Programme
BFPA	Bangladesh Family Planning Association
BIDS	Bangladesh Institute of Development Studies
BIHS	Bangladesh Integrated Household Survey
BMET	Bureau of Manpower, Employment and Training
BMI	Body Mass Index
BRDB	Bangladesh Rural Development Board
BSA	Bangladesh Shishu Academy
CBM	Christian Blind Mission
CBO	Community Based Organization
CBRMP	Community Based Resource Management Project
CBT	Community Based Testing
CCRIIP	Costal Climate Resilient Infrastructure Improvement Programme
CCT	Conditional Cash Transfer
CCTP	Conditional Cash Transfer Programmes
CDC	Child Development Centres
CDD	Centre for Disability in Development
CFPR	Challenging the Frontier of Poverty Reduction
CFS	Child Friendly Spaces
CGAP	Consultative Group to Assist the Poor
CHT	Chittagong Hill Tracts
CLP	Chars Livelihoods Programme
CM	Commodities
CODI	Core Diagnostic Instrument
Cont.	Control
CPD	Centre for Policy Dialogue
CPP	Cyclone Preparedness Programme
CSO	Civil society organizations
CSSB	Child Sensitive Social Protection in Bangladesh
CTP	Co-responsibility Transfer Programmes
CVS	Compliance Verification System
DA	Data Entry
DC	Deputy Commissioner
DFAT	Department of Foreign Affairs and Trade
DFID	Department for International Development
DGFP	Directorate General of Family Planning

DGHS	Directorate General of Health Services
DIC	Drop-in-Centres
DID	Difference in Differences
DiDRR	Disability Inclusive Disaster Risk Reduction
Diff	Difference
DPO	Development Partner Organization
DSF	Diagnostic Study of Demand Side Financing
DSS	Department of Social Services
DSWD	Department of Social Welfare and Development
DT	Demographic Targeting
DWA	Department of Women Affairs
ECCD	Early Childhood Care and Development
EGPP	Employment Generation Programme for the Poorest
ENS	Emergency Night Shelters
EP	Extreme poor
etc.	Etcetera
EU	European Union
FEP	Food for Education Programme
FFA	Food for Asset-creation
FFE	Food for Education
FFW	Food for Work
FGD	Focus Group Discussion
FIES	Family Income and Expenditure Survey
FLS	Food and Livelihood Security
FP	Factors of Production
FSVGD	Food Security Vulnerable Group Development
FTF	Feed the Future
FY	Fiscal Year
FYP	Five Year Plan
GDP	Gross Domestic Products
GED	General Economics Division
GMI	Guaranteed minimum income
GNI	Gross National Income
GoB	Government of Bangladesh
GR	Gratuitous Relief
GRS	Grievance Redress System
GSS	Ghana Statistical Service
GT	Geographical Targeting
HAIL	Haor Area Infrastructure and Livelihood
HDRC	Human Development Resource Center
HFIAS	Household Food Insecurity Access Scale
HH-IO	Households and Other Institutions
HI	Handicap International
HIES	Household Income and Expenditure Survey
HSC	Higher Secondary School Certificate
HSNP	Hunger Safety Net Programme
ICDDRB	International Centre for Diarrheal Disease Research, Bangladesh

ICF	International Classification of Functioning, Disability and Health
ICRPD	International Convention on the Rights of Persons with Disabilities ICRPD
ICT	Information and Communications Technology
IDRA	Insurance Development & Regulatory Authority
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IFS	Integrated Food Security
IGA	Income Generating Activities
IGVGD	Income Generation Vulnerable Group Development
ILO	International Labour Organization
IMCI	Integrated Management of Childhood Nutrition
Intv.	Intervention
ISPA	Inter-Agency Social Protection Assessments
JJS	Jagrata Juba Sangha
JMS	Jatiya Mohila Samity
JPUF	Jatiya Protibondhi Unnoyon Foundation
KHH-OI	Capital Account Households and Other Institutions
KII	Key Informant Interviews
LBP	Land Bank of the Philippines
LCA	Life Cycle Approach
LDC	Least Developed Countries
LEAP	Livelihood Empowerment against Poverty
LFS	Labour Force Survey
LGD	Local Government Division
MDG	Millennium Development Goal
MDGs	Millennium Development Goals
MEFWD	Medical Education and Family Welfare Division
MHVS	Maternal Health Voucher Scheme
MIS	Management information system
MIS	Management Information System
MLE	Maximum likelihood estimation
MNCAH	Maternal Neonatal Child and Adolescent Health
MoCHTA	Ministry of Chittagong Hill Tracts Area
MoDMR	Ministry of Disaster Management and Relief
MoE	Ministry of Education
MoF	Ministry of Food
MoH	Ministry of Health and Family Welfare
MoLE	Ministry of Labour and Employment
MoLGRDC	Ministry of Local Government, Rural Development and Co-operatives
MoLibWarAff	Ministry of Liberation War Affairs
MoP	Ministry of Planning
MoPME	Ministry of Primary and Mass Education
MoSW	Ministry of Social Welfare
MoWCA	Ministry of Women and Children Affairs
MoY&S	Ministry of Youth and Sports
MP	Member of Parliament
MPCDF	Marginal Propensity to Consume Food

MPI	Multidimensional Poverty Index
MS	Micro-simulation
MSM	Micro Simulation Model
MT	Means Testing
MTIR	Mid Term Implementation Review
MTRI	Mid-Term Review Implementation
NC	Not covered
NDD	Neurodevelopmental disability
NDDPT	Neuro-Developmental Disability Protection Trust
NE	Not-eligible
NEET	Not in education, employment or training
NFOWD	National Forum of Organizations Working with the Disabled
NGO	Non-governmental Organization
NGOs	Non-Government Organizations
NHD	National Household Database
NHTS-PR	National Household Targeting System for Poverty Reduction
NID	National Identity Documents
NIPORT	National Institute of Population Research and Training
NJLIP	Notun Jibon Livelihood Improvement Programme
NNHP	National New-born Health Programme
NNS	National Nutrition Services
No.	Number
NSIS	National Social Insurance Scheme
NSP	National Service Programme
NSSF	National Social Security Fund
NSSS	National Social Security Strategy
OAA	Old Age Allowance
OAS	Open Air Street
OECD	The Organization for Economic Co-Operation and Development
OMS	Open Market Sales
OPHI	Oxford Policy and Human Development Initiative
OTUP	The Other Targeted Ultra Poor
OVCs	Orphans and Vulnerable Children
Oxfam	Oxford Committee for Famine Relief
PA	Production Activities
PATH	The Programme for Advancement Through Health and Education
PERC	The Property and Environment Research Center
PESP	Primary Education Stipend Programme
PIO	Project Implementation Officer
PKSF	Palli Karma-Sahayak Foundation
PMO	Prime Minister's Office
PMT	Proxy means test
PMT	Proxy means test
PND	Persons with neurodevelopmental disabilities
PO	Partner organisation
PPP	Purchasing Power Parity
PPRC	Power and Participation Research Centre

PRI	Policy Research Institute
PRSP	Poverty Reduction Strategy Paper
PRSSP	Policy Research and Strategy Support Program
PSM	Propensity Score Matching
PSS	Primary School stipend
PSU	Primary selection units
PTP	Private Training Provider
PVP	Private Voluntary Pension
PWD	Person with Disabilities
PWDs	Persons with Disabilities
RAPID	Research and Policy Integration for Development
RDCD	Rural Development and Co-operatives Division
REOPA	Rural Employment Opportunities for Public Assets
RID	Rural Infrastructure Development
RMG	Ready Made Garment
RMGs	Ready-Made Garments
RMP	Rural Maintenance Programme
ROSC	Reaching Out of School Children
ROW	Rest of the World
SAE	Small Area Estimates
SAM	Social Accounting Matrix
SANEM	South Asian Network on Economic Modelling
SAR	Specific Absorption Rate
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goal
SDG-F	Sustainable Development Goals Fund
SDGs	Sustainable Development Goals
SEIP	Skill for Employment Investment Programme
SEPB	Skills and Employment Programme Bangladesh
SEP-B	Skills and Employment Programme Bangladesh
SEQAEP	Secondary Education Quality and Access Enhancement Project
SES	Secondary education stipend
SHIREE	Stimulating Household Improvements Resulting in Economic Empowerment
SID	Statistics and Informatics Division
SIMPLA	Sustainable Integrated Multi-sector PLAnning
SISP	Strategic Information Systems Planning
SME	Small and Medium Enterprise
SNP	Safety Net Programme
SP	Social Protection
SPP	Social protection programmes
SPST	Sharirik Protibondhi Suroksha Trust
Sq	Square
SSC	Secondary School Certificate
SSN	Social Safety Net
SSNP	Social Safety Net Programme
SSP	Social security programme
SSPS	Social Security Protection Support

SSPSS	School Stipend for Primary and Secondary Students
SSSP	Social Security Support Programme
SEQuAS	Specialist Evaluation and Quality Assurance Services
SWAPNO	Strengthening Women's Ability for Productive New Opportunities
SWD	Students with Disabilities
TDD	Total Domestic Demand
TFP	Total Factor Productivity
TFR	Total Fertility Rate
Tk.	Taka
TMRI	Transfer Modality Research Initiative
ToR	Terms of reference
TR	Test Relief
TSS	Total Supply Side
TTC	Technical Training Centre
TUP	Targeting the Ultra Poor Programme
TVET	Technical and vocational Education and Training
UCG	Universal Child Grant
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programmes
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
UP	Union Parisad
USD	United States Dollar
VfM	Value for Money
VGD	Vulnerable Group Development
VGF	Vulnerable Group Feeding
VWB	Vulnerable Women's Benefit
WB	World Bank
WEAI	Women's Empowerment in Agricultural Index
WF	Workfare
WFM	Work for Money
WFP	World Food Programme
WHO	World Health Organization
ZOI	Zones of Influence

EXECUTIVE SUMMARY

Cost-effectiveness of few selected cash and food assisted programmes have been analysed in this study. Various types of methods utilizing diverse data sets have been used in this study. A through ***desk review*** of administrative costs – their share in total programme cost or investment; merits and demerits of various cash and food schemes; costs associated with various types of targeting methods have been reviewed using literatures and data sets. An ***analytical framework*** invoking the costs and benefits of selected cash and food schemes has been used to assess their cost effectiveness or benefit-cost ratio. Administrative costs of the selected cash and food schemes are based on data gathered from ministries. Two approaches have been adopted to assess benefits. In the first approach (please refer to Khondker, B and Freeland, N (2014) and Philip et al (2015), poverty impacts of the schemes (with and without the schemes) have been determined using the unit record data of HIES 2016. In the second approach, the Social Accounting Matrix (SAM) of Bangladesh for 2012 has been used to derive the economywide impacts of these transfers. Finally, a ***micro-simulation model*** based on the HIES 2016 has been used to compare poverty impacts of expansion of the schemes/programmes versus enhancing the transfer amounts.

Key Findings

Administrative Cost – International Evidence: For 16 cash and near cash schemes, the average administrative cost has been at 8.2 percent. Average cost for CCT schemes is also same at 8.2 percent. The administrative cost has been found highest for the food schemes. Average cost for food schemes is around 25.2 percent – almost three times of the administrative cost reported for cash and near cash schemes. The higher administrative costs for the food-assisted schemes compared to the cash schemes are mainly due to the logistical costs of transportation, storage, preparation, and related losses during these phases of such schemes. On the basis of these global findings, it has been suggested that desirable administrative cost for cash schemes may range from 8 percent to 15 percent. While on the same logic, for food schemes it may vary between 25 percent and 35 percent.

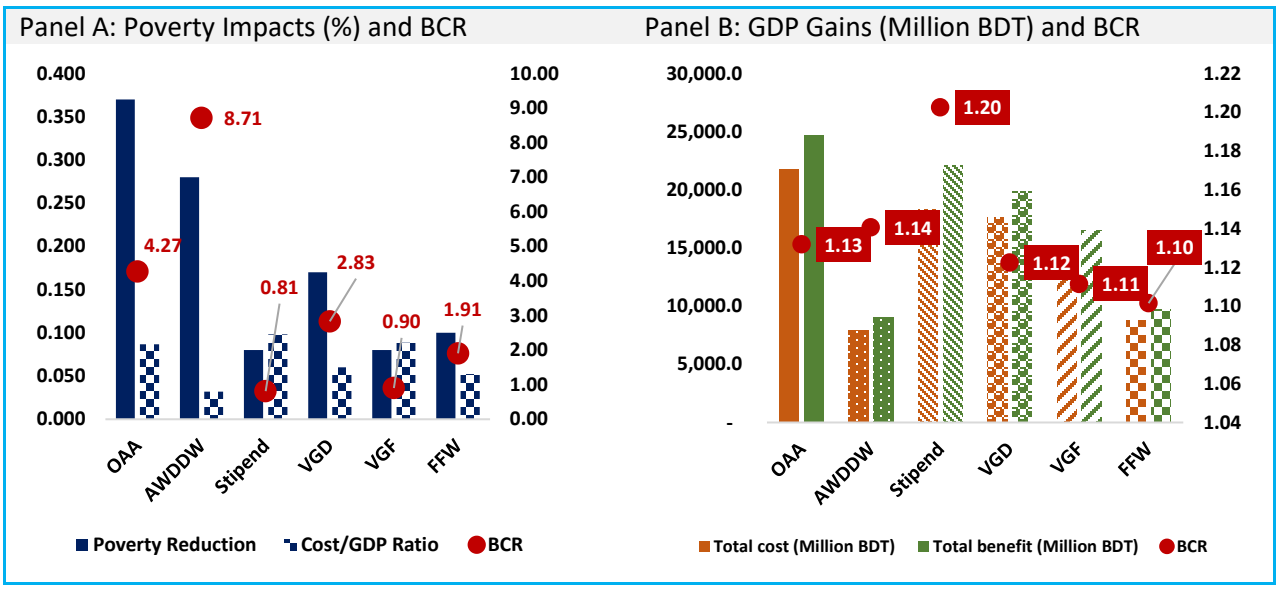
A study on EU countries clearly established a strong correlation between adequate administrative cost and poverty outcomes. On average the EU 28 spent about 1 percent of their GDP on administrative cost. Countries like Denmark, Ireland, the Netherlands and France allocate around 1.4 to 1.6% of their GDP on administrative cost with higher impact on poverty compared to countries with lower administrative cost such as Romania, Malta, Hungary and Estonia spent around 0.2% of their GDP on administration costs of social protection systems.

Administrative Cost – National Evidence: Administrative costs by social protection schemes are not well documented in Bangladesh and hence it is a challenge to estimate (or calculate) the administrative costs. Available data suggests that administrative cost of cash and CCT is around 4 percent. While administrative cost of food schemes has been found at around 10 percent. Low or inadequate allocation of resource for administrative costs are associated high exclusion and inclusion errors (for instance, in the OAA the exclusion errors are in the range of 32 – 35 percent) and leakages of resource (in the case of stipend programmes, the leakage has been estimated at 20-40 percent).

Benefit – Cost Ratio: An analytical framework has been adopted to calculate the benefit-cost ratio (BCR) of selected cash and food schemes include two components – assessing the total costs of these schemes (i.e. transfer costs plus administrative costs) and estimating benefits of these interventions. Data for two years – 2016 and 2018 – have been collected for BCR estimation. Year 2016 has been selected since poverty estimates are available for that year through the use of HIES 2016. On the other hand, choice of year 2018 has been suggested as being the most recent year for which data are available.

Seven schemes have been selected for the BCR assessment. They are: **Pure Cash Transfer Schemes:** Old Age Allowances (OAA); and Allowances of Widow, destitute and deserted women (AWDDW). **Condition Cash Transfer (CCT) Schemes:** Primary Education Stipend Programmes (PES); and Secondary Education Stipend Programmes (SES). **Food Transfer Schemes:** Vulnerable Group Development Programmes (VGD); Vulnerable Group Feeding Programmes (VGF); and Food for Work Programmes (FFW).

Total costs composed of programmes costs and administrative costs. Two approaches have been adopted to assess benefits. In the first approach poverty impacts of these schemes (with and without the schemes) have been determined using the unit record data of HIES 2016. In the second approach, the Social Accounting Matrix (SAM) of Bangladesh for 2012 has been used to derive the economywide impacts (i.e. GDP gains) of these transfers.



Source: Micro-simulation model and SAM Multiplier Model

Higher BCR values have been found for the two cash transfer programmes – OAA and AWDDW. The key drivers for higher BCRs values are larger impact on poverty. Relatively lower poverty impacts of VGD compared to OAA and AWDDW led to lower BCRs for these food schemes. On the other hand, lowest BCR value has been found for Stipend programme since poverty reduction is not the main goal of this scheme. Thus, assessing the impact of stipend programmes through the poverty lens may not be the appropriate method. In the case of SAM model approach, highest BCR has been found for stipend mainly due to the inclusion of an added multiplier factor (5%) for human resource development. However, even in the SAM model approach, BCRs of cash schemes have been found higher than BCRs of food schemes.

Coverage Expansion vs Increased Transfer: Social protection system is an important instrument to fight against poverty. There are various conduits through which social protection system can be used to exert impact on poverty situation. Poverty situation may either be impacted through expanding coverage – including additional beneficiaries; enhancing the transfer amounts – higher transfers paid to the existing beneficiaries; improving implementation efficient – better selection of deserving beneficiaries. To assess the effectiveness of these three modalities (i.e. coverage expansion; increased transfers; and improved selection) a micro-simulation model (MSM) based on the HIES 2016 has been used. We also consider three cash schemes (i.e. OAA; AWDDW and Stipend) for the micro-simulation exercise.

Coverage expansion and increased transfer amounts produced large poverty impact compared to current situation only with the assumption of 'perfect targeting'. If this assumption were excluded the coverage expansion and increased transfer amount did not yield large gains in terms of poverty reduction. It thus envisaged that coverage expansion and increased transfer amount must be pursued along with fixing the system. Outcomes of the MSM for OAA are shown below.

	Intervention	Poverty Impact (with OAA)	Vulnerability impact	Budget requires
Current System	-	0.37	0.37	Current budget
Intervention 1	Coverage increase to vulnerability line	3.12	3.43	1.2 times more than the current budget
Intervention 2	Increased transfer to BDT 569 for all elderly living under the poverty line	5.7	-	1.2 times more than the current budget
Intervention 3	Perfect targeting of poor elderly with current transfer amount of BDT 300	3.02	-	0.13 times more than the current budget
Intervention 4	Current system (imprecise selection) with increased transfer amount of BDT 569	0.57	-	1.2 times more than the current budget

Recommendation

Adequate Investment on Administrative Cost: International and national evidences clearly envisaged that allocating adequate resources for administrative costs are important for programme success. Contrary to this understanding, our analysis suggests poor provision of resources for administrative cost in Bangladesh. Given the poor state of administrative cost in Bangladesh social protection system following measures may be adopted:

- Designing an adequate administrative cost structures in Bangladesh may not be feasible without large scale consolidation of schemes. Thus, in line with the recommendations of the NSSS (2015), Bangladesh must start consolidating the social protection schemes into six core clusters based on the life cycle approach or age-specific schemes. This step would allow the authorities to design and determine an adequate administrative cost system for the social protection schemes in Bangladesh.

- Key agencies involved in policy formulation, resource allocation and implementation may need to be exposed to a systematic acquaintance to the formulation of an adequate administrative cost through tailored trainings; exchange programmes and further in-depth studies. Bangladesh must also determine an adequate administrative cost structures for Bangladesh social protection schemes (i.e. cash; CCT; food and livelihood) with clear provision for cost to cover set-up (i.e. office, equipment and MIS system etc.), beneficiary selection; and monitoring and evaluation.

- Experience in developing countries confirms that safety net programs can be run well for modest administrative costs: a *useful rule of thumb is roughly 10 percent of overall program costs*.' Bangladesh may also consider 10 percent administrative costs for cash and CCT programmes. Furthermore, constructing an index for benchmarking the administrative cost has also been proposed. It essentially proposed to use generosity (transfer amount) and the proportion of administrative cost in total programme cost to derive an index for administrative cost. Bangladesh may adopt this measure to assess the state of administrative cost across the major social protection schemes.

Gradual Phasing of Food Schemes: Poverty impacts of OAA and AWDDW have been found larger than the poverty impacts of VGD, VGF and FFW programmes. Better poverty outcomes led to higher BCRs for the cash schemes compared to the food schemes. The cost-effectiveness outcomes of the competing schemes using the GDP gain utilizing a SAM multiplier model are also higher under the cash or CCT schemes compared to the food schemes. The findings of this study thus re-iterate the NSSS proposal for consolidation of food schemes into one or two major food schemes and converting other food schemes into cash or CCT schemes.

Arrest Expansion of Social Protection System: The simulations with expansion of coverage as well as increased transfer payment produced large impact only under the assumption of 'perfect' selection (i.e. 100 percent identification of poor and vulnerable population, implying zero exclusion or inclusion errors) of beneficiaries. For example, increased transfer amount from BDT 300 to BDT 569 to all poor elderly may reduce poverty by 5.7 percentage points compared to the current rate of 0.37 percentage points. But when monthly transfer of BDT 569 has been provided to all current sample beneficiaries the poverty reduction rate is only 0.57 percentage points compared to current rate. These experiments clearly suggest that any plan for expanded coverage and enhanced transfer amounts must be associated fixing the system. Without fixing the system, expansion of the social protection system may result in larger leakages and wastages of public resources. Fixing of the system may entail programme consolidation; improvement in programme implementation with adequate provision for administrative cost; installation of MIS systems and procedures for better selection of beneficiaries; and establishing protocol for stricter monitoring and evaluation of programmes.

A Dedicated Survey on Social Protection System in Bangladesh: HIES has incorporated a section on social protection system covering 30 large programmes since 2005 with an aim to generate data to assess the performance of the social protection system. HIES has been a good source of information for assessing the social protection system. However, the extent of exclusion and inclusion errors are quite large according to the HIES social protection data base. Moreover, a deeper analysis of HIES social protection data base reveals existence of large numbers of outliers – perhaps influencing high exclusion and inclusion errors and related other deficiencies of the social protection system. Considering the importance of a comprehensive data base for the social protection system, a dedicated survey of social protection system may be carried out under the aegis of the General Economics Division. Moreover, this should be supplemented by a comprehensive review of the administrative cost of the major 15 to 20 social protection schemes covering cash, CCT, food and livelihood programmes to find out cost structures, gaps in cost compared to international best practices, and what needs to done to move towards an adequate administrative cost structure with an aim to improve cost effectiveness of Bangladesh social protection system.

COST-BENEFIT RATIO STUDY ON EFFECTS OF SOCIAL PROTECTION CASH TRANSFER[1]

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1. Introduction

1.1. Background of the Study

Social protection can be defined as the set of public and private policies and programmes aimed at preventing, reducing and eliminating economic and social vulnerabilities to poverty and deprivation. Social protection represents a strategy for reducing income poverty and inequality. It is essentially a demand-side approach that can complement and increase the effectiveness of supply-side investments in sectors such as health, education, and water and sanitation, towards reducing disparities and gaps and fostering equitable socioeconomic development.

The 2030 Agenda for Sustainable Development underscores the importance of social protection for the attainment of the Sustainable Development Goals (SDGs). Target 1.3 addresses the role of social protection in ending poverty in all its forms. Bangladesh was a global leader in terms of achieving the Millennium Development Goals (MDGs). United Nations Development Programmes (UNDP) Bangladesh aims to achieve the national objectives of Bangladesh and eradicate poverty. UNDP has initiated a number of innovative solutions for addressing the development challenges of Bangladesh. The main aim of UNDP is to create open and inclusive civic spaces, within which the government and people are empowered to realize national development goals and fully engage in global sustainable development efforts.

Social Security Policy Support (SSPS) Programme is working with the government to reconfigure the existing social security system. The programme is supporting the government in two areas namely governance of social protection and strengthening of system, in order to ensure that economic growth is achieved in a more inclusive manner. This may allow economic opportunities to reach rural and urban poor and to protect vulnerable groups against shocks. This work may also help to improve social protection delivery, ensure accountability and transparency, measure social protection outcomes and work to streamline and consolidate the current social security programme portfolio. UNDP, the Department of Foreign Affairs and Trade (DFAT) and the Government of Bangladesh (GoB) have improved institutional development in social protection portfolio and developed a comprehensive social security strategy as National Social Security Strategy (NSSS) to inform current and future reforms and to serve as evidence for policy and decision-makers.

