Chapter 2

Design Features of the Conditional Cash Transfer Programme in Cambodia: Impacts on Income Distribution and Poverty

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CHAPTER 2

Design Features of the Conditional Cash Transfer Programme in Cambodia: Impacts on Income Distribution and Poverty

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The objective of this paper is to present the complexities of designing the pilot CCT (Conditional Cash Transfer) scheme in Cambodia, focusing on the benefit level, potential selected beneficiaries, and tentative costing in different scenarios. The four potential beneficiaries for this paper are selected to address gaps in health, nutrition, and education. They are: pregnant woman, infants (< 2 years old), children of primary-school-age, and those of secondary school-age. If proven effective, targeted cash transfer programs linked to education and health should be integrated, or at least harmonized. High impacts on poverty rate are projected, mainly if transfers are directed to rural areas. The poverty rate in rural areas is expected to be reduced from 28.13% in the base year 2010 to 27.10% in the CCT scheme for pregnant women, to 25.54% for infants, to 22.68% for primary school children, and to 24.20% for secondary school children. The total impact on rural poverty is a 13 percentage point reduction in the rural poverty rate from the base year (from 28.13 to 15.13%). The proposed CCT scheme, especially if targeted at the poor population, is estimated to reduce the Gini-coefficient at the national level from 0.4191 to 0.3933. An annual budget of 0.95% of GDP for all four scenarios is required to make this a reality (or 0.88% of GDP if limited to only targeted poor beneficiaries in rural areas). The total government budget for social sector ministries increased by 0.8 percentage points between 2006 and 2010, to 3.9% of gross domestic product (GDP). Given this trend of increasing social budget as share of GDP, it is secured that the proposed CCT scheme, at 0.88%, is in line with the government's spending capacity.

Keywords: *Cambodian Millennium Development Goal, National Social Protection Strategy, Conditional Cash Transfer, Potential Beneficiaries*

1. Introduction

The main rationale behind the Cambodian National Social Protection Strategy for the Poor and Vulnerable (NSPS) is the need to accelerate progress towards the Cambodian Millennium Development Goals (CMDGs). Achievement of the CMDGs has been further delayed by the recent food, fuel and financial crises, which have had a negative impact on the poor and widened social disparities. The NSPS outlines short- and medium-term provision of response measures to address the consequences of shocks confronting Cambodian citizens, and also provides a long-term framework for a comprehensive social protection system to contribute to the sustainable reduction of poverty over time (RGC, 2011). In the short and medium term, then, the NSPS prioritises the development of effective and sustainable social safety nets targeted at the poor and vulnerable, with complementary social welfare services for special vulnerable groups. Under this goal, the NSPS has the following objectives: (i) the poor and vulnerable receive support including food, sanitation, water and shelter, to meet their basic needs in times of emergency and crisis; (ii) poor and vulnerable children and mothers benefit from social safety nets to reduce poverty and food insecurity and enhance the development of human capital by improving nutrition, maternal and child health, promoting education and eliminating child labour, especially its worst forms; (iii) the working-age poor and vulnerable benefit from work opportunities to secure income, food and livelihoods, while contributing to the creation of sustainable physical and social infrastructure assets; (iv) the poor and vulnerable have effective access to affordable, quality health care and financial protection in case of illness; and (v) special vulnerable groups, including orphans, the elderly, single women with children, people living with disabilities, people living with HIV, and TB patients and those with other chronic illness, receive income, in-kind and psycho-social support and adequate social care.

Achievement of these objectives requires a mix of programmes that cover both chronic and transient poverty as well as hunger, and also promote human capital development. Addressing major sources of vulnerability will take priority, while simultaneously building the foundations of an effective safety-net system that can be

developed further. Given these priorities, CCT is one of the preferred instruments for short- and medium-term implementation: Cash and in-kind transfers and fee exemptions (as already being applied in health and education, with new cash-transfer programmes to address high levels of malnutrition and the worst forms of child labour).

Besides presenting the complexities of designing the CCT pilot scheme as an integral part of NSPS (where a coordination mechanism is central), this paper will point out the design features of CCT, focusing on the benefit level, targeting mechanism, and potential selected beneficiaries. Moreover, this paper will project tentative costing in different scenarios (level of coverage, geographical segment of the poor, and level of benefit). Scenarios of CCT schemes for selected beneficiaries are proposed and the impact of these proposed schemes on selected indicators in comparison with the international experience is presented.

This paper is organised into four main parts beginning with a review of vulnerability profiles and the reasons for determining the potential beneficiaries for the proposed CCT schemes and literature review in Section 2, followed by the presentation of data and programme type for the design of features of the CCT scheme in Section 3. The impact of CCT on income distribution and poverty, with referencing to other international experience, is elaborated in Section 4, while costing for each scenario is presented in Section 5.

2. Vulnerability Profile and Literature Review

2. 1. Vulnerability Profile

Infants and children constitute over a third of the Cambodian population. More than 1.7 million children aged below 18 were income poor in 2004 (2004 CSES by NIS, 2004) and 40% live in poverty, suffer high rates of malnutrition and child mortality and thus have low levels of educational achievement. In recent years, the child mortality situation has improved substantially, but there are still wide regional variations that need to be addressed. It is estimated that child poverty is higher among the younger age groups and reduces as age increases. However, small children (up to five years old) are

currently not targeted by social protection, except if they are beneficiaries of health protection through the Health Equity Funds (HEFs) and to some extent through interventions focusing on early childhood development (ECD). According to the Cambodia Demographic and Health Survey (CDHS) of 2005 (NIPH, NIS and ORC Macro, 2006), 64% of children in Cambodia face deprivation in at least two areas of wellbeing (food, health, education, information, water and sanitation, and shelter).

Girls and women of reproductive age (15-49) are also vulnerable, despite progress in advancing gender equality and opportunities for women in Cambodia. Women have particular vulnerabilities arising from their health needs: maternal mortality remains unacceptably high; women make up a bigger proportion of HIV-infected adults than in the past (52% in 2009 versus 38% in 1997)[1]; their low nutritional status is a growing concern; and the overall number of women reporting constraints in accessing health care remains high[2].

