

## 6. Education, health and wealth

### Summary

- Human development is both intrinsic to the definition of what constitutes a good standard of living *and* instrumental to economic development. Investments in human development are investments in human capital. A healthy, well-educated population is more productive than one which is poor and illiterate.
- Cambodia at present records extremely low scores in most human development indicators, including those used to measure progress towards the Cambodian Millennium Development Goals. However, the Ministries of Education and Health are amongst the most advanced in terms of strategic vision, an integrated approach to sector policies and programs, and coherent planning, budgeting and monitoring systems. Improved policies are, increasingly, resulting in improved outcomes.
- The education system has made impressive gains. A focus on primary education, backed with rising public spending, has resulted in more schools and trained teachers; lower direct costs to households; and increasing primary enrolment rates (which have risen particularly fast for girls and for children from the bottom quintile).
- Child nutrition remains extremely serious and the incidences of preventable diseases are very high, but there are clear gains in both preventative care (e.g. vaccination coverage and antenatal contacts) and curative care. There has been notable success in halting and reversing the spread of HIV/AIDS. Indicators suggest that child survival rates are improving, but an accurate measure will only be possible when findings from the 2005 Demographic and Health Survey become available in 2006.
- Many challenges remain. On the supply side, per capita public spending is still far below that required for a minimum standard of basic service delivery. Particularly with regard to healthcare, Cambodian households have to compensate by spending large proportions of their total income on generally rather low-quality care. High out-of-pocket spending can easily push non-poor households into poverty.
- On the demand side, poor households may not be in a position to take up improved services. The main costs of education for poor parents are the opportunity costs of foregone child labor, which remains very important for poor families
- In both sectors, sustained increases in public expenditure (although still far short of what is needed) have been supported by the development of a sector strategy, effective sector-wide partnerships, and policy changes. Further improvements in education and health outcomes, for the general population and for the poor, will require policies to tackle both delivery (quantity and quality) and uptake of services.
- Finally, improving service delivery and human development outcomes will also involve addressing “governance” issues regarding the transparency and accountability of service provision; community participation in local service delivery; and increased volume, efficiency and effectiveness of public spending, increasingly oriented towards the needs of the poor.

**L**ow levels of human development—that is, poor health and limited education—are both cause and effect of poverty as measured in terms of per capita income or expenditure. A foundation of basic education and literacy expands an individual's economic opportunities, helping them to acquire better jobs with higher and more dependable income and so work themselves and their families out of poverty. Education can also be a powerful vehicle for improving awareness of health issues and the uptake of preventative health practices.

Similarly, an individual in good health remains more productive, and has more money available to spend on other essential goods and services, than an individual who is unable to work due to illness, or who has to spend large amounts of money on treatment. The economic consequences of a disease episode or chronic illness that requires large expenditures can push individuals and households into poverty, in particular when poorer households are forced into selling productive assets or into debt.

Ill health also has inter-generational effects in the context of (inter-linked) high child mortality and high fertility. High fertility rates reduce the ability of households to provide adequately for health and education for children, resulting in a vicious circle of reduced opportunities for future earning potential.

There are also society-wide impacts of ill-health. HIV/AIDS and even malaria epidemics can slow economic growth through their impact on labor and labor productivity. New public health threats such as SARS or avian flu can significantly affect tourism and the service industries.

Effective government policies to mitigate the impact of preventable disease, protect the poor from impoverishing costs of health care, and ensure access to affordable, essential high quality health care and education are, in other words, key public goods that increase the stock of human capital available to Cambodia and facilitate long-term economic growth.

There is a strong presumption throughout this chapter, based on sound basic economics, that the Government has to play a key role in the activities that add up to the population's (in particular the poor) access to an acceptable minimum package of health and education services. However, an overall strategy for improving human development needs to take account of the important role that is already being played by non-state actors (particularly in the health sector), where the private sector is already a very significant provider of services as well as mobilizing and managing funds.

## **Education, skills and growth**

Between Cambodian households as between countries, there is strong correlation between increasing levels of education or literacy on the one hand and decreasing levels of poverty on the other. It is of course important to be careful in interpreting this correlation. It is possible that a better education leads to higher incomes, but it may also be simply that increasing wealth enables households to educate their children in a way that is not possible for poorer households. Intuitively, it seems probable that there are causal effects at work in both directions. In particular, it is important to remember that literacy and education can only increase the potential productivity of individuals. If the economy is unable to respond to this increased supply of skilled

individuals, they will remain underutilized and the economy will continue to perform below its potential (Chapter 4).

The RGC, with support from a number of donors, has over recent years, developed a successful sector strategy which has begun to pay off in terms of improving level and equity in educational participation, particularly at primary level<sup>1</sup>.

### **Positive trends**

Starting from a low base, the Cambodian education system has made some impressive gains, a fact that is recognized by participants in qualitative research (Box 6.1). The Government's focus on primary education (e.g. school operational budgets for routine expenditures, the abolition of enrolment fees, and school-based learning remediation programs) has resulted in marked progress, particularly in enrolment. This progress has been pro-poor, with enrolment (and completion) increasing faster amongst the poor than the rich, faster amongst girls than boys, and faster in rural areas than urban areas. While the inequalities in education described above are still significant and call for sustained action, it is important to acknowledge that some of them (notably between boys and girls and between urban and rural groups) have clearly been narrowing since 1997 (Ragatz 2005, 12-14).

<sup>1</sup> Cambodia's educational structure consists of primary education (grades 1-6 for, in theory, ages 6-11 years); lower secondary education (grades 7-9); and upper secondary (grades 10-12). Primary and lower secondary education are, in principle, compulsory, while upper secondary and early childhood education (age 3-5) are not.

#### **Box 6.1: Peace, more schools and changes to fee policy have increased participation in primary education**

Participants in the MOPS focus group discussions (FGDs) in all nine villages agreed that the availability of schooling, and the level of participation of village children in education, was now much better than in 1998. To differing degrees in different villages, this was attributed to: (i) the end of armed conflict; (ii) the construction or upgrading of school buildings; (iii) rising standards of living which meant that more people could afford to send their children to school; and, in particular, (iv) the abolition of the enrolment fee in 2000 or 2001.

*Our young brothers and sisters are luckier than us because now they can have better access to schools than us, [and] the schools are near our houses.*  
Kompong Thom

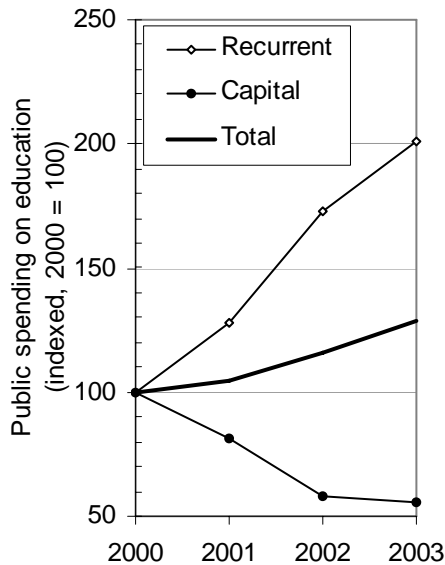
*Parents now are more alert and tend to push their children to school more than before - and there are good schools, and education is free.* Male youth, FGD, Kratie.

Source: CDRI 2006a (forthcoming).

### **Significant increases in public funding for education**

These improvements have been driven by a steady rise in allocation of public expenditure to education. Education's share of the total RGC recurrent budget rose to 18.5 percent in 2003, nearly double the level of around 10 percent in the late 1990s. In the sector as a whole, capital spending has declined over time as recurrent expenditures (wage and non-wage) have risen (Figure 6.1). While donor assistance continues to account for a major part of total public (i.e. non-household) education spending, it no longer exceeds government education spending (as it did in 1999). ODA flows to education fell considerably in 2001 and

**Figure 6.1: Public expenditure on education—particularly on recurrent costs—has risen dramatically**



Source: MEF.

have remained largely unchanged since, declining in share relative to spending by the Ministry of Education, Youth and Sport (MOEYS), which has been increasing since 1998.

This increase in financing for the sector has made possible progress on the issue of teacher salaries. Average teacher salaries have risen in a number of steps since 2002, most recently by 37 percent (bringing the average to US\$43.3 per month) between 2004 and 2005<sup>2</sup>.

These trends in public expenditure on education have also been strongly pro-poor in nature. Beneficiary incidence analysis brings out that, by prioritizing primary education (within which the children from

the poorest 40 percent of households account for 45 percent of all pupils), government spending results in the balance of benefits accruing to the poor.

### *There are now more, and better, teachers and schools*

The results of increased public sector spending, made possible and directed by increasingly strong sector policies and institutions, are then seen in a number of intermediate indicators of education supply, access and quality. The number of trained primary school teachers has increased by 12 percent (from 42,000 to 47,000) between 1999/00 and 2002/03; an increased percentage of the teaching workforce now have upper secondary or graduate qualifications<sup>3</sup>. The quality of physical infrastructure in the education sector has also improved considerably; a variety of sources paint a consistent picture of more schools with better facilities (see Table 6.1).

As more girls and children from the poorest households enter and in some cases complete schooling, so the gaps in literacy between sexes and wealth groups is starting to close in younger age cohorts who have more recently left school. Whereas amongst those aged 25-29 years, the literacy rate in the richest quintile is 39 percent higher than in the poorest quintile, among the cohort aged 15-19, the gap has narrowed to 22 percent. In this youngest cohort of 15-19 years, the gap in literacy between male and female youths is a mere 4 percent.

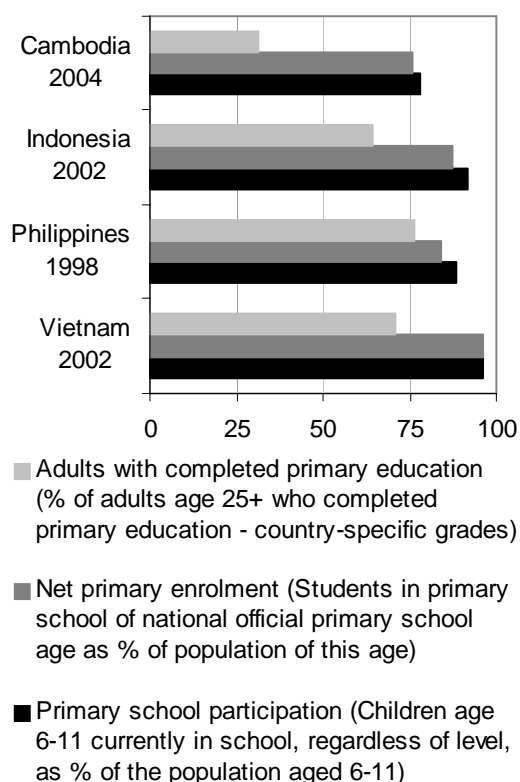
<sup>2</sup> However, these across-the-board increases need now to be complemented by efforts to address the salary *structure*, which remains very flat by international standards, and does not reward experience or working on priority tasks.

<sup>3</sup> RGC 2003. The quality of pre-service training, however, remains low, and the opportunities for professional development limited (Ragatz 2005, p.41).

**Table 6.1: There have been significant improvements in education infrastructure**

<b>a. Coverage</b>		<b>1998</b>	<b>2004</b>
Districts w/out lower secondary school	N	32	14
	%	17%	8%
Districts w/out upper secondary school	N	81	45
	%	44%	25%
<b>b. Facilities: schools with...</b>		<b>1999</b>	<b>2004</b>
Drinkable water		31%	64%
Latrine		34%	64%
<b>c. Teachers' perceptions of change in school conditions over last 5 years</b>			
	Primary	Secondary	
		Lower	Upper
Improved	72%	65%	65%
Stayed the same	18%	26%	25%
Deteriorated	10%	9%	10%

Source: EMIS, CSES 2004 Village Questionnaire.