Among others, two important types of social protection schemes in operations in Bangladesh are cash transfer schemes and food assisted schemes. They entail different types of cost to implement. Moreover, their impacts on individual, households, community and country may vary considerably. NSSS (2015) recommended to convert most of the food assisted schemes to cash schemes in a phased manner. Such a move may require better understanding of cost and benefits of these schemes. Accordingly, a Cost-Benefit ratio study to determine the value for money or cost effectiveness has conducted for selected cash and food assisted schemes implemented in Bangladesh. The research investigates cash transfers of four of the largest schemes, including Old Age Allowance and Secondary Education Sector Investment schemes. In addition to investigating the cash schemes, cost benefits of three food assisted schemes has also been undertaken.

1.2. Objectives and Research Questions

Objectives

The specific objectives of this research are:

- To examine the value for money of the Government of Bangladesh and its impact on expanding programme coverage or increasing transfer size as means of social security protection;

- To estimate the cost-benefit of cash transfer social security programmes of at least 5 of the largest programmes;
- To estimate the cost-benefit of food exchange social security programmes of at least 3 of the largest programmes.

Research questions

Research Question 1: What has greater value for money and impact: expanding programme coverage or increasing transfer size?

- ✓ Currently, the exclusion error, possibly due to budget constraints is quite high. Is the transfer for current recipients high enough to contribute toward the objectives of the social security system?

Research Question 2: What is the cost-benefit of cash transfer social security programmes?

- ✓ Most social security programmes are cash-transfers; examine 5 of the largest programmes by budget, size of cash transfer, impact according to a basket of consumer goods, and primary data from beneficiaries receiving such transfers.

Research Question 3: What is the cost-benefit of food exchange social security programmes?

2. Methodologies

Various types of methods utilizing diverse data sets have been used in this study. A thorough ***desk review*** of administrative costs – their share in total programme cost or investment; merits and demerits of various cash and food schemes; costs associated with various types of targeting methods have been reviewed using literatures and data sets. An ***analytical framework*** invoking the costs and benefits of selected cash and food schemes has been used to assess their cost effectiveness or benefit-cost ratio. Administrative costs of the selected cash and food schemes are based on data gathered from ministries. A KII has also been conducted to gather pros and cons of the cash and food schemes in the context of Bangladesh. Two approaches have been adopted to assess benefits. In the first approach (please refer to Khondker, B and Freeland, N (2014) and Philip et al (2015)[1], poverty impacts of the schemes (with and without the schemes) have been determined using the unit record data of HIES 2016. In the second approach, the Social Accounting Matrix (SAM) of Bangladesh for 2012 has been used to derive the economywide impacts of these transfers. Finally, a ***micro-simulation model*** based on the HIES 2016 has been used to compare poverty impacts of expansion of the schemes/programmes versus enhancing the transfer amounts.

Desk Review

A comprehensive desk review has been conducted to examine the patterns and composition of administrative costs. International and national evidences on the share of administrative costs in total programme cost or investment have also been collated and examined. The merits and demerits of cash and food schemes and as well as costs associated with various types of targeting methods have been reviewed using available literatures and data sets.

Analytical Framework

The analytical framework composed of a cost component and a benefit component. Programme costs of the selected schemes in 2016 obtained from the MOF budget have been used. In this study following six schemes have been considered to assess their cost effectiveness.:

(i) Old Age Allowances (OAA);
(ii) Allowances for Widow, Destitute and Deserted Women (AWDDW);
(iii) Primary Education Stipend Programme (PES);
(iv) Secondary Education Stipend Programme (SES);
(v) Vulnerable Group Development (VGD);
(vi) Vulnerable Group Feeding (VGF); and
(vii) Food for Works (FFW).

Cost Component: Although programmes costs amount by various cash and food schemes are readily available from the MOF social protection budget, the corresponding administrative costs are very hard to find. Discussions with key experts and Ministry of Finance officials transpired that some sort of administrative data maty be available from the respect line ministries or agencies. Accordingly, relevant line ministries and agencies have been approached for consultations and meetings to help gather the administrative data. To assist generation of the administrative cost data, the cost template based on international and national literatures has also been developed and shared with the relevant line ministries and agencies.

[1] Bazlul Khondker and Nicholas Freeland (2014) "Poverty impacts of core life-course programmes proposed under Lesotho National Social Protection Strategy: A micro simulation exercise", May 2104, Mesuru, Lesotho; and Philip White, Anthony Hodges and Matthew Greenslade (2015), "Measuring and maximising value for money in social protection systems", UK Aid and DFID.

Table 0.1: Template for Administrative Data Generation (%)

Cost Items	Cash Schemes	Food Schemes
1. *Set up Cost (Fixed Cost)*		
1.1. Evaluate administrative and institutional capacity		
1.2. Infrastructure (Computers, vehicles, software)		
1.3. Procedure		
2. *Selection Cost (Beneficiary selection related costs)*		
2.1. Meeting and related cost		
2.2. Survey/search cost		
2.3. Determining transfer amounts		
3. *Administrative Cost*		
3.1. Wages and salaries		
3.2. Purchase of goods and services (Utility bills, lease)		
3.3. Application receive and process; verifications; dealing appeals; processing payments; programme oversight etc.		
3.4. Payment Delivery cost		
3.4.1. Bank charges		
3.4.2. Charges of Mobile transfer		
3.5. *Storage cost*		
3.5.1. *Cost at port*		
3.5.2. *Cost at local storage facilities*		
3.6. *Transport cost*		
3.6.1. *From port to local storage facilities*		
3.6.2. *From local storage to beneficiaries*		

Benefit Component: As mentioned above, two approaches have been adopted to assess benefits. In the first approach, poverty impacts of the schemes (with and without the transfers or schemes) have been determined using the unit record data of HIES 2016. In the second approach, the Social Accounting Matrix (SAM) of Bangladesh for 2012 has been used to derive the economywide impacts of these transfers.

In the first approach, poverty impacts with and without social protection schemes have been determined for each of these selected schemes. A micro-simulation model (MSM) using HIES 2016 data has been used to assess the poverty impact of cash and food schemes.

In the second approach, SAM based multiplier model has been employed to assess the economy wide impacts of the cash and food transfers. In the narrower sense, a SAM is a systematic data and classification system. As a data framework, SAM is a snapshot of a country at a point in time. A particular innovation of the SAM approach is to bring together macroeconomic data (such as national accounts) and microeconomic data (such as household surveys) within a consistent framework. This aims to provide as comprehensive a picture of the structure of the economy as possible. A SAM is a generalization of the production relations, and extends this information beyond the structure of production to include: i) the distribution of value-added to institutions generated by production activities; ii) formation of household and institutional income; iii) the pattern of consumption, savings and investment; iv) government revenue collection and associated expenditures and transactions; and v) the role of the foreign sector in the formation of additional incomes for household and institutions. SAMs usually serve two basic purposes: a) as a comprehensive and consistent data system for descriptive analysis of the structure of the economy and b) as a basis for macroeconomic modelling.
The move from a SAM data framework to a SAM model (also known as multiplier framework) requires decomposing the SAM accounts into 'exogenous' and 'endogenous'. Generally, accounts intended to be used as policy instruments (for example, government expenditure including social protection, investment and exports)

are made exogenous and accounts specified as objectives or targets must be made endogenous (for example, output, commodity demand, factor return, and household income or expenditure). For any given injection into the exogenous accounts of the SAM, influence is transmitted through the interdependent SAM system among the endogenous accounts. The interwoven nature of the system implies that the incomes of factors, households and production are all derived from exogenous injections into the economy via a multiplier process. The multiplier process is developed here on the assumption that when an endogenous income account receives an exogenous expenditure injection, it spends it in the same proportions as shown in the matrix of average propensities to spend (APS). The elements of the APS matrix are calculated by dividing each cell by the sum total of its corresponding column (please Annex 1 for details on SAM based modelling).

Table 0.2: Description of the endogenous and exogenous accounts and multiplier effects

Endogenous (y)	***Exogenous (x)***
The activity (gross output multipliers), indicates the total effect on the sectoral gross output of a unit-income increase in a given account, *i* in the SAM, and is obtained via the association with the commodity production activity account *i*.	
The consumption commodity multipliers, which indicates the total effect on the sectoral commodity output of a unit-income increase in a given account *i* in the SAM, is obtained by adding the associated commodity elements in the matrix along the column for account *i*.	Intervention into through activities (x = i + g + e), where i= GFC + ST (GFCF) Exports (e) Government Expenditure (g) *Investment Demand (i): Increased construction sector investment will be injected into the SAM model via capital account.* Inventory Demand (i)
The value-added, or GDP multiplier, giving the total increase in GDP resulting from the same unit-income injection, is derived by summing up the factor-payment elements along account *i*'s column.	
Household income multiplier shows the total effect on household and enterprise income and is obtained by adding the elements for the household groups along the account i column.	Intervention via Households (x = r + gt), where Remittance (r) ***Government Transfers (gt)***

The multiplier analysis using the SAM framework helps to understand further the linkages between the different sectors and the institutional agents at work within the economy. Accounting multipliers have been calculated according to the standard formula for accounting (impact) multipliers, as follows:

$y = A\,y + x = (I - A)^{-1}\,x = M_a\,x$

Where:

y is a vector of endogenous variables (*which is 69 according to SAM 2012 with all accounts showing number with no zero*)

x is a vector of exogenous variables (*which is also 69 according to SAM 2012 with lots of zero suggesting that policy options are not large*)

A is the matrix of average expenditures propensities for endogenous accounts, and

$M_a = (I - A)^{-1}$ is a matrix of aggregate accounting multipliers (generalized Leontief inverse).

The economy-wide income generation impacts of the cash and food transfers have been examined by changing the total exogenous injection vector, especially government to household account.

More specifically, Bangladesh SAM for 2012 has been converted into SAM multiplier model to determine the economywide (i.e. GDP) impacts cash transfers and food transfers. By convention a data SAM needs to be decomposed into four blocks to specify the SAM model (please see below) Scheme specific transfer amounts have been obtained from the MOF social protection budget.

Figure 0.1: SAM model specification

		Activity					Factors		Institution				Total Use
		A1	...	...	...	A86	LAB	CAP	HH	GoV	SAV	RoW	
Commodity	C1	Endogenous (97 x97) [Multiplier]								Exogenous (97 x 3)			
	..												
	..												
	..												
	C86												
Factor	Labour (2)									Govt to HH transfer vector (7 x 1]			
	Capital (2)												
Institution	Household (7)												
	Government)	Leakage								Other			
	Savings												
	Rest of the world												
	Total Supply												

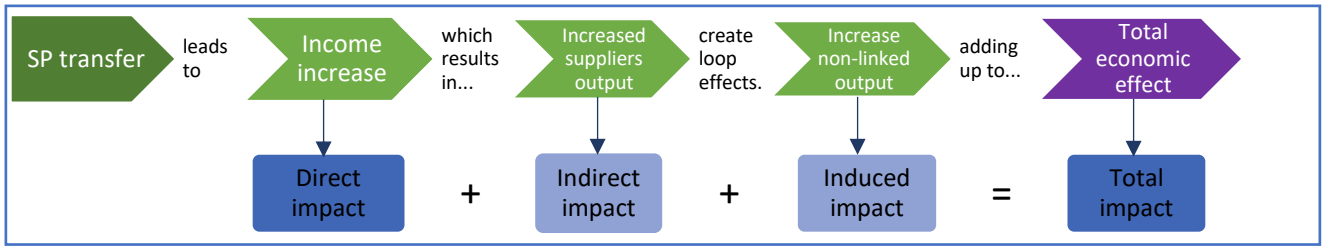
More specifically, government interventions through social protection system by smoothing household's consumption are expected to have an impact on the economy through different channels as outlined below. As such, the SAM analysis captures some of these effects.

(a) Direct effects: Government transfers to households would increase their income and consumption on goods and services of their choices. The income and consumption increase (or change) of households constitute direct effects of social protection system.

(b) Indirect effects: Increase in household income may likely to trigger additional demand for goods and services – requiring higher outputs employing more employment of factors (labour and capital). The additional output and employment created in the supply chain (through backward linkages) are the indirect effects.

(c) Induced effects: The additional workers employed by the expansion of the sectors supplying to it (through indirect effects) now spend more - which creates additional production and employment in various other sectors throughout the economy, creating a multiplier of further demand. This spillover effect is called an induced effect.

The SAM methodology presented in this paper helps to estimate direct, indirect, and induced effects from government intervention through social protection system.



Finally, a micro-simulation model (MSM) based on the HIES 2016 has been used to compare poverty impacts of expansion of the schemes/programmes versus enhancing the transfer amounts. The tasks involved are to:

1. *Develop an MSM using unit record data of 2016 HIES*
2. *Estimate poverty impacts of selected social protection schemes using HIES 2016 (this is the **base case**)*
3. *Simulate poverty impact of **expanding coverage** of the same selected social protection schemes (as in case 1 above) and compare with **base case** (with 1)*
4. *Simulate poverty impact of **higher transfers** to the beneficiaries under the same selected social protection schemes (as in case 1 above) and compare with **base case** (with 1)*

More specifically, two sets of micro-simulation models have been developed to assess effectiveness of the transfers:

- *MS model for poor households (by upper poverty line UPPL)*
- *MS model for vulnerable households (NSSS definition of UPPL x 1.25 has been to estimate vulnerability)*

Following format has been used for the micro-simulation model.

Micro-simulation	**Cash schemes**		**Food schemes**	
	Poverty without SP	**Poverty with SP**	**Poverty without SP**	**Poverty with SP**
MS for Poor				
MS for Vulnerable				

3. Cash and Food Debate

The prime goal of social protection programmes is to help poor people to encounter social and economic risks. In particular, the social protection schemes help people – especially people in a disadvantageous situation to tackle economic risks such as crop failure, or famine and life-cycle risks such as maternity, childhood, illness, unemployment, old age, death or migration. Although, there are various types of social protection schemes, two most prominent categories are cash schemes and food schemes. Cash or food transfers help beneficiaries to meet their food and nutrition security through consuming more food, ensuring dietary diversity and providing means to acquire varied and higher quality foods. Policy makers and experts however have opposing views with regards to the efficacy of these two schemes in terms of cost of programme implementation, access and availability in difficult times and locations; and providing freedom of choice. Accordingly, the merits and demerits of these schemes are discussed below[2].

3.1. Merits and Demerits of the Cash and Food programme Cash Schemes

Box 0.1: Merits and Demerits of Cash Programmes

Advantages

- The cost of operating cash transfer schemes is usually small and far less than the cost of aiding via food when the administrative infrastructure is in place.
- When food markets are well functioning then targeted cash transfer cannot distort prices directly. On the other hand, it can strengthen local retail establishment.
- According to the recipients, cash transfer provides them with the freedom of choice on the use of the transfer to expand their welfare and reduce their sufferings.
- Distributing cash is likely to be cheaper than alternatives scheme due to lower transport and storage costs.
- Cash transfer can improve the status of women and marginalized groups by improving their livelihood status and by increasing their spending on food and non-food items.

Disadvantages

- Sometimes it is difficult for the women to maintain control of the benefit. In such situations cash transfer may lead to antisocial behaviour – like the consumption of alcohol or cigarettes by male members of the family. As a result, the welfare of their family can't be ensured.
- Unconditional cash transfer schemes may lead to disincentive to work than in-kind transfers or public works programmes because it distorts preferences where cash transfer programmes strictly base on income.
- In less developed food market, cash transfer may trigger inflation. Due to inflation the cash transfer schemes lose its value because changes in the product prices affect the value of the schemes and effectiveness.
- Cash transfer programmes are more attractive to elite and unintended beneficiaries. Due to its attractiveness, it may be more difficult to target, as even the wealthy will want to be included. Thus, selecting the deserving beneficiaries may become difficult.
- Preconditions for success in cash schemes include transparent targeting criteria, automatic and robust delivery mechanisms and transparency about citizen's entitlements. If this efficiency is not made, then the effectiveness of the programme becomes controversial.

Source: Grosh et al (2008)

[2] This section has been drawn heavily from Grosh et al (2008)

Food Schemes

Box 0.2: Merits and Demerits of Food Programmes

Advantages

- Unlike the Cash schemes, Food schemes generally do not lead to inflation.
- Food-based transfers have the potential of being self-targeted as long as the commodities are limited to inferior, less preferred foods (see Alderman and Lindert, 1998 for the case of yellow maize in Mozambique).
- Food schemes encourage increased consumption because there is a possible change in the share of benefit controlled by women.
- Due to food schemes consumption of calories and protein was raised for all age groups and through real income it also ensures the nutrition among low income people.
- Food schemes might help satisfy the need to rotate the food stocks of governments that maintain such stocks for security purposes, as in Bangladesh and India.
- Food schemes based on school feeding programmes may contribute to improved learning by alleviating short-term hunger in addition to its effects as a food supplement and an incentive to attend school. On the other hand, additional benefits exist when supplementary feeding programs are linked to adequate care for children and prospective or new mothers at health centres.

Disadvantages

- The direct provision of food limits the beneficiary's immediate choices to the needed commodities.
- The costs of food schemes vary widely depending on the transfer size, targeted group size, and logistical difficulty of distributing the benefit. Distribution costs tend to be higher for schemes distributing actual food than other cash transfer programmes.
- The transport, procurement and distribution of food can create distortions in the general food market.
- Sometimes for the procedure of the distributing food among the beneficiaries go wrong because the eligible and needy beneficiary do not get the benefit and also feeding programs might provide households with disincentives to provide children with food at home, and meals eaten on-site may be substituted for home prepared meals.
- As the targeted are not observable the school feeding programme cannot ensure the food distribution efficiently among the eligible people.
- When the targeted group cannot get the benefit due to non-eligible people it causes leakage. This increases costs and reduces the cost-effectiveness of targeted programmes. Leakage of resources from the program is quite extensive and is a matter of concern for ensuring the success of the programmes.

Source: Grosh et al (2008)

3.2. Cost Effectiveness of Cash and Food Schemes

Similar to the merits and demerits arguments, there are opposing views, and evidences with regard to the cost effectiveness of cash and food schemes. Proponents of cash schemes establish their arguments on the cheaper delivery cost component of the cash schemes. While promoters of food schemes highlight food security and inflationary impact aspect.

Cash schemes less costly than food schemes. There are plenty of evidences that the cost of food transfer is higher than operating cash schemes. Almost all the comparative studies found that when the conditions are in place for cash schemes, transferring cash is cheaper than distributing food – given the logistics and physical nature of the food schemes (Farrington, Harvey and Slater, 2005; Levine and Chastre, 2004). On the procurement side, costs of transoceanic food aid shipments are estimated to be approximately 40 percent higher than locally

procured foods, and 33 percent more-costly than procurement of food in third countries (triangular transactions) (OECD, 2005). The cost of cash transfers is usually reported to be about 50 percent of the cost of imported foods (Oxfam, 2005a). Moreover, the beneficiaries mostly prefer cash transfer than food or in-kind transfer.

There are also cases where cash seemed more cost effective than food in the design phase but costlier in the implementation phase. For example, a recent evaluation of cash transfer programmes in Zambia showed that a 40% appreciation of the Zambian kwacha over the life-cycle of the project and high non-cash costs of the project which were over 30 percent of the value of the cash distributed. This made cash a less cost-effective option than locally procured food aid (Harvey and Marongwe, 2006). Similar findings about the inappropriateness of cash were found in Malawi (Savage and Umar, 2006).

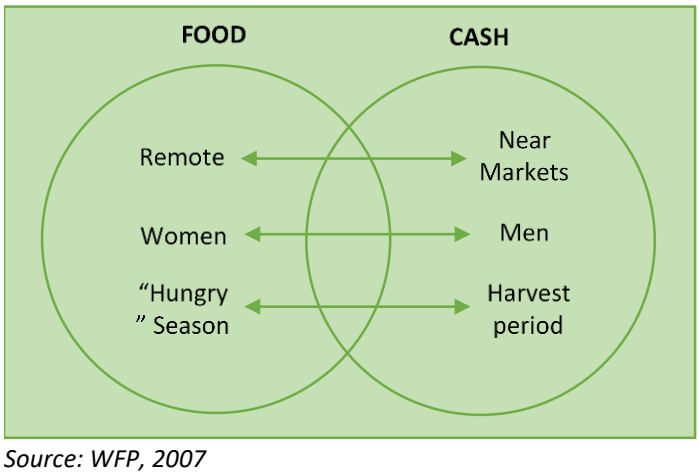
Administrative Costs are higher for Food than Cash. The promoters of the food schemes tried to counter the lower cost argument of cash schemes by suggesting that although remitting money from one location to another location is cheaper than moving commodity overland, administrative costs (e.g. the targeting, registration and identification costs) associated with starting up a cash scheme can be substantial. But generally, administrative costs of food transfer programmes are high due to the transportation cost and storing food in bulk and these costs are incurring in addition with the information system and personnel costs by cash transfer programmes (Radhakrishna et al. 1997; World Bank 2001e).

Food schemes promote food security and nutrition. The promoters of the food schemes pointed out the food security aspect in support of the food schemes. For instance, (D. Ninnoand (2003) and Fraker (1990), argued that food transfers result in higher food consumption than cash transfers. Households are more likely to stick (the so-called flypaper effect) to consumption patterns and intra household distributions that have a positive impact on the nutrition of children if they have access to small transfers of good food shown by the Hoddinott and Islam (2007) and Jacoby (2002).

3.3. Does Less Cost Define Effectiveness of the Programme?

In support of the food schemes, WFP (2007) on the basis of findings of many studies on comparative marginal propensity to consume food (MPCf) out of food and cash transfers argued that poor tend to have higher MPCf as a result of food transfers than equivalent cash transfers. Moreover, the beneficial choices for cash or food are very relevant for the generalization context. Many examples of beneficiaries explicitly mention their choice against cash and vice versa. WHO (2007) also showed that there is evidence on people's preferences which are disaggregated spatially, temporally and by gender. The adjacent figure suggests that food is preferred in remote areas while cash is preferred in where there are functioning markets. Women are in favour of food compared to men.

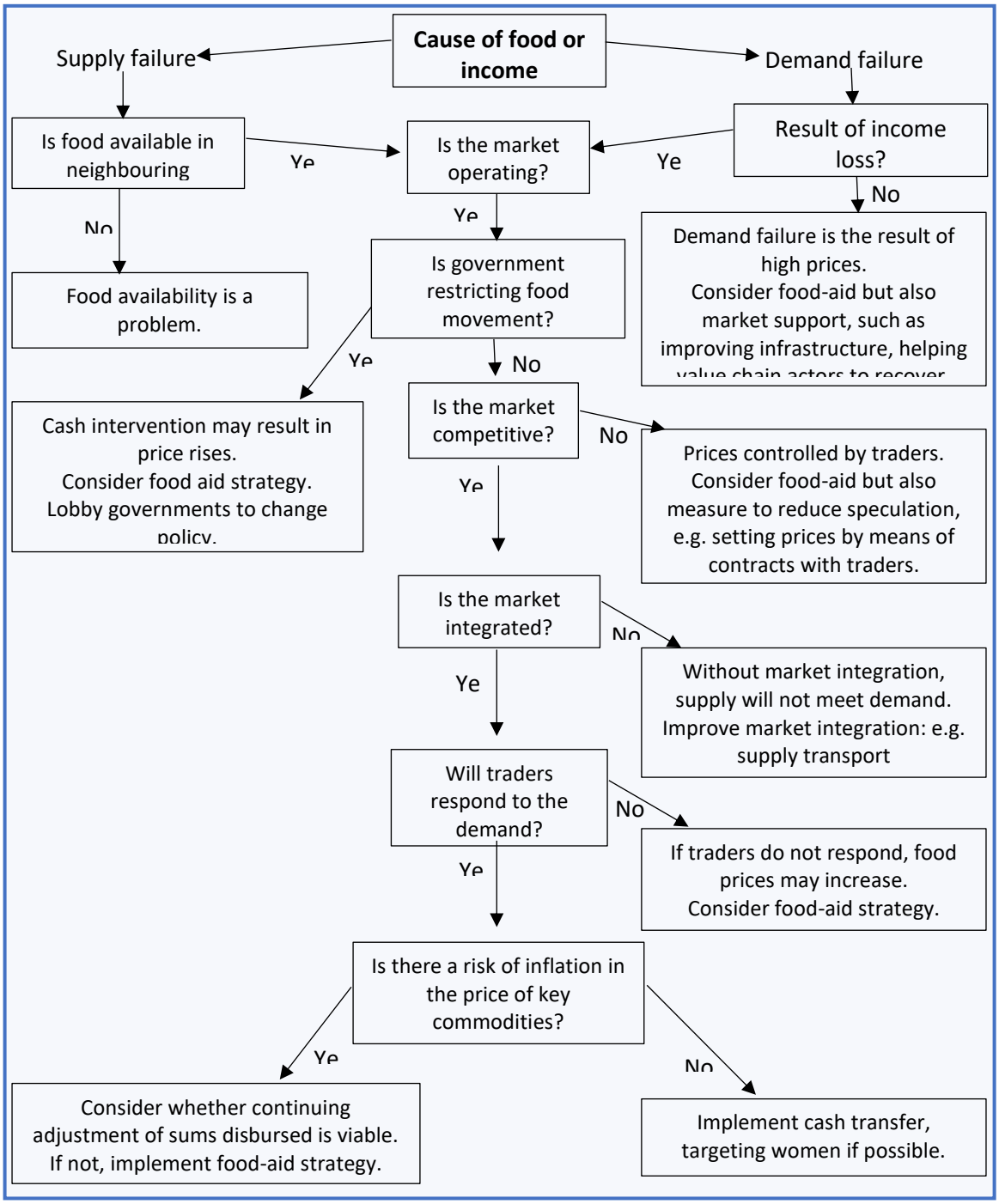
Figure 0.2: Beneficiaries preferences



Source: WFP, 2007

Creti and Jaspars (2006) illustrated the following sequence of questions for policy-makers to consider when deciding whether to use cash or food schemes.