2. 2. Constraint to Human Capital Development

2.2.1. Access to Quality Education

Poor access to quality education is a source of vulnerability for young Cambodians. A lack of basic school facilities, a shortage of textbooks and inadequate supply of (trained) teachers are key constraints. According to MoEYS (2010), Cambodia particularly suffers from a shortage of teachers in primary and secondary education (49 and 26 students per teacher, respectively). Low educational outcomes remain a concern, with particular challenges in writing and mathematics. Dropout rates are high: although enrolment rates are as high as 82% in primary school, they decrease sharply to 29% in lower secondary, down to 13% in upper secondary school. Children in rural areas are more than two times less likely to continue to lower secondary than children in Phnom Penh (25% of the former versus 61% of the latter).

Increasing the attainment of schooling, especially among girls, is a challenge in much of the developing world. Nonetheless, over 180 governments have adopted

[1] Of all new infections among women, two-thirds will be among non-sex workers or women at "low risk".

[2] In 2005, 89% of women reported at least one problem in accessing health care. Getting money for treatment remains the main one, followed by the concern that no provider or drugs are available, and not wanting to go to health services alone (NIPH, NIS and ORC Macro, 2006).

universal primary education and gender parity in schooling as Millennium Development Goals. These commitments notwithstanding, there is surprisingly little evidence on policies and programs that effectively raise school attainment, including for girls. Most Cambodian children undertake some schooling, but a large share complete only very few grades. According to the 2000 Demographic and Health Survey (NIPH, NIS and ORC Macro. 2001), 85% of 15 to 19 year olds had completed grade 1 while only 27% had completed grade 7, the first year of lower secondary. These percentages are lower in rural areas, 83 and 21 respectively, and lower still for rural girls, at 78% and 17% respectively. To address these problems, the Cambodian government has initiated a series of reforms in the education sector, including scholarship programs for students from disadvantaged backgrounds.

2.2.2. Access to Quality Health Care

Access to quality health care is limited for the poor, owing to factors such as distance from health facilities, difficult and expensive transport, lack of qualified health staff in remote facilities, lack of drugs and equipment, limited opening hours of health facilities and negative attitudes of health staff. Serious outcomes of poor access to quality health care are persistently high maternal and under-five mortality rates. Maternal mortality, at 461 per 100,000 births, remains highly worrying. Only 63% of births were attended by trained birth attendants in 2009, even though this represented a significant increase from 22% in 2003 (MoH, 2010). Under-five mortality is estimated to be at 83 per 1,000 children in this age range, with children in the poorest quintile almost three times more likely to die before the age of five than those in the highest wealth quintile.

Cambodians experience high costs of access to, and utilisation of, essential health care services. Total annual health expenditure is about US$40 per capita, of which around 60% is individuals' out-of-pocket spending. The Health Financing Charter (HFC), introduced in 1996, regulates the application of user fees at government health facilities. Its purpose was both to ensure uniform application of user fees and to provide an income for health facilities. The HFC also sanctioned a fee exemption system for those too poor to pay for health care, to enable them to receive care at government

facilities for free, when needed. In practice, the exemption system covers fewer than half of those considered too poor to pay for services.

2.2.3. Malnutrition and Maternal Mortality as Major Challenges

Chronic and acute malnutrition remains high in Cambodia, particularly among infants and young children. Malnutrition is caused by inadequate feeding practices, high levels of infectious disease and inability to access and afford nutritious food. Despite efforts to address the underlying causes of malnutrition, the proportions of thin (8.9%), short (39.5%) and underweight (28.8%) children remain high (Table 1). Despite improvements between 2000 and 2005, chronic malnutrition rates have since stagnated; acute malnutrition saw an increase between 2007 and 2008, possibly as a result of the 2007-2008 food price crises (CAS 2008 by NIS 2008).

Table 1. Nutritional Status of Children under 5 of Age in Selected Asian Countries

Country	Underweight	Thin	Short	Year
India	43.5	20	47.9	2005/6
Lao	31.6	7.3	47.6	2006
Myanmar	29.6	10.7	40.6	2003
Cambodia	28.8	8.9	39.5	2008
Philippines	20.7	6	33.8	2003
Indonesia	19.6	14.8	40.1	2007
Papua New Guinea	18.1	4.4	43.9	2005
Thailand	7	4.7	15.7	2005/6

Note: With the exception of Cambodia, all data taken from the WHO Global Database on Child Growth and Malnutrition on 13th August, 2009.

In addition to malnutrition, Maternal Mortality Rates (MMR) are also high in Cambodia compared to the East Asian average (Table 2). While there have been significant improvements, it remains a challenge; only 58 % of births were attended by trained birth attendants in 2008, which did, however, represent a significant increase from 32% in 2000. Women frequently skip antenatal and postnatal check-ups due to their precarious employment and income situation, coupled with an absence of effective social protection coverage for them (CARD and WB, 2010).

Table 2. MMR in the East Asia and the Pacific Region.

Country	MMR per 100,000 Live-Born	Uncertainty Range (Estimate)
Cambodia	540	370-720
China	45	30-60
DR Korea	370	110-1200
Fiji	210	55-720
Indonesia	420	240-600
Lao PDR	660	190-1600
Malaysia	62	41-82
Myanmar	380	260-510
Papa New Guinea	470	130-1300
Philippines	230	60-700
Republic of Korea	14	14-27
Vietnam	150	40-560

Source: Maternal mortality in 2005. Estimates developed by WHO, UNICEF, UNFPA, World Bank. WHO (2008).

Various factors explain high levels of MMR: only 58% of women have access to a skilled birth attendant; 57% of pregnant women have anemia; emergency obstetrics and newborn care (EmONC) is inaccessible, with the Cesarean Section rate below 1%t against the minimum recommended 5%; and inadequate family practices during pregnancy and childbirth such as the use of traditional birth attendants and unclean cord care. There are also considerable financial barriers to the use of health services, with out-of-pocket expenditure representing about 70% of total per capita health spending. The greatest inequalities are in access to delivery care: women from the richest quintile are 10 times more likely to have a facility-based delivery (67.4 %) than those from the poorest quintile (6.5 %). There is also an issue of lack of post-natal service provision. These adverse factors, for both pregnant women and new mothers, compound the threat to newborn survival.