**Figure 6.2: Primary education in Cambodia compares poorly with the rest of the region**

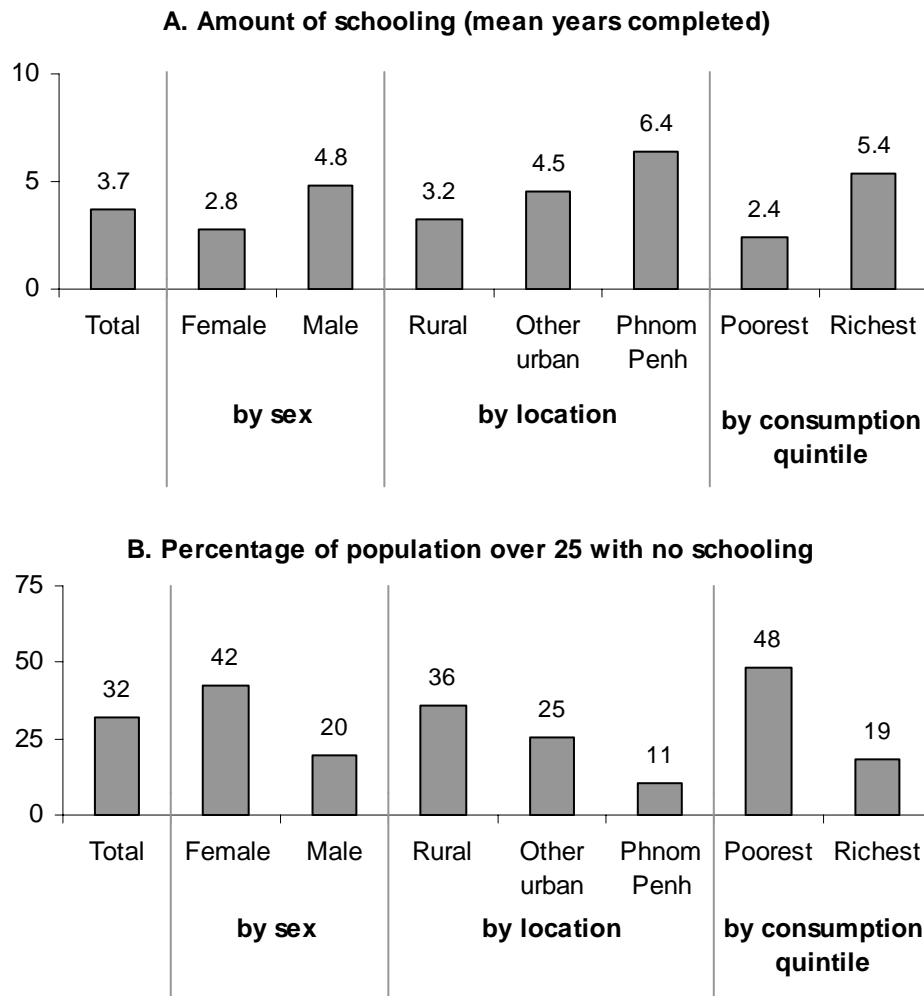
Source: Last DHS (year of survey noted for each country).

### Current educational status

Despite these positive trends, the current educational status of the Cambodian population remains very low (Figure 6.2 for international comparisons). To a significant degree, this reflects the legacy of a lost decade in the 1970s, in which all formal education ceased and those adults with education (including many teachers) suffered particularly severely from revolutionary violence under the Khmer Rouge. The collapse of the Democratic Kampuchea regime was followed by only slow recovery as the education system was rebuilt from scratch under extreme resource constraints from the 1980s onwards.

This legacy is reflected in both supply- and demand-side problems and in very low levels of completed schooling and literacy amongst the adult population compared to other countries in the region. By one indicator—that of gross primary enrolment, which is the total enrolment in a specific level of education, regardless of age, as a percentage of the school-age population corresponding to the same level of education in the given school-year(s)—the Cambodian education system outperforms all its neighbors. However, this measure, which reflects rapid increase in participation in education and (broadly) the ability of the education system to absorb these numbers, also reflects the prevalence of over-age enrolment. By all other measures Cambodia scores below its neighbors, including Lao PDR and Myanmar<sup>4</sup>.

<sup>4</sup> EdStats data, derived from national EMIS (Educational Management Information Systems) data. Indicators from Demographic and Health Surveys (DHS)—generally

**Figure 6.3: Pronounced inequalities still exist in education outcomes**

Source: CSES 2004.

In one of the most pronounced gender disparities in Cambodia, women have markedly less education than men (Figure 6.3). This is seen not only in years of schooling but in literacy rates, in which the average (69.6 percent) masks significant differences between male (80.3 percent) and female (60.3 percent) literacy rates.

Geographical inequalities are also stark; those living in the countryside have completed on average, only half the years

of schooling as those living in the capital. There are significant differences in net enrolment rates amongst the poorest two quintiles, with most of the remote highland Provinces in the north, north-east and south-west recording much lower rates than the Tonle Sap and Mekong Plains Provinces (Figure 6.4).

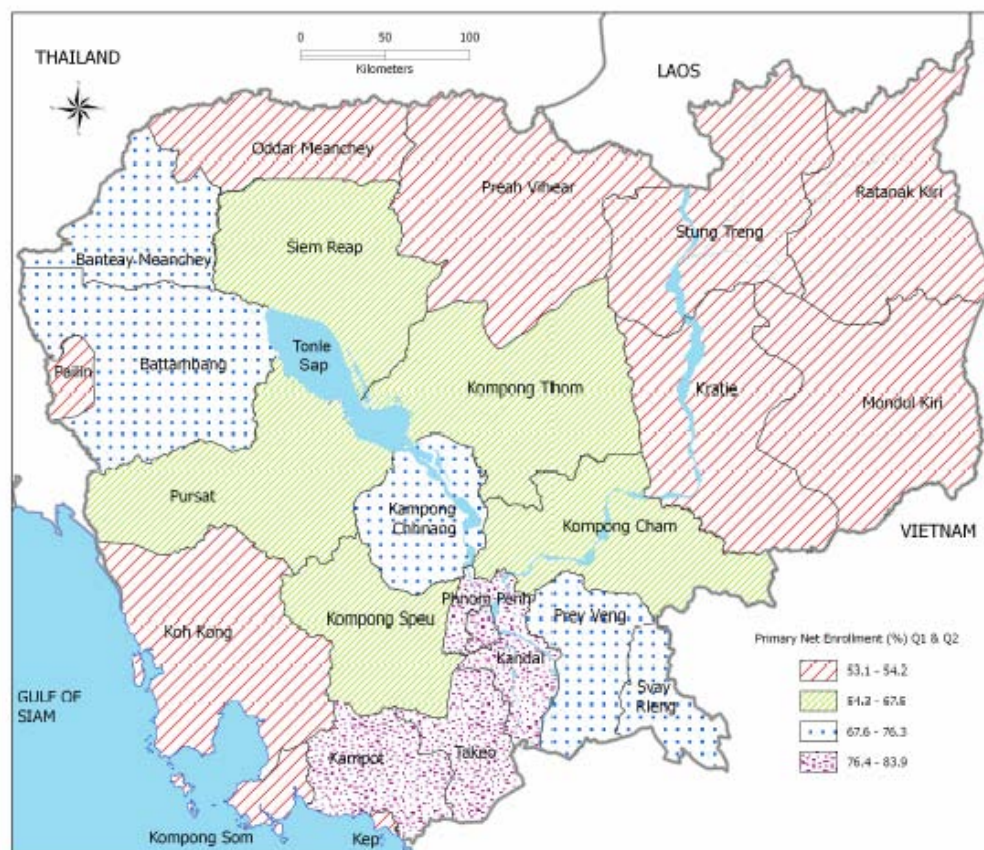
#### *Late entry, repetition and dropout rates are falling but still high*

Late entry is pervasive; only 28 percent of new entrants in grade one were of the official entry age (six years old) or

considered more reliable than EMIS, but not available for all countries in all years—confirms the picture.

**Figure 6.4: Children from poor families are much more likely to obtain a primary education in the south-east and north-west**

- Net primary enrolment (%) of poorest and next poorest quintiles, 2004



Source: CSES 2004.

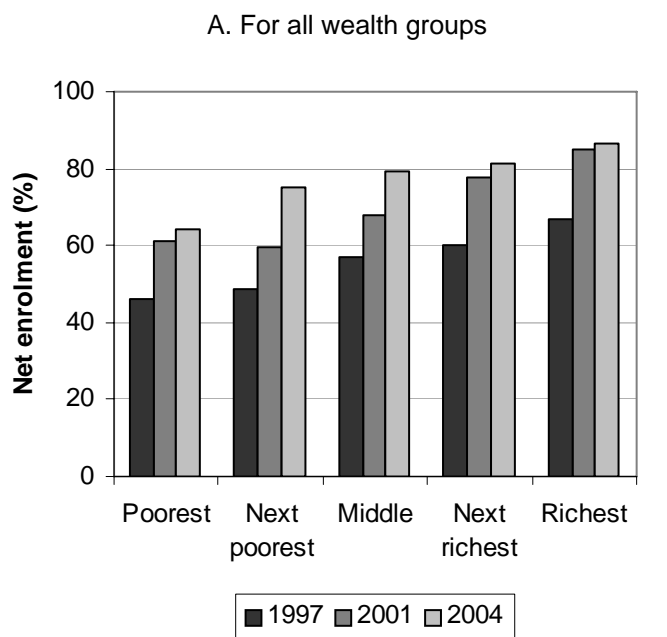
younger<sup>5</sup>. Comparing average age on entry from 2001 (the Child Labor Survey or CLS) to 2004 (the CSES) shows no change, suggesting that this phenomenon is to a large degree a structural problem, rather than merely a transitional feature of an education system recovering from conflict.

Overage enrolment is a problem primarily because it seems to be a significant factor in explaining high dropout. Those children who start school late are highly likely to drop out before they complete primary education. The primary factor

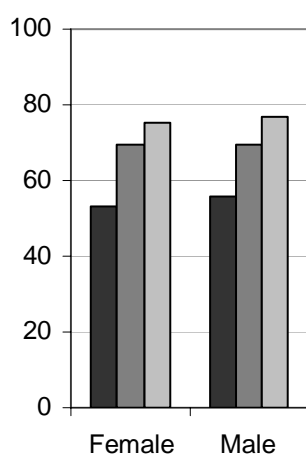
underlying dropout and low completion rates, however, is the importance of child labor to poor households. Although the dramatic increase in primary enrolment is a major success to be celebrated (Figure 6.5), it appears to be much harder to keep children in primary school beyond initial enrolment, and even harder to keep them attending through into secondary education.

As expected, primary *completion* rates are by a significant margin higher for urban areas and the top wealth quintile. The primary completion rate for the poorest quintile is very significantly lower than all other groups—and, unlike the gap between

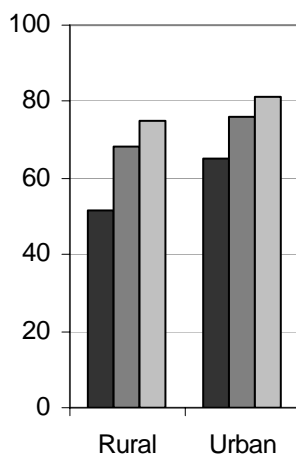
<sup>5</sup> CSES 2004.

**Figure 6.5: Net primary enrolment has improved for all**

B. For both girls and boys



C. For rural and urban populations



Source: CSES 1997, CLS 2001, CSES 2004.

male and female or urban and rural completion rates, this gap between wealth groups is *not* closing over time (Ragatz 2005).

While primary completion rates do not now differ much for boys and girls, a significant difference between the sexes emerges in lower secondary education.

The underlying problems which prevent children (and girls, the rural population, and the poor in particular) from completing education will need to be tackled if Cambodia is to attain the CMDG target of increasing the percentage of universal completion of primary education.

The percentage of children needing to repeat grades has fallen considerably between 1997 and 2003 (from 26 percent to 10 percent in the primary grades). Nonetheless, rates of repetition (particularly in grade one) remain very high, second only to Lao PDR in the region.

### *Quality of education*

To get a full picture of the Cambodian public education system and its ability to provide citizens with the skills they need to secure higher-paying jobs and attract foreign investment, it is necessary to look beyond simply getting children into the classroom and keeping them there, to address the quality of teaching. Key indicators of this ability to transmit learning to pupils

include pupil-teacher ratios and the level of teacher qualifications. In looking into the quality of education, it is clear once again that the education system itself suffers from the nation's short supply of human capital. There are not enough teachers for the needs of a young population. Although they have started to

drop in the last two years, pupil-teacher ratios are the highest in the region for primary education (in 2004 far below other countries) and the third-worst at secondary levels<sup>6</sup>.

The paucity of teachers is felt particularly badly by the poor (pupil-teacher ratios in schools in the poorest communes average 79:1 compared to 46:1 in schools in the richest communes). These pupil-teacher ratios, furthermore, got worse as success in recruiting more teachers failed to keep up with success in increasing enrolment. Since 2002, ratios appear to have stabilized in primary levels: they now need to be brought down significantly.

There is also a need to improve not merely the quantity of teachers but also their qualifications and skills. This, and other dimensions of change required to improve further the education and literacy of Cambodian citizens, will require significant and sustained increase in the level and efficiency of public financing allocated for education. In particular, there is a compelling need to further increase teachers' salaries if Cambodia is to achieve benchmark goals set in the Fast Track Initiative. Globally, it is recommended that low income countries pay teachers around 3.5 times the average national income (as measured by per capita GDP) in order to ensure quality and equitable education<sup>7</sup>. In Cambodia, by contrast, the starting salary for teachers is *below* per capita GDP; mid-career salaries average only c. 1.5 times per capita GDP. Low salaries—combined with weak human resource management in the education system—contribute to the low average quality of teaching (Box 6.2). Here as in many other aspects of RGC

**Box 6.2: Parents worry about the quality of teaching**

Although far more children are in school, the overall quality of education—and the availability and pay of teachers—was still a common complaint amongst parents in the MOPS villages:

*I have doubts about the quality of schooling—for example, my son who is in grade 6 now cannot even read his name. I wonder what he has done in school and why the teacher just lets him pass the class.* Battambang.

*We really appreciate that there are better school facilities now. But we are concerned with the increasing malpractices engaged in by the teachers because of their low salary. They normally put as the topics for examination topics that have been in their private classes, especially after the primary level. Parents have to spend a lot on children's education, especially from the secondary level. The teachers require our children to attend their private class and pay 400-500 riels per session.* Kampot.