Figure 0.3: Decision tree of cash and food transfer



In spite of these counter arguments, cash schemes are now being preferred over food schemes due mainly to the fact that it is less costly to implement than a food scheme. In the context of Bangladesh, NSSS (2015) is in favour of converting most of the food assisted schemes to cash schemes on ground of lower administrative cost, problem with timely procurement, leakages and wastages, and as well as developed food market system. So even though less cost is not a sufficient condition for effectiveness of a programme, it is preferable to use cash-based programme where a functioning food market system is present.

4. International and National Evidence on Administrative Cost

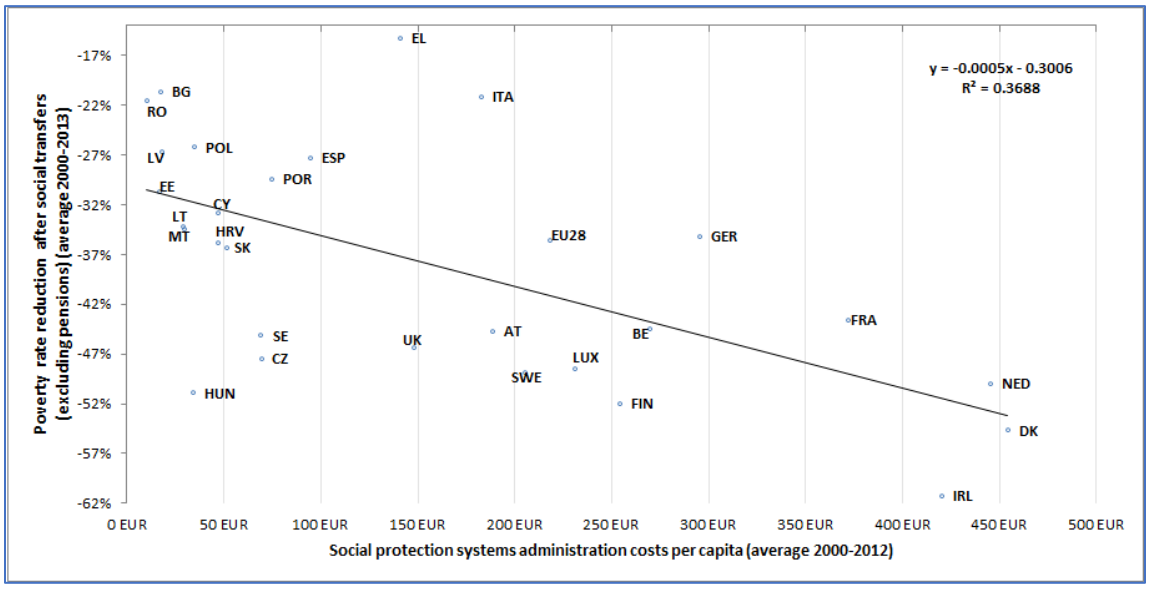
An important element of a social protection system is the administrative cost of implementing the programme. Understanding administrative costs is important for assessing programme efficiency. According to (Stefan, G. M., 2015) '*administration costs represent the costs of management and administration of social protection schemes. These usually include expenses for registering beneficiaries, collecting mandatory social security contributions, benefits administration, inspection, reinsurance, financial management and other general expenses*.'

While Grosh et al (2008) suggested that "to maximize the level of transfers reaching beneficiaries, the obvious desire is to minimize administrative costs. At the same time, delivering cash or in-kind transfers is like any production process: to reach the intended beneficiaries with the desired transfer or service, programs have to finance a set of critical functions, such as receiving and processing applications, dealing with appeals, processing payments, undertaking monitoring and evaluation, and exercising oversight over how program resources are used. Programs that allocate insufficient resources to perform these functions tend to perform poorly. As a result, sector specialists often ask what a reasonable level of administrative costs is."

4.1. Administrative Cost and Poverty Impacts in EU

In European Union where cost of social protection system constitutes a large share of their budget, administrative cost for operating the social protection system has been found considerable. Notwithstanding variations among member countries, on average the EU 28 spent about 1 percent of their GDP on administrative cost. Countries like Denmark, Ireland, the Netherlands and France allocate around 1.4 to 1.6% of their GDP on administrative cost. On the other hand, counties such as Romania, Malta, Hungary and Estonia spent around 0.2% of their GDP on administration costs of social protection systems. European data on poverty reduction through social protection (SP) system and size of administrative cost reveal a strong association. This association is captured below.

Figure 0.4: Relationship between administration costs of SP systems and poverty rate reduction in EU



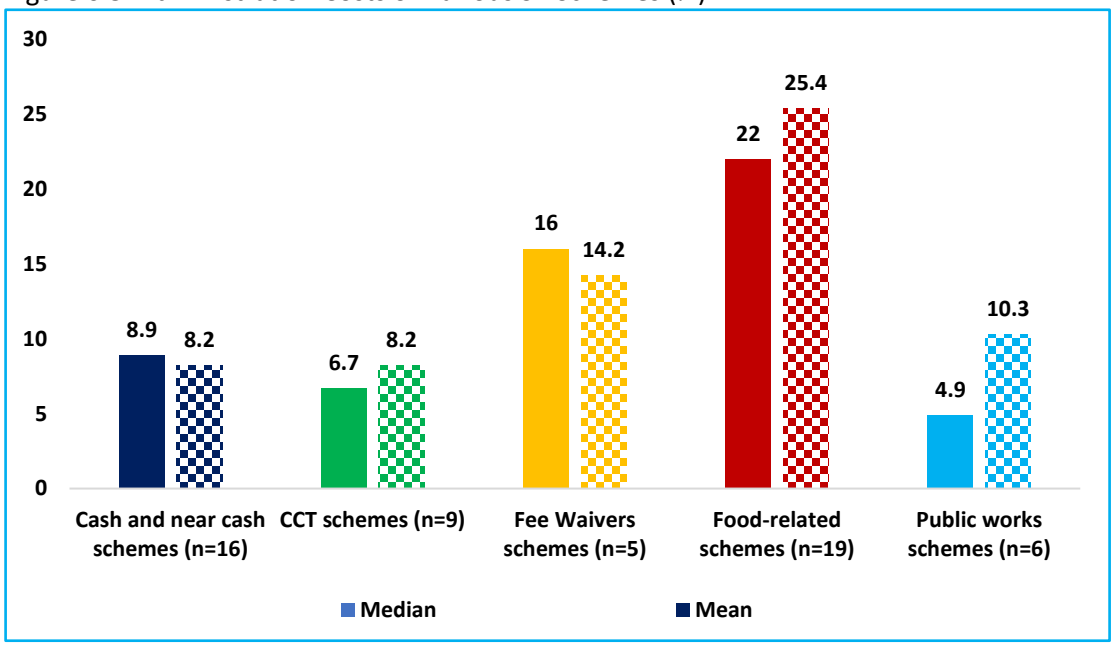
Source: Stefan (2015).

Above figure shows that, in general, countries with the biggest administration costs have higher reduction in poverty[3]. Poverty reduction rates are much higher for countries like France, Denmark and Ireland (with high administrative costs – 1.4 to 1.6 % of GDP) compared to countries like Romania, Latvia and Malta etc. (with lower administrative cost of around 0.2 % of GDP).

4.2.Administrative Cost of Various Types of SP Schemes

In order to understand the role of administrative cost and desirable administrative rates for various types of social protection system, Grosh et al (2008) collected data from various cash, conditional cash transfer (CCT), food assisted schemes, fee waivers and public works programmes. In total, data of 55 global schemes have been used to compare the administrative costs across these five categories of SP schemes. The results are summarised below (please see Annex 2 for details):

Figure 0.5: Administration Costs of Various SP Schemes (%)



Source: Grosh et al (2008)

Main observations are:

- For 16 cash and near cash schemes, the average administrative cost has been at 8.2 percent. Average cost for CCT schemes is also same at 8.2 percent. Administrative cost of fee waivers is much higher at 14.2 percent. However, the administrative cost has been found highest for the food schemes. Average cost for food schemes is around 25.2 percent – almost three times of the administrative cost reported for cash and near cash schemes.
- The higher administrative costs for the food-assisted schemes compared to the cash schemes are mainly due to the logistical costs of transportation, storage, preparation, and related losses during these phases of such schemes.

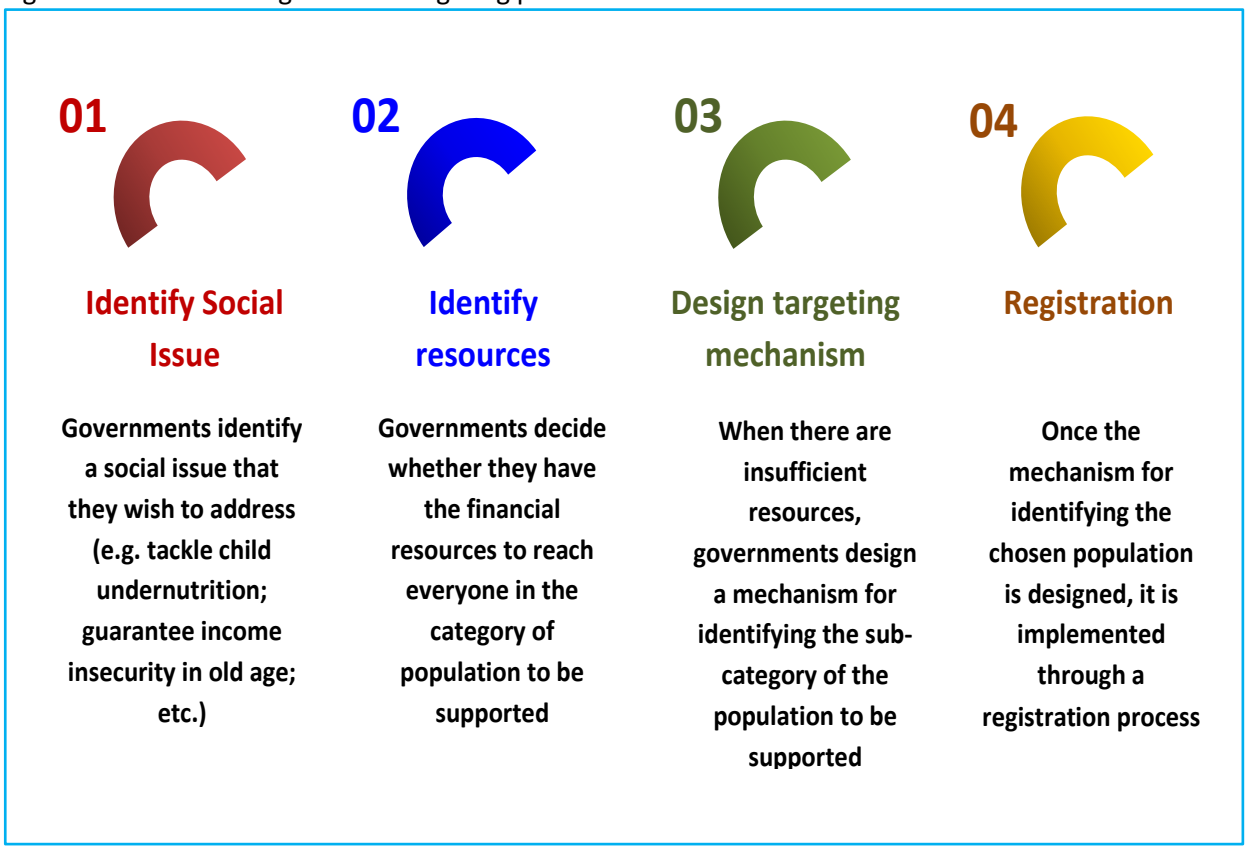
[3] Poverty rate reduction was expressed by the percentage change in people at risk of poverty rate before social transfers (excluding pensions) and after social transfers. The paper considered the average poverty rate reduction for period 2000-2013 and the average administration costs per capita in period 2000-2012.

- On the basis of these global findings, Grosh et al (2008) suggested that desirable administrative cost for cash schemes may range from 8 percent to 15 percent. While on the same logic, for food schemes it may vary between 25 percent and 35 percent.

4.3. Administrative Cost of Targeting Approach and Efficiency

Although universal social protection is a desirable approach from rights point of view as well as accuracy with regard to beneficiaries, it is seldom adopted due to fiscal constraint. In reality, countries around the world adopted various targeting approaches to select the deserving beneficiaries. The main objective of the selected targeting approach is to identify the beneficiaries without errors with least possible cost. Review of literatures on the subject suggests use of seven different types of targeting approaches. They include: (i) Means testing; (ii) Proxy means testing (PMT); (iii) Self-targeting; (iv) Pension testing; (v) Community based targeting (CBT); (vi) Geographical targeting (GT); and (vii) Demographic targeting (DT). Whatever may be the targeting approach it may have to pass through the four stages as shown in figure below.

Figure 0.6: The four stages of the targeting process



Source: Kidd et al (2019)

The four stages of targeting process also suggest involvement of resources and costs each of these stages. Brief descriptions and associated costs by these targeting approaches are illustrated in table below.

Table 0.3: Targeting Methods and Associated Cost

Targeting Methods	Description	Cost
Means Testing	It involves assessing the income or wealth of applicants of poverty-targeted schemes. Generally, an income or wealth eligibility line is determined and all those with incomes or wealth below the line are considered to be eligible. It is very common in high income countries where the vast majority of the labour force is in the formal economy and it is relatively easy to verify incomes Due to informality, it is costly and difficult to implement in low- and middle-income countries	No accurate data cost is available. But, given that minimal information is needed from applicants, simple means-tests are likely to be inexpensive to implement.
Proxy Means Testing (PMT)	Since means testing are difficult to implement in low income countries, PMT has been promoted as an alternative for targeting poor. It tries to predict a household's – rather than an individual's – level of welfare using an algorithm that is commonly derived from statistical models. Proxies for income are usually determined through an analysis of national household survey datasets and are meant to be easily observable and measurable indicators that have some correlation with consumption or income. Usually the proxies include demographics; human capital; type of housing; durable goods; and productive assets. Surveys of all households (desired method) are conducted to generate data. Once the survey is undertaken, the data is fed into a computer and the algorithm is applied. Scores are allocated to households which are ranked from poorest to richest. A threshold is determined or are agreed upon for eligibility. All households those with PMT score below the threshold are considered to be eligible.	The PMT can be expensive. In Pakistan, the 2009 PMT survey cost US$60 million. In Indonesia it cost US$100 million in 2015. In Tanzania, each PMT survey cost US$12 per household implying that for the entire nation, the total cost would be around US$140 million. Kenya's HSNP programme required around US$10 million to survey only 380,000 households, or around US$26 per household. In Bangladesh it will cost $ 80 million.
Self-Targeting	With self-targeting, programmes are open to everyone with people making their own decision on whether to participate in the scheme. The methodology is commonly used in workfare schemes: usually a low wage is set for those participating in the scheme on the assumption that only the poorest will be willing to access it. So, while, in theory, the programme can be universal, its intention is to use the wage rate to discourage those who are better-off from participating. In effect, it should be understood as an attempt at a simple form of poverty targeting.	
Pension Targeting	Pension testing has been adopted by some governments to offer universal pension coverage. But in reality, it could also be regarded as a simple form of income testing. A tax-financed social pension is offered to all those not in receipt of another state pension (such as a social insurance or civil service pension).	In theory, universal pension coverage at a reduced cost to the state.

Targeting Scheme	Description	Cost
Community Base d Targeting (CBT)	CBT may have different approaches. Some of the most commonly adopted methods include: • Community leaders decide who should on the list. • The entire community makes the decision in a large meeting, with or without external facilitation (but in reality, it is rare for all community members to attend such meeting as they can take a long time and many people cannot afford the opportunity cost). • Communities are given selection criteria by an external authority and are asked to select households based on those criteria. The selection could be undertaken by local elites and leaders, or in community meetings. • Facilitators work with communities in a more intensive process, often engaging across smaller groups to develop local criteria. The 'community' applies those criteria to rank households from 'poorest' to 'richest.'	No reliable data is available on the costs of community-based targeting. But it shifts some costs from governments to the community members. The cumulative opportunity costs could be very high when members of community are required to spend a day or more in such meetings. If outsiders support is also required for facilitation, these costs can be considerable. In the context of Malawi, CBT is too expensive a methodology for national-level scaling up (Chinsinga, 2005)
Geographical Targeting (GT)	GT is a popular targeting scheme where eligibility for benefits to a scheme is determined, at least partly, by location of residence. This method uses existing information such as surveys of poverty map or nutrition map. GT is very useful where considerable variations exist in living standards across regions and where administrative capacity is sufficiently limited precluding use of individual/household assessment. It is also more appropriate where delivery of intervention uses a fixed site such as a school, clinic, or ration shop. GT is administratively simple and do not lead to labour disincentive. It is also unlikely to create stigma effects and easy to combine with other methods. But depends critically on the accuracy of information. GT performs poorly where poverty is not spatially concentrated.	Geographic targeting is popular form of targeting method adopted by many countries because it requires so few administrative resources. A small team of analysts can prepare a map using available data, though clearly the accuracy of the map will be greater if good data are gathered at disaggregated levels every few years. The map is used by a host of agencies with only an intuitive understanding of how it's construction.
Demographic Targeting	Demographic targeting – by age or gender is a common form of targeting and has been adopted in different countries. The basic idea of demographic targeting is simply to select groups defined by easily observed characteristics such as the old, the young, or female-headed households to make them eligible for some sort of benefit. Beneficiary coverage may range from universal to categorical. Two important appeals of demographic targeting are: (i) administrative cost associated with running the schemes based on demographic targeting is relatively lesser than the cost associated with other types of targeting methods (discussed above); and (ii) demographically targeted schemes often have high political acceptability	Administrative cost associated with running the schemes based on demographic targeting is relatively lesser than the cost associated with other types of targeting methods.

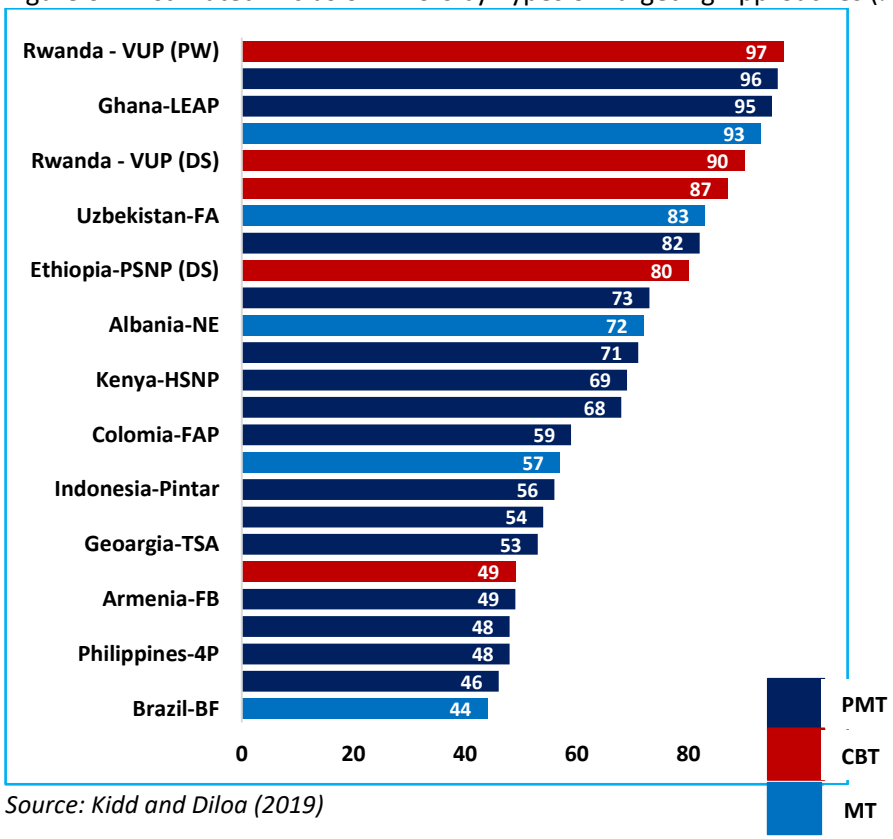
Source: Based on Coady et al (2004) and Kidd et al (2019)

Attaining the intended goals of the social protection system (for instance reducing poverty or extreme poverty among bottom 25 percent of the population) through adopting one of the seven targeting approaches is not always satisfactory due to inherent identification problem of targeting approaches. In a recent study, Kidd et al

(2019) assess the targeting efficiency of selected 25 social protection schemes of low- and middle-income countries. More specifically, they wanted to '*assess whether is it possible to effectively reach those living in extreme poverty using poverty targeting. To answer this question, we examined the targeting effectiveness of those programmes aiming to reach the poorest 25 percent or less of their intended category.*'

The outcomes (i.e. exclusion errors) of the 25 schemes are provided in figure below. The report argued that findings are not satisfactory, with out of the 25 programmes or registries with coverage under 25 percent of their target population, 12 have exclusion errors above 70 percent, 8 have errors above 80 percent and 5 have errors above 90 percent. Only six schemes have been able to reach over half of their intended recipients.

Figure 0.7: Estimated Exclusion Errors by Types of Targeting Approaches (%)



Source: Kidd and Diloa (2019)

On the basis of the findings, they concluded that "*overall, the results demonstrate a mass failure of poverty targeting across low- and middle-income countries. In programme after programme, the majority of both the intended recipients and the poorest members of society are excluded. Therefore, if the aim of governments and international agencies is to reach those living in poverty and 'leave no-one behind,' the use of poverty targeting will result in failure.*"

4.4. Administrative Cost: Bangladesh Evidence

Administrative costs by social protection schemes are not well documented in Bangladesh and hence it is a challenge to estimate (or calculate) the administrative costs. Despite this challenge, there have been some attempts to quantify administrative costs of selected programmes or schemes in Bangladesh.

Ahmed (2005[4]) tried to estimate administrative costs of three types of social protection schemes that used three different delivery mechanisms. They include: Income Generation Vulnerable Group Development (IGVGD), Primary Education Stipend Programme (PES); and Rural Maintenance Programme (RMP). Using data for 2001/2, administrative costs of IGVGD programme has been estimated at 10 percent. Out of the 10 percent cost, around 88 percent went to BRAC towards management cost and rest 12 percent had been spent for transportation purposes. Using budget data of 2002/3, administrative cost for PES has been estimated at 4 percent. The cost elements include manpower, delivery expenses, seminar and training, social awareness, evaluation, bank charges and other expenses. A major cost driver in PES has been bank charges accounting for about 2.5 percent of total administrative cost in PES. The largest administrative cost has been found for RMP. Based on data from 1996 to 2002, the administrative cost of 32 percent has been found for RMP. Wage cost has turned out to the major cost driver in RMP amounting more than 90 percent of the RMP administrative cost.

Series of administrative costs have been conducted under a project of Ministry of Finance, funded by DFID. Administrative costs of major cash, CCT, and food programmes has been attempted under the project.