2.2.4. International Experiences of Impact of CCT Programs on Human Development

On average, CCT programs have been found to have a strong impact on human development indicators (although in health the impact varies quite significantly across programs, as it depends on additional factors such as quality of service delivery and how severe children's health outcomes are). Table 3 summarizes selected evidence presented in Fiszbein and Schady (2009).

All reviewed CCT programs have had an impact on school enrolment, while impact on health outcomes is more heterogeneous. Mexico's *Oportunidades* has had an

estimated impact on child height of approximately 1 cm, but only for children between 12 and 36 months of age. In Colombia's *Familias en Acción*, Attanasio *et al.*, (2005) found that the Z scores of children covered by the scheme who were younger than two years of age improved by 0.16 points with the program, but there was no statistically significant impact on older children. In contrast, Brazil's *Bolsa Alimentação* appears to have had a negative impact on weight for age and a borderline significant negative effect on height for age (Morris *et al.*, 2004).

Table 3. Impact of CCT programs on human development indicators

Program	School Enrolment		Growth monitoring		
	Age range	Impact (%)	Outcome	Age (months)	Impact
***Chile Solidario* (Chile)**	6-15	7.5	n/a		
***Familias en Acción* (Colombia)**	8-13 14-17	2.1 5.6	Height-for-age Z score	<24 24-48 >48	**0.161** 0.011 0.012
***Oportunidades* (Mexico)**	Grades 0-5 Grade 6 Grades 7-9	1.9 8.7 0.6	Height (cm) Change in height (cm)	12-36 4-12 12-36 36-48	**0.959** 0.503 **1.016** –0.349
***Red de Protección Social* (Nicaragua)**	7-13	12.8	Height-for-age Z score	<60	**0.17**
***Bolsa Escola/Bolsa Alimentação* (Brazil)**	10-15	3	Height for-age Z score	<24 24-48 49-83	–0.110 –0.190 –0.040

Source: Fiszbein and Schady (2009).
Note: Significant estimates are in bold. Results must be interpreted with caution owing to the methodological limits of the study.

There is strong evidence showing that failure of nutrition interventions can be related to both poor quality of services, and to people who have little incentive to attend health care visits, follow training courses, and use supplied micro-nutrients appropriately. Some studies have also estimated the impact of CCT schemes on children's haemoglobin levels and anaemia. Gertler (2004) estimates that, in Mexico's *Oportunidades*, CCT-covered children were 26% less likely to be anaemic after the first year than those not exposed to the program. Other studies have also found impacts on infant mortality (Barham, 2005, Mexico), infant and maternal mortality, children's self-reported illnesses (Gertler, 2004, Mexico) and diarrhoea incidence among children aged 48 months or younger in rural areas (Attanasio *et al.*, 2005, Colombia).

Most evaluations suggest positive program impacts on health centre visits by children. Maluccio and Flores (2005), for instance, estimate that the *Red de Protección Social* in Nicaragua had resulted in a 13 percentage-point increase in the probability that a child aged 0-3 had been taken to a health centre and weighed in the past six months. Attanasio *et al.* (2005) report even larger effects for the *Familias en Acción* program in Colombia: the study finds a 22 percentage-point increase in the probability that a child aged 0-1 had been taken to growth and developing monitoring, 33 percentage points for children aged 2-4 and 1.5 percentage points for children aged 4 years old and above. Only in a few countries (Chile and Mexico) does there appear not to be significant impacts of CCT programs on preventive health care usage, partly because of already relatively high usage of services (Fiszbein and Schady, 2009*).* Moreover, CCT schemes have been used widely to increase the frequency of preventive visits and address malnutrition. Although effectiveness varies across programs, some have achieved positive impacts. In Mexico, preventive visits increased from 16 to 18 % in communities covered by *Oportunidades*, the national CCT program. Similarly, growth monitoring in communities which received CCTs increased by 20 percentage points in Honduras, and from 23 to 33 percentage points in Colombia, where the program also reduced stunting among children younger than two years of age by 6.9 %.

3. Data and Programme Type

CCT programs require the same systems as other transfer programs: at minimum, a means to establish the eligibility of clients and enrol them in the program, a mechanism to pay their benefits, and preferably strong monitoring and evaluation systems. This section aims at outlining in broad terms how a cash-based incentives program that targets education, malnutrition and MMR could work, and highlights key points that should be thought through when implementing a cash-transfer program. The section should be used as a basis to stimulate discussions, rather than be seen as a definitive proposal: many features will evolve during discussions with key stakeholders, and more analyses would have to be performed before initiating program implementation.

3.1. Overall Program Design

The short and medium term NSPS identified the potential for piloting a cash transfer program targeted at poor pregnant mothers and poor families with young children. Such a program would fulfil the dual objective of alleviating chronic poverty and promoting human capital. Table 4 below summaries the proposed approaches for CCT programmes to be piloted in Cambodia based on the measurements used to address life cycle risks. Consultations held in October 2009 suggested that the program could be integrated into the existing national policy framework on maternal and child health and would be part of an early childhood development approach that aims to improve, among others, child health, development outcomes and readiness for school.

Table 4. Proposed Scheme of Cash Transfer Programme

No	Proposed CCT	Vulnerable Group	De-selecting Criteria
1	Cash transfer for targeted poor household	Poor families	Too general, specific objective is to be defined. Working-age poor can be covered by other types of social protection programs
2	Cash transfer for eliminating the worst form of child labour	Child labour (1-15 year)	Can be combined with the education improvement programme, narrow targeted group
3	Scholarship for poor children	School age (6-15)	On-going, impact assessment is needed
4	Cash transfer for infant nutritional improvement	Infant (< 2 years)	Can be combined with intervention on pregnant women and mothers
5	Cash transfer for maternal health and nutritional improvement	Pregnant woman	
6	Cash transfer for elderly, people with disability, and most vulnerable groups	Elderly (> 65 year)	Need more evidence and consultation

Source: Authors' own design.