Source: CDRI 2006a (forthcoming).

service delivery, there is a compelling need for government-wide reform of public sector salaries and human resource management (Chapter 7).

Finally, while enrolment rates have risen (and been followed, with a lag, by rising completion rates), the hours of classroom instruction within the Cambodian educational system is still far too low to enable significant learning. At a *maximum* of 760 hours per annum, Cambodian children receive far below the Education for All (EFA) target of 850 hours per annum. Tackling this will once again require further increases in the allocation and efficiency of public expenditures to education.

<sup>6</sup> Cambodia data from EMIS; other countries' data from Edstats.

<sup>7</sup> EFA benchmark.

### *Level and allocation of public spending on education*

As noted above, the pattern of public expenditure on education is broadly pro-poor in that it favors primary education, in which the poor are most prominently represented. *However*, as the unit costs per pupil are significantly higher in secondary and post-secondary education (in which the children of rich families are over-represented relative to the children of poor families), secondary and tertiary education still capture a very large share of the education budget in absolute terms, and the children of the rich are still receiving more, in per child terms, than the children of the poor. There is thus still room to improve the poverty focus of education sector policies and financing.

There is also a need, as in other sectors of RGC public financial management, to improve the efficiency of disbursement of public funds. In an effort to tackle frustrations with budget execution, the Priority Action Program (PAP) was introduced in Education (and other ministries) from 2000 (Box 6.3). A recently-completed Public Expenditure Tracking Survey (PETS) for the education sector found that school operational funds channeled through the Priority Action Plan (PAP)<sup>8</sup> were transferred down as intended. However, the survey was based on official and incomplete receipt data (the PAP system is characterized by low quality record-keeping), so it is still not clear how to interpret the findings. PETS-based analysis of the older Chapter 11 Operations and Maintenance (O&M) budget line found little of this money was spent below the Provincial level, despite the intention that it complement PAP funds at the school level.

#### **Box 6.3: The Priority Action Program**

The Priority Action Program (PAP) is one of a series of attempts to address problems of rigidity, delay and uncertainty arising from over-centralized budget execution. Introduced first as a pilot in education and health ministries in 2000 and soon expanded to MAFF and MRD, PAP has sought to ensure that high priority activities obtain their full budget allocation by (i) removing PAP funds from the discretionary monthly cash allotment system; (ii) improving management flexibility by reducing the need for line item detail; (iii) introducing budget management centers in spending agencies to allow them to manage PAP funds according to pre-approved plans; (iv) replacing pre-audit with post-audit; and (v) creating in Provincial treasuries dedicated accounts that are not subject to discretion over cash release. The evidence for the impact of PAP has been mixed; budget execution still appears weak, suggesting both that PAP failed fully to solve the problem of cash management and also that the spending agencies themselves have been slow to disburse. There are also concerns that, without greater capacity for post-audit in the spending ministries, PAP has weakened control and accountability. Over the medium- to long-term, efforts to strengthen PAP need to be framed in terms of incorporating its best features—and eventually PAP itself—within gradual moves towards a single, unified budget execution system for non-wage expenditure.

*Source:* World Bank and ADB 2004.

### ***The costs and benefits of education***

Crucial to improving educational outcomes is the calculus that households, rich and poor, make when assessing the returns to education against the costs involved.

<sup>8</sup> Strictly speaking, PAP 2.1, which is the primary schools' operating budget.

*Direct costs are coming down...*

For poor families, the costs of educating their children can be a significant deterrent. The direct costs of education (that is, fees, uniform, transport, etc.) have come down in recent years with the abolition of enrolment fees (mentioned often in focus group discussions in the MOPS fieldwork). Nonetheless, although they are now quite low in the early years of education, they increase rapidly with each grade until they account for on average, nearly a quarter of total non-food expenditure for children in grade 7, and 45 percent of non-food expenditure when (or if) children reach grade 12.

*...but out-of-pocket costs continue to constitute a burden on, and barrier to the poor*

Although at any given level of schooling poor and rich households spend roughly the same on education as a proportion of their total non-food expenditure, this amounts to a significantly greater absolute amount that rich parents invest in their children's education.

The composition of direct education costs changes with age and varies between wealth groups. Tutoring costs—that is, costs for supplementary private teaching outside school hours, although typically provided by the same teacher—become progressively more important at higher grades, and is a cost that poorer families can less frequently afford (either in monetary terms or in terms of children's time free of household tasks (Box 6.4).

*...and the indirect, opportunity costs remain very high*

More important than direct costs for poor households, however, are the indirect costs. As in other low-income South-east

**Box 6.4: Supplementary private tutoring mirrors public schooling**

Supplementary tutoring, which operates as a sort of shadow system alongside the mainstream schooling system, consumes considerable household resources, especially in urban areas and for key final grades. One study indicates that in grades 3-8 it accounts for approximately 20 percent of total education expenditure in urban areas. By grade 9 it is 38 percent. Whereas in primary school, tutoring usually covers the whole curriculum, in lower secondary school it is specialized by subject. In Cambodia, much of the tutoring takes place in the students' own schools and is provided by their own teachers. The tutoring system that has evolved can be considered regressive in that it is a cost that poor households typically cannot afford. Supplementary tutoring is closely linked to the poor working conditions of most teachers. Thus, for policy changes on tutoring to be effective, they must be accompanied by changes in teacher remuneration.

Source: Ragatz 2005.

**Table 6.2: Child labor rates in Cambodia are amongst the highest in South-east Asia (% of age group)**

Country	1997	2003
Malaysia	3	2
Vietnam	8	4
Philippines	7	4
Thailand	15	10
Myanmar	24	22
<i>Cambodia</i>	24	23
Lao PDR	26	24

Source: EdStats.

Asian nations (Table 6.2), child labor in Cambodia is common and begins at an early age. In both rural and urban settings, poor families often rely heavily on their children to help with a variety of tasks (generally household-based) essential to the wellbeing of the family.

These forms of child labor include both income-earning or subsistence-oriented productive or trading activities, and household reproductive tasks (caring for younger siblings, cooking, cleaning, carrying water, etc.)—much of which, of course, is necessitated in order to free up both parents for economic activity, including in some cases long absences from the home in pursuit of income opportunities elsewhere in Cambodia or in Thailand. The CLS in 2001 found that children contributed on average 28 percent of total household labor income<sup>9</sup>.

For many Cambodian children, work and school attendance are largely substitutes for one another, with this trade-off becoming more pronounced as children get older. The burden of housework and productive work is a particular problem for rural children, children of families in the poorest quintile, and girls. From age 12 onwards, household work is significantly more likely to interfere with girls' education than boys. Children who work more than 14 hours a week—who are more likely to be poor, rural, and female—start to fall behind in grade attainment compared to their peers who only attend school. This difference is insignificant at age ten, but pronounced amongst 17-year olds<sup>10</sup>. The high proportion of children reported to both attend school and work suggests that the household need for child labor not only contributes to outright dropout from school, but will also make it hard to increase the currently very short school day.

**Box 6.5: Villagers recognize links between education and opportunity**

Despite the improvements in availability and uptake of schooling seen in recent years, education beyond the primary level remains by and large a possibility only for the children of wealthy families; and some children from poor and very poor families are still left out of primary school because they have to help their parents to earn or to look after the house. Amongst the poorer families in the MOPS study villages, there was a strong sense that education was a way out of poverty—but that, equally, poverty would continue to prevent their children obtaining an education.

*Because we are poor, our children quit school at an early age or after only one or two years in order to help their parents earn a living. Unfortunately, they cannot go as far as the rich do in obtaining skills to earn a living. Because we are trapped in illiteracy, we have poor knowledge and are without ideas, remaining short-sighted and powerless. Kampong Thom.*

*Education is the most important asset of people in this world. Being well educated, someone can find a good job with a high standard of living. With good education, s/he can manage to have a better life or able to set a clear goal. The educated person never fears facing financial security since s/he has a permanent, good paid job. For example, a literate woman is able to find a good job at the garment factory now. Those who have no education cannot find such fortune and become mobile laborers, a more risky life. Female youth group, Kampong Speu.*

Source: CDRI (2006) forthcoming.

***The benefits of education: returns to households and the nation***

The benefits of education, however, appear to be significant (and are certainly seen as such by parents and young adults (Box 6.5). Analysis of the 2001 Labor Force Survey suggests that the returns to

<sup>9</sup> This figure coincides remarkably with the estimates of their contribution to household income provided by youths, both male and female, in MOPS focus group discussions.

<sup>10</sup> Ragatz 2005, p. 25-6.

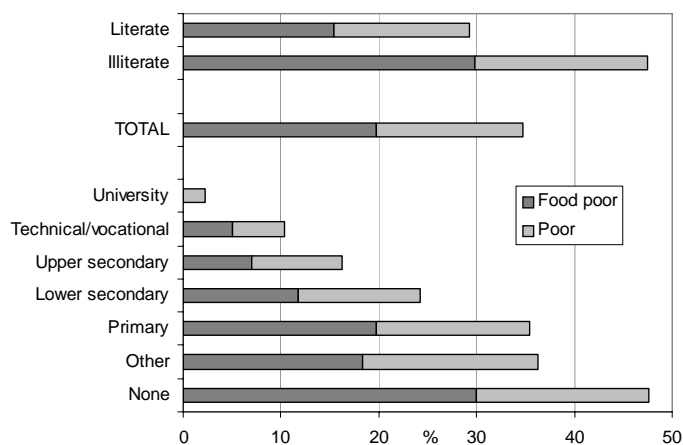
schooling are sizeable and increasing over time<sup>11</sup>. Increasing levels of education improve the likelihood of having paid employment (further classified into self-employment and wage employment) rather than unpaid work. This is particularly true of those who complete primary schooling compared to those with no schooling, with the increase in likelihood declining with higher stages of schooling. Within the category of paid employment, however, secondary education significantly increases the probability of getting a waged (rather than self-employed) paid job in a way that primary schooling does not.

Schooling also has a significant impact in terms of the stability of income, as measured by being in permanent rather than temporary (seasonal or short-term) employment. For employees, completion of primary and lower secondary schooling resulted in the greatest improvement in the likelihood of being in permanent rather than temporary employment. Amongst the self-employed, it is secondary education that has the greatest effects<sup>12</sup>.

As in previous national surveys, CSES data shows that the likelihood of being poor drops significantly with completion of each successive level of education (Figure 6.6). Conversely, analysis of adult wages (of salaried employees) and earnings (of the self-employed) show increasing average incomes with higher levels of education (Figure 6.7).

**Figure 6.6: Those with a good education are significantly less likely to be poor**

- Poverty headcount by literacy status and level of education completed, 2004



Source: CSES 2004, analyzed in Knowles 2005a.

These findings suggest that, as expected, education does expand an individual's economic opportunities and their chances of escaping or staying out of poverty<sup>13</sup>.

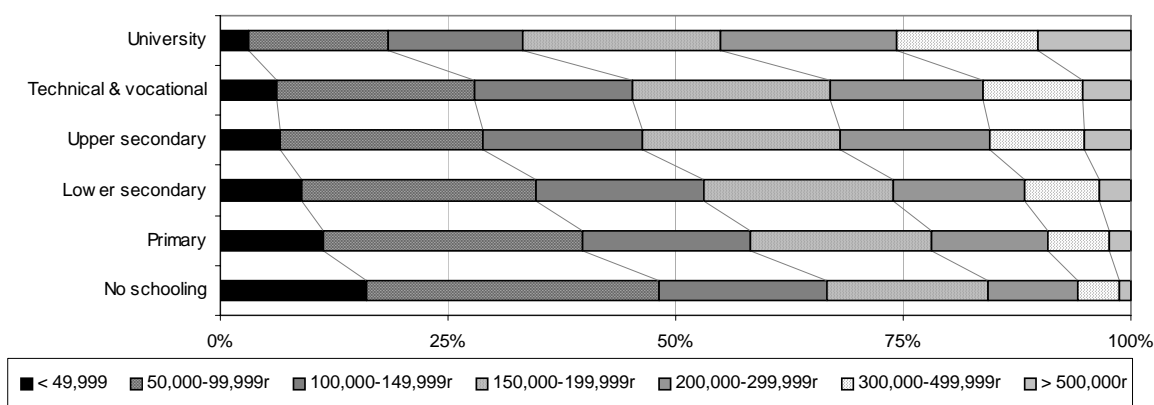
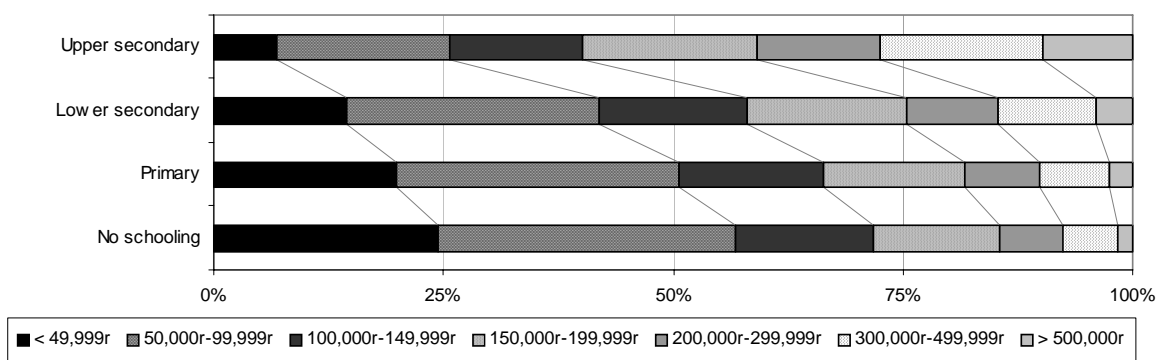
At a household level then, there would appear to be clear benefits to education within the economy as it is currently structured. Analysis suggests that this reflects a low-level equilibrium: although current demand for skilled and educated workers in the labor market is low, there is nonetheless a return to education because the levels of overall education are correspondingly low.