Using data of FY 2014 and 2017, Emily and Khondker (2017) estimated that the cost to administered two major cash transfer schemes (e.g. Old Age Allowance Programme and Allowance to the Husband Deserted Destitute Women and Widows (AWDDW) programme under the Ministry of Social Welfare) is around 4 percent of the their respective programme costs. It is however argued that the estimated administrative cost for OAA and AWDDW may be underestimated due to 'zero (free)' cost associated with following elements:

1. As all the administrative functions are provided by either Social Services Officers (who are already employed by the DSS, and are therefore viewed as 'free' resources, along with running costs for field offices) or volunteer committee members at ward, union, and upazilla level (who, again, are not paid), no administrative costs are allocated.
2. The costs of bank transfers are also not recorded as the state-owned banks disbursing the funds do not officially charge the Ministry a fee for the service.
3. Local field office running costs are shared across the Department, with no specific allocation for these two programmes.

Another diagnostic Study on VGD programme under MoWCA estimated the administrative cost associated with implementing the VGD scheme. Table below captures the estimated costs. The study used data from FY 2010 to FY 2016. The estimated average administrative cost for VGD is around 3.5 percent. A major cost driver is cost of training reported at 2.6 percent of the overall administrative cost. The administrative costs of the VGD estimated for the recent years are almost three times lower than the administrative cost of IGVGD programme reported by Ahmed (2005). The variations may be due to increase in the overall programme cost without corresponding increase in the administrative cost. Furthermore, BRAC has managed the programme charging a hefty management cost. Since the programme is now being managed by government – there may a large reduction on the account of management cost.

Table 0.4: Cost breakdown of VGD

Cost Components	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Average
Food Allocation	98.94	97.15	96.13	96.74	95.82	95.96	95.98	96.67
Training cost	0.62	2.09	3.16	2.53	3.49	3.25	2.72	2.55

[4] Ahmed S. S. (2007), "Delivery Mechanisms of Cash Transfer Programs to the Poor in Bangladesh," Social Protection Discussion Paper Series, No. 0520. World Bank, 2007

Petrol and lubricant	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Transport cost	0.36	0.62	0.62	0.60	0.57	0.55	0.81	0.59
Contingencies	0.07	0.15	0.09	0.13	0.12	0.23	0.47	0.18
Motor Transportation	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Administrative cost	1.06	2.85	3.87	3.26	4.18	4.04	4.02	**3.33**
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: MoWCA, 2017

The Report on Diagnostic Study of Demand Side Financing (DSF) – Maternal Health Voucher Scheme of Ministry of Health and Family Welfare by Finance Division calculate some costs without the transfer payment cost. The cost calculations for the personnel who are involved in the programme and for the personnel who are appointed by the World Health Organization are shown in Box below as one important additional cost component not included in the budget or expenditure.

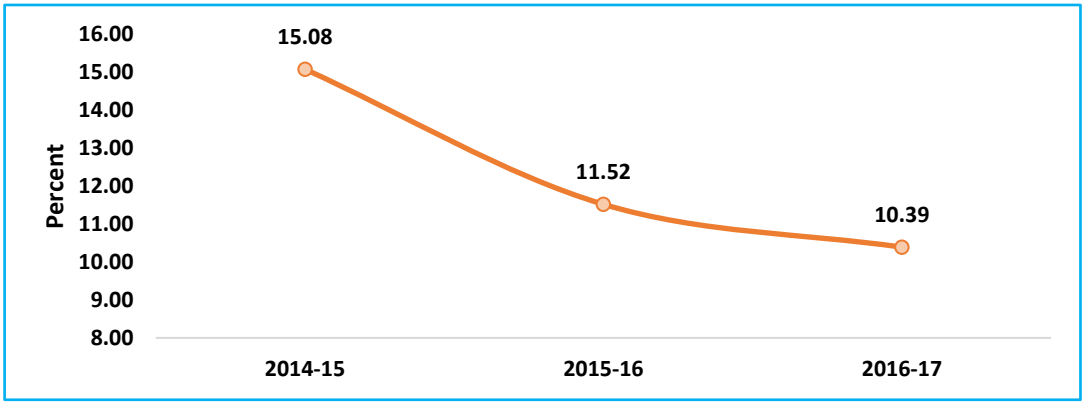
Box 0.3: Additional cost component not included in budget for Maternal Health Voucher Scheme

- Average annual budget of the programme (DSF-MHVS) is BDT 12.674 million per upazilla or BDT 671.72 million per year for the programme in 53 upazillas.
- Excluding the expenses related to payment for services and incentive payments for beneficiaries, the remaining expenses becomes BDT 13.21 lac or BDT 1.321 million per upazilla.
- Based on the average budget numbers, it is assumed that publicity and training of providers should cost about BDT 0.10 lac per year for the programme.
- Value of time MOHFW personnel Per month is BDT 73,650
- Value of time of WHO appointed personnel to DSF is BDT 1,915,000
- Annual administrative and implementation cost out-of-budget of MHVS BDT 23,863,800
- Additional administrative cost as percentage of total programme cost is thus ***3.56 percent*** (BDT Million 23.86/BDT 671.7 Million)

Source: MoF, 2017

Furthermore, the diagnostic study on stipend programmes in Bangladesh with focus on Primary Education Stipend Project (PES) has also estimated administrative costs for FY 2015 to FY 2017. According to the report the administrative cost as percentage of total budget declined from 15.8 percent in FY 2015 to 10.4 percent in FY 2017.

Figure 0.8: PES Administrative Costs (%)



The cost drivers in the Livelihood programmes are somewhat different than the cost drivers in other traditional social protection programmes. Emily et al (2015) estimated administrative cost of five livelihood programmes (also known as the extreme poor programmes) in Bangladesh. These are: CLP; Shiree; Prime; STUP and OTUP. The cost estimates are based on the data [5] collated from the agencies involved in administering these programmes. The programmes have been categorised in three heads:

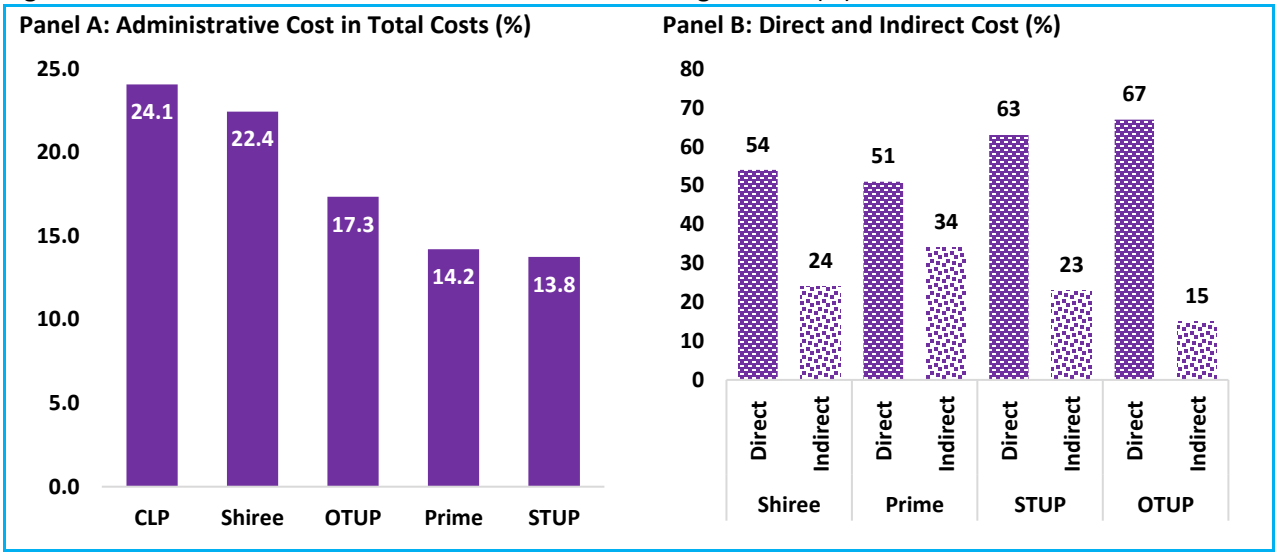
A. ***Direct costs:*** This includes items that are provided to households or beneficiaries themselves. They include the set of 'products and services' that are provided to households. They comprise of:
    - *Assets*
    - *Training programmes on income generating activities*
    - *Healthcare provision (including drugs as well as health worker remuneration)*
    - *Nutrition interventions*
B. ***Indirect costs:*** These are the costs need to deliver the products and services package to beneficiaries directly. They include:
    - *Remuneration packages for community-level staff*
    - *Transportation costs for these staff (i.e. the motorcycles and fuel)*
C. ***Administrative costs:*** These are the costs of managing the service delivery. It has been found that there are several different layers of management, including:
    - *Regional management staff remuneration*
    - *Regional office costs*
    - *Other administrative costs of implementing partner organisations (e.g. a share of their senior management time, costs of monitoring, finance and administration, etc.)*
    - *Central administrative costs are only found in the case of BRAC programmes. For BRAC, they are head quarter costs and include functions of monitoring and evaluation, finance and oversight, as well as senior management. They include both local and international TA, and costs may be paid either out of Bangladesh central offices or managing agent headquarters.*

The estimated administrative costs by the five major livelihood programmes or the extreme poor programmes in Bangladesh are shown below. Administrative costs are high and varied between 24 percent for CLP to 13.8 percent for BRAC's STUP. The cost estimation suggests that both CLP and Shiree have a similar overall cost structure, with 76-78% of the programmes are allocated to beneficiaries, and the remainder towards management. STUP, OTUP, and PRIME all have lower shares of administrative costs and higher shares going towards delivery (i.e. 83-86%).

Direct and indirect cost breakdown have been calculated for four programmes as CLP's data does not allow this level of disaggregation. Both Shiree and STUP allocate around 24% of spending to indirect delivery costs. These are largely driven by cost of local staffing. For PRIME, this share is higher at 34%, but that is likely to reflect the fact that direct costs are lower as a share of spending (as they are loans and therefore the costs are largely borne by households rather than the programme).

[5] For instance, CFPR of BRAC keeps record by disaggregated levels (e.g. around 400 expenditure items) compared to the other programmes. CLP data has been collated at much higher level of aggregation (e.g. by 15-20 expenditure items), and Shiree even fewer. Along with differences in the aggregation levels, classifications were also different.

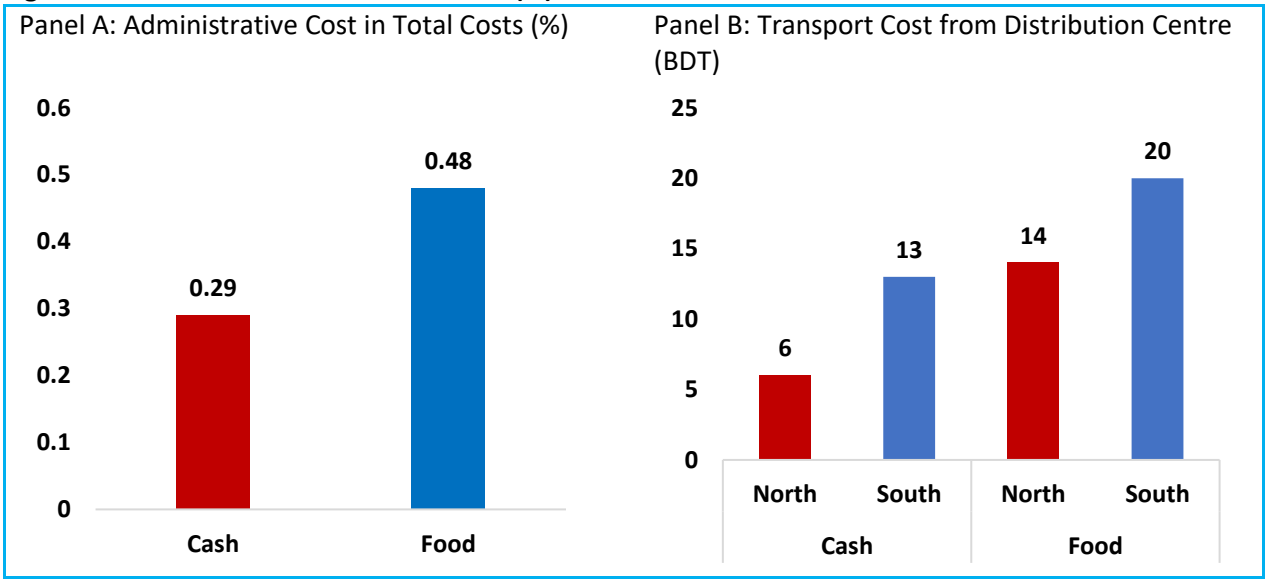
Figure 0.9: Administrative Costs of Selected Livelihood Programmes (%)



Source: Emily et al (2015)

On the other hand, International Food Policy Research Institute (IFPRI) in collaboration with the World Food Programme (WFP) implemented interventions aimed at improving the nutrition status of participating households (i.e. treatment group) in Northern and Southern part of Bangladesh. The project (known as Transfer Modality Research Initiative or TMRI) implemented the interventions under five different implementation modalities including a pure cash transfer and food transfer programme. They also reported the administrative cost incurred by the TMRI project in implementing the project. The administrative costs of cash intervention and food intervention have been 29 percent and 48 percent respectively. Administrative cost of TMRI cash and food transfer schemes are significantly higher than the administrative costs of cash and food transfer programmes reported by Ahmed (2005) and MOF projects. However, in line other Bangladesh and International studies, administrative cost of food transfer programmes is almost 2.5 times higher than administrative cost of the cash transfer programme. As was indicated elsewhere, the higher cost driver of the food intervention in comparison to the cash intervention may be due to higher transportation costs associated with food intervention (which is more double or more than double)

Figure 0.10: Administrative Costs of TMRI (%)



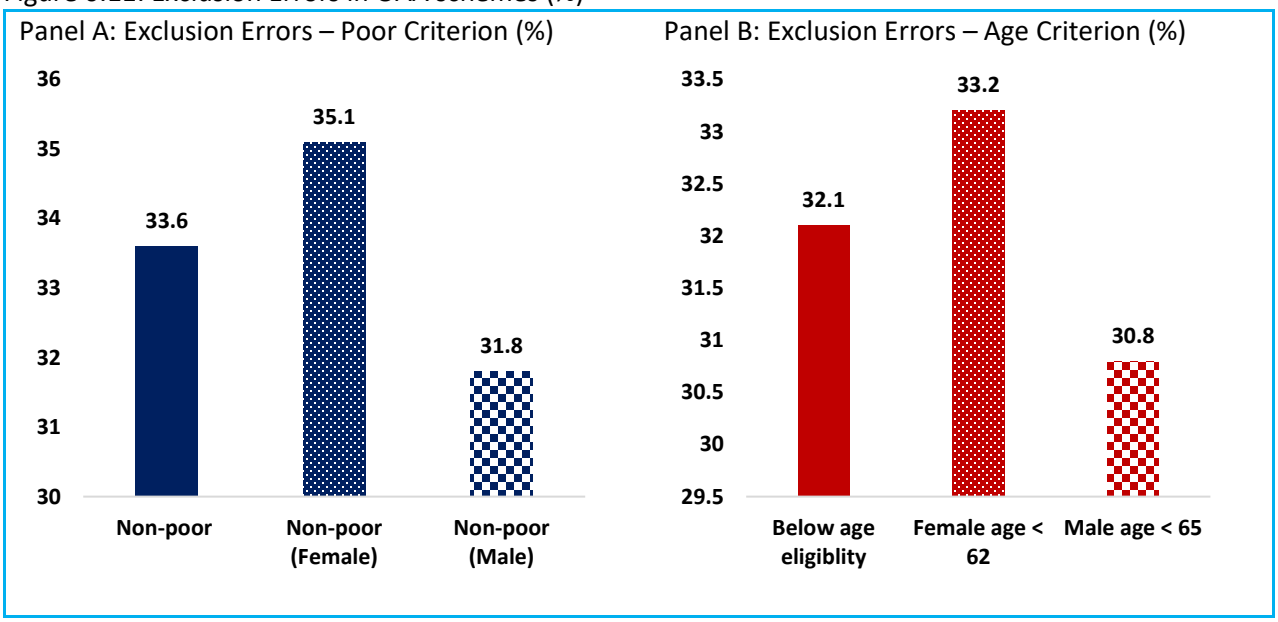
Source: Ahmed et al (2016)

4.4.1. Administrative Cost and Programme Performance: Bangladesh Evidence

The administrative costs of social protection schemes in Bangladesh (i.e. cash and food schemes) are generally significantly lower than the costs found for similar programmes operated in other countries. By global standard, administrative costs in Bangladesh seems inadequate. Furthermore, low administrative costs do not necessarily imply efficiency and on the contrary may have deleterious implication in outcomes of the programmes. Some illustrations are provided to validate the above proposition.

Cost of Inadequate Selection Costs is High. Social pension or OAA is one of the major cash transfer programmes in Bangladesh. Total allocation for OAA was 0.083 percent of GDP in 2016 to support almost 4 million beneficiaries. The estimated administrative cost of OAA is around 4 percent of the total programme cost. As a result of OAA, poverty rate among elderly Bangladesh population declined by 0.37 percentage in 2016 from 22.5 percent (without OAA) to 22.24 (with OAA). However, with same transfer amount but with better (i.e. 100% perfect selection) selection of beneficiaries (i.e. implying higher allocation of administrative cost) the poverty reduction would have much higher at 3.02 percentage points. Thus, forgone poverty reduction of 2.65 percentage points (i.e. 3.02 % and 0.37 %) is due to high exclusions of deserving beneficiaries and inclusions of non-deserving beneficiaries. The estimated exclusions and inclusions errors[6] of current the OAA based on HIES 2016 are reported below.

Figure 0.11: Exclusion Errors in OAA schemes (%)



Source: Authors' Estimation Using HIES 2016

Cost of low M&E expense is Large. Stipend programmes for primary and secondary students are major conditional cash transfer programmes in Bangladesh. Selection of beneficiaries is not a major issue for these interventions since primary and secondary female students are the beneficiaries of these schemes. Administrative cost of the stipend programmes has been found around 4 percent of the programme cost and it appears that allocation for M&E component is inadequate. Inadequate administrative cost along with low or no M&E cost may have resulted in high leakages in the stipend programmes. Accordingly, A PERC report (GoB, 2003) shows that a large part of the budgetary allocations for the Female Secondary Stipend programme (about 20-

[6] It excludes the apparent outliers such as age 3 but married found in HIES 2016. If such outliers are not discarded the exclusion errors would have jumped to over 70 percent.

40%) do not reach the beneficiaries and are perhaps appropriated by the schools and other intermediaries. Similarly, Tietjens (2003) estimates that the leakage[7] in the Female Secondary Stipend program is between 10-12 percent of the programme cost.

[7] Similarly, high incidences of leakages have also been reported for some of food assisted programmes. For instance, in the case of FFW the leakage is 26% (World Bank,2003). For FFE it is between 16 and 20 percent (Dorosh, Del Ninno and Shahabuddin, 2004)

5. Overview of the Selected Cash and Food Transfers

In this study four cash transfer programmes and three food transfer programmes have been considered to compare their effectiveness. Their brief descriptions are provided.

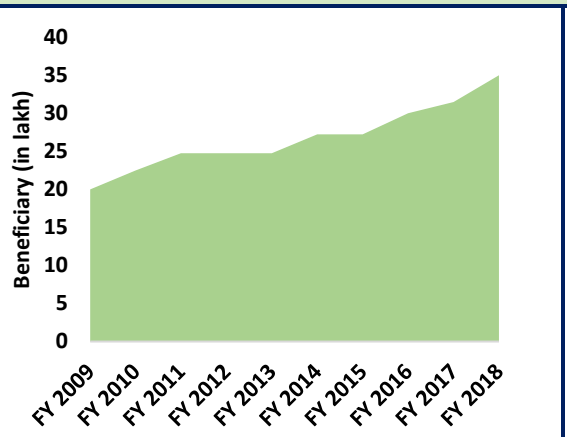
5.1. Cash Transfers Schemes

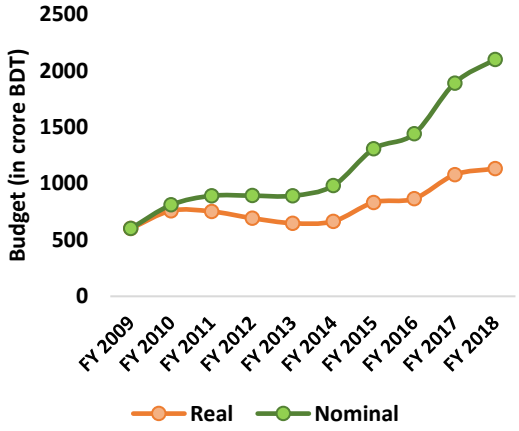
According to World Bank cash transfers are defined as the provision of assistance in the form of cash to the poor or to those who face probable risk, in the absence of the transfer, of falling into poverty. Following five large cash transfer such as Old age allowance, Allowances for the Widow, Deserted and Destitute Women, Primary school stipend, and Secondary education stipend are considered in this study.

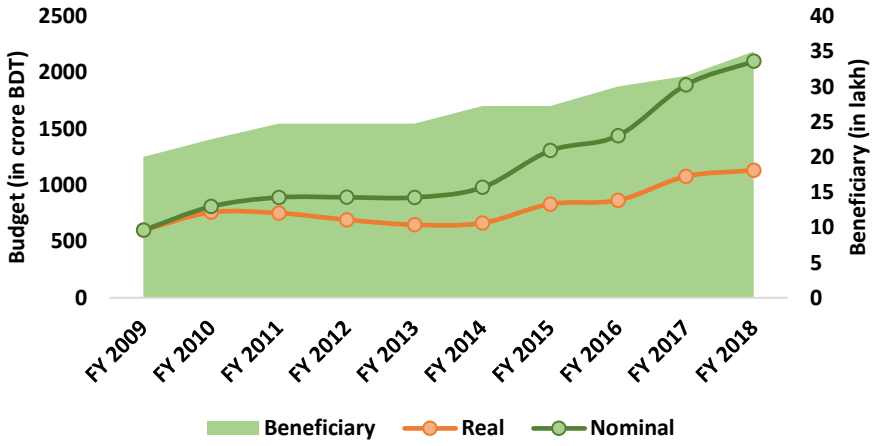
5.1.1. Old Age Allowance (OAA)

Old Age Allowance programme is one of the major cash transfer programmes in Bangladesh. It was introduced in April 1998. This is implemented by the Department Social Services (DSS) of the Ministry of Social welfare (MoSW). The beneficiaries of OAA reached to 3.15 million in 2016-17. In 2013-14 OAA budget was 9,801,000 thousand BDT and in 2016-17 it was 18,900,000 thousand BDT.

The OAA currently reaches over a third (38%) of the population who are eligible in terms of age. OAA's beneficiary criteria are related to disability, landholding (prioritizing those with less than 0.5 acre) and availability of support from a spouse or children, and whether someone is destitute. Share of older people will increase and Bangladesh will also start to experience population ageing, so this programme should be the major concern. To improve the beneficiary selection process is the main challenge of the programme.