If well implemented, a cash transfer program could be expanded to become one of the core pillars of support for the poor and vulnerable. Once an effective cash transfer program is in place and the poor have been identified, it would be easy to expand it to cover additional poor beneficiaries, such as the disabled or the elderly poor. Such an expanded cash transfer program, covering various categories of beneficiaries, could become one of the core pillars of support for the poor and vulnerable (CARD and WB, 2010).

If proven effective, targeted cash transfer programs linked to education and health should be integrated, or at least harmonized. In the short term, cash transfers linked to education and health need to be piloted and implemented independently, so as to limit capacity requirements, enable better measurement of effectiveness and identify gaps and challenges. In the medium term, however, keeping such programs separated may lead to inefficient outcomes linked to households' double dipping, potential tensions over budget allocations and separate administrations with similar purposes. Following international best practices, it is advisable that, if successful, these separated programs be integrated into a harmonized cash transfer program that supports poor children all along their developmental path.

A cash transfer, in addition to providing direct support to poor families, could ensure attendance of poor families with children at growth monitoring checkups and training sessions, and could facilitate better transition to planned deliveries and required follow-up care to help reduce the risks to maternal and child survival.

A small benefit for young children to address malnutrition delivered at regular and predictable intervals to poor families (possibly during growth monitoring visits and training sessions) could provide some incentive for families to bring children to health checkups and to attend training sessions, and ensure that children receive the early childhood care that they require, in particular support with procuring nutritious food. A cash transfer program for small children could be for instance conditional on adults receiving parenting education through the Baby Friendly Community Initiative (BFCI) – while also expanding the BFCI infrastructure – and on children receiving preventive medicine (including ART for young children living with HIV) through health clinics and their outreach services.

3.2. Targeting and Program Coverage

In implementing such a cash-based incentives program, it will be important to look carefully at targeting and program coverage. Important issues to be considered include: whether all pregnant women and children should be covered or only poor ones; how to target poor families; and whether coverage should be nationwide, or limited to certain geographic areas.

3.2.1. Targeting All vs. Only Poor Families

If the program were to be targeted, a relevant question would be how to target poor families. A harmonized approach for pre-identification of poor households based on a set of standardized procedures and criteria for all kinds of social transfers and fee exemptions was developed over recent years in Cambodia. The most straightforward way would be using the existing Identification of Poor Households (ID Poor) targeting system, since it would spare the program from having to build yet another targeting system ex novo. If such a targeting strategy should be adopted, it would be important to include a provision financing some of the costs of implementing the ID Poor system in program costing. Nonetheless, if severe malnutrition proves not to correlate perfectly with ID Poor holders, it may be worth thinking about how to extend targeting criteria to families with severely malnourished children.

3.2.2. Geographic Coverage.

Ideally, given how malnutrition is widespread all across the territory, the program should be implemented nationwide (though implementation may begin with a pilot to evaluate program effectiveness and some of the key program parameters). Nevertheless, if budget constraints were to prevent national coverage, a malnutrition map should be constructed to primarily target areas with the highest malnutrition rates.

In this paper, since official demographic data for 2010 is limited, the projected number based on growth rate of selected potential beneficiaries for CCT projects is shown in Table 5. The estimated numbers of potential beneficiaries (woman in general, infants, children in general, and school-age children) are presented and disaggregated by geography (rural and urban). Based on numbers presented in Table 5, it is a political decision if Cambodia were to target only the rural poor, and specifically pregnant women (at an estimated number of 89,815 persons) and new-born children and infants (less than 2 years old, 0.23 million) for a CCT programme to address food security as well as maternal and child health. On the other hand, if a CCT scholarship programme were to tackle educational improvement among poor families, 0.69 million primary school-age children and 0.35 million secondary school-age children would benefit.

Table 5. Projected Numbers of Potential Beneficiaries (2010).

	Total (2010)	Urban		Rural	
GDP (USD)	11,218,000,000				
Population	15,053,000				
		Targeted	**Universal**	**Targeted**	**Universal**
Pregnant women	311,723	6,567	36,360	89,815	275,364
Infant (<2years old)	799,272	19,666	100,246	233,200	699,026
Primary school age	2,344,160	54,765	307,269	688,645	2,036,891
Secondary school age	1315761	26,774	179,732	356,371	1,136,030
Poverty line (Riel)	2882				
Poverty rate (%)*	25.81%	12.71%		28.13%	
Gini coefficient	0.4191	0.4523		0.3684	

Source: Author's calculation.
Note: * NCDD (2010).

3.3. Benefit Levels and Payment System

There has been some discussion as to whether the transfers are designed to encourage participation in public services (health, sanitation, education) or whether the intention is for larger transfers to address food security and hence poverty alleviation via purchasing power. To begin consideration of benefit level, it is essential to understand changes in the food and non-food poverty lines in Cambodia, as presented in Table 6 below. Poverty lines for different regions of the country, with different consumption bundles and price levels, are calculated separately and evolve over time. The poverty lines used in the 2004 and 2007 Cambodia Socio-Economic Survey (by NIS, 2004 and WB, 2009) are indicated in the Table below. The resulting average national poverty line for 2007 was 2,470 Riels per Capita per Day, or about US$ 0.61 (at an exchange rate of R 4,062, as used in 2007).

Table 6. Food and Non-Food Poverty Line and the Change from 2004 to 2007

Domain		2004	2007
Phnom Penh	Food	0.44	0.60
	Non-Food	0.14	0.16
	Total	0.58	0.76
Other Urban	Food	0.39	0.56
	Non-Food	0.09	0.11
	Total	0.48	0.67
Rural	Food	0.34	0.48
	Non-Food	0.09	0.10
	Total	0.45	0.58
National	Food	0.35	0.50
	Non-Food	0.09	0.11
	Total	0.45	0.61

Source: WB (2009) and NIS (2004).

The pattern of the latest average monthly income by different quintile of population is presented in Table 7. In general, in moving the first and second quintile of the population out of the monthly poverty line (US$18.3), the transfer of US$13.3 and US$6.3 per month respectively is needed.