One way of looking at this is that even though the sectors that currently dominate the formal, waged economy (e.g. garment manufacturing) do not require a high level

<sup>11</sup> Ridao-Cano 2005, pp. 24-35.

<sup>12</sup> Probit analysis of 2001 Labour Force Survey data in Ridao-Cano 2005, pp. 27-30.

<sup>13</sup> Since education precedes work in an individual's life, it is presumed that education explains income rather than vice versa. However, one or both variables might be determined by one or more other, unobserved variables: for example, income might be shaped primarily by education or wealth of parents, with own income moving in line with own education but not causing it.

**Figure 6.7: Average wages and earnings increase with each stage of education completed****A. Wages (employees), 2001****B. Earnings (self-employed), 2001**

Source: Cambodia Labor Force Survey data, analyzed in Ridao-Cano 2005, pp. 32-3.

of education, employers can choose to select only those with, for example, lower secondary education.

It is important to distinguish between a static and a dynamic analysis of the relationships between human capital (in this case, education and skills) and economic development. The static analysis above suggests that at present employers are broadly satisfied with the skills available in the labor market. This is in large part because the structural factors that normally drive demand for educated, skilled labor within an economy—for example, broad-based trade and foreign investment—currently have a

somewhat weak effect on the Cambodian labor market.

If however the Cambodian economy is to sustain the economic growth of the level and (equally important) the kind needed to drive an economic transition and long-term development, it will need to diversify manufacturing and exports beyond its current, rather risky dependence on a few largely low-wage growth sectors (Chapter 4), and find alternative sources of decent employment and earnings for the vast majority currently employed primarily in low-input, weather-dependent, subsistence-oriented small-holder agriculture (Chapter 5). To enable Cambodian workers to expand their

**Table 6.3: The children of educated mothers are much less likely to be malnourished**

- Mean rates (%) of moderate and severe malnutrition among children under 5, by mother's level of schooling, 2004

Mother's schooling	Height for age (stunting)		Weight for age (underweight)		Weight for height (wasting)	
	Moderate	Severe	Moderate	Severe	Moderate	Severe
None	59.6	38.9	51.6	18.5	12.9	2.8
Primary	53.6	32.6	46.8	16.3	12.2	2.6
Lower secondary	46.7	28.0	34.3	8.6	9.3	2.4
Upper secondary+	38.9	21.1	31.4	9.4	10.9	2.5
Total	54.1	33.6	46.0	15.7	12.0	2.7
N	5,738	5,738	5,738	5,738	5,738	5,738

Source: 2004 CSES (15-month sample).

economic opportunities, and Cambodia as a nation to attract the domestic and foreign investment required for this economic transformation, will require an increase in the stock of educated workers who can supply the needs for higher-wage, greater value-added economic activities.

### *Non-economic returns to education*

Education also has important inter-generational, inter-sectoral and often societal effects. The level of a mother's education in particular appears to be a significant determinant of child health. One powerful example is with regard to child malnutrition, in which the level of education of the child's mother appears to be a strong influence upon malnutrition (Table 6.3).

### *Barriers to access for the poor*

Other parts of the CSES dataset reinforce the impression that it is the indirect, opportunity costs of education that constitute the most important barrier preventing the poor from obtaining an education and all the advantages that go with it. When those not attending school were asked the most important reason for

not attending, "need to contribute to household income" and "need to help with household chores" emerge as the most common answers, each of which accounts for between 14-31 percent of the total (depending on the sub-sample used).

Interestingly, reasons to do with spatial coverage—"no suitable school available/school too far"—emerged as important but (at 9 percent of all who have never attended, and 4 percent of those who attended but stopped) less important than in the past. The impression is that with the exception of extremely remote and sparsely populated areas (in which only a very small proportion of the population lives), the physical availability of schools is not the critical issue<sup>14</sup>.

<sup>14</sup> These answers can be disaggregated between those children who have never attended school and those who have attended in the past but are no longer attending (7.8 percent and 18 percent of those aged 10-18 years, respectively). Amongst the "never attended" group, "I don't want to" (25 percent) was by a small margin more common than chores (22 percent), need to contribute income in this group accounted for another 14 percent.

Multivariate analysis of the determinants of enrolment and retention reveals more detailed insights into the interplay of factors that influence households' decisions regarding the schooling of their children (Box 6.6).

A low level of education is one of the few variables that are found to be significantly associated with self-reported disability. Only 2.3 percent of those who have completed upper secondary education or higher report one or more disabilities, compared to 7.4 percent of those who have no schooling. In other words, disabled children have significantly less access to education than do non-disabled children<sup>15</sup>. Disabilities in vision, hearing or speaking appear to be the most important in preventing children from receiving an education.

### **Government policies, funding and targets**

As described above, the improvements seen in education have been achieved through a combination of: (i) concerted efforts to develop and implement a strategic framework within which education policies have been refined; and (ii) significantly increased public expenditure on the education sector.

As MOEYS works with MOP and MEF to formulate the education strategy that will be reflected in the 2006-2010 NSDP, it faces the need to balance a number of competing considerations. Further

<sup>15</sup> The conclusion is that disability is a barrier to education, rather than that less educated people are more likely to become disabled. This is based on the observation that there is no difference in incidence of disability based on a mother's level of education for children under 15 years old (who were excluded from the calculations above). If low education caused disability, this would not be the case. Knowles 2005b, p. 4-6.

improving the educational opportunities and outcomes for the poor, which will help them to better contribute to and benefit from national development, requires increased attention to post-primary education. At the same time, the

#### **Box 6.6: Explaining enrolment and retention: findings from multivariate analysis**

##### *Demand side, household-level factors*

- Among all children aged 15-17, the mother's level of education is the primary determinant of girls' schooling while the father's level of education is the primary determinant of boys' schooling.
- A child's relationship with the head of the household may have more impact on retention than on school entry.
- Poverty and stunting play a key role in determining dropout rates.
- Late school entry is significantly associated with higher dropout rates.

##### *Supply-side, school-level factors*

- The higher the average experience and education levels of teachers, the lower the dropout rates
- Schools with health- and learning-related facilities have consistently lower dropout rates.
- The quality of school management, teacher monetary incentives and the degree of community participation in the school play a role in attracting children to school early and keeping them in school
- Incomplete schools contribute to late entry and higher dropout and repetition rates in those grades offered.
- Children who live physically near a lower secondary school are more likely to stay in primary school.
- Schools with preschool facilities attached to them have consistently lower dropout and repetition rates.

##### *Contextual factors*

- Schools located in communes with higher levels of inequality have significantly higher dropout rates.

Source: World Bank 2005a, pp. 50-57.

Government needs to protect the budgets for basic education by developing sustainable financing strategies to support Education for All goals. While post-primary education does now merit more attention, it is important to recognize that the bottleneck is now faced first and foremost in the upper years of primary school rather than lower secondary school. It is at this stage that direct and indirect costs for households appear to act as a significant barrier to the continued attendance of children from poor families.

The poorest quintile in particular faces clear cost barriers, as long as they are forced to rely on their children working to support their families. Many poor families explicitly recognize that pulling children out of school to work solves a short-term problem of income flow at a high long-term price. Without this investment in their education, the children of the poorest 20 percent of Cambodians are unlikely to be able to realize their potential to secure employment at decent wages or earnings which could, in turn, allow them to work their way out of poverty and contribute to the development of the nation.

In the interests of both equity and macroeconomic efficiency, there is thus a strong case for public investments in promoting access to education for poor children. International experience suggests that preschool or early childhood education may well merit more significant investment as a way to tackle late entry and the problems that follow. There is also a good case for scholarships for pupils from poor families, as a mechanism to compensate poor families for lost income from child labor and so increase the probability that their children will remain in school (Box 6.7)—and for re-entry and equivalency programs.

**Box 6.7: Scholarships help girls from poor families stay in school**

High direct and indirect costs constitute a significant barrier to post-primary education for children from poor families. Girls in particular are unlikely to be able to continue into secondary education without special assistance. A scholarship program supported by the Japan Fund for Poverty Reduction (JFPR) and administered by the ADB attempts to address this particular group. In 2004 the program targeted 93 lower secondary schools. Within each school, 45 girls or ethnic minority children who were starting grade 7 received scholarships of US\$45 each. An early evaluation of the program suggests that the JFPR scholarship had a large and positive effect on the girls' participation in school, concluding that a girl who was offered a scholarship was 10-30 percent more likely to stay in school than was a comparable girl who was not offered a scholarship. The result of this program suggests that scholarships can be a useful tool for ameliorating the economic pressures that give rise to inequities in education (which in turn perpetuate the inter-generational transmission of poverty).

*Source:* Multivariate analysis by Deon Filmer and Norbert Schady, cited in Ragatz 2005.

Parental and community involvement in running local schools can make an invaluable contribution and should be addressed within the ESSP, but will only be able to achieve small gains until teacher pay and human resource management (including training) are tackled.

Although indirect costs are the most significant barrier to the education of poor children, direct costs remain important. The current situation in which underpaid public school teachers teach short hours and supplement their incomes with out-of-hours private tutoring is regressive and contributes to the low internal efficiency of the education system. Addressing this problem in a comprehensive manner will

ultimately require tackling the systemic problem of low public sector pay through whole-of-Government civil service reform.

health-related problems that relate to poverty in Cambodia.

## Health and wealth

There have been some notable improvements in Cambodians' health over the last decade. Although Cambodia still has the highest prevalence of HIV/AIDS in the region, it has been successful in arresting and reversing the growth of the epidemic.

Similarly, the tuberculosis (TB) epidemic shows a declining trend. There are also reported improvements in the provision of health care, in particular for maternal and child health, delivery of the minimum package of activities (MPA) and the TB program.

While many key MDG indicators (notably child and maternal mortality rates) have until recently remained stagnant or worsened (UN 2005), new evidence suggests that the infant mortality rate (IMR) and under-five mortality rate (U5MR) may have started to decline<sup>16</sup>. This would need to be verified with other sources, most notably the 2005 Cambodia Demographic and Health Survey (CDHS), the results of which will be available in late 2006<sup>17</sup>.

Malnutrition and lack of access to essential health care appear to be the most salient

**Table 6.4: Despite gains, Cambodia's health outcomes lag behind the rest of the region**

- Selected aggregate health indicators, 2003 (CIPS 2004)

	Infant mortality rate	Under-5 mortality rate	Maternal mortality rate	Life expectancy at birth	
				female	male
Cambodia	97 (66)	140 (83)	450	57 (65)	50 (60)
Indonesia	31	41	230	68	65
Lao PDR	82	91	650	60	58
Myanmar	76	107	360	63	56
Thailand	23	26	44	73	67
Viet Nam	19	23	130	74	68

Sources: WHO and UNICEF. Cambodia estimates derived from CIPS shown in brackets.

### Ill health and the poor

Many of the aggregate health indicators for Cambodia have been stagnant. The most recent internationally reported estimates<sup>18</sup> for average life expectancy, child and infant mortality as well as for maternal mortality date from 2003 and show no improvement over previous reports.

However, the 2004 Cambodian Intercensal Population Survey (CIPS) and 2004 CSES suggest significant improvements in some of the aggregate health status indicators. The CIPS reports that the IMR has declined from 93 deaths per 1,000 births in 1998 to 66 in 2003; and that U5M declined from 124 in 1998 to 97 in 2003. The CIPS estimates that average life expectancy at birth has increased for men from 52 to 60 years, and for women from 56 to 65 years between 1998 and 2003, i.e., gaining nine

<sup>16</sup> Based on data from the Cambodia Inter-Censal Population Survey (CIPS) and the CSES, both conducted in 2004.

<sup>17</sup> The CIPS and CSES rely on indirect measurements compared for direct measurement of key MDG indicators by DHS

<sup>18</sup> Internationally reported (WHO, UNICEF) health indicators appear to be extrapolations of country and regional trends as no surveys were conducted in 2003.

**Table 6.5: Communicable diseases are the main cause of illness for all groups—although non-communicable illnesses are becoming significant for the rich**

- Reported type of health problem or care need during the past four weeks by per capita consumption quintile, 2004.

Health problem or care need	Percent of total reported health problems or care needs in last four weeks					
	Poorest	Next poorest	Middle	Next richest	Richest	Total
Communicable disease	87.7	88.1	85.7	75.3	75.3	83.3
Non-communicable disease	3.2	3.6	3.8	6.3	10.8	5.8
Injury or accident	1.2	1.0	1.5	1.6	1.5	1.4
Malnutrition	0.9	0.6	0.7	0.6	0.5	0.7
Preventative / other	7.1	6.8	8.4	9.4	11.8	8.9
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: CSES 2004.

years of life expectancy over five years. If years confirmed, these would represent very significant changes occurring over a very short period of time. The reliability of these new estimates need to be verified by subsequent demographic studies (e.g. the 2006 DHS).