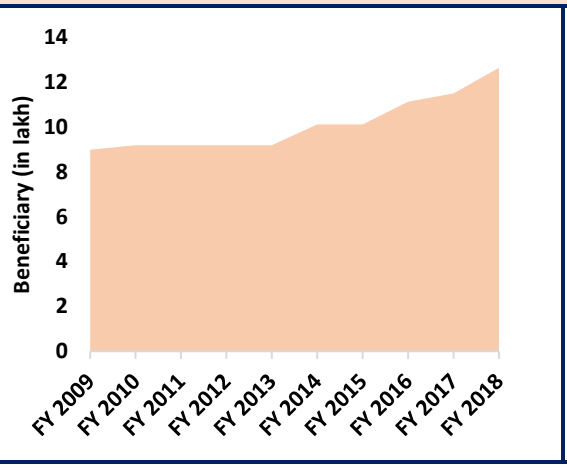


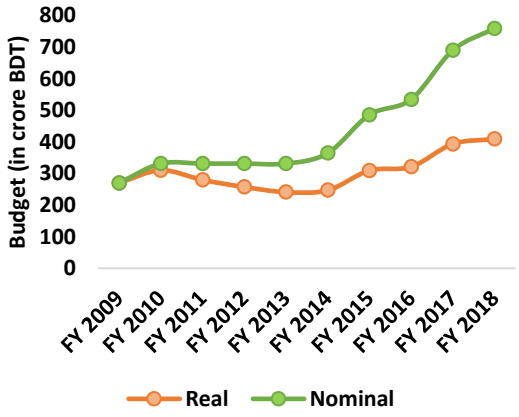


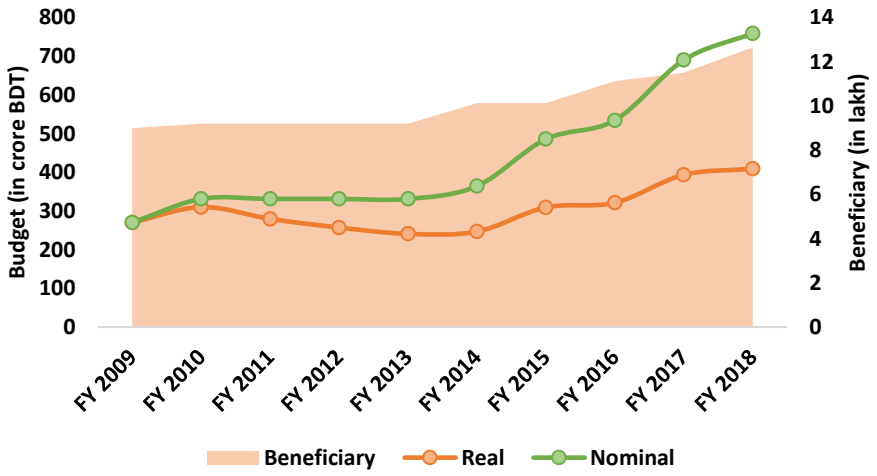
5.1.2. Allowances for the Widow, Deserted and Destitute Women (AWDDW)

The allowance programme for widowed is one of the most important cash transfer programmes among the different safety net programmes, dealing with the most vulnerable and marginalized section of the population. Starting from 1998, like other Safety Net Programmes the allocation for Widow Allowance Programme is also in rise over the years.

The number of beneficiaries of AWDDW programme was 9.20 Lakh in FY2010 and it reaches up to 12.65 in FY2018 with gradual expansion. In FY2010 AWDDW budget allocation was BDT 331.2 core and in FY 2018 it is BDT 759 crore. To reach the target group certain objectives were settled and specific procedures were developed to reach the objectives, but the effectiveness of the programme depends on how well and efficiently the programme is being implemented in terms of selection of beneficiaries. So beneficiary selection should be main focus of the programme.



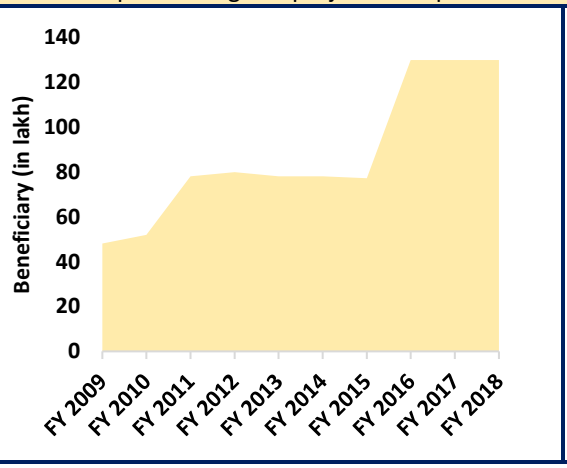


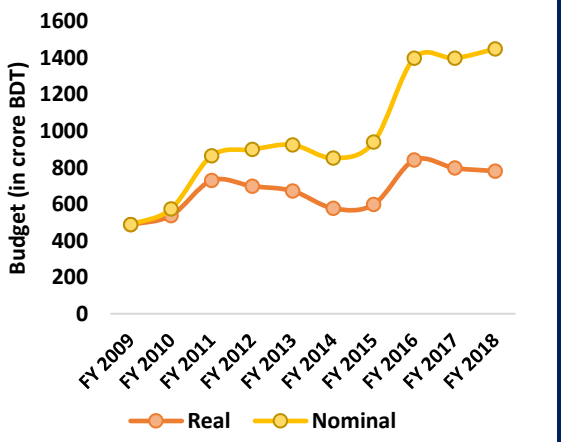


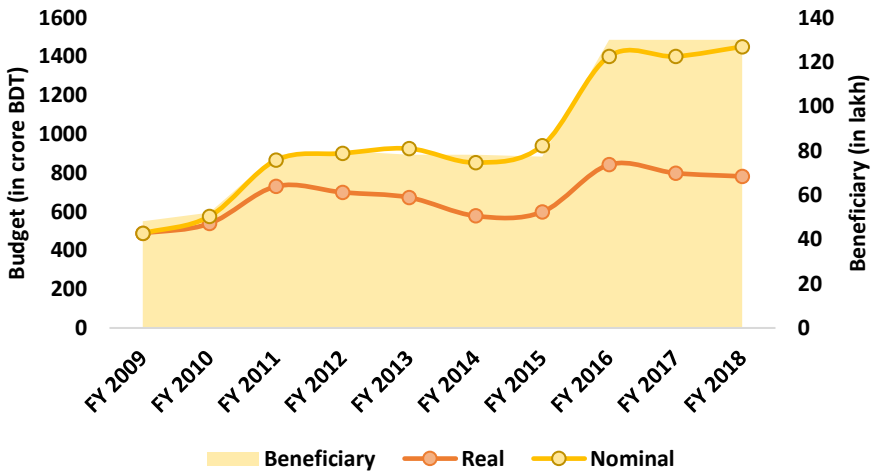
5.1.3. Primary Education Stipend (PES)

The primary school pupils and their families throughout the rural Bangladesh are the main targeted beneficiaries of the primary education stipend schemes. It is a conditional cash transfer programme. This programme is designed to provide cash assistance through a stipend programme to all the eligible primary school students. The main purpose this programme is to increase the enrolment rate among primary and school aged children, increase the attendance rate completion cycle, survival rates and reduce the dropout rate. Primary Education Stipend Project (PESP) being implemented by the Ministry of Primary and Mass Education.

Number of beneficiaries of PESP programme was 52.0 lakh in FY 2010 and increases to 130.0 lakh in FY 2018. The budget allocation were BDT 574.84 crore and BDT 1450 crore respectively in FY2010 and FY 2018. Existing process of implementing this project need positive intervention for improving efficiency and effectiveness.



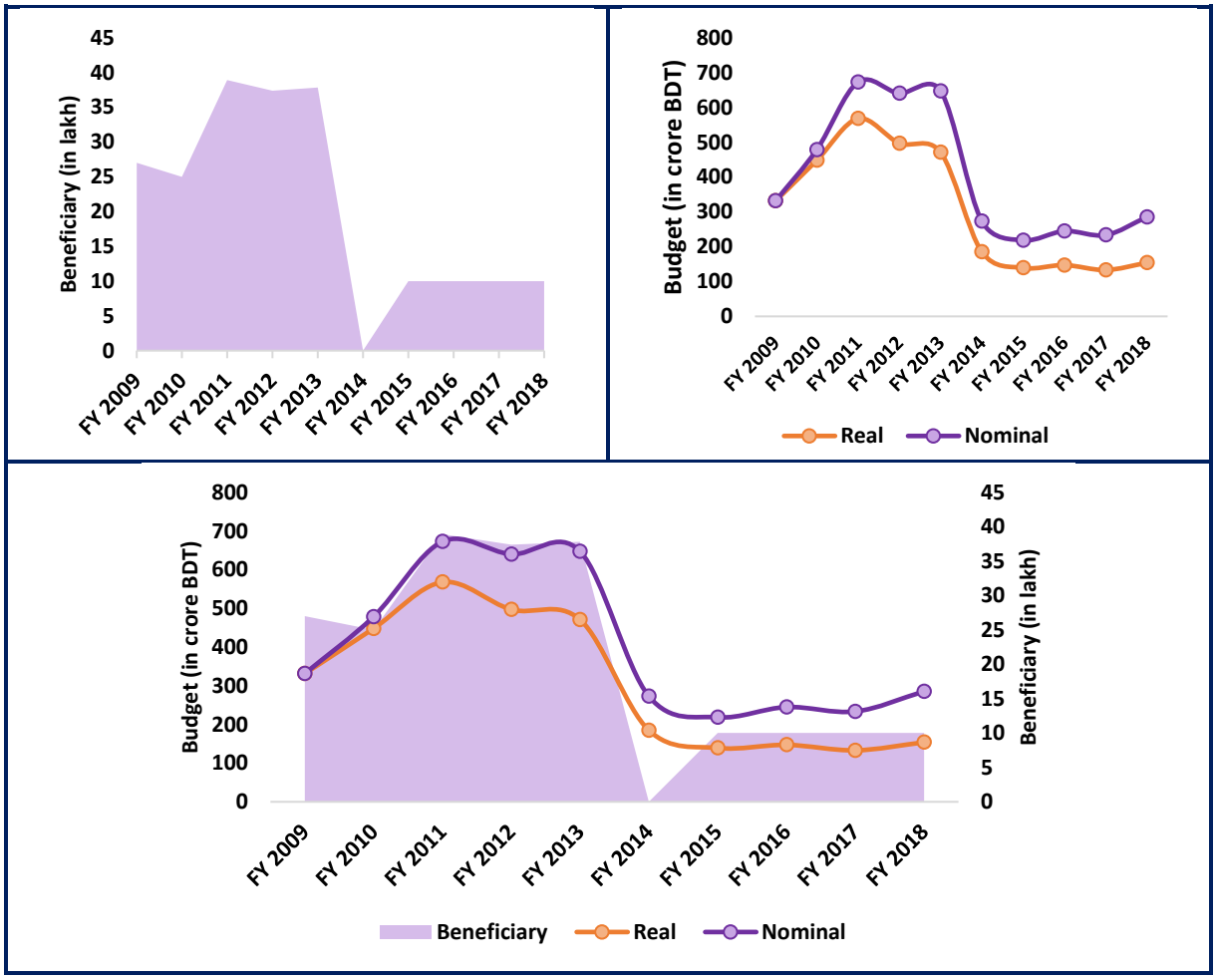




5.1.4. Secondary Education Stipend (SES)

The Secondary Education Stipends are being transferred to the Secondary School level students. The secondary education stipend program is administered and governed by the secondary and higher education division of the Ministry of Education. The objective of this stipend programme is to increase enrolment of students, enhance access to education, ensure their retention in schools, ensure equitable access to education, to encourage pro poor students to study more and reduce dropout rate.

According to the MOF budget data (Finance Division, 2018), the number of beneficiaries under SESP was 11,46,004 and the total budget was 245,00,00,000 BDT in FY 2015-16. In FY 2016-17, the number of beneficiaries was 11,34,453 and the total budget was BDT 233,60,00,000.



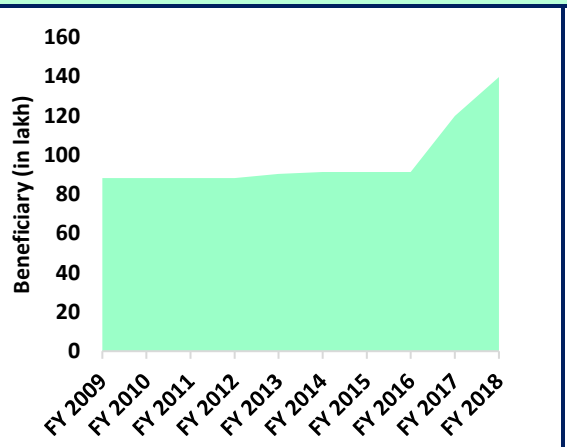
5.2. Food Transfers Schemes

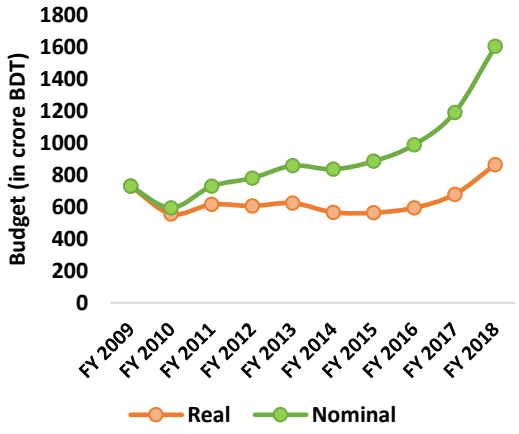
Food assisted social protection schemes are also important instruments to fight against poverty – especially in situations where food availability is not ensured. Bangladesh has also been implementing a number of food schemes. A sizeable amount of resources has been allocated to implement these schemes. Thus, it is also important to assess the cost effectiveness of some of the major food schemes in Bangladesh. Accordingly, in addition to the cash transfer schemes, the study also considered three large food programmes i.e. Vulnerable Group Development (VGD), Vulnerable Group Feeding (VGF), and Food for Work (FFW). VGD started in 1975 as a relief programme, and subsequently evolved into a programme which provides training and saving opportunities with the intent of creating a lasting impact on the lives of its beneficiaries. In the same year, government launched the FFW Programme to respond to the crisis resulting from the famine by providing relief to the poor facing severe food insecurity using food donated by other countries. In response to the devastating floods in 1998, Vulnerable Group Feeding (VGF) programme was started and was targeted to the poor than to the flood-affected households. The brief description of these three schemes are provided below.

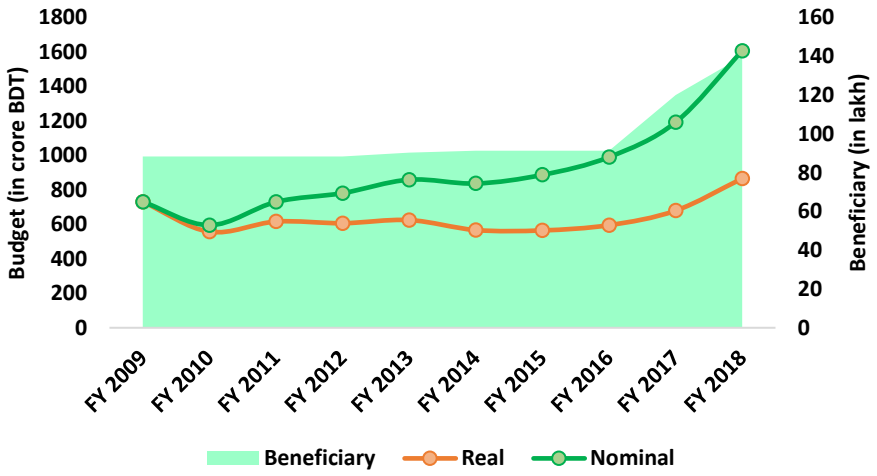
5.2.1. Vulnerable Group Development (VGD)

The VGD is one the major safety net food programmes for the poor households in Bangladesh. This programme is the largest intervention in poverty reduction drive in Bangladesh. It is implemented and governed by MoWCA and Ministry of Food & Disaster Management with involvement of WFP and the help of local NGOs in Bangladesh. The main objective of this programme is to address the marginalization of the poor including the feminized aspects of poverty, to bring sustainable improvement to the lives of ultra -poor special attention being given to the food security and nutrition status of the disadvantaged women. The payment for food programs is transferred by the Ministry of Food at the end of the financial year.

The budget allocations for VGD programme was BDT 1191.85 crore in FY 2017, BDT 1605.7 crore in FY 2018 and BDT 1685.07 crore in FY 2019 (MoWCA, 2018). A sharp increase VDG beneficiaries has been observed from FY 017.



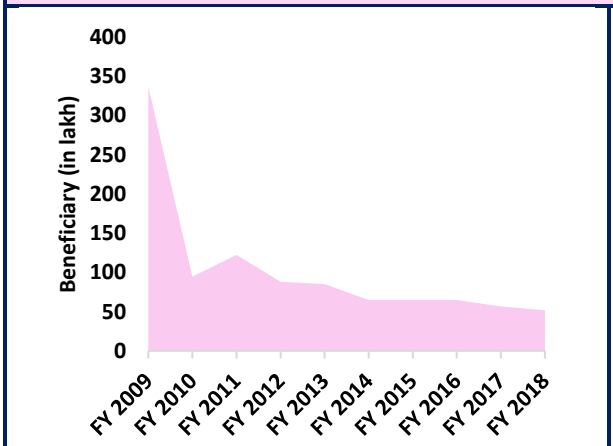


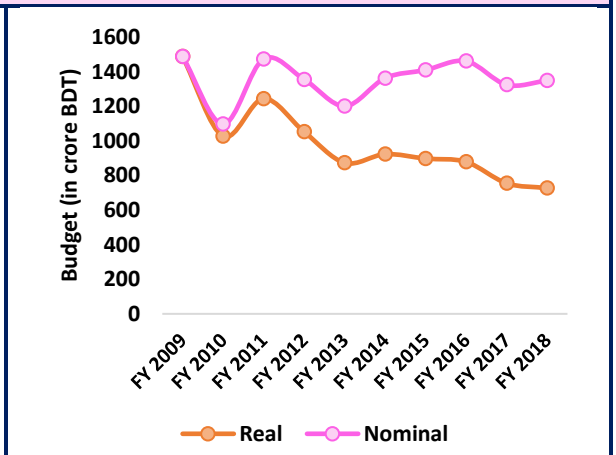


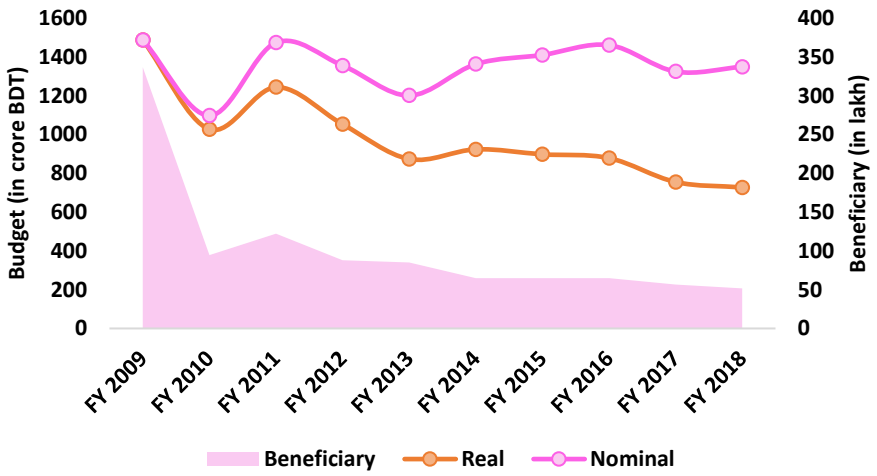
5.2.2. Vulnerable Group Feeding (VGF)

VGF falls under such programmes that usually launched during disaster and aftermath of disasters. At first VGF was started as a relief activity among the poorest women in Bangladesh during 1975 by WFP and now it has been converted in a larger programme under VGD (Vulnerable Group Development). Government of Bangladesh has been implementing this scheme which includes important interventions that enable effective management of disaster and natural shock vulnerability. Vulnerable Group Feeding (VGF) is also considered a humanitarian assistance program implemented by the Ministry of Disaster Management and its main objective is to soothe the consequences of disasters like floods, cyclones, other natural shocks, to ensure food security to the hunger and reduce malnutrition of the female headed households.

The budget for the vulnerable Group Feeding (VGD) programme was BDT 1324.28 crore for FY 2017, BDT 1348.88 crore for FY 2018 and BDT 1730.81 crore for FY 2019 (GED, 2019). According to beneficiary measurement, in FY 2015 beneficiaries were 64.72 lakh and in FY 2018, beneficiaries were 51.78 lakh (GED, 2019). Thus, a declining trend in beneficiary coverage has been noted.



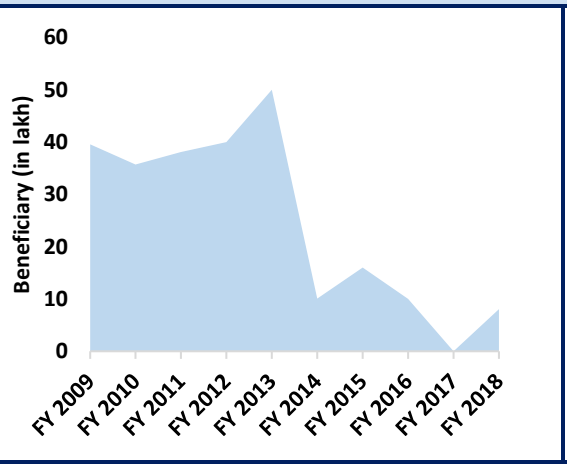


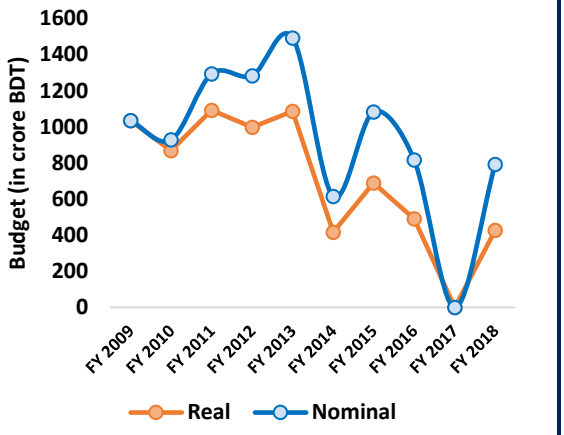


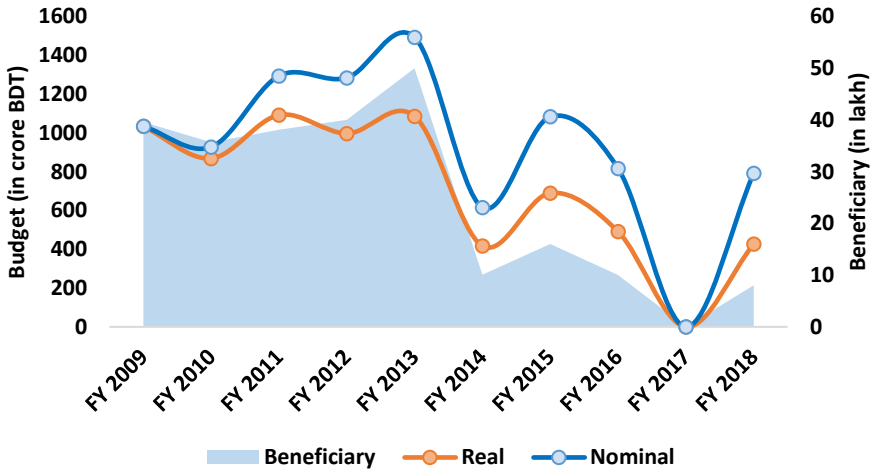
5.2.3. Food for Work (FFW)

The major objectives of FFW are to improve agricultural sector performance through the construction and maintenance of infrastructure for production and marketing; reduce physical damage and loss of human lives due to natural disasters through appropriate protective measures; and generate productive employment for the rural poor during lean seasons (Ahmed et al. 1995). The FFW is administered by the World Food Programme (WFP) and CARE – which is implemented by several ministries, government departments and NGOs.

The budget for Food for Work (FFW) programme was BDT 1083.54 crore for the FY 2015, and BDT 987.58 crore for the FY 2019 (GED, 2019). According to beneficiary measurement, in FY 2015 beneficiaries were 16.03 lakh and in FY 2018, beneficiaries were 8.03 lakh (GED, 2019).







6. Analytical Framework for BCR

Analytical framework adopted to calculate the benefit-cost ratio (BCR) of selected cash and food schemes include two components – assessing the total costs of these schemes (i.e. transfer costs plus administrative costs) and estimating benefits of these interventions. Data for two years – 2016 and 2018 – have been collected for BCR estimation. Year 2016 has been selected since poverty estimates are available for that year through the use of HIES 2016. On the other hand, choice of year 2018 has been suggested as being the most recent year for which data are available. As mentioned above, following seven schemes have been selected:

Pure Cash Transfer Schemes:

1. Old Age Allowances (OAA)
2. Allowances of Widow, destitute and deserted women (AWDDW)

Condition Cash Transfer (CCT) Schemes:

1. Primary Education Stipend Programmes (PES)
2. Secondary Education Stipend Programmes (SES)

Food Transfer Schemes:

1. Vulnerable Group Development Programmes (VGD)
2. Vulnerable Group Feeding Programmes (VGF)
3. Food for Work Programmes (FFW)

6.1. Cost of the Selected Cash and Food Schemes in Bangladesh

Transfer Cost

Transfer costs by these seven schemes are obtained from the MOF social protection budget for 2016 and 2018. These are shown below.

Table 0.5: Transfer Costs of the Selected Cash and Food schemes (Million BDT)

Costs/Schemes	OAA	AWDDW	PSS	SES	VGD	VGF	FFW
FY 2016							
Programme cost	14,400.0	5,343.4	14,000.0	2,450.0	9,899.4	14,610.8	8,167.6
FY 2018							
Programme cost	21,000.0	7,590.0	14,500.0	2,855.0	16,057.0	13,487.0	7,925.0

Source: Based on MOF Social Protection and Budget.