Table 7. Average monthly income per capita and per household in 2009

Quintiles	Cambodia		Phnom Penh		Urban		Rural	
	Value ($)	%	Value ($)	%	Value ($)	%	Value ($)	%
Average Monthly Income per-Capita								
1	5	2	20	2	8	2	4	3
2	12	5	44	5	22	7	10	7
3	21	10	67	8	35	11	18	12
4	36	16	104	13	58	18	30	19
5	150	67	557	69	193	59	90	59
Average Monthly Income per-Household								
1	18	2	83	2	33	2	16	2
2	51	5	193	5	96	6	44	6
3	94	10	316	8	156	10	79	11
4	165	16	512	13	254	16	134	19
5	730	67	2,706	71	1,033	66	424	61

Source: NIS (2009).

If the programme is designed to address food security issues, there are global reference points that help predict the impact of an increase of income on nutrition. As a general rule, rates of under-nutrition, defined as low weights for age, decline at half the rate that income increases. Thus a 10% increase of income might achieve a 5% decrease in malnutrition rates. Similarly, anaemia, defined as haemoglobin levels below 10.9 g/dl, declines at roughly 25% of the rate of income growth (Aldermann, 2004).

This gives a first approximation of the effect of the income transfer alone (that is, not including behavioural change promoted by the health services). Household data from Cambodia can be used to make more precise estimations but given that, even with higher-level transfers, such estimates imply that the impact of the transfer on nutritional status will be largely determined by the quality of the health services (Aldermann, 2004).

Table 8. Sample Means of per-Capita Daily Consumption

	2004	2007	% change
Phnom Penh	8,067	13,324	65.2
Other urban	4,424	6,976	59.8
Rural	2,571	3,710	44.1
Cambodia	3,238	4,964	53
Poorest 20%	1,107	1,608	44.4
Next poorest 20%	1,660	1,656	44.3
Middle 20%	2,231	3,227	44.1
Next richest 20%	3,192	4,710	47.1
Richest 20%	8,004	12,889	61
Share of Food Consumption			
Phnom Penh	42.87	42.94	
Other urban	57.68	57.07	
Rural	64.45	65.45	
Cambodia	61.88	62.44	
Poorest 20%	69.08	72.56	
Next poorest 20%	67.41	68.63	
Middle 20%	65.09	64.7	
Next richest 20%	60.55	60.1	
Richest 20%	47.29	46.14	

Source: WB (2009) and NIS (2004).

Similar calculations can be made with regards to food purchases. Using data from the 2007 Cambodia Socio-Economic Survey (CSES) aggregated by quintile, a 10% increase in income is estimated to lead to an 8.5% increase in food expenditure. This is at the top end, compared with the global experience. But the increase in food expenditure is always larger than the increase in the amount of food (as measured by calories). Using global experience, it is estimated that the quantity of food increases at half the rate that expenditure increases. This implies that an affordable transfer program might increase calories by 3-4% (Aldermann, 2004). The difference between the increase in expenditure on food and the quantity of food in calories usually reflects a

change in the quality of the diet with greater diversity, possibly reinforcing messages related to child care and complementary feeding.

To achieve its intended outcomes, the program benefit levels should be consistent with the program objectives, and they should at least cover – if not exceed – the cost of pogram participation, such as the costs of transportation to a health facility and also the costs of nutrition for the mother. In many other countries' implemented CCT programmes, cash transfer accounted around 20% of pre-transfer consumption of household from the poorest quintile (Fiszbein and Schady, 2009). Benefits are usually also differentiated by household characteristics such as poverty level, size and composition, or specific needs or behaviours (such customization tends to improve the poverty impact per unit of transfer, but also complicates administration and communication with the public and is thus more common in high-capacity settings).

3.4. Conditionality: Combining Supply and Demand Sides

The success of a cash-based incentives program should be evaluated on two fronts. The first would be its success in providing much-needed cash-assistance to the poor. This means, by and large, ensuring that targeting has been done appropriately, and that good fiduciary procedures are in place for payments. The second would be to improve children's nutritional status and MMR. This is a much more challenging task, as it requires three components to work well: the cash transfers component; delivery of health and nutrition-related services; and the interaction between the two (i.e. conditionality). In particular, some thinking will have to be done about how and when to make the payments so as to guarantee participation of poor families and, in practical terms, how to implement such a system.

Cash transfers could be associated with soft conditions for compliance with a set of actions related to maternal and childhood health. Notably, a food transfer component, as a delivery mechanism for micronutrients, could also be integrated. If covering all children aged five or younger proves to put excessive strain on fiscal resources, then children aged two or younger should be covered as a priority. Given the prevalence of malnutrition across all income distribution quintiles, such a program may need complementary interventions to promote behavioural changes among the rest of the population who do not qualify for a cash transfer. In particular, public information and

outreach activities may be needed, in addition to the CCT program, targeted at the poor. Linkages to other complementary welfare services, to address other, overlapping vulnerabilities facing families with children, should also be considered in an attempt to ensure a comprehensive and integrated approach.

3.5. The Need for Monitoring and Evaluation

The M&E system should have a dual purpose: to monitor implementation, and rapidly identify flaws, such as delays in payments, leakages in coverage, poor quality of training, and ensure that that beneficiaries do not receive benefits from multiple programs; and also evaluate the medium-term impact of the program on overall welfare improvements of beneficiaries (through the cash-transfer assistance), and on children's nutritional status.

3.6. Extending Coverage and Scope beyond Malnutrition and MMR

After a cash transfer system is in place, it could be worthwhile thinking about whether to expand it to other categories of poor beneficiaries, and to make it the Government's core social assistance program. For instance, it could be worthwhile thinking about extending program coverage to holders of ID Poor cards who are disabled or old. Such an expansion should come, however, at a later stage, once good implementation has been ensured and the fiscal sustainability of the program has been well evaluated.