But even with those improvements, Cambodia would still rank behind most of the countries in the region and with other countries of similar economic standing.

### Overall morbidity

In the 2004 CSES, 19 percent of the population reported illness during the preceding four weeks. Communicable diseases dominate all age groups, accounting for 83 percent of the reported disease burden. Even for the elderly (age 75+), communicable disease accounted from 67 percent of reported health problems. For the age group 0-5 year, the rate was 96 percent.

Communicable disease also ranks high as the leading cause of death (37 percent), second only to accidents and injuries (42

percent). Communicable diseases are more prevalent among poorer groups (see Table 6.5). Epidemiologic transition is limited and more detectable among the richer parts of population.

#### **Box 6.8: Access to health and "new diseases"**

In general, the picture of improvements in health services and health status obtained in the nine MOPS villages was more muted than the equivalent picture of improvements in education. On the positive side of the ledger, it was acknowledged that access to public curative services had increased with the construction of health centers and hospitals, and many villages reported the introduction of preventative health programs and significant declines in the number of people affected by traditional diseases such as TB, malaria or diarrhea. However, there were numerous complaints regarding the cost of healthcare, which were often perceived to be rising relative to average earnings; and a widespread perception that "new diseases"—particularly high blood pressure and stomach ulcers—were on the increase (often attributed to increasing consumption of purchased foods and the suspicion that these contained harmful chemicals from pesticide-intensive agriculture).

Source: CDRI 2006a (forthcoming).

The prevalence of reported morbidity is positively correlated with socio-economic status. This is not an uncommon finding and is usually linked to higher sensitivity to changes in health status, greater knowledge of and ready access to health care for the higher income groups.

Similarly, the 2004 CSES did not indicate any clear overall relationship between reported disability and consumption poverty. The overall disability rate at the individual level was 4.7 percent (higher than the 3 percent reported in the 1996 SESC and 1.6 percent reported in the 2000 DHS although this may be due to different methodological approaches). The CSES reveals, however, that disability is more prevalent in rural areas, disease, fever, difficulty with deliveries and malnutrition accounting for about 35 percent of total reported disability.

Another look into disease patterns and poverty comes from village leaders who under the CSES questionnaire were asked to identify up to three most important health problems. Twenty nine percent of the population in the poorest quintile reside in villages that ranked malaria as the top health issue, compared to 13 percent in the richest quintile. By contrast, injuries and accidents were identified as relatively more important health problems in the villages where the rich reside (7 percent versus only 1 percent in the villages inhabited by the poorest quintile).

Child and infant mortality do not have a consistent relationship with per capita consumption, although estimated mortality is lowest in the richest consumption quintile. It is, however consistently higher in the Mountain and Plateau and Tonle Sap regions and lower in Phnom Penh and urban areas. The CSES data suggests,

however, that child mortality is strongly and negatively correlated with the education of a mother. A child born to a mother with secondary and higher education has about 2.5 times better chances to survive. The statistical analysis of the CSES data also suggests that child mortality is negatively correlated with access of health services and positively correlated with malaria prevalence.

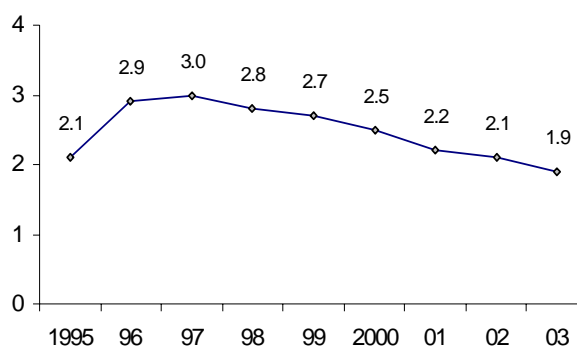
Deaths among children below five years of age make up 20 percent of all deaths in the poorest socio-economic quintile, compared to 13 percent among the richest. This reflects the “fertility trap”. Significantly higher mortality rates among the poor create an incentive for more births, which increase the health risks for the mother and reduce the level of per capita spending on health and education available for each child.

### HIV/AIDS

Controlling the spread of the HIV epidemic has been a notable success for the Royal Government (Figure 6.8). This can be attributed to the law on prevention

**Figure 6.8: Cambodia has achieved remarkable success in reversing the spread of HIV**

- Estimated prevalence (%) among adults aged 15-49, 1995-2003.



Source: NCHADS surveillance data, December 2004, reported in Addendum to UNAIDS 2004.

and care concerning HIV and AIDS. This provides a sound basis for comprehensive multisectoral interventions. This enabling policy environment and firm government commitment has helped to mobilize donors and civil society to help implement anti-AIDS programs.

Cambodia is also one of the few countries worldwide that has been successful in making anti-retroviral treatment available to AIDS patients and meeting the target set by the global “3 by 5” initiative<sup>19</sup>.

However, there is concern that the epidemic is shifting. Husband-to-wife infection is now the major mode of transmission and one third of all new HIV infections are from mother to child. Increasing youth risk behavior and illicit drug use among youth and people in labor intensive activities could also become potential drivers of HIV infection.

The 2004 CSES reports high overall knowledge of the disease (over 90 percent) among the population, but somewhat lower among the youth. The knowledge of HIV/AIDS and methods of prevention is lower among the poor and among women in all consumption quintiles. As anti-retroviral therapy is becoming available in Cambodia, concerted effort on prevention activities should be maintained to counterweigh stabilization of prevalence of HIV/AIDS and potential resurgence of risk behaviors because of risk compensation.

### Nutrition

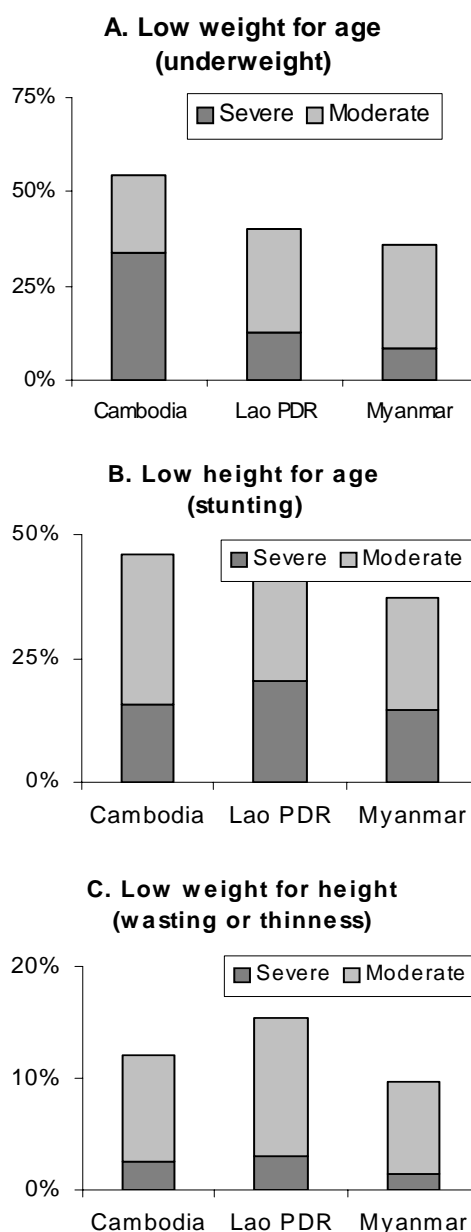
Malnutrition remains a serious problem for Cambodian children and Cambodia generally. The 2004 CSES data suggests there has been no improvement since the

<sup>19</sup> The “3 by 5” initiative sought to ensure that, globally, three million AIDS patients received ARV treatment by 2005. The target for Cambodia was 10,000 patients.

2000 DHS. The levels are much higher than in other low-income countries in the region (Figure 6.9).

In the 2000 DHS, the prevalence of stunting and low weight for age amongst children below age 5 was 45 percent, compared to 54 percent and 46 percent respectively in CSES 2004 (see Table 6.6). Cambodia clearly exhibits a pattern of widespread protein energy malnutrition.

**Figure 6.9: Malnutrition rates in Cambodia are extremely high**



Source: UNICEF database for Lao PDR, Myanmar, 2001. CSES 2004 for Cambodia

**Table 6.6: Mean rates (%) of moderate and severe malnutrition among children under 5 by per capita consumption quintile, 2004**

Quintile	Low height for age (stunting)		Low weight for age (underweight)		Low weight for height (wasting)	
	Moderate	Severe	Moderate	Severe	Moderate	Severe
Poorest	57.8	37.7	53.9	19.7	13.2	2.4
Next poorest	54.6	33.1	46.6	15.7	12.3	2.6
Middle	55.2	34.5	45.7	16.7	12.2	2.0
Next richest	52.3	31.3	42.4	13.6	10.8	3.1
Richest	48.4	29.3	36.5	10.1	10.6	3.3
Total	54.2	33.7	46.1	15.7	12.0	2.6
N	5,905	5,905	5,905	5,905	5,905	5,905

Source: 2004 CSES (15-month sample); Knowles 2005b, p. 30.

Malnutrition indicators climb severely between 6 and 24 months of age, indicating a combination of un-nutritious complementary food and childhood diseases (acute respiratory infections, diarrhea and other infections such as TB). The 2004 CSES indicates that only 59 percent of individuals in the poorest quintile reported having had adequate food supply for every day in the past 12 months compared to 88 percent of the richest quintile.

If malnutrition rates are significantly higher for the poor, the differences between wealth quintiles are less pronounced than could be expected and less than in other countries<sup>20</sup>. In Cambodia, even the children of the relatively rich suffer from high rates of malnutrition.

This supports the perception that while inadequate food access (and by extension low incomes and low and variable productivity of food crops for household consumption) is critical, poor infant and child feeding practices (e.g. too early or too late introduction of complementary

feeding and inappropriate complementary food) and poor public health (a high risk of diarrhea, TB and other infections that prevent nutrition uptake) also play a significant role.

Cambodia also exhibits moderate to potentially severe micro-nutrient malnutrition. The 1997 MOH survey estimated a gross national goiter rate at 17 percent and it is estimated that about 1.3 million people are at risk of iodine deficiency disorders. There are some signs of improvement, however, as the proportion of households reporting use of iodized salt has increased from 12 percent in 2000 (DHS data) to 27 percent in 2004 (CSES data). It should be noted however that the DHS estimates were based on salt that was tested, whereas the CSES estimates are self-reported. There are significant differences between socio-economic strata: 12 percent of households in the poorest quintile report using iodized salt compared to 50 percent of richest quintile.

Vitamin A deficiency is linked to access to vitamin--rich food for children, poor breastfeeding practices, and high prevalence of childhood diseases such as acute respiratory infections, diarrhea and measles. According to the 2004 CSES, 82

<sup>20</sup> Although malnutrition as a cause of disability is significantly more common amongst the poorest.

percent of children under 5 were given vitamin A. This reported uptake of vitamin A is considerably higher than the 29 percent reported in the 2000 DHS. There may be some ambiguity however, as the 2004 CSES did not distinguish between vitamin A supplements and food rich with vitamin A. The 2000 DHS reported that 76 percent of children consumed vitamin A rich food. Children of mothers with at least primary schooling are at least 7 percent more likely to receive vitamin A than those without schooling.

In the past, Cambodia has also reported high levels of iron deficiency (63 percent among children, 58 percent among women, 66 percent among pregnant women, 2000 DHS). This is likely a contributory factor in high maternal death rates in Cambodia (437 per 100,000 births, DHS 2000).

The causes of malnutrition are complex. They range from household food insecurity to inadequate care practices to lack of access to essential health services. Malnutrition combined with childhood illnesses can have significant human and economic costs. Malnutrition contributes to 20-25 percent of global burden of disease (World Bank 1993) and the WHO estimates that 16 percent of global Disability-Adjusted Life Years (DALYs) – a measure of the impact of ill-health on labor productivity can be attributed to malnutrition.

There is clear evidence that the major damage caused by malnutrition takes place in the womb and in the first two years of life; that this damage is irreversible; that it has consequences for cognitive and physical capacity (which in turn reduce productivity, slow economic growth and perpetuate poverty); and that malnutrition passes from generation to generation, since

stunted mothers are more likely to give birth to underweight children.

Several studies have documented a strong correlation between adult height and earnings. Malnourished and sick children are more likely to reach adulthood with reduced height. There is also evidence that the health and nutritional status of children are linked with educational attainment, both in terms of cognitive capability and school attendance. The effect on adult earnings and productivity is estimated at 10 percent for stunting and 4 percent for childhood anemia. Estimates of these losses to the economy are estimated at 2-3 percent of GDP in low income countries (ADB 2001).

It has been estimated in one recent international study that the present value (using a discount rate of 5 percent) of the benefits of shifting one child at age 3 from malnourished to normal nutritional status is US US\$514<sup>21</sup>. If this estimate (or anything close to it) is accepted, the potential benefits from interventions designed to reduce Cambodia's currently very high rates of child malnutrition are about US\$84 million annually or about US\$6.50 per capita per annum<sup>22</sup>.