Administrative Cost

Literature review suggest that the total cost is composed of Set up cost (fixed cost); Running cost (Variable cost); and Transfer cost). That is:

Total Cost = F (Set-up, running, transfer)

The study thus required data on administrative costs of these selected schemes. There is no systematic approach of record keeping of administrative costs in Bangladesh and hence this component turned out to be most difficult part of the study. Collection of administrative data commenced with a meeting with the Finance division. A

comprehensive overview of the current situation with respect to the administrative data of the social protection system emerged from the discussion[8].

Administrative Cost of Cash and CCT Schemes

Ministry of Education keeps detailed record of cost by different expenditure items under the administrative cost. The administrative costs by expenditure items for PES and SES are provided below.

Table 0.6: Cost Breakdown PES (FY 2018)

Expenditure Items	Cost ('000' BDT)	Percent
Wage (Officers)	44920	*0.06*
Wage (Staffs)	13471	*0.02*
Allowance	40003	*0.06*
Administrative cost	257399	*0.37*
Fee, charge, commission	1661983	*2.40*
Petrol, oil, lubricant	21402	*0.03*
Travel and transfer	38249	*0.06*
Printing and stationary	423308	*0.61*
General supply and raw materials	1676	*0.00*
Professional services	4075	*0.01*
Repair and maintenance	16784	*0.02*
Capital expenditure	3550	*0.01*
Total (Administrative Cost)	**2526820**	**3.65**
Total (Stipend or Transfer Cost)	**66703734**	**96.35**
Total Cost	**69230554**	**100.00**

Source: Ministry of Education

Data suggests that administrative cost of operating PES programme in FY 2018 is 3.65 percent of total transfer cost. A major cost driver is 'fee, charge and commission' accounting for 2.4 percent. Two other major cost drivers are 'printing' with 0.61 percent and 'administrative cost' with 0.37 percent. The administrative cost of 3.65 percent for PES in 2108 is close to the 4 percent administrative cost reported for PES by Ahmed for 2005.

The administrative cost of SES is even more detailed, and the cost breakdown has been provided below. The administrative cost of operating SES programme in FY 2018 is 2.11 percent of total transfer cost – more than 1 percentage points lower than the administrative cost of PES. A major cost driver is 'bank charge' accounting for 0.70 percent. Two other major cost drivers are 'workshop' with 0.31 percent of 'wages including allowance' with 0.36 percent.

Table 0.7: Cost Breakdown SES (FY 2018)

Expenditure Items	Cost (BDT in Lakh)	Percent
Wage (Officers)	298.90	0.22
Wage (Staffs)	29.40	0.02
Allowance	154.77	0.12
Travel Allowances	110.00	0.08

[8] Finance division also helped the research team in setting up appointments with the other agencies such as DSS; Ministry of Education; Ministry of Food and MoWCA.

Outsourcing staff	90.00	0.07
Postages	0.40	0.0003
Telephone/Internet	8.00	0.01
Gas/Fuel	260.00	0.20
Software development	0.93	0.00
Bank charge	933.95	0.70
Stationary	6.00	0.005
Advertisement	5.50	0.004
Workshop	410.00	0.31
Data entry processing and printing	150.00	0.11
Repair, maintenance, and rehabilitation	20.40	0.02
Capital expenditure	161.79	0.12
Others	170.00	0.13
Total (Administrative Cost)	**2810.04**	**2.11**
Total (Stipend or Transfer Cost)	**130205.56**	**97.89**
Total Cost	**133015.60**	**100.00**

Source: Ministry of Education

Two selected cash schemes – OAA and AWDDW – have been implemented by DSS under the Ministry of Social Welfare. Administrative record keeping is not satisfactory in DSS[9] and DSS could not still provide the research team the required data. More specifically, DSS has been struggling to provide manpower data by different slabs to estimate wage and salary cost of DSS. They however provided data on purchase of goods and services along with the salary structures of DSS employees. It appears that gathering the required data from DSS may longer time and efforts. Under this circumstance, the research team used the administrative cost of OAA and AWDDW estimated for FY 2014 to FY 2017 by Emily and Khondker (2018) for the current study with the provision that they would be updated once the required date is provided by DSS to the research team. It may be relevant to note that Emily and Khondker (2018) found 4 percent administrative cost for both OAA and AWDDW.

Administrative Cost of Food Schemes

Two of the food schemes – VGF and FFW – selected are operated by Ministry of Food. While VGD is being implemented by MoWCA with active collaboration from the Ministry of Food. According to MoWCA, the main expenditure components of VGD include transportation cost; training cost; fuel cost; and administrative cost (e.g. wages and purchase of goods). In addition to these costs, BDT 300 has been paid to each Upazilla Chairman as transfer cost. Food is provided by Ministry of Food and price of food is thus determined by them. Costs in incurred by MoWCA in implementing VGD in FY 2108 are shown below.

Box 0.4: Administrative Cost Elements of VGD

- Transportation cost is BDT 18 crore per year
- The administrative cost is BDT 15 crore per year
- Training and NGO cost is BDT 36 crore per year
- Petrol and Oil cost BDT 12 crore per year
- BDT 300 has been given to Upazilla chairman as transfer cost
- Price of rice is determined by food ministry

Source: MoWCA (2019)

[9] This may be due to the fact they perhaps never asked to provide such information or fail to realize the importance administrative cost of running the schemes. Moreover, they may also lack centralized digital record keeping of their staff and related expenses.

Total transfer cost of VGD in FY 2018 is BDT 1,605.7 crores and estimated administrative cost of VGD is BDT 78 crores. This thus suggests that administrative cost of VGD as percent to total programme cost is 4.85 percent. The major cost driver is transportation cost estimated at 2.24 percent. The administrative cost of VGD based on MoWCA data seems underestimated as it fails to include cost of food procurement (i.e. the difference between the economics price and market price of food), storage and transportation borne by the Food Ministry. If these costs are included, the administrative cost of VGD may be around 9 to 10 percent of the programme transfer cost. Ahmed found administrative cost of VGD at 10 percent for 2005.

Ministry of Food did not provide detailed breakdown of the administrative costs of FFW and VGF schemes but argued that overall administrative cost of FFW is around 13.78 percent in FY 2018 (which includes leakages of around 20 percent). Since leakages are not considered for other selected schemes, the leakage element must not be included. If leakages of 20 percent are disregarded, the administrative cost of FFW may dropped to 11 percent. According to Ministry of Food, administrative cost of food schemes are generally 2 to 3 times higher in Bangladesh compared to the cash or CCT schemes due to expenditures on procurement, storage and transportation[10]. In support of their argument, they also refer to administrative cost of implementing the Open Market System (OMS). The estimated administrative cost of operating OMS may range between 8.8. percent and 10.3 percent for FY 2018.

The estimated administrative costs of these seven schemes are mapped according to the expenditure items listed in Table 0.1.1. The estimated cost structure by expenditure items and seven schemes are provided in the table below.

Table 0.8: Cost Structures of the selected Cash and Food schemes

Cost Items	OAA	AWDDW	PSS	SES	VGD	VGF	FFW
1.Set up Cost (Fixed Cost)							
1.1 Evaluate administrative and institutional capacity				0.126			
1.2. Infrastructure (Computers, Vehicles, Software)	0.149	0.149					
1.3. Procedure							
2. Selection Cost							
2.1. Meeting and Related cost			0.372	0.308	2.154	2.154	
2.2. Survey/Search cost							
3. Administrative wages and services							
3.1. Wages and salaries	1.903	1.903	0.142	0.431	0.898	0.898	
3.2. Purchase of good and services (Utility bills, lease)	0.433	0.433	0.620	0.011	0.718	0.718	
3.3. Application receive and process; Verifications; Dealing appeals; Processing payments; Programme oversight	0.255	0.255		0.113			
4. Payment Delivery Cost							
4.1. Bank charges	1.200	1.200	2.401	0.702			
4.2. Charges of Mobile transfer							
5.Storage Cost							
5.1. Cost at port							
5.2. Cost at local storage facilities							
6.Transport Cost			0.086	0.278	1.077	1.077	
6.1. From port to local storage facilities							
6.2. From local storage to beneficiaries							
7.Other Cost (if any)	0.060	0.060	0.029	0.143			
A. Total Administrative cost (1..7)	**4.000**	**4.000**	**3.650**	**2.113**	**4.847**	**4.847**	**11.024**
B. Total Transfer Cost	**96.00**	**96.00**	**96.35**	**97.89**	**95.15**	**95.15**	**88.98**
C. Total Cost (A + B)	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Authors Calculations based on data provided by respective agencies

[10] Similar view has also been expressed by Ministry of Finance.

Total Cost

Total cost is composed of programme cost and the administrative cost. Since administrative cost of food assisted schemes are underestimated due to exclusions of cost items, two approaches have been considered. Approach A incudes administrative cost of food schemes based on administrative data. While in Approach B, 10 percent administrative costs have been considered for VGD and VFG.

Table 0.9: Estimated Total Costs of the selected Cash and Food schemes for FY 2016 (Million BDT)

Cost Elements	OAA	AWDDW	PSS	SES	VGD	VGF	FFW
Approach A							
Programme cost	14,400.0	5,343.4	14,000.0	2,450.0	9,899.4	14,610.8	8,167.6
Administrative Cost	576.0	213.7	511.0	51.8	479.9	708.2	900.4
Total Cost	14,976.0	5,557.1	14,511.0	2,501.8	10,379.3	15,319.0	9,068.0
Total Cost/GDP (%)	**0.087**	**0.032**	**0.084**	**0.014**	**0.060**	**0.089**	**0.052**
Approach B							
Programme cost	14,400.0	5,343.4	14,000.0	2,450.0	9899.4	14610.8	8167.6
Administrative Cost	576.0	213.7	511.0	51.8	989.94	1461.08	900.4
Total Cost	14,976.0	5,557.1	14,511.0	2,501.8	10,889.3	16,071.9	9,068.0
Total Cost/GDP (%)	**0.087**	**0.032**	**0.084**	**0.014**	**0.063**	**0.093**	**0.052**

Source: Based on MOF Social Protection and Budget and Table 2.8.

Note: *In Approach A*, administrative cost rates estimated for each of these seven social protection schemes have been to calculate the total administrative cost in FY 2016. While in *Approach B*, 10 percent administrative cost rates have been used for VGD and VGF.

Total costs by the seven selected schemes have been provided below.

Table 0.10: Estimated Total Costs of the selected Cash and Food schemes for FY 2018 (Million BDT)

Cost Elements	OAA	AWDDW	STIPEND	VGD*	VGF	FFW
Programme cost	21,000.0	7,590.0	17,350.0	16,057.0	13,487.0	7,925.0
Administrative Cost	840.0	303.6	999.8	1,605.7	1,348.7	384.2
Total Cost	**21,840.0**	**7,893.6**	**18,349.8**	**17,662.7**	**14,835.7**	**8,309.2**

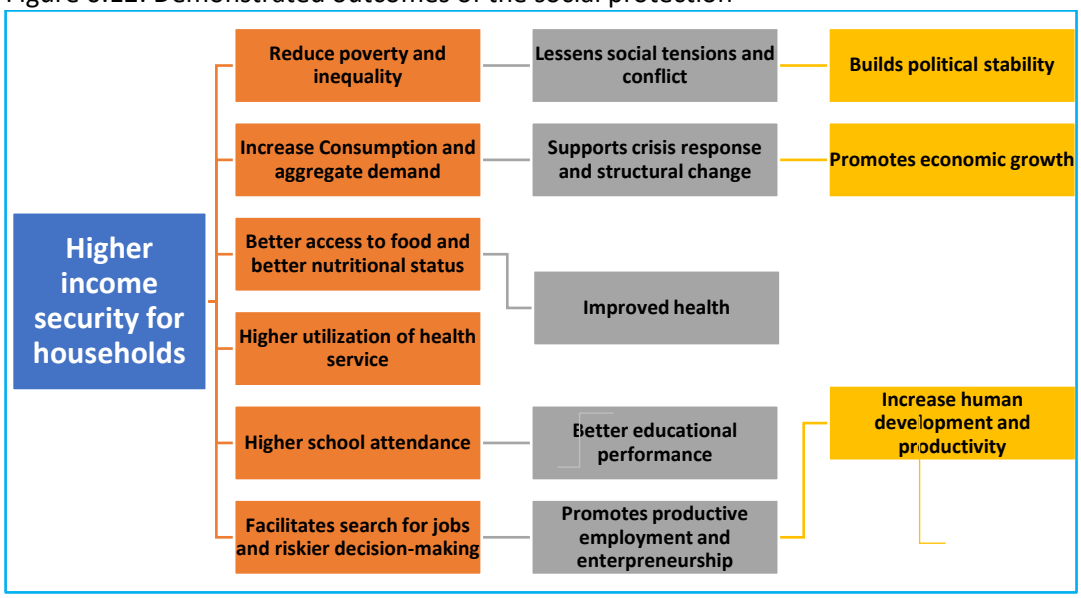
Source: Based on MOF Social Protection and Budget and Table 2.8

Note: For VGD and VFG, 10 percent administrative cost rates have been used.

6.2. Estimation of Benefits

Wide range of benefits may emerge from a well-managed social protection system. The depth of the poverty may be reduced at national level by the social protection schemes. It may help raise living standards of the poor, improve quantity and quality of food consumption (child nutrition and development). It may also result in higher utilization of health service. It also facilitates structural reforms supporting long-term growth, helps households to escape low risk, low productivity poverty traps. Moreover, social protection expenditures may enhance household spending with local multiplier effects and potential for fiscal stimulus role, reduce inequalities that contribute to economic growth. However, the potential benefits of a social protection system have been best epitomized by the World Bank and ILO (2017) joint initiatives on universal social protection to realize the SDGs.

Figure 0.12: Demonstrated outcomes of the social protection



Source: World Bank and ILO (2017)

6.2.1. Poverty Reduction and BCR: Use of Micro-Simulation Model

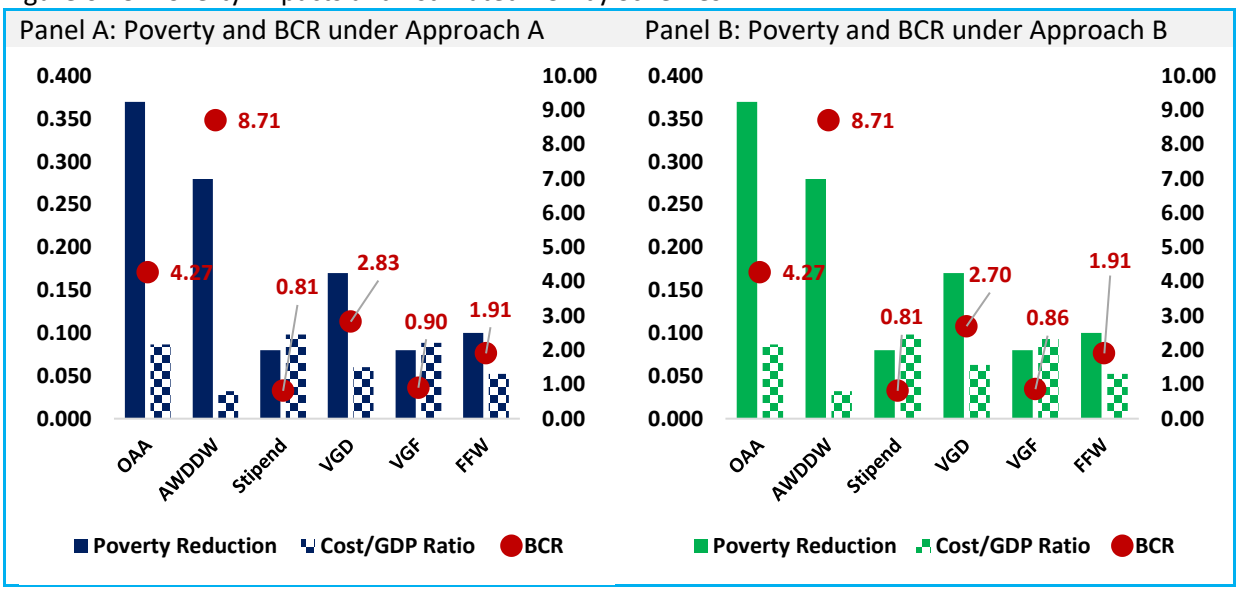
Micro simulation model has been used to estimate poverty impacts of social protection transfers by each of these selected schemes. HIES 2016 data set has been used to develop micro-simulation models (MSM). More specifically, six micro-simulation models have been developed. Population over 62 and 65 years have been identified for the OAA MSM. Thereafter, poverty situation with and without OAA have been determined for the elderly population for 2016. All individuals identified as widows, separated and divorced are grouped together to represent a group eligible for AWDDW. Combining these categories of women, an MSM for AWDDW has been developed. Again, poverty situation with and without AWDDW have been determined for this group of women. Primary and secondary students are assembled in a group for Stipend MSM. Poverty situation with and without stipends have been calculated for them.

Defining eligible sample populations for VGD, VGF and FFW are difficult. Observing the characteristics of VGD, VGF and FFW recipients, sample populations for these programmes have been developed. They mainly belong to the rural poor working women aged between 15 and 64. Thereafter, poverty situation with and without VGD, VGF and FFW have been determined for the sample populations.

Estimated poverty rates by these six schemes are then compared to their respective cost to GDP ratio to determine the BCRs of these six schemes. As mentioned above, BCRs have been calculated for both approaches – A and B. Poverty and BCR outcomes under the two approaches are provided below.

Higher BCR values have been found for the two cash transfer programmes – OAA and AWDDW. The key drivers for higher BCRs values are larger impact on poverty. Poverty rates reduced by 0.37 percent and 0.28 percent respectively under OAA and AWDDW. BCRs for food schemes especially for VGD and FFW are moderate – ranged between 1.9 percent and 2.8 percent. Relatively lower poverty impacts of VGD (i.e. 0.17 percent) and FFW (i.e. 0.10 percent) compared to OAA and AWDDW led to lower BCRs for these food schemes. On the other hand, lowest BCR value has been found for Stipend programme since poverty reduction is not the main goal of this scheme. Thus, assessing the impact of stipend programmes through the poverty lens may not be the appropriate method.

Figure 0.13: Poverty Impacts and Estimated BCR by Schemes



Source: Micro-simulation model

6.2.2. Income Generation (GDP) Benefit: Use of SAM Multiplier Model

Simulation Design

As mentioned above, Bangladesh SAM 2012 has been converted into a SAM multiplier model to simulate the income gain (GDP gain) impacts of the selected social protection schemes. Two types of interventions are considered in setting the simulations.

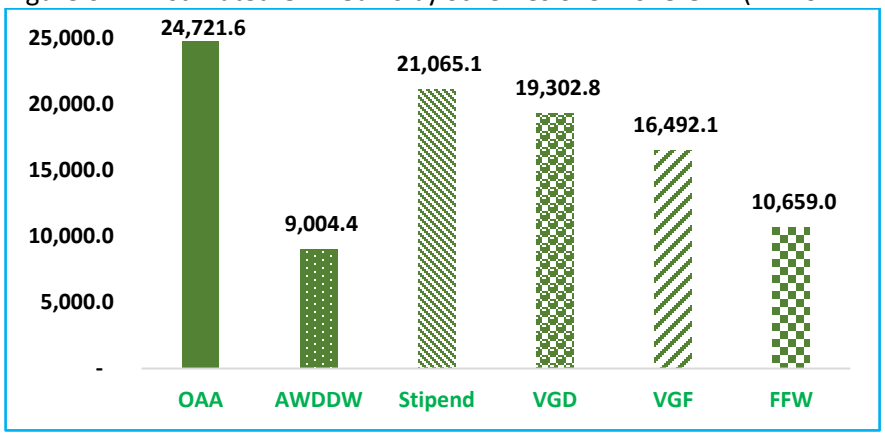
Business as Usual (BAU): A business as usual scenario is generated assuming that there is no additional social protection transfers or interventions into the Bangladesh economy. The exogenous account of the SAM model is set up in such a way (i.e. it reflects what is needed to change in all the five elements of the exogenous account – the government expenditure, investment, exports, foreign remittances and government transfers to household – social protection transfers) to exactly match the nominal GDP values reported for 2018 for Bangladesh by BBS. Generating the BAU to exactly match the GDP values of 2018 is important since the BAU set the benchmark to examine impact of various simulations described below.

Social Protection Interventions: We used the transfer values of FY 2018 for OAA, AWDDW, PES and SES, VGD, VGF and FFW separately in six simulations to simulate their respective impact on GDP. The transfers amounts are injected by enhancing incomes of the rural and urban households according to the distribution found in HIES 2016. Simulation designs are reported below.

	Selected Schemes					
	OAA	**AWDDW**	**STIPEND**	**VGD**	**VGF**	**FFW**
Intervention Amounts (Million BDT)	21,000.0	7,590.0	17,350.0	16,057.0	13,487.0	7,925.0

The simulated GDP gains by each of the selected schemes are shown in figure below. As expected, gains are larger for schemes with larger interventions such OAA and Stipend programmes. Combined GDP gains of seven interventions is 0.47 percent of FY 2018 GDP.

Figure 0.14: Estimated GDP Gains by Schemes over 2018 GDP (Million BDT)



Source: Bangladesh SAM Multiplier Model 2012

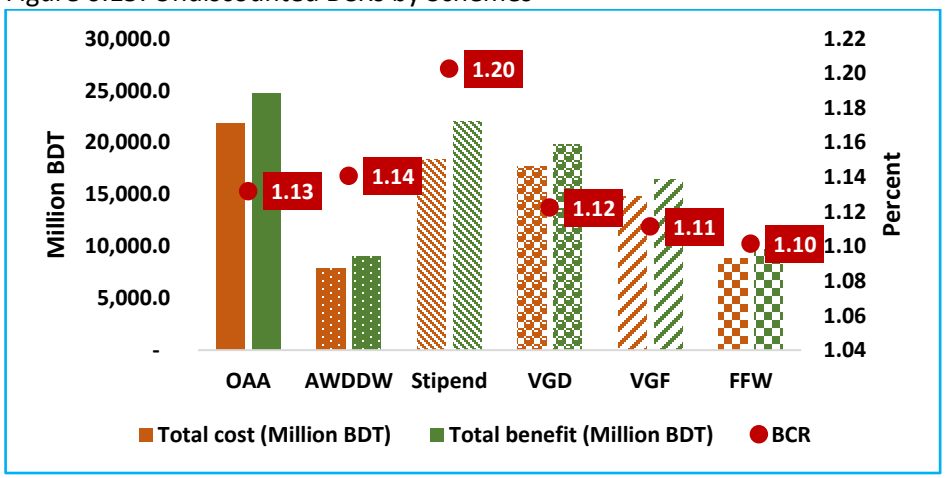
Box 0.5: Gains from Social Protection Intervention

Similar economic gains have also been found in USA during 2008 recession due to fiscal stimulus. A study by Zandi (2008) compared the growth impact of a dollar spent on two social protection schemes – the food stamp programme and unemployment insurance – with investment in infrastructure. Investment in infrastructure had a multiplier of 1.6. While multipliers of the social protection spending were similar (1.6 for unemployment benefits and 1.7 for food stamps).

Income gains have also been found in Bolivia's universal pension, where rural households invested pension income into agricultural activities. A study of the impact of the scheme found that the return from these livelihood investments translated into household consumption 1.5 times the value of the pension (Sebastian M., 2013). There is also evidence of how pension income can help younger family members in their search for work. In South Africa, for example, research found that young men were more likely to become labour migrants if they were living in a household with an older person eligible for the social pension. Pension income also seemed to help facilitate migration of younger household members for work (Ardington, et al 2013).

The simulated GDP gains by each of the selected schemes are contrasted against total costs to derive BCRs. The estimated BCRs by these schemes are shown below. The BCR values are greater than 1 (unity) implying that it may be desirable to investment in the social protection system in Bangladesh. The BCR values are in the range between 1.10 and 1.20. The gains are relatively higher for cash and CCT programmes compared to the food programmes. However, the highest BCR value has been found for Stipend programmes.