3.7. Length of Transfer

In the context of Cambodia, CCT schemes are not considered to be a permanent social transfer programme for any specific target population. Politically, a benefit level at US$13.3 per month for the first and second quintile of the population may result in the immediate moving of per capita income to the level of the third quintile. Moreover, in avoiding the phenomena of social disparity, dependency and moving towards a welfare state, CCT schemes have to be designed with exiting strategy in mind, where the transfer of benefits to the potential beneficiaries has to be limited in terms of length of transfer (the number of months in a year that a beneficiary may receive benefits).

Table 9 summaries the proposed length of social transfer in a year for the potential beneficiary group.

Table 9. Proposed Length of CCT for Potential Beneficiaries

No	Potential Beneficiaries	Length of Transfer	Reason
1	Pregnant woman	3 months	During the pre-pregnant period, most of the pregnant women have participated already in the labor market. A transfer of three month period at 13.3 $ per month is not only an incentive to encourage the pregnant woman to obtain the public health service during the ante-natal, delivering, and post-natal cares, but also a compensation of absence from labor market.
2	Infant	7 months	Similar to the above reason for pregnant women, a support for 7 months to the infants through the mothers is the incentive of breast feeding during the first 7 month of post-delivery, the absence from labor market, and the source of finance for mother and child food and nutrition.
3	Primary-school age	8 months	In Cambodia, the school day period is 8 months divided into two school semester equally.
4	Secondary-school age	8 months	

Source: Authors' own design.

3.8. Scholarship Programme as a CCT Scheme in Cambodia

Given the importance of behavioural practices in determining nutrition outcomes, a cash transfer program could be used to address demand constraints in fighting chronic malnutrition, the main source of vulnerability among infants and small children. Questions remain open on the extent to which strict enforcement of conditions is necessary to achieve such an impact, as well as on the relative importance of investments to boost demand versus addressing supply-side constraints (i.e. quality of service delivery). However, there is little doubt that, if well implemented, cash transfers can be an effective tool to influence the behaviour of poor households in key areas of human development. Poor households have higher rates of malnutrition and poorer health outcomes compared with other groups, despite the fact that levels of malnutrition remain high for all income groups.

In Cambodia, the Japan Fund for Poverty Reduction (JFPR) scholarship program selected 93 lower secondary schools and, within each of these schools, approximately 45 girls who were beginning 7th grade were awarded scholarships of USD45 each. The

value of the scholarship is large in 2002; mean per capita GDP in Cambodia was approximately USD300. Once a girl is selected for a JFPR scholarship, she is automatically eligible to continue receiving a scholarship for the three years of the lower secondary cycle. The JFPR program therefore attempts to increase the fraction of girls who make the transition from primary school to lower secondary school, and encourage girls to complete the lower secondary school cycle. In 2003/04, there were 698 lower secondary schools in Cambodia, so the JFPR scholarship program covered approximately 15 % of lower secondary schools in the country. It showed a large, positive effect on school enrolment (30-43 %) and attendance (22-33 %). The impact of the JFPR program appears to have been largest among girls with the lowest socioeconomic status.

Although the JFPR program is known as a "scholarship" program, it does not directly subsidize the fees paid by parents for the education of their daughters; rather, families receive cash transfers provided their daughter is enrolled in school, maintains a passing grade, and is absent without "good reason" fewer than 10 days in a year. The JFPR program therefore functions much like a "conditional cash transfer" (CCT) program of the sort that has been implemented in many Latin American countries.

4. Impact of Conditional Cash Transfer on Income Distribution and Poverty

In principle, the impact of CCT programs on poverty could be smaller than would be suggested by simple back-of-an-envelope calculations based on the size of the transfer, because of both intended and unintended effects of the program. However, if part of the transfer is invested, or if the transfer enables households to better smooth consumption, then CCT programs also can have impacts on consumption in the long run.

Since the concept of design and implementation of CCT is relatively new to Cambodia, except the experience in scholarship programmes in the education sector, the proposed CCT scheme's impact on several indicators is estimated in comparison to

existing international experience. The impact of CCT on consumption and food share, as well as poverty at program and at national level, is presented.

4.1. Dimension of Impacts

There is now ample scientific evidence to suggest that significant longer-term losses occur, both to the individual and to the economy, if child malnutrition is not addressed early on. According to the Lancet series on maternal and child under-nutrition, "poor foetal growth or stunting in the first two years of life leads to irreversible damage, including shorter adult height, lower attained schooling, reduced adult income, and decreased offspring birth-weight." [3]

All existing studies showed that economic losses are likely to be high. Preventing one child from being born with a low birth-weight is worth US$580.[4] Another estimate suggests that the productivity losses in India associated with under-nutrition, iron deficiency anaemia, and iodine deficiency disorders (IDD), in the absence of appropriate interventions, will amount to about US$114 billion between 2003 and 2012 (India's annual GDP is about US$601 billion). And a similar study that examines only the productivity losses with forgone wage employment resulting from child malnutrition, estimates the loss at 0.4 % of annual GDP.[5]

In addition to alleviating chronic poverty, cash transfers (both conditional and unconditional) can help promote human development by addressing demand for services. A major (though far from unique) cause of low utilization of education and health services by poor households is often the monetary (opportunity) costs that this entails. Poor households may not have the necessary resources to pay for transportation to health facilities (even if care is offered for free), or for textbooks and uniforms; often, in particular if the immediate returns to education are low, child labour seems a rational decision and families may send their children to work to supplement family incomes.

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[3] See also J. Behrman (2004), "Estimated Economic Benefits of Reducing Low Birth Weight in Low Income Countries," *HNP Discussion Paper*, The World Bank.

[4] It was calculated under the assumption that all non-low-birth weight children would survive to adulthood and become laborers. When corrected for age-specific mortality, the benefit becomes US$510.

[5] See for details: World Bank (2006), *Repositioning Nutrition as Central to Development a Strategy for Large-Scale Action.*
http://siteresources.worldbank.org/NUTRITION/Resources/281846-1131636806329/NutritionStrategyCh1.pdf.

Some of these children may end up in hazardous working conditions, which can permanently damage their physical and moral development. Accordingly, international best practices show that providing cash support to poor households helps reduce financial barriers and improve utilization of education and health services.