As with other health indicators, child malnutrition sharply declines with increases in the level of the mother's education, in particular between primary and secondary level schooling (Table 6.3). Lack of information and knowledge about the "abnormality" and potential impact of malnutrition may be a reason why

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<sup>21</sup> Behrman, Alderman and Hoddinott 2004 cited in Knowles 2005.

<sup>22</sup> According to the 2004 CSES, there were about 277,000 children age three in 2004. Multiplying this number by the percentage of children age 3 who are estimated to be moderately stunted and the estimated potential benefits per malnourished child of US\$514 yields the estimate cited in the text.

malnutrition is not reported as a major health concern (malnutrition made up only 0.7 percent of self-reported overall morbidity and 0.2 percent for the age group 0-4). This lack of information could be linked to the low level of education among women, only 18 percent of whom have secondary or higher levels of schooling.

It is clear that significant effort needs to be put into improving nutritional status to improve future opportunities, promote economic wellbeing, and break the vicious circle of poverty. Responses need to be multi-sectoral, including overall economic and social policies to spur economic growth, reduce poverty and mitigate the impact of poverty. As in other countries, it appears that educating women is a critical factor in reducing malnutrition over time. Although health sector interventions on nutrition are fairly limited, in the short and medium term, effective and accessible health services and nutrition programs could help to mitigate the impact of malnutrition. Education is important and links need to be sought with the education sector for school-based interventions (e.g. school feeding programs or micro-nutrient initiatives). Effective nutrition programs are likely to have pro-poor impact given the higher prevalence of malnutrition amongst the poorer quintiles.

An assessment of the sector reveals a number of nutrition programs with varying scope and scale, but, at present, without adequate coordination. Most nutrition programs are NGO- and donor-led. There is a need for more significant government involvement, strengthening of relevant institutions and resource allocation, and

monitoring and evaluating nutrition program process and impact indicators<sup>23</sup>.

### *Fertility*

High fertility rates can lead families with resource constraints to under-invest in the health and education of the next generation. Lower child mortality rates combined with lower fertility rates would allow households to improve their economic status through investments in health and education.

These demographic effects also have an impact on the economy-wide level. When child mortality rates decline, followed by declines in fertility rates, overall population growth tends to slow, the average age of the population begins to rise and dependency ratios fall, so boosting per capita income and economic growth (Bloom and Canning 2001).

The most recent international sources estimate Cambodia's total fertility rate at 5 in 2000 (Figure 6.10). This compares to 5.6 in 1990. However, as with other key demographic indicators, the 2004 CIPS estimates are significantly lower than previously thought. The CIPS puts the fertility rate at 3.3 in 2003 and the CSES at 2.9. Factors underlying high fertility rates include high child mortality rates, cultural beliefs, lack of schooling of women and limited work opportunities, and lack of essential health services and effective counseling. However, the proportion of married women using modern birth spacing methods has increased. In 2004, 20 percent of married women between ages 15-49 accessed contraceptives through the public sector<sup>24</sup>. There has also been significant contraceptive distribution

<sup>23</sup> Cambodia Nutrition Investment Program, 2002.

<sup>24</sup> Based on MOH administrative data from 2004 based on users of public health services.

by means of the private sector through donor-funded social marketing programs.

This represents significant improvement since 2000, when 19 percent of women had access to contraceptives, including 13 percent from public sector<sup>25</sup>.

There are significant variations in the use of contraceptives. The CPR of the wealthiest quintile is approximately twice that of the poorest, the highest provincial coverage is about three times that of the lowest, and the CPR of women with the highest education level is about twice as that of women with no education<sup>26</sup>. These challenges need to be met by implementing the Cambodia population policy (announced in 2004) and by mitigating the impact of high fertility, for example by lowering the cost of and improving access to education and essential health services.

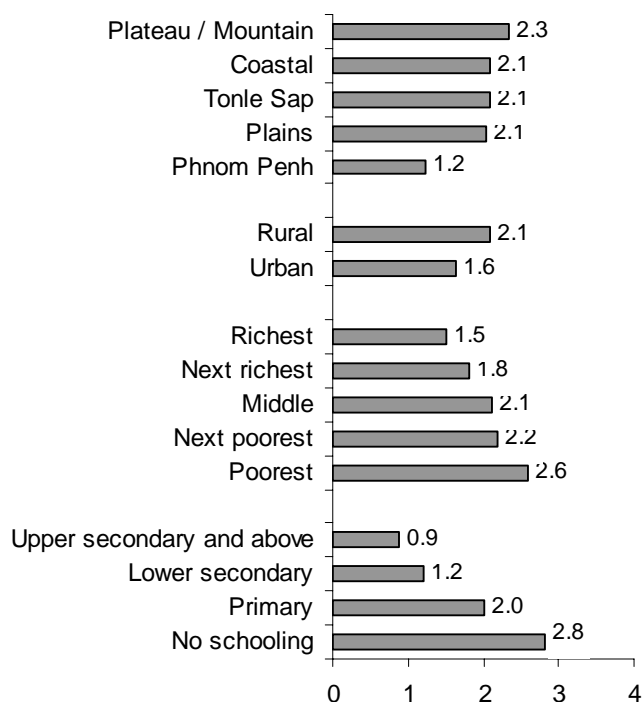
### ***Disease prevention, health knowledge and risky behavior***

#### ***Immunization coverage***

Vaccination against common communicable diseases is one of the most cost-effective public health interventions, with significant individual and social benefits. The WHO recommends that all children receive one BCG (against TB), three polio and three DPT (diphtheria, pertussis, tetanus) and one measles vaccination before age one. As already

**Figure 6.10: Poor and uneducated women have more children than other women**

- Number of children ever born to a woman between ages 15-49



Source: CSES 2004.

discussed earlier, protection against measles is also an important factor in reducing malnutrition.

It is thus encouraging that there has been some improvement in immunization coverage in Cambodia. The 2004 CSES reports full immunization coverage for 40 percent of children aged 12-23 months before they were 12 months of age and for 50 percent of children between 13-24 months of age regardless of their age at the time of vaccination (this compares to 30 percent and 40 percent respectively in 2000 DHS).

<sup>25</sup> Achieving the Millennium Development Goals 2005 Update, Royal Government of Cambodia.

<sup>26</sup> Cambodia at a Glance – Population, Gender and Reproductive Health, 2005. UNFPA Cambodia.

But by all standards, coverage is still low and some of the vaccination coverage may be partial. For example, the MOH reports that 85 percent of children below one year received DPT3 vaccine in 2004 compared to 64 percent in 2002. Children in the poorest consumption quintile have almost twice the probability of never being vaccinated.

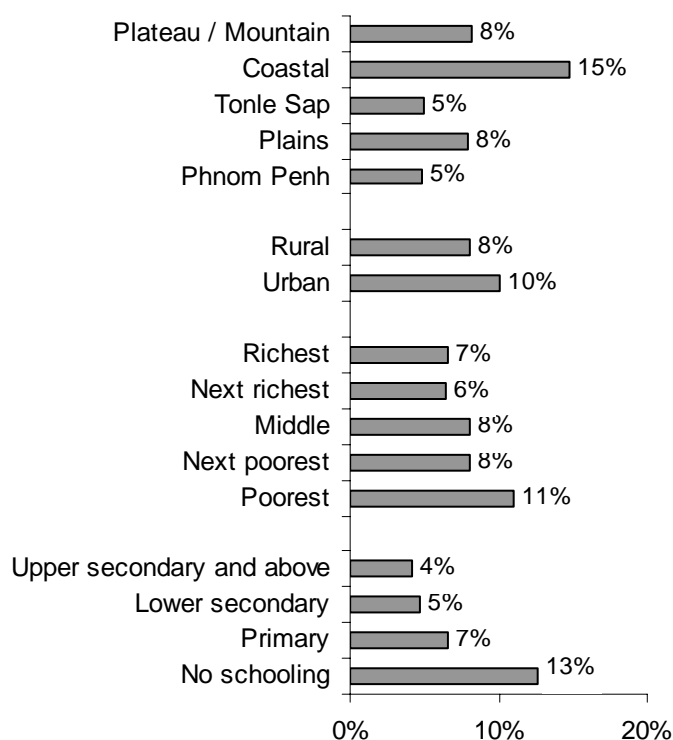
Schooling of a child's mother also makes a big difference to the uptake of immunization services. Twelve percent of the children of mothers with no schooling do not get vaccinations, compared to 7 percent amongst children of mothers with primary education and 4 percent amongst children of mothers with secondary education (Figure 6.11). There also appear to be problems with immunization coverage in coastal regions (which corresponds with low status of health service utilization in the coastal regions).

### *Use of bed nets*

Sleeping under insecticide-impregnated bed nets is a cost-effective measure against malaria and other mosquito-borne diseases. The CSES 2004 reports a high level of utilization of bed nets by population (94 percent) but only 4 percent of the sample reports using impregnated nets. Although richer groups report slightly higher use of nets, the difference is not large (96 percent of the richest quintile compared to 90 percent of the poorest). Low utilization of impregnated nets is likely to be linked to lack of availability or information, as there is no significant difference in use between different socio-economic groups. When scaling up impregnated net use, heavily infested

**Figure 6.11: The level of a mother's education is strongly and positively associated with children's immunization**

- Children between 13-24 months of age never vaccinated, by selected characteristics



Source: CSES 2004.

malaria regions in the Mountain/Plateau regions should be targeted first; here, the reported use of impregnated nets is still only 14 percent. This finding is a little surprising given that the MOH reports that 80 percent of villages in endemic malaria regions received annual re-treatment and replacement of bed nets. Limited knowledge by villagers of whether the nets are impregnated or not may be the reason for the cited difference.

### *Breastfeeding*

Breastfeeding is an important factor in protecting infants from diarrhea and acute respiratory infections and stimulates the

development of the immune system. Breast milk contains all the important nutrients and antioxidants needed for infant development and protection. According to some studies it also enhances cognitive development. WHO recommends early initiation of breastfeeding (within 1 hour of birth) exclusive breastfeeding during the first 6 months of life and continued breastfeeding to two years, accompanied by appropriate complementary feeding. As discussed earlier, the Cambodian population has high levels of malnutrition and childhood illnesses, and in this context promoting appropriate breast-feeding practices matter a great deal.

In 2004, 98 percent of children under three have been breast fed; 14 percent of infants began breastfeeding within one hour of birth and 49 percent within one day. This compares to 11 percent and 24 percent respectively in 2000. But still, only 14 percent of male infants and 20 percent of female infants aged 0-6 months were being exclusively breastfed on the day of the CSES interview. Infants of mothers with primary education are 11 percent more likely to receive breast milk as their first liquid after birth; infants of mothers with no education are 15 percent more likely to receive breast milk as their first liquid after birth; infants of mothers with secondary education are 15 percent more likely.

There appears to be an impact of some recent developments as infants who were

born one year or more before the 2004 CSES survey were 5 percent less likely to have been given breast milk as first liquid to a child. Given that this coincides with increased efforts under the joint health sector development program between MOH and donors that report improved access to appropriate antenatal care and deliveries with qualified attendant in 2004, the health system may have had impact in improving breastfeeding practices.

### *Tobacco and alcohol consumption*

As discussed above, the epidemiologic transition (from communicable diseases of poverty to non-communicable “lifestyle” diseases) is still at an early stage in Cambodia and still confined to the richer parts of the population. However, given the time lag between some health behaviors and their impact on health, it is worth looking at smoking and other risk factors as proxies for future outcomes.

Cambodia exhibits high levels of smoking rates among males (42 percent). These rates steadily increase with age (up to 70 percent among males of 65-74 years of age). Low smoking prevalence among women (4.1 percent) help to bring the overall smoking prevalence down to 21 percent. On average, a smoker in Cambodia smokes 14 cigarettes a day. There is no time series data available to assess whether the prevalence of smoking is increasing or decreasing.

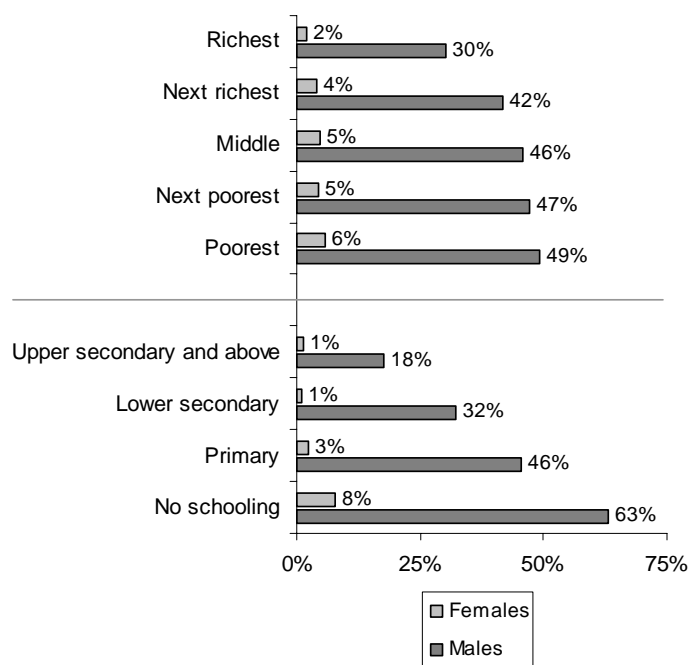
The CSES reveals, however, that the likelihood of smoking is inversely related to per capita consumption and schooling. The poor and men with no schooling have the highest smoking prevalence rates (Figure 6.12). Although in general, knowledge about the health impact of smoking is high (87 percent of population over 15 years of age is aware), twice as many respondents in the poorest quintile than in the richest quintile think that it is not harmful (7 percent and 3 percent, respectively).