Figure 0.15: Undiscounted BCRs by Schemes



7. Expanding Programme Coverage or Increasing Transfer Size

Even though NSSS (2015) has embraced the life cycle approach to design the social protection system in Bangladesh, the focus will still on reducing the incidence of poverty and vulnerability due to pervasive poverty (i.e. accosting to HIES 2016 24.3% of total population of Bangladesh were poor according to the national poverty line). Social protection system is an important instrument to fight against poverty. There are various conduits through which social protection system can be used to exert impact on poverty situation. Poverty situation may either be impacted through expanding coverage – inclusion additional beneficiaries; enhancing the transfer amounts – higher transfers paid to the existing beneficiaries; improving implementation efficient – better selection of deserving beneficiaries.

To assess the effectiveness of these three modalities (i.e. coverage expansion; increased transfers; and improved selection) a micro-simulation model (MSM) based on the HIES 2016 has been used. We also consider three cash schemes for the micro-simulation exercise. These are OAA; AWDDW and PES and SES. Effectiveness of these three modalities are measured with regard to impact on poverty rates and vulnerability rates. Following steps have been adopted for this exercise: (i) In the first step, poverty rates with and without the transfer amounts has been calculated for these three schemes. (ii) In the next step, beneficiary coverage has been expanded from the current size (according to HIES 2016) to include all vulnerable population. These additional beneficiaries have been provided with same monthly transfer amount (i.e. monthly transfer in 2016). Due to expansion of the beneficiary size, total resource requirement increased under this case. (iii) In the third step, additional resource required under case two has been distributed to the existing beneficiaries on top of their current transfer amount (i.e. BDT 300). This essentially entails a rise in their monthly transfer amount. (iv) In the last step, a perfect selection is considered, and all the selected beneficiaries are provided with current monthly transfer amount to assess the impact of perfect selection without substantial programme modification (i.e. no or very small additional resource is considered here).

7.1. Poverty Impact of Selected Cash Schemes

Table below shows the poverty rates of elderly person (60+ years), widow, and school age population with and without the social protection transfer amounts. Transfer amounts have been deducted from the monthly consumption level to derive the effects of the transfer amounts. As a result of OAA, poverty rates among elderly person reduced by 0.37 percentage points. In the case of widow, it is 0.28 percentage points. For stipend schemes, impacts are small at around 0.08 percentage points.

Table 0.11: Poverty impact of OAA, AWDDW, PES & SES

	Poverty with Social Protection	Poverty without Social Protection	Social Protection Impact (Poverty)
Age 60+	21.77 (OAA)	22.14	**0.37**
Widow	26.68 (AWDDW)	26.96	**0.28**
School Age (5-14)	28.01 (PSS & SES)	28.09	**0.08**

Source: Based on HIES 2016

Upper poverty lines have been adjusted upward by 25 percent to estimated vulnerability rates. The outcomes are shown below. As expected, vulnerability rates are significantly higher than the poverty rates. Again, the transfer amounts have been deducted from the monthly consumption level to derive the effects of the transfer amounts. As a result of OAA, poverty rates among elderly person reduced by 0.37 percentage points. In the case of widow, it is 0.26 percentage points. For stipend schemes, impacts are small at around 0.07 percentage points.

Table 0.12: Vulnerability impact of OAA, AWDDW, PSS & SES

	Vulnerability with Social Protection	*Vulnerability without Social Protection*	*Social Protection Impact (Vulnerability)*
Age 60+	42.92 (OAA)	43.29	0.37
Widow	49.00 (AWDDW)	49.26	0.26
School Age (5-14)	52.38 (PSS & SES)	52.45	0.07

Source: Based on HIES 2016

7.2.Simulated Impacts of Interventions

The interventions are designed to simulate the impact of coverage expansion; increased monthly transfer amount and perfect targeting of poor. The design aspects of OAA are described in box below[11].

Box 0.6: Description of Interventions

According to HIES 2016 the key parameters are:

Total sample population aged 60 and over = 15,344
Number of vulnerable sample old age population= 6,643
Number of poor old age people = 3,397
Number of current sample beneficiaries of OAA = 2,994

A. Current System

Resource requirement with BDT 300 monthly transfer amount = BDT 1,07,78,400 (=>2,994*300*12)

B. Coverage Expansion (Intervention 1)

Resource requirement with coverage expansion = BDT 2,39,14,800 (=>6,643*300*12)

The resource requirement over current system increases by = ((2,39,14,800/1,07,78,400) –1) *100 = = 115%.

C. Increase Transfer Amount (Intervention 2)

Monthly transfer increases to BDT 569. This is estimated as BDT 569 (=>2,39,14,800/3,397/12). In this case enhanced monthly transfer amount of BT 569 in place of BDT 300 is provided.

D. Perfect Targeting of Poor (Intervention 3)

In this case all poor (i.e. 3,397) are perfectly selected with zero inclusion and exclusion errors. Due to additional 403 elderly poor the resource need increased slightly.

The **resource requirement** is BDT 1,22,29,200 (=3,397*300*12).

Increase in resource requirement over current system is = ((1,22,29,200/1,07,78,400)) *100 = = 13%.

Key assumption: in all the three simulations perfectly targeting of beneficiaries has been assumed.

A. Scheme: Old age allowance (OAA)

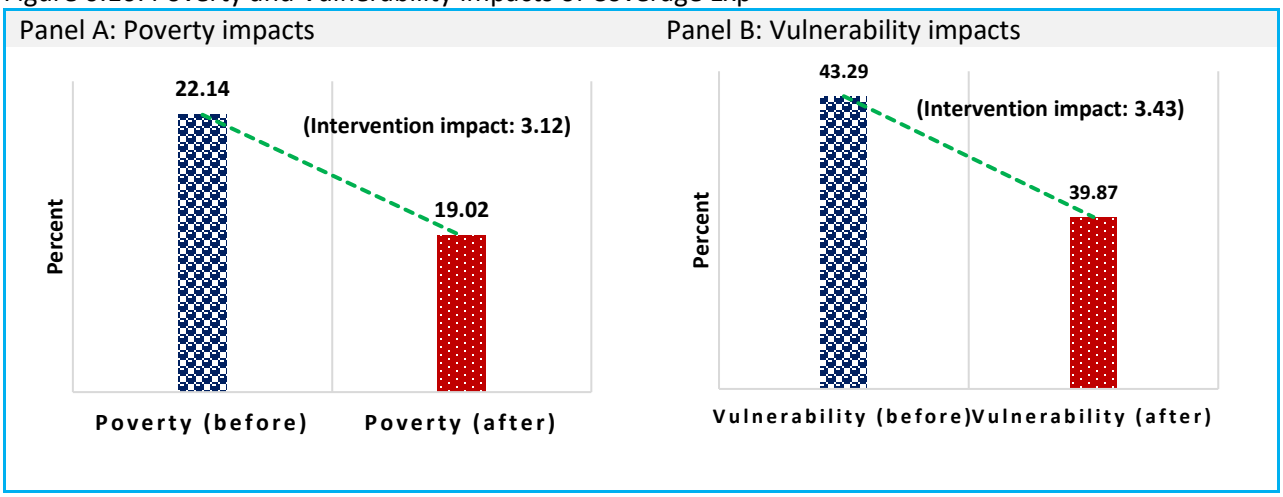
Intervention 1: Expanded Coverage

Impacts of expanded OAA coverage on poverty and vulnerability situation are shown in figure below. As a result of expansion coverage with no inclusion and exclusion errors, poverty would have been decreased by 3.12

[11] For Widow and stipend simulations similar types of simulation set ups have been developed for intervention. These are note reported here.

percentage point from the current elderly poverty rate i.e. 22.14 percent (i.e. without any intervention) to 19.02 percent (with coverage expansion).

Figure 0.16: Poverty and Vulnerability Impacts of Coverage Exp



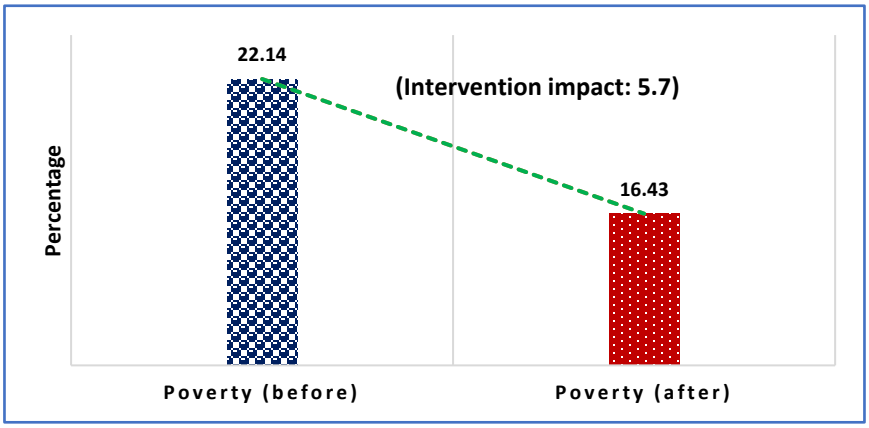
Panel B captures the vulnerability impact for the same intervention. The vulnerable old age people would lessen for the intervention of coverage increase to vulnerable line. Again, as a result of expansion coverage with no inclusion and exclusion errors, vulnerability among elderly population would have been reduced from 43.29 percent (i.e. without any intervention) to 39.87 percent (i.e. with intervention). The simulated positive impacts depend on two factors – coverage expansion with resource increase of about 115 percent over the current system and assumption of zero inclusion and exclusion errors. As mentioned above inclusion and exclusion errors are very high in the current OAA system. If these errors were incorporated into the simulation impacts on poverty and vulnerability would have much less compared to with zero errors.

Intervention 2: Increased Transfer Amounts

In intervention 2, the study uses the estimated resource required for intervention 1 as total transfer size which are distributed to the old age people living under the poverty line. The increased resource requirement has enlarged the individual monthly OAA transfer amount of OAA from BDT 300 to BDT 569. The simulated poverty impacts of intervention 2 is shown in figure below.

Impacts on poverty are larger under this intervention compared to intervention 1. As a result of increased transfer with no inclusion and exclusion errors, poverty would have been decreased by 5.7 percentage point from the current elderly poverty rate i.e. 22.14 percent (i.e. without any intervention) to 16.43 percent (with increased transfer).

Figure 0.17: Poverty Impacts of Increase Transfer Amounts



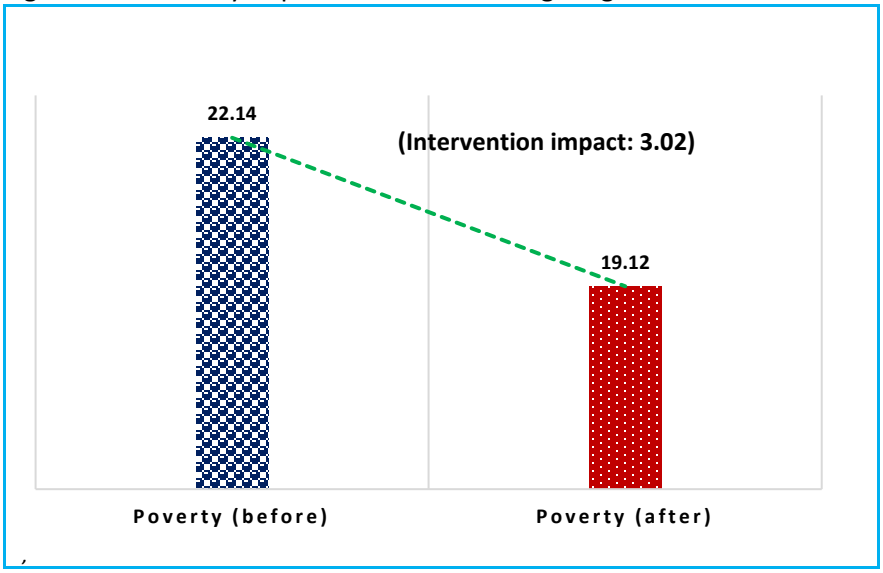
Similar to the previous case, the simulated positive impacts depend on two factors – increased transfer amount (BDT 569 in place of BDT 300 implying a rise of 90 %) and assumption of zero inclusion and exclusion errors. As mentioned above inclusion and exclusion errors are very high in the current OAA

system. If these errors were incorporated into the simulation impacts on poverty would have much smaller compared to with zero errors.

Intervention 3: Perfect Targeting of Poor

According to HIES 2016, the number of OAA sample beneficiaries were 2,994 receiving BDT 300 per month. It requires the budget allocation of BDT 1,07,78,400. In this intervention it is assumed that all 3,397 poor elderly would receive OAA of BDT 300 per month (that is perfect targeting and no inclusion-exclusion error). Additional resource need is minimal (only 0.13 percent over the current resource need due to covering 403 additional elderly poor at BDT 300 per month). But the poverty impacts are very impressive. It may reduce by 3.02 percentage points. It thus suggests that it may be possible to attain large reduction in poverty with the same resource but substantial system improvement (i.e. in this selection efficiency gain). In other words, without improving system efficiency it may not be advisable to expand coverage and increase the transfer amount.

Figure 0.18: Poverty Impacts with Perfect Targeting



Summary

Impacts of interventions under OAA schemes are summarised below. The most important finding is that improving the current system may yield large gain without stretching the fiscal system.

Table 0.13: Intervention feasibility selection for OAA

Sl. No.	Intervention	Poverty Impact	Vulnerability impact	Budget requires
Current System	-	0.37	0.37	Current budget
Intervention 1	Coverage increase to vulnerability line	3.12	3.43	1.2 times more than the current budget
Intervention 2	Increase in transfer size to BDT 569 for all old age population living under the poverty line	5.7	-	1.2 times more than the current budget
Intervention 3	Perfect targeting of poor old age people with current transfer amount of BDT 300	3.02	-	0.13 times more than the current budget

The intervention simulations outcomes for the AWDDW scheme is summarised blow. The outcomes are similar in direction but more pronounced than the OAA. Intervention 1 may lessen the poverty by 3.95 percentage

points and vulnerability by 4.06 percentage points. Intervention 2 has the highest impact on poverty reduction (a gain of 6.74 percentage points) requiring the same budget of intervention 1. Intervention 3 needs least resource than other two interventions to reduce poverty by 3.95 percentage points.

Table 0.14: Intervention feasibility selection for AWDDW

Sl. No.	Intervention	Poverty Impact	Vulnerability impact	Budget requires
Current System	-	0.28	0.26	Current budget
Intervention 1	Coverage increase to vulnerability line	3.95	4.06	3.2 times more than the current budget
Intervention 2	Increase in transfer size to BDT 554 to the widow/destitute/deserted women living under the poverty line	6.74	-	3.2 times more than the current budget
Intervention 3	Perfect targeting of poor widow/destitute/deserted women with current transfer size of BDT 300	3.96	-	1.3 times more than the current budget

The intervention simulation outcomes under the stipend scheme is summarised blow. The outcomes are similar in direction but smaller than the OAA and AWDDW. Intervention 1 may lessen the poverty by 2.1 percentage points and vulnerability by 2.00 percentage points. Intervention 2 has the highest impact on poverty reduction (a gain of 3.98 percentage points) requiring the same budget of intervention 1. Intervention 3 needs least resource than other two interventions to reduce poverty by 2.4 percentage points.

Table 0.15: Intervention feasibility selection for PSS & SES

Sl. No.	Intervention	Poverty Impact	Vulnerability impact	Budget requires
Current System	-	0.08	0.07	Current budget
Intervention 1	Coverage increase to vulnerability line	2.17	2.00	1.4 times more than the current budget
Intervention 2	Increase in transfer size to BDT 206 to primary and secondary students	3.98	-	1.4 times more than the current budget
Intervention 3	Perfect targeting of students with transfer at current amount.	2.4	-	0.41 times more than the current budget

8. Recommendations

Adequate Investment in Administrative Cost: International and national evidences clearly envisaged that allocating adequate resources for administrative costs are important for programme success. Contrary to this understanding, our analysis suggests poor provision of resources for administrative cost in Bangladesh. Moreover, usefulness of adequate provision for administrative costs to implement the social protection system is virtually non-existence in Bangladesh. According to available data, it is found that the share of administrative costs in total costs across selected cash and food schemes mostly hovered around 4 percent. These ratios contrast poorly with international ratio of 9 to 10 percent for cash schemes and 25 percent for food assisted schemes. Bangladesh authorities involved in social protection system do not have clear understanding of the elements and structures of an adequate administrative cost system and thus failed to provide the cost breakdown. The most of administrative costs are incurred for salaries and purchases of goods and services. Important costs associated with the selection of beneficiaries and monitoring, and evaluations are virtually non-existent. Given the poor state of administrative cost in Bangladesh social protection system following measures may be adopted:

- Designing an adequate administrative cost structures in Bangladesh may not be feasible without large scale consolidation of schemes. It is argued that lack of knowledge on administrative costs associated with programme (scheme) inception and subsequent implementation may have resulted in the proliferation of schemes in Bangladesh. Thus, in line with the recommendations of the NSSS (2015), Bangladesh must start consolidating the social protection schemes into six core clusters based on the life cycle approach or age-specific schemes. This step would allow the authorities to design and determine an adequate administrative cost system for the social protection schemes in Bangladesh.

- Key agencies involved in policy formulation, resource allocation and implementation may need to be exposed to a systematic acquaintance to the formulation of an adequate administrative cost through tailored trainings; exchange programmes and further in-depth studies.

- Determining an adequate administrative cost structures for Bangladesh social protection schemes (i.e. cash; CCT; food and livelihood) with clear provision for cost to cover set-up (i.e. office, equipment and MIS system etc.), beneficiary selection; and monitoring and evaluation.

- While rationalizing the importance of the administrative cost from Okun (1975)[12] classical treatise point of view, Grosh et al opined that 'Okun deems that these are easily measured, are subject to policy control, and amount to only a few percentage points of overall costs at most. Experience in developing countries confirms that safety net programs can be run well for modest administrative costs: a ***useful rule of thumb is roughly 10 percent of overall program costs***.' Bangladesh may also consider 10 percent administrative costs for cash and CCT programmes.

- A proposal for benchmarking the administrative cost has also been discussed. It essentially proposed to use generosity (transfer amount) and the proportion of administrative cost in total programme cost to derive an index for administrative cost. Bangladesh may adopt this measure to assess the state of administrative cost across the major social protection schemes.

[12] It may be relevant to note that Okun treatise focused on leaky bucket the tax system.

A Proposal for Benchmarking the Administrative Cost

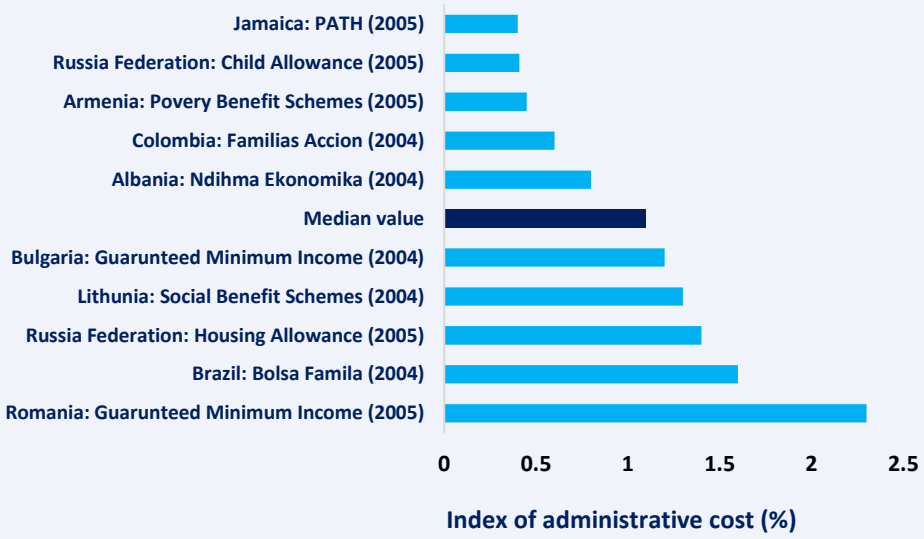
If generosity or transfer amounts (such as in Bangladesh) differs across programmes or schemes, then comparing the share of administrative costs in total costs with the usual share of administrative costs may lead to the wrong conclusion (this was also found for Russian Federation).

Thus, in order to assess whether the administrative costs of a programme are within the normal range, it is preferred to compare the administrative costs per beneficiary, expressed in purchasing power parity terms. It is also encouraged that analysts to report this information whenever they examine the administrative costs of a programme.

Alternatively, the analysts can multiply programme generosity, calculated as the ratio of benefits to the consumption of the beneficiary household based on household survey data, with the share of administrative costs and compare this index across safety net programmes of the same type, for instance, cash schemes, public works schemes, or school feeding schemes. It is specified as:

Index of Administrative Cost = Generosity x share of administrative cost in total programme budget

The index for a sample of programmes from Europe and Central Asia and Latin America and the Caribbean is reported as an illustration.



Source: Grosh et al (2008)

Gradual Phasing of Food Schemes: Two major types of social protection schemes in operation in Bangladesh are cash and food schemes. Food schemes have been in operation since early 1970s mainly in response to food crisis, pervasive poverty and underdeveloped food markets. Bangladesh has already achieved self-sufficiency in food; poverty is no-longer pervasive; economic growth has been impressive and moreover, the food markets are developed now. Under this changed circumstances, the need for implementing similar type of large numbers of food-assisted programmes have recently been discussed. In line with this discussion, NSSS (2015) has recommended consolidation all food schemes into one or two food assisted schemes and rest of the schemes may be converted into cash schemes for greater efficiency and cost-effectiveness. Poverty impacts of OAA and AWDDW have been found larger than the poverty impacts of VGD, VGF and FFW programmes. Better poverty outcomes led to higher BCRs for the cash schemes compared to the food schemes. The cost-effectiveness outcomes of the competing schemes using the GDP gain utilizing a SAM multiplier model are also higher under

the cash or CCT schemes compared to the food schemes. The findings of this study thus re-iterate the NSSS proposal for consolidation of food schemes into one or two major food schemes and converting other food schemes into cash or CCT schemes.

Arrest Expansion of Social Protection System: Bangladesh has been spending about 2.5 percent of her GDP in social protection system. The system, however, fails to generate satisfactory outcomes due to system inefficiencies. The simulations with expansion of coverage as well as increased transfer payment produced large impact only under the assumption of 'perfect' selection (i.e. 100 percent identification of poor and vulnerable population, implying zero exclusion or inclusion errors) of beneficiaries. For example, under perfect selection of beneficiary, in the case of OAA, expansion of coverage to include all vulnerable elderly may reduce poverty 3.6 percentage points compared to the current situation (i.e. only by 0.37 percentage points). Moreover, increased transfer amount from BDT 300 to BDT 569 to all poor elderly may reduce poverty by 5.7 percentage points compared to the current situation. But when monthly transfer of BDT 569 has been provided to all current sample beneficiaries the poverty reduction rate is only 0.59 percentage points compared to current rate of 0.37 percentage points. These experiments clearly suggest that any plan for expanded coverage and enhanced transfer amounts must be associated fixing the system. Without fixing the system, expansion of the social protection system may result in larger leakages and wastages of public resources. Fixing of the system may entail programme consolidation; improvement in programme implementation with adequate provision for administrative cost; installation of MIS systems and procedures for better selection of beneficiaries; and establishing protocol for stricter monitoring and evaluation of programmes.

A Dedicated Survey on Social Protection System in Bangladesh: HIES has incorporated a section on social protection system covering 30 large programmes since 2005 with an aim to generate data to assess the performance of the social protection system. HIES has been a good source of information for assessing the social protection system. However, the extent of exclusion and inclusion errors are quite large according to the HIES social protection data base. Moreover, a deeper analysis of HIES social protection data base reveals existence of large numbers of outliers[13] – perhaps influencing high exclusion and inclusion errors and related other deficiencies of the social protection system. Discussion with DSS officials also transpired that they are sceptical on the extent of high exclusion and inclusion errors emerged out of HIES data and pointed to unsatisfactory data collection methods adopted by the HIES field enumerators. Considering the importance of a comprehensive data base for the social protection system, a dedicated survey of social protection system may be carried out under the aegis of the General Economics Division. Moreover, this should be supplemented by a comprehensive review of the administrative cost of the major 15 to 20 social protection schemes covering cash, CCT, food and livelihood programmes to find out cost structures, gaps in cost compared to international best practices, and what needs to done to move towards an adequate administrative cost structure with an aim to improve cost effectiveness of Bangladesh social protection system.

[13] For instance, in the OAA schemes, there are existence of sample respondents receiving OAA at age 3 or 5 but reportedly married.