Cash transfers (in particular conditional ones) can also be used to provide incentives to households to change behavioural practices. The way payments are made, or conditions attached to receiving payments, can be used to provide incentives to households to change their behavioural practices. International evidence shows that attaching some form of conditions to payments can improve utilization of health care services, attendance and enrolment of children in schools, household behaviour with regard to nutrition and educational attainments. This has been demonstrated in the Cambodian context as well: the Scholarship for the Poor program, which, by paying a scholarship conditional on attending school, is a form of CCT, was found to have significantly increased enrolment (although impact on attainments was of lower magnitude; Filmer and Schady, 2006).

4.2. Estimated Impact on Consumption among Program Beneficiaries

The impact of CCTs on immediate consumption is an important determinant of poverty alleviation in the short term, especially because most of the beneficiaries belong to the poorest quintile of the population. Fiszbein and Schady (2009) assessed the impact of CCTs on short-term consumption or income of several programmes and showed that the pre-program median per capita consumption levels for the target population were low in all programs.

Table 10. International Lesson on the Impact of CCTs on per-Capita Consumption

Country	Year	Daily per capita consumption ($)	Daily per capita transfer ($)	Ratio of transfer to consumption (%)	Impact on per capita consumption
Brazil	**2002**	0.83	0.06	8	**7**
Cambodia	**2007**	0.89	0.02	2–3	**B**
Columbia	**2002**	0.85	0.12	17	**A**
	2006	1.19	0.13	13	**10**
Ecuador	**2003**	1.12	0.08	8	**A**
	2005	1.13	0.08	7	**B**
Honduras	**2000**	0.79	0.06	9	**A**
	2002	0.68	0.06	11	**7**
Mexico	**1998**	0.59	0.12	21	**B**
	Jun-99	0.58	0.14	20	**7.8**
	Oct-99	0.59	0.13	19	**8.3**
Nicaragua	**2000**	0.63	0.16	29	**A**
	2001	0.53	0.15	31	**29.3**
	2002	0.52	0.15	30	**20.6**

Source: Fiszbein and Schady (2009)

Note: A. Baseline, B. No significant impact on consumption

As shown in Table 10, per capita consumption varied between US$0.52 per day in Nicaragua and US$1.19 per day in Colombia. Size of the transfer varies a great deal across countries and programmes and affects the ratio of the transfer to median consumption differently. For households in Nicaragua, the transfer represented about 30% of consumption whereas in Cambodia, it is accounted for only about 2%. The largest impact of CCT on consumption is found in the RPS programme in Nicaragua, where the largest transfer was made. Neither the Ecuadorian nor Cambodian programmes appear to have increased consumption level. In the case of the Cambodian scholarship programme, the result is not unexpected, given the small size of the transfer (2-3% of median consumption) and the fact that short-term poverty alleviation was not a programme goal.

4.3. The Impact of CCT Schemes on Poverty at Programme and National Level in Cambodia

Experience from different countries suggested that CCTs generally helped in reducing national poverty. In Mexico, for instance, there are large effects on poverty (headcount index reduced from 24.06 to 22.22%) whereas in Brazil, the headcount index reduced slightly from 24.21% to 23.69%.

Using household survey data from the 2004 socioeconomic survey and calibrating it to match the government's latest poverty estimate (MoP, 2010) of 25.8% in 2010. The poverty line and consumption is adjusted to reach this same poverty rate with estimated Gini coefficient at 0.42.

Table 11. Impact of Transfer (13.3$ per-month per-beneficiaries) on Poverty and Income Distribution

		Impact on Poverty Index				
		Baseline	**Pregnant women**	**Infant (< 2 years old)**	**Primary school**	**Secondary school**
Targeted	**Urban**	12.71	12.34	11.51	10.47	11.05
	Rural	28.13	27.10	25.54	22.68	24.20
	Total	25.81	24.87	23.43	20.84	22.22
Universal	**Urban**	12.71	12.34	11.51	10.47	11.05
	Rural	28.13	27.10	25.54	22.68	24.20
	Total	25.81	24.87	23.43	20.84	22.22
		Impact on Gini-coefficient				
Targeted	**Urban**	0.4523	0.4516	0.4504	0.4490	0.4502
	Rural	0.3684	0.3657	0.3618	0.3557	0.3594
	Total	0.4191	0.4169	0.4136	0.4085	0.4116
Universal	**Urban**	0.4523	0.4507	0.4481	0.4438	0.4463
	Rural	0.3684	0.3652	0.3607	0.3533	0.3578
	Total	0.4191	0.4160	0.4116	0.4044	0.4088

Source: Author's calculation.

As presented in Table 11, different scenarios of CCTs had been proposed and the impact is varied. High impacts on poverty rate are estimated mainly if the transfer is directed at rural areas. The poverty rate in rural areas is expected to be reduced from 28.13% in the base year 2010 to 27.10% in the CCT scheme for pregnant women, to 25.54% for infants, to 22.68% for children at primary-school age, and 24.20% for secondary-school age. The total impact on rural poverty is an estimated 13 percentage point-reduction (from 28.13 to 15.13%) in the rural poverty rate from the base year.

Changes in poverty over time depend not only on changes in average levels of real per capita consumption, but also on changes in the size distribution of per capita consumption. Inequality in the distribution of per-capita household consumption increased during the period 2004 to 2007 from 0.3960 to 0.4310 at national level, where the increase from 0.3420 to 0.3460 during the same period is found in rural areas (WB, 2009 and NIS, 2004). The proposed CCT scheme, especially if targeted at the poor

population, is estimated to reduce the Gini-coefficient at the national level from 0.4191 in 2010 to 0.3933 in one year operation of the project (2011).

5. Tentative Cost Estimates for a Cash-based Incentives Program

In this section, we discuss potential impacts of CCT that may address the issues of pregnant woman lacking incentives to obtain health service from public providers, poor households keeping their children in school, and an outright anti-poverty measure. As shown previously in Table 5, the potential beneficiaries for the proposed CCT schemes in Cambodia including pregnant woman, infants (less than 2 years old), and primary- and secondary-school age children. As discussed earlier, the benefit level is US$13.3 per month for the targeted poor beneficiaries to reach the poverty line. Several caveats are worth stressing in these cost calculations.