High smoking levels among the poor suggest that as the demographic and epidemiologic transitions proceed, the prevalence of non-communicable diseases (NCD) is likely to rise among the poor population. In order to prevent some avoidable NCD morbidity and mortality in the future, public policy measures to curb smoking are warranted today.

The poor spend more on tobacco than on medical care as a proportion of their non-food consumption. The combined share of tobacco and alcohol spending among the poorest quintile is more than twice that spent on medical care (Figure 6.13). Thus, potential benefits from reduced risky behavior would accrue not only in the

**Figure 6.12: Smoking is overwhelmingly a male habit, and declines with education**

- Smoking prevalence per consumption quintile and level of schooling as proportion of population

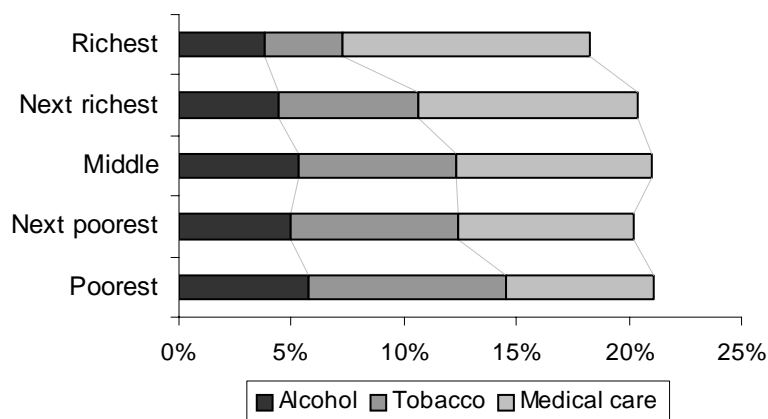


Source: CSES 2004.

future but also today, in the form of increased opportunities to spend more on health, education and productive investments.

**Figure 6.13: Compared to the rich, the poor spend proportionately more on tobacco and less on medical care**

- Percentage of household non-food consumption on alcohol, tobacco and medical care. CSES 2004.



Source: CSES 2004.

### **Access to health services and patterns of use**

Since the mid-1990s, the Royal Government has made significant efforts to improve delivery of basic health services. In recent years, these efforts have been framed by the health sector strategy and joint annual health sector programming with external partners, adopted in 2003. This has helped to increase attendance at public health centers from 0.38 to 0.42 for all age groups and from 0.54 to 0.74 for children below five years. In 2004, 164 health centers were able to provide integrated management of childhood illnesses, compared to just 45 in 2002. Provision of vital micronutrients to children and pregnant women has also increased. Between 2002 and 2004, the percentage of pregnant women who receive at least two antenatal consultations from public health services has risen from 29 percent to 47 percent; deliveries attended by a trained public practitioner has increased from 20 percent to 32 percent. All 962 health centers and 70 referral hospitals provide the full DOTS program for TB patients.

But huge challenges remain. The poor find it hard to obtain access to quality

healthcare. Less than 60 percent of the poor who are in need of health care use it, compared to 74 percent of the richest (Table 6.7). This difference is not that marked in Phnom Penh. The poor appear to have the least access to health care in the coastal zone where only 36 percent of the poorest in need utilize health services, as compared to 67 percent of the richest (Table 6.8). Hospital care is particularly inaccessible for the poor. The two richest quintiles use hospital service five times more often than the poorest quintile (Table 6.9)

Access to health services depends on several factors: physical access (distance, condition of roads); ability to pay (for care and transport); knowledge and information about availability; personal beliefs and perceptions of need and quality of health care; and of the functioning of referral systems.

**Table 6.7: The poor are much less likely to seek healthcare when ill**

- Percentage of persons reported ill or in need of health care during the past 4 weeks who sought care

Quintile	By sex		By location		Total
	Male	Female	Urban	Rural	
Poorest	60	58	59	59	59
Next poorest	60	63	63	62	62
Middle	64	64	60	64	64
Next richest	68	70	70	69	69
Richest	74	75	81	72	75
Total	66	67	73	65	66

Source: CSES 2004.

**Table 6.8: Outside Phnom Penh and the Tonle Sap provinces, wealth makes a big difference to healthcare utilization**

- Percentage of persons reported ill or in need of health care during the past 4 weeks who sought care

Geographical zone	Per capita consumption quintile					Total
	Poorest	Next poorest	Middle	Next richest	Richest	
Phnom Penh	88	78	80	86	87	86
Plains zone	54	57	58	69	72	63
Tonle Sap zone	64	67	68	68	67	67
Coastal zone	36	55	61	55	67	57
Plateau/Mountain zone	59	66	73	69	73	67
Total	59	62	64	69	75	66

Source: CSES 2004.

*Physical access* is a significant issue, especially for hospital care. Only nine percent of the poorest quintile lives in a village with a health center; the mean distance to the closest health center for this quintile is 7.6 km and 16 km to referral hospital. This compares to 6 km and 9 km for the richest quintile. In comparison, private traditional providers (traditional birth attendant, *kru khmer* and/or other

traditional healers) are available within 1-4 km. In terms of health programs, village leaders judged that only the immunization program is available for all segments of the population in their village. The Mother and Child Health (MCH) and family planning programs, HIV testing and iodine programs are all more readily available in communities where rich people reside.

**Table 6.9: Individuals in the richest quintile are five times more likely to use hospital services than individuals from the poorest two quintiles**

- Annual hospital admission rate per 1,000 persons

		Per capita consumption quintile					Total
		Poorest	Next poorest	Middle	Next richest	Richest	
by sex	Male	28	29	56	88	144	69
	Female	28	31	44	92	179	75
by location	Urban	39	56	45	63	98	73
	Rural	27	28	51	95	197	72
Total		28	30	50	90	162	72

Source: CSES 2004

Secondly, there is the issue of *cost barriers to access*. Health care in Cambodia is relatively expensive. This is

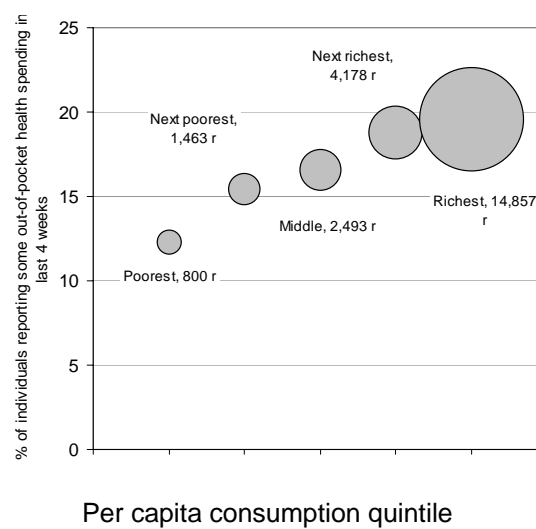
true of public health services as well as private care. Because the public health service is desperately under-funded,

obtaining service requires high fees at the point of service. In 2004, the budget allocation to health was 1.26 percent of GDP or 7.6 percent of government planned expenditures. Allocations have steadily increased over the recent years. However, the execution of public budgets has been a problem (Chapter 7). In 2004, only 83 percent of the operating budget was disbursed by the end of the calendar year; this was even lower at the provincial level (63 percent). This has been accompanied with unpredictable and delayed flows of funds that mostly occurred in the second semester of the calendar year. As a consequence, per capita public health expenditures in 2004 were only US\$2.94 equivalent (less than in 2003 and 2002, US\$ 3.16 and US\$ 4.10 respectively)<sup>27</sup>.

This under-funding puts considerable pressure on front-line services and the institutions have had little option but to charge user fees for services. In the early and mid-1990s, there was no scope for formalizing these fees (as healthcare was theoretically free); fees were therefore informal, untransparent and largely arbitrary. User fees in public facilities have been institutionalized by the Government since 1997 with the aim to smooth out public financing fluctuations, improve salaries of front line staff and regulate unofficial fees. Although the formalization and standardization of fees, together with exemptions for poor patients is a clear improvement, these fees can often still contribute a barrier to access. User fees in public facilities and out-of-pocket expenditures for private health care amount to 86 percent of total health expenditures per capita, i.e. six times more than government expenditures.

From the 2004 CSES, it is estimated that out-of-pocket payments (OOPS) for health care amount to US\$15.48 per capita per year. However, this estimate is based on data collected only from individuals who were reported to have had an illness, injury or other health problem during the preceding four weeks and may therefore be under-estimated. The 2000 DHS reported out-of-pocket expenditure at US\$24 per capita. The size of OOPS increase with the level of household consumption, both in absolute terms and in terms of share of non-food consumption. While nearly 19 percent of those in the richest quintile paid for healthcare in the four weeks preceding the CSES interview, only 12 percent of the poorest paid for care. At 14,857 riels per capita, the average out-of-pocket spending on health care during the past 4 weeks amongst the richest quintile was almost 19 times that of the poorest quintile (Figure 6.14).

**Figure 6.14: Frequency (% individuals) and size (mean riels p.c. shown by size of circle) of out of pocket spending on health care in the last 4 weeks, by consumption quintile, 2004**



Source: CSES 2004.

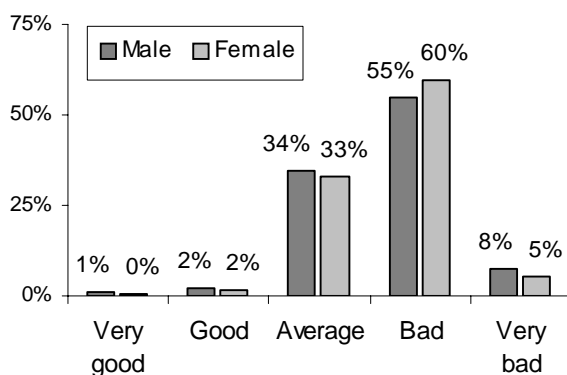
<sup>27</sup> It should be noted though that for the referenced years, undisbursed budgets were carried over to the following year.

The same applies to catastrophic health costs (i.e. treatments requiring payments of more than 50 percent of a household's annual non-food consumption). The same pattern of OOPS is true whether analysis is in terms of per capita or per household costs. However, the population in rural areas appears to have higher OOPS than in urban areas across consumption quintiles.

The burden of OOPS is thus lower among the poor than the rich. However, this is most likely because the poor simply do not use health services, and if they do, they use lower cost and lower quality services. In this context, it is surprising that only 12 percent of village leaders representing the poorest communities list the high cost of health services as the most important health services problem in the CSES (behind lack of medicines and long distance to better quality care).

**Figure 6.15: The 10 percent of the population with bad or very bad health account for 64 percent of total household spending on healthcare**

- Percentage of total out-of-pocket spending by reported health status, 2004



Source: CSES 2004

The 10 percent of the population with bad or very bad reported health status account for 64 percent of total OOPS. A similar pattern is also true for people with disabilities, whose mean OOPS is more

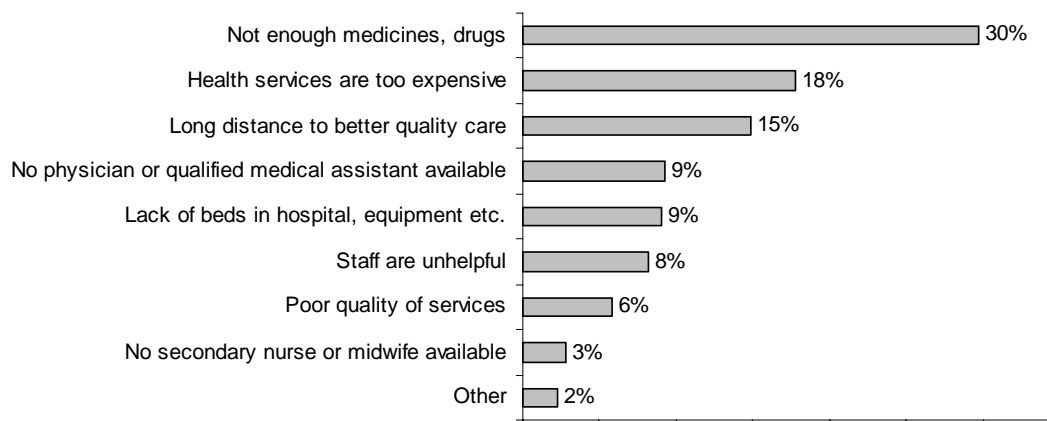
than five times higher than that of people with no disability. This reflects lack of insurance in Cambodia and makes this part of population extremely vulnerable to ill health induced poverty (Figure 6.15).