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Annex 1: Input-output Matrix and Social Accounting Matrix

A social accounting matrix (SAM) is an extension (or generalization) of the input-output matrix by incorporating other parts of the economy – namely primary and secondary income distribution and institutions of an economy. More specifically, Input-output analysis involves constructing a table in which each horizontal row describes how one industry's total product is divided among various production processes and final consumption. Each vertical column denotes the combination of productive resources used within one industry. A table of this type (Figure 2.3) illustrates the dependence of each industry on the products of other industries: for example, an increase in manufacturing output is also seen to require an increase in the production of power.

Figure 0.19: Input-output table

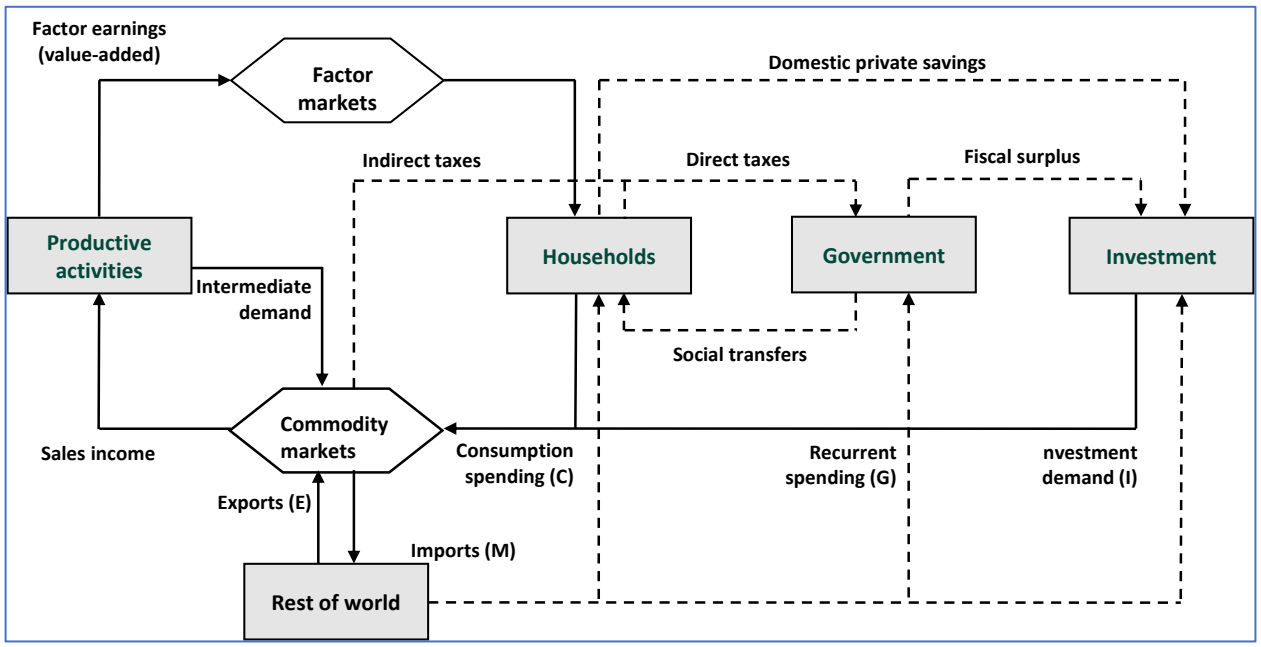
		Activity					Final Demand				Total Use
		A1	…	…	…	A16	C_p	C_g	I	Ex	
Commodity	C1	Technology matrix (16 x 16)					Final Demand				
	..										
	..										
	..										
	C16										
Value added	Compensation	GDP (Income Approach)					GDP (Expenditure Approach)				
	Operating Surplus										
	Indirect Taxes										
	Import										
	Total Supply										

SAM is a square matrix which captures all the main circular flows (Figure 0.21) within an economy in a given period.

Figure 0.20: Basic Structure of a SAM

		Expenditure columns							
		Activities C1	Commodity C2	Factors C3	Households C4	Government C5	Investment C6	Rest of world C7	Total
Income rows	Activities R1		Domestic Supply						Activity income
	Commodities R2	Intermediate demand			Consumption spending (C)	Recurrent spending (G)	Investment demand (I)	Export earnings (E)	Total demand
	Factors R3	Value-added							Total factor income
	Households R4			Factor payments to households		Social transfers		Foreign remittances	Total household income
	Government R5		Sales taxes and import tariffs		Direct taxes			Foreign grants and loans	Government income
	Savings R6				Private savings	Fiscal surplus		Current account balance	Total savings
	Rest of world R7		Import payments (M)						Foreign exchange outflow
	Total	Gross output	Total supply	Total factor spending	Total household spending	Government expenditure	Total investment spending	Foreign exchange inflow	

Figure 0.21: Circular flow in an Economy



Source: Breisinger, et al (2009)

The input-output part of SAM captures production linkages between sectors that are determined by sectors' production technologies. These linkages can be differentiated into backward and forward linkages. Stronger forward and backward production linkages lead to larger multipliers.

Backward production linkages are the demand for additional inputs used by producers to supply additional goods or services. For example, when electricity production expands, it demands intermediate goods like fuel, machinery, and construction services. This demand then stimulates production in other sectors to supply these intermediate goods. The more input intensive a sector's production technology is, the stronger its backward linkages are.

Forward production linkages account for the increased supply of inputs to upstream industries. For example, when electricity production expands, it can supply more power to the economy, which stimulates production in all the sectors which use power. Thus, the more important a sector is for upstream industries, the stronger its forward linkages will be. Forward linkages are particularly important for the energy sector as it provides key input into the majority of other sectors in the economy.

Methodology – Description of social accounting matrix model

The move from a SAM data framework to a SAM model (also known as multiplier framework) requires decomposing the SAM accounts into 'exogenous' and 'endogenous'. Generally, accounts intended to be used as policy instruments (for example, government expenditure including social protection, investment and exports) are made exogenous and accounts specified as objectives or targets must be made endogenous (for example, output, commodity demand, factor return, and household income or expenditure). For any given injection into the exogenous accounts of the SAM, influence is transmitted through the interdependent SAM system among the endogenous accounts. The interwoven nature of the system implies that the incomes of factors, households and production are all derived from exogenous injections into the economy via a multiplier process. The multiplier process is developed here on the assumption that when an endogenous income account receives an exogenous expenditure injection, it spends it in the same proportions as shown in the matrix of average

propensities to spend (APS). The elements of the APS matrix are calculated by dividing each cell by the sum total of its corresponding column.

The economy-wide impacts of the SAR have been examined by changing the total exogenous injection vector, especially government. More specifically, the total exogenous account is manipulated to estimate their effects on output (through an output multiplier), value-added or GDP (through the GDP multiplier), and household income (through household income multiplier) and commodity demand (via commodity multipliers).

Table 0.16: Description of the endogenous and exogenous accounts and multiplier effects

Endogenous (y)	Exogenous (x)
The activity (gross output multipliers), indicates the total effect on the sectoral gross output of a unit-income increase in a given account, *i* in the SAM, and is obtained via the association with the commodity production activity account *i*.	
The consumption commodity multipliers, which indicates the total effect on the sectoral commodity output of a unit-income increase in a given account *i* in the SAM, is obtained by adding the associated commodity elements in the matrix along the column for account *i*.	Intervention into through activities (x = i + g + e), where i= GFC + ST (GFCF) Exports (e) Government Expenditure (g) Investment Demand (i) Inventory Demand (i)
The value-added, or GDP multiplier, giving the total increase in GDP resulting from the same unit-income injection, is derived by summing up the factor-payment elements along account *i*'s column.	
Household income multiplier shows the total effect on household and enterprise income and is obtained by adding the elements for the household groups along the account i column.	Intervention via Households (x = r + gt + ct), where Remittance (r) Government Transfers (gt) Corporation Transfers (ct)

The shift from a 'data' SAM structure to a SAM multiplier module requires the introduction of assumptions and the separation of the SAM accounts into 'exogenous' and 'endogenous' components.[14]

Table 0.17: General SAM modular structure

		1a-PA	1b-CM	2-FP	3a-HH-OI	4-KHH-OI	5-ROW	TDD
1a	PA		$T_{1a, 1b}$		0			Y_{1a}
1b	CM	$T_{1b, 1a}$			$T_{1b, 3}$	$T_{1b, 4}$	$T_{1b, 5}$	Y_{1b}
2	FP	$T_{2, 1a}$					$T_{2, 5}$	Y_2
3	HH-IO	$T_{3, 1a}$	$T_{3, 1b}$	$T_{3, 2}$	$T_{3, 3}$		$T_{3, 5}$	Y_3
4	KHH-OI	$T_{4, 1a}$			$T_{4, 3a}$		$T_{4, 5}$	Y_4
5	ROW		$T_{5, 1b}$	$T_{5\,2}$	$T_{5, 3}$	0	0	Y_5
	TSS	E_{1a}	E_{1b}	E_2	E_3	E_4	E_5	

Where: by definition $Y_i = E_j$ and 1 Production (1a PA = Production Activities and 1b CM = Commodities); 2 FP = Factors of Production; 3 HH-IO = Households and Other Institutions (incl. Government); 4 KHH-OI = Capital Account Households and Other Institutions (including government); 5 ROW = Rest of the World (current and capital account). Blank entries indicate that there are no transactions by definition.

[14]This methodology follows Pyatt G and Round J.I., "Social Accounting Matrices for Development Planning", Review of Income and Wealth, Series 23, No.4, 1977;Pyatt G and Round JI, "Accounting and Fixed Price Multipliers in a SAM Framework", *Economic Journal, No. 89*, 1979 and Pyatt, G. and Roe, A. (1987) (eds), while the layout follows Alarcon JV et al, *La Matriz de Insumo-ProductoAdaptadapara la Planificación de lasnecesidadesbásicas, Ecuador 1975 y 1980*, Quito, ISSPREALC, 1984, and Alarcon JV et al, *The Social Accounting Framework for Development*, Avebury, Gower House, 1991.

The separation is needed to enter the system, allowing some variables within the SAM structure to be manipulated exogenously (via injection instruments) to assess the subsequent impacts on the endogenous accounts as well as on the exogenous accounts.

Generally, accounts intended to be used as policy instruments are classified as exogenous and accounts specified *a priory* as objectives (or targets) are classified as endogenous. Three accounts are designated as endogenous accounts: 1) Production (production activities and commodities) account, 2) Factors of Production account, 3a) Households and Other Institutions (excluding the Government).

The exogenous accounts comprise: 3a Government (expenditure, transfer, remittances); 4 Capital account of institutions (savings and demand for houses, investment demand, infrastructure and machinery and equipment); and 5 ROW transfers, remittances, export demand and capital. The SAM flows and the categorization into endogenous and exogenous accounts are shown below.

Table 0.18: Endogenous and Exogenous Accounts

		1a-PA	**1b-CM**	**2-FP**	**3a-HH-OI**	**3b-Gov**	**4-KHH-OI**	**5-ROW**	**TDD**
1a	PA		$T_{1a,\ 1b}$		0				Y_{1a}
1b	CM	$T_{1b,\ 1a}$			$T_{1b,\ 3a}$	$T_{1b,\ 3b}$	$T_{1b,\ 4}$	$T_{1b,5}$	Y_{1b}
2	FP	$T_{2,\ 1a}$						$T_{2,\ 5}$	Y_2
3a	HH-OI			$T_{3a,\ 2}$	$T_{3a,\ 3a}$	$T_{3a,\ 3b}$		$T_{2,\ 5}$	Y_3
3b	Gov	$T_{3b,\ 1a}$	$T_{3b,\ 1b}$		$T_{3b,\ 3a}$	$T_{3b,\ 3b}$		$T_{3a,\ 5}$	
4	KHH-OI	$T_{4,\ 1a}$			$T_{4,\ 3}$			$T_{4,\ 5}$	Y_4
5	ROW		$T_{5,\ 1b}$	$T_{5,\ 2}$	$T_{5,\ 3a}$	$T_{5,\ 3b}$	$T_{5,\ 4}$	0	Y_5
	TSS	E_{1a}	E_{1b}	E_2	E_{3a}	E_{3b}	E_4	E_5	

Where Endogenous: 1 Production (1a PA = Production Activities and 1b CM = Commodities); 2 FP = Factors of Production; 3a HH = Households and Other Institutions (excluding Government); Where Exogenous: 3b Government; 4 KHH-OI = Capital Account of Households and of Other Institutions (incl. government); 5 ROW = Rest of the World (current and capital account). Blank entries indicate that there are no transactions by definition.

Table 0.19: Endogenous and components of exogenous accounts

	PA	**CM**	**FP**	**3a HH&OI**	**EXO**	**INCOME**	**Exogenous Accounts (EXO) used as injections Column Vectors**
1a PA		$T_{1a\ 1b}$		0	X_{1a}	Y_{1a}	$X_{1a} = 0$
1b CM	$T_{1b\ 1a}$			$T_{1b\ 3a}$	X_{1b}	Y_{1b}	X_{1b} = Government Consumption Subsidies - Taxes + Exports + Gov. Investment (capital formation in infrastructure and machinery and equipment) + Gross Capital Stock formation
2 FP	$T_{2\ 1a}$				X_2	Y_2	X_2 =Factor Remittances from ROW
3a HH&OI			$T_{3a\ 2}$	$T_{3a\ 3a}$	X_{3a}	Y_{3a}	X_{3a}= Transfers (OAA), remittance
3b-5 Leaks	L_{1a}	L_{1b}	L_2	L_{3a}	$L_{3b\text{-}5} = X_{3b\text{-}5}$	$Y_{3b\text{-}5}$	3b =Aid to Government from ROW
EXPN	E_{1a}	E_{1b}	E_2	E_{3a}	$E_{3b\text{-}5}$		Where $E_i = Y_j$
L_{1a} = Activity Tax					L_{3a} = Income Tax + Household Savings + Corporate Savings		
L_{1b} = Commodity Tax + Import Duty + Imports					$L_{3b\text{-}5}$ $X_{3b\text{-}5}$ and $Y_{3b\text{-}5}$ falls out of the model		
L_2 = Factor Remittances to ROW					Blank entries indicate that there are no transactions by definition.		

Note on Injection: For any given injection into the exogenous accounts X_i (i.e., instruments) of the SAM, influence is transmitted through the interdependent SAM system among the endogenous accounts. The interwoven nature of the system implies that the incomes of factors, institutions and production are all derived from exogenous injections into the economy via a multiplier process. Multiplier models may also be built on the input-output frameworks. The main shortcoming of the IO model is that the feedback between factor income

generation (value-added) and demand by private institutions (households) does not exist. In this case, the circular economic flow is truncated. The problem can be partly tackled by endogenising household consumption within the I-O framework; this is typically referred to as a 'closed I-O model'. In this case, the circular economic flow is only partially truncated. A better solution is to extend the I-O to a SAM framework, which captures the full circular economic flow derivation of SAM multipliers

SAM coefficients (A_{ij}) are derived from payments flows by endogenous accounts to themselves (T_{ij}) and other endogenous accounts as to the corresponding outlays ($E_i = Y_j$); similarly, the leak coefficients (B_{ij}) derived from flows reflecting payments from endogenous accounts to exogenous accounts. They are derived below.

Table 0.20: Coefficient Matrices and Vectors of the SAM Model

Account	**1a – PA**	**1b – CM**	**2 – FP**	**3a - HH&OI**	**3b … 5 EXO**	**Income**
1a – PA		$A_{1a,1b} = T_{1a,1b}/ Y_{1b}$			X_{1a}	Y_{1a}
1b – CM	$A_{1b,1a} = T_{1b,1a}/ Y_{1a}$			$A_{1b,3a} = T_{1b,3a}/ Y_{3a}$	X_{1b}	Y_{1b}
2 – FP	$A_{2,1a} = T_{2,1a}/ Y_{1a}$				X_2	Y_2
3a - HH&OI			$A_{3a,2} = T_{3a,2}/ Y_2$	$A_{3a,3a} = T_{3a,3a}/ Y_{3a}$	X_{3a}	Y_{3a}
3b … 5 Leaks	$B_{1a} = L_{1a} / Y_{1a}$	$B_{1b} = L_{1b} / Y_{1b}$	$B_2 = L_2/ Y_2$	$B_{3a} = L_{3a} / Y_{3a}$		
Expenditure	$E_{1a} = Y_{1a}$	$E_{1b} = Y_{1b}$	$E_2 = Y_2$	$E_3 = Y_{3a}$		

The multiplier analysis using the SAM framework helps us to understand the linkages between the different sectors and the institutional agents at work within the economy. Accounting multipliers have been calculated according to the standard formula for accounting (impact) multipliers, as follows:

$$Y(t) = A\,Y(t) + X(t) = (I - A)^{-1} X(t) = M_a X(t)$$

Where:

tis time
Y is a vector of incomes of endogenous variables
X is a vector of expenditures of exogenous variables
A is the matrix of average expenditure propensities for endogenous accounts
$M_a = (I - A)^{-1}$is a matrix of aggregate accounting multipliers (generalized Leontief inverse).

The aggregate accounting multiplier (M_a) will be further decomposed to separately examine the direct and induced effect. In order to generate the direct and induced effects the M_a multiplier will be decomposed using both multiplicative and additive forms.

<u>From the above it logically follows that the SAM model mainly provides answers to ten basic issues:</u>

1. it helps to assess the impacts on the endogenous and exogenous accounts in a clear and differentiated manner;
2. the technological structure of the sectors oriented towards the production of basic intermediate and final goods and services;
3. expenditure structures of factors of production, institutions and demand for goods and services of domestic and foreign origin;

4. the identification of key sectors, commodities, factors of production, institutional accounts and basic needs in the economy and quantification of the main linkages (total and partial);
5. the dynamics of the production structure, factorial and institutional income formation;
6. helps to assess the effects of incomes of institutions and their impact on production via their corresponding demand;
7. helps to assess the intra, across or extra and inter-circular group effects, both in additive and multiplicative manner;
8. matching labour and investment requirement can be calculated;
9. assess price changes on endogenous accounts arising out of endogenous account price changes as well as exogenous account price changes;
10. design simulations and alternative scenario and perform analysis; and
11. it serves as the basis for development of computable general equilibrium.

Annex 2: Administrative Cost of Major Programmes

Region	Country	Scheme	Administrative Cost (%)	Source
Cash and Near Cash Schemes				
Albania	2004	Ndihme Ekonomika	7.2	Tesliuc and others
Armenia	2006	Family Poverty Benefits Scheme	2.2	
Bulgaria	2004	Guaranteed Minimum Income Scheme	9.9	
Bulgaria	1992/93	Child Allowances	5.6	Coadt et al (2004)
Kyrgyz Republic	2005	Unified Monthly Benefit Scheme	9.3	
Lithuania	2004	Social Benefit Scheme	6.5	Tesliuc and others
Romania	2003	Guaranteed Minimum Income Scheme	9.8	
Honduras	1992	Food Stamps for Female-Headed HHs	12	Grosh (1994)
Honduras	1992	Bono Matemo Infanti	6	Grosh (1994)
Jamaica	1992	Food Stamps Scheme	6	
Mexico	1992	Tortivales	12	
Venezuela	1992	Food Scholarship	4	
Yemen	2001	Social Welfare Fund	8.5	Coady et al (2004)
Sri Lanka	1982	Food Stamps Scheme	2	Casteneda (1998)
Namibia	1993/94	Old Age Pension	9.5	Coady et al (2004)
Zambia	2005	Pilot Social Cash Transfer Scheme	16.6	Devereux and others (2005)
		Median	**8.9**	
		Mean	**8.2**	
Conditional Cash Transfer Schemes				
Brazil	2003	Bolsa Familia	12.3	Lindert et al (2006)
Colombia	2000/4	Familias en Accion	10.5	
Dominican Republic	2006	Solidaridad	5.9	WB (2006a)
Ecuador	2005	Bono de Desarrollo Humano	4.1	
Jamaica	2004/5	PATH	13	
Mexico	2003	PRGRESA/Opportnidades	6	Lindert et al (2006)
Peru	2006	Juntos	11.6	WB (2006a)
Bangladesh	2002	Primary Education Stipend Scheme	4	Ahmed (2005)
Pakistan	2005/6	Child Support Scheme (Pilot)	6.7	WB (2006K)
		Median	**6.7**	
		Mean	**8.2**	
Fee Waivers Schemes				
Columbia	1992	Student loans	21	Grosh (1994)
Costa Rica	1992	University Tuition waivers	16	
Jamaica	1992	Student loans	30	
Belize	1992	Hospital fee waivers	0.4	
Dominican Republic	1992	Hospital fee waivers	3.6	
		Median	**16**	
		Mean	**14.2**	
Public Works Programmes				
Argentina	2004	Jefes de Hogar	1.6	Lindert et al (2006)
Bolivia	1992	Emergency Social Fund	3.5	Grosh (1994)
Peru	2002/3	A Trabajar Urbano	23	Chaccaltana (2003)
Morocco	1990s	Promotione Nationale	6	World Bank (2001g)
Bangladesh	2001	Rural Maintenance Programme	24	Ahmed (2005)
Yemen	2003	Second Public Works Programme	3.7	Al-Baseir (2003)
		Median	**4.9**	
		Mean	**10.3**	
Food Assisted Schemes				
Bolivia	2003	School Feeding, WFP	55.5	Lindert et al (2006)
Brazil	1997	Programa Nacional de Alimentacion Escolar	28.9	
Colombia	2003	School Feeding, WFP	20.5	
Dominican Republic	2003	School Feeding, WFP	9.4	
El Salvador	2003	School Feeding, WFP	46.2	
Guatemala	2003	School Feeding, WFP	14	
Honduras	2003	School Feeding, WFP	30.1	
Nicaragua	2003	School Feeding, WFP	38.3	
Chile	1992	Food Supplements	6	
Costa Rica	1992	Day care Food Packates	9	
Dominican Republic	1992	Proyecto Matemo-Infanti	12.3	
Jamaica	1992	Nutibus	6.8	

Peru	2005	School Feeding, WFP	19.5	WFP (2006a)
Peru	1992	Programa de Alimentaciony Nuticion para Familias de Alto Riesgo	22	Grosh (1994)
Mexico	1992	Leche Industrializada Compania Nacional de Subsistencias Populares	28.5	
Bangladesh	2001	Income Generation for VGD Programme	10	Ahmed (2005)
Benin	2005	School Feeding, WFP	37.2	WFP (2006a)
Malawi	2005	School Feeding, WFP	35.8	
Mali	2005	School Feeding, WFP	52	
		Median	**22**	
		Mean	**25.4**	

Annex 3: Bangladesh SAM Accounts

The 2012 SAM identifies the economic relations through *four types of accounts*: (i) production activity for 26 activities and commodity accounts for the 31 products and services; (ii) 4 factors of productions with 3 different types of labour, 1 type of capital (including land); (iii) current account transactions among the 3 main institutional agents; household-members and unincorporated capital, government and the rest of the world; and (iv) one consolidated capital accounts capturing the flows of savings and investment. The disaggregation of activities, commodities, factors and institutions in the SAM is given below.

Table 0.21: Description of Bangladesh SAM 2012

SAM Accounts	Detailed sector classification
Activities (31)	
	Crops, Livestock, Fishing, and Forestry (04)
	Milling, Food Products, Leather, Jute, Clothing, RMG, Pharmaceuticals, Tobacco, Wood, Paper, Chemical, Cement, Machinery, Other Manufacturing, Construction, Utility, and Mining (17)
	Trade, Transport, Housing and Real Estate Service, Health Service, Education Service, Public Administration and Defence, Bank and Other Financial Services, Hotel and Restaurant, and Services (09)
Commodities (31)	
	Crops, Livestock, Fishing, and Forestry (04)
	Milling, Food Products, Leather, Jute, Clothing, RMG, Pharmaceuticals, Tobacco, Wood, Paper, Chemical, Cement, Machinery, Other Manufacturing, Construction, Utility, and Mining (17)
	Trade, Transport, Housing and Real Estate Service, Health Service, Education Service, Public Administration and Défense, Bank and Other Financial Services, Hotel and Restaurant, and Services (09)
Factors of Production (04)	
	Labour factor (02): Un-Skilled; and Skilled
	Capital factor and Land Factor
Institutions (04)	
	Household
	Government
	Rest of the World
	Savings or Gross fixed capital (consolidated capital)

Source: SAM 2012

Social Security Policy Support (SSPS) Programme

Cabinet Division

and

General Economics Division (GED) of Bangladesh Planning Commission

Government of the People's Republic of Bangladesh

www.socialprotection.gov.bd

Australian Aid

UNDP

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