First, these estimations only consider the cost of the cash transfer program. Second, the estimations are based on very preliminary parameters, and will need to be revised upon considering implementation constraints and as more information becomes available. More analyses will have to be performed to determine a more precise level of benefits that may significantly change the cost estimates. Third, administrative costs are also likely to vary depending on program effectiveness and coverage. Experience shows that it may be possible, if the program were to have national coverage, to keep administrative costs below 15% after some years of implementation. Fourth, these estimates do not take into consideration the cost of targeting the poor that are currently borne by the *ID Poor* program, but if such a cash transfer program is to be put in place, ways to pay at least in part for the implementation of the *ID Poor* should be explored. Finally, this calculation is based on the assumption that the duration of transfer for the beneficiaries is taken into consideration.

The static impacts on income distribution and poverty are very significant. If the program were to operate for a sustained period of time, the poverty rate would be reduced, and the Gini coefficient would be cut. Therefore, should the program be properly implemented and leakages prevented, the program could be one of the most

effective policy interventions to narrow the income gaps between the rich the poor. This poverty reduction would in turn help Cambodia to avoid a future poverty trap and social tensions that are happening. As shown in Table 12, an annual budget at 0.95% of GDP for all four scenarios is required to make it reality (or 0.88% of GDP if limited to only targeted poor beneficiaries in rural areas).

It is hard to determine the level of spending on social protection, and on CCT programs in particular, by the government given the current budget structure. The new budget structure, in use since 2007, has two chapters (64 and 65), in which there are items labelled as social interventions[6]. Government expenditure on these items amounted to a total of US$181 million across all government agencies in 2008, showing a 55% increase since 2007. Nevertheless, given the level of aggregation in the budget, it is not possible to determine how much of this goes to social protection activities and how much to other types of social intervention. Most of the explicit social protection spending currently targets public employees and formal sector workers. Moreover, the total government budget for social sector ministries increased by 0.8 percentage points between 2006 and 2010, to 3.9% of gross domestic product (GDP). Budgets for the health and education sectors together have consistently accounted for more than 70 % of total social-sector spending, with the health budget increasing one half of a percentage point over this period. Given this trend of social budget increase as share of GDP, it is secured that the proposed CCT scheme, at 0.88%, is in line with the government's spending capacity.

[6] Chapter 64.5 is called Allowances and Social Transfers, and includes: 1. Family 2. Health and birth giving 3. Death 4. Retirement 5. Demission 6. Work Accidents and Invalidity 7. Orphans of Personnel 8. Other 9. Return Attenuation. Chapter 65.7 refers to Social Assistance, which includes 1. Assistance for hospitalisation 2. Medicaments 3. Food and Supplies 4. Natural Disaster 5. Research Stipends 6. Local Scholarships and Research 7. Scholarships and Research for Abroad 8. Others. Chapter 65.8 refers to Subsidies to Cultural and Social Entities, including subsidies to 1. Communities 2. Orphan Centres 3. Travel scholarships 4. The CRC 5. Sport and Culture Community 6. Rehabilitation Centres 7. King Affairs (King's Charity Programmes).

Table 12. Estimated Annual Cost of CCTs Scheme for Cambodia

		Estimated Annual Cost			
		Pregnant Women	**Infant (<2 years old)**	**Primary school**	**Secondary school**
		Annual cost			
Targeted	**Urban**	262,004	1,742,399	3,455,428	2,257,793
	Rural	3,547,310	20,057,601	43,844,572	31,442,207
	Total	3,809,314	21,800,000	47,300,000	33,700,000
Universal	**Urban**	1,434,590	8,901,936		
	Rural	10,865,410	60,898,064	142,700,000	103,500,000
	Total	12,300,000	69,800,000	165,000,000	120,000,000
		Transfer as % of GDP			
Targeted	**Urban**	0.0023	0.0155	0.0308	0.0201
	Rural	0.0316	0.1786	0.3911	0.2799
	Total	0.0340	0.1941	0.4219	0.3000
Universal	**Urban**	0.0128	0.0794	0.1987	0.1474
	Rural	0.0969	0.5433	1.2718	0.9193
	Total	0.1100	0.6230	1.4710	1.0670

Source: Author's calculation.

6. Conclusion

The key question discussed in this paper is how to better allocate the very limited resources that are available to ensure coverage of main sources of vulnerability and of the most vulnerable groups. The RGC and its partners face tight capacity and budget constraints across all sectors. Any spending on social protection interventions has high opportunity costs, as resources are limited and spending on social protection means fewer resources for other sectors. Coherence rather than competition between sectors needs to be strengthened, as investments in social protection without adequate investments in basic social services, including health, education, water and housing, would remain ineffective. Better targeting plus coherence between current sector investments in social protection, and a gap analysis-driven identification of priorities for scaling-up across sectors, will ensure maximum coverage and provision for the poor and vulnerable.

The matching of main sources of vulnerability with programs that are being implemented suggests the need to scale up and harmonize existing interventions, and also the presence of gaps that could be addressed by the implementation of a few new programs. HEFs, school feeding, scholarships and public works are already addressing

most of the major sources of vulnerability faced by the poor and already have, to various extents, a strong presence in Cambodia. However, coordination and expansion are needed in the context of sustainable financing of programs.

High dropout rates and high incidence of child labour are serious outcomes of the vulnerability affecting children. They also have a profound effect on the likelihood of future generations moving out of poverty. Programs intended to fight child labour and keep children in school (in-kind transfers including school feeding and take-home rations, cash scholarships) should be not only expanded but also harmonized. While addressing demand constraints that prevent parents from sending their children to school, it is equally (if not more) important to also improve the quality of education. Cash transfers help poor households to access services and can provide incentives to change behavioural practices. Given the importance of behavioural practices in determining nutrition outcomes, a cash transfer program, in particular, could be used to address demand constraints in fighting chronic malnutrition, the main source of vulnerability among infants and small children. Such a program would fulfil the dual objective of alleviating chronic poverty while combating maternal mortality and malnutrition.

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