High-out-of-pocket expenditures on health and health services may throw a household into poverty. Households may be forced to sell or mortgage productive assets (e.g. animals or land), or simply cease expenditures on items that can enhance household productivity in either the short or long term (tools, fuel to go to market, children's education, etc). The 2004 CSES reports that borrowing is one of the coping mechanisms for covering OOPS. Illness and injury rank fourth as the most common reasons for taking out a loan (13 percent of all loans). The relative burden of health-related indebtedness is higher among the poor (11 percent of value of all outstanding loans compared to 7.5 percent for the richest). In a recent study, illness was the number one reason for land sales. Unlike harvest failure, the impact of a health crisis requires significant lump sum payments. Even when households first borrowed to meet the costs of a catastrophic health event, they were later forced to sell land because of high interest rates (Kenjiro 2005).

It is clear from the above that protecting the population from high health care-related out-of-pocket costs should be one of the priorities for health system development. While the poorest should be the first priority, it is also desirable to provide protection against costs over a certain threshold to the non-poor among the 10 percent of population with more serious health status facing high out-of-pocket costs. This would not necessarily mean abolishing user fees but rather institutionalizing ways of protecting the poor and seriously ill from the full impact of user fees.

**Figure 6.16: Inadequate drug supply, cost of services and distance to facilities are seen as the key problems with health services**

- Frequency of answers given by village leaders when asked to choose top three problems with health services (public and private) in their village of residence



Source: CSES 2004 (Village Questionnaire)

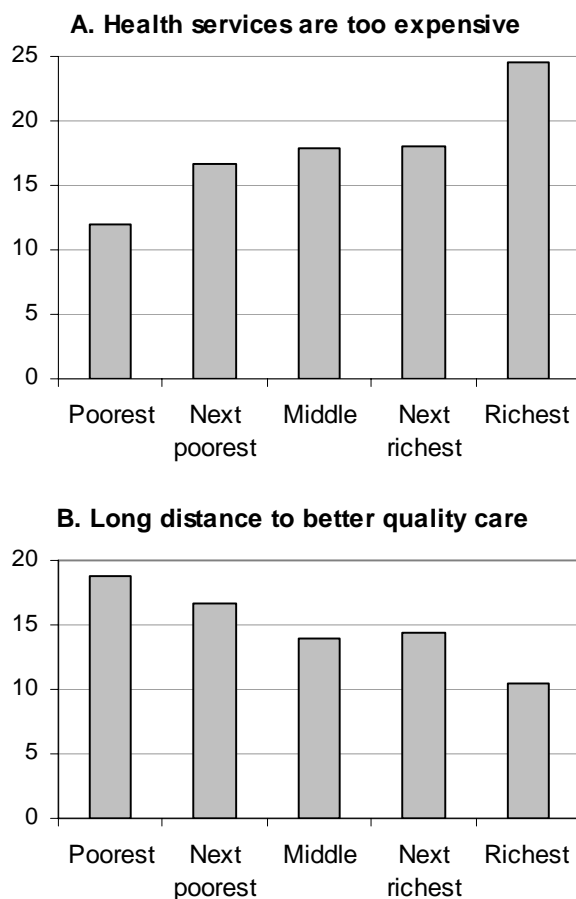
Poor quality of care is another factor explaining low utilization of health care. Although this continues to be a problem, the trend is positive. The 2004 CSES asked village leaders in the 900 sampled villages whether health services for the people in their villages had improved over the past five years. Village leaders reported improvement for villages inhabited by 56 percent of population and deterioration for only 6 percent of the population. According to the same survey, lack of drugs is the most commonly perceived problem with health services, with expense and distance also accounting for a large proportion of reported health service problems (Figure 6.16). There is considerable consistency regarding the nature of the problems with healthcare. The main difference that can be imputed between groups is that, when the answers given by village chiefs are assigned to the households in their villages, it would seem that distance to quality health care is relatively more important for poor

households (and the costs of that care are somewhat *less* important, relatively speaking: (Figure 6.17).

Matching the CSES data against the database of public health facilities and 2002 Health Coverage Plan reveals that significant rich-poor differences exist in overall availability of staff, availability of midwives and doctors, staff-to-bed ratios, and doctor-to-bed ratios in the primary coverage facility to particular population. For example, only 5 percent of the poorest quintile is served by a primary health center staffed with a doctor, compared to 25 percent of the richest quintile. Similarly, the primary hospital for the poorest quintile had 13 midwives, compared to 18 in the richest. These indicators suggest that, in addition to physical access and financial barriers, the poor are also disadvantaged in terms of the quality of health care facilities that are available to them.

**Figure 6.17: For the poor, distance to health facilities may be as important as the cost of care**

- frequency problem was mentioned in village level questionnaire, by household consumption status



Source: CSES 2004 (Village Questionnaire).

### **Public and private provision of health services**

Public health centers and referral hospitals are closer to the poorest segments of population (7.6 and 16 km, respectively) than equivalent private facilities (private clinic 17 km; private hospital 94 km). However, publicly-provided health services are used by only 17 percent of the

population who reported using health care in the CSES<sup>28</sup>.

There may be a number of factors that deter the poor from seeking health care from public health care providers. Likely explanations are the still-low public perception of the quality and availability of publicly-provided health services (absence of qualified personnel, formal and informal charges, and lack of drugs) as well as the proximity of private traditional providers.

Amongst the poorest quintile, 78 percent consulted a private provider when they utilized health care. The most common private consultations occur in drug shops (33 percent). The other important private providers are off-duty or absent-from-duty public providers (for example, nurses), usually located in the villages they serve. Thirteen percent of private consultations occur in the doctor's or nurse's home, as villagers find it much more convenient than traveling to a health center; and 18 percent of consultations occur in the patient's home by a visiting private health care provider.

There is evidence, however, from both CSES 2004 as well as from the

<sup>28</sup> Focus group discussions in the MOPS and PPA research studies revealed a continued preference for private treatment over public—despite the higher cost of private treatment—based on a perception that the skills or medicines of the private practitioners were better than those of the public facilities. Speed of treatment and convenience were also reported as important issues. If a villager is taken ill at night they will seek treatment from the pharmacists who live in the village rather than make the long journey to the nearest health center (CDRI 2006a, forthcoming, 2006b, forthcoming).

Government reporting that children and women utilize health centers more frequently. The likely explanation is that MCH services are more readily available in health centers.

Over the 1990s, much effort went into improving the rates of utilization of public health services, on the assumption that the public sector provided a better quality of care than traditional healers and modern providers or drug sellers. Private providers are perceived to have low levels of medical knowledge, sometimes prescribing harmful treatments. This, accompanied with low level of regulation and incentives to over-prescribe, may result in treatment that is ineffective, over-priced, or in some cases actually harmful. Many Cambodians self treat with drugs purchased from pharmacies or other retail outlets selling drugs.

Although private providers are not necessarily the cheapest, their responsiveness to patients' preferences and their availability seems to make them attractive options. The Government has recognized this and has included changing the behavior of public health care providers as a policy priority. So far, however, the impact on utilization of public providers has been limited.

There is also a question about the beneficiary incidence of government expenditures on health. Although the poor tend to use public services more than the rich, the difference is not large (19 percent vs. 17 percent). As the poor tend to use more health centers and district hospitals (87 percent of those who used public services) when the rich use provincial and national hospitals (53 percent of those who used public services), public expenditures on health are likely to provide more benefit to the rich, who consume more

expensive high-end services by public providers.

### ***Engaging civil society as partners in service delivery***

The Government of Cambodia has experimented with community participation and innovative public-private-partnerships to improve the governance and management of public health services. The best-known example of these attempts to improve the delivery of public services through partnerships with non-state actors involves the contracting of NGOs to manage health services at the Operational District level (Box 6.9). The Government has also expressed a willingness to channel part of Government funds through NGO-run equity funds that help to compensate facilities for the user fees and other health care-related out-of-pocket costs for the poor. There is emerging evidence that these initiatives have helped to increase transparency of health facility operations (through user fee schedules approved by communities), access to health services for the poor and coverage by essential health interventions (e.g. antenatal care, assisted deliveries or vaccination).

Since the early 1990s, attempts to ensure community participation and oversight in the management of health facilities has moved from pilots to become official policy. In 1997, the first national guidelines on community participation were included in the Health Finance Charter, which gave Health Centre Management Committees (HCMCs) the task of setting user fees and exemption policy. In 2003 the MoH established (with assistance from UNICEF) a standardized policy which mandates two types of Committees for each health center. The first (the Village Health Support Group) serves primarily as a channel for

**Box 6.9: Contracting-out to NGOs for healthcare: public-private partnerships for service delivery**

In an experiment to improve management and incentives in the delivery of rural health care, the Government, with support from the ADB, selected nine Operational Districts (ODs) in which to try alternative approaches. Two ODs were contracted out (in which the contractors—international NGOs—had full responsibility for service delivery and full management control, including to hire and fire). Three Districts were “contracted in” (the contracted NGOs provided management support and the Government covered recurrent costs through normal channels); and four served as control Districts, in which normal public health service arrangements applied. Surveys in 1997 (before the experiment began) and again in 2001 showed that while service delivery improved markedly in all Districts (reflecting the impact of national reforms of the public health system), the rate of improvement was dramatically greater in the contracted-out Districts. In part, this could be argued to reflect the higher per capita Government/donor/NGO health spending in contracted-out Districts (US\$4.50 compared to US\$2.82 in the contracted-in Districts and US\$1.86 in the control Districts); but this increased level of spending was itself to some degree a reflection of improved management practices. The NGO managers adopted innovative practices (e.g., in one District the use of formal user fees, the proceeds of which were used in a transparent manner to improve salaries and motivation; performance-based staff contracts; and the decentralization of more highly-trained personnel to Health Centers). The improvements had a significant equity impact, with major reductions in the average out-of-pocket health expenditure of the poorest half of the population and a corresponding dramatic increase in the utilization of public facilities. With additional donor funding, the Government has now expanded the contracting out approach to cover 10 percent of all Cambodians.

Sources: Keller and Schwartz 2001; Conway and Crossland 2002; World Bank 2003.

communication between the health center and beneficiaries on public health issues, but also elects one man and one woman

per Commune to the Health Centre Management Committee (HCMC). The HCMC sets objectives for the annual operational plan; monitors implementation and achievements; introduces and monitors the health finance scheme; and manages the HC budget<sup>29</sup>.

A review of experience with user fees examined (among other aspects) the link to community participation and concluded positively that the existence of functional management and feedback committees appears to correlate with increased usage and improved internal management and morale of staff (Wilkinson, Holloway and Fallavier 2001).

**Health sector strategy and challenges ahead**

As stated in the MOH strategic document “Pushing Momentum for Health Sector Development: Annual Operational Plan for 2005,” the Cambodian health sector is confronted by the challenges of an economy emerging from a period of conflict, with widespread burden of infectious diseases, and malnutrition that poses a risk to the country’s human capital. One may add to this widespread poverty, the threat of new infectious diseases such as SARS and avian flu, and the likely increase burden of non-communicable diseases in the future. After initial improvements in the mid-1990s, there was a setback in key MCH indicators in the late 1990s and early 2000s. But more recently there are signs of improvement that now need to be taken further and made sustainable.

In the Government’s “Rectangular Strategy” (2004), health sector strategy forms part of the “growth rectangle” of

<sup>29</sup> Committees have been much rarer, and less successful, in hospitals.

capacity building and human resource development. The health strategy is described in the Health Sector Strategic Plan for 2003-2007, which identified six key areas for health sector development. These are health services delivery; behavioral change and communication for health service providers; quality improvement; human resources development; health financing; and institutional development. These generic categories need to be harnessed to address priority concerns of the MOH, including high infant and child mortality; high rates of malnutrition; high maternal mortality (including death from obstetric trauma and septic abortions); high case fatality rates from HIV/AIDS, malaria and TB; and high total fertility rates and population growth. The MOH and donors have committed to joint annual operational planning and reviews of health sector performances.

Evidence presented in this report supports the strategic directions of the Royal Government of Cambodia. The report also points towards some of the key challenges that need to be overcome.

*First*, public expenditures on health need to become more effective and more targeted towards the poor. There is direct evidence that the poor do not have access to essential health care when they need and that high out-of-pocket costs constitute an important barrier. There is also indirect evidence that the benefits from government health expenditures are consumed more by the richer segment of the population.

Scaling up equity funds is a promising initiative to protect the poor against out-of-pocket expenditures but achieving meaningful population coverage is likely to take time. In this context it is important that the equity funds be established first in locations where poverty rates are highest

and/or where high numbers of the poor live. Given that out-of-pocket spending mostly impact the 10 percent of population with poor health who may or may not be among the poorest, the equity fund initiative may also be needed to cover very high out-of-pocket expenditure (above a certain threshold, or for certain health conditions with high costs) among the non-poor to mitigate potential impoverishing impact of high out-of-pocket spending.

The execution of the government budget needs to become more predictable and stable. This would require coordination and cooperation with overall reforms of public financial management (Chapter 7), led by the Ministry of Finance and Economy, as well as overcoming capacity constraints within the Ministry of Health. There is currently a disconnect between the annual operational planning process and the budgeting process. Compatibility between MOH priorities, key areas of health sector development used in Annual Operating Planning (AOP) purposes and budget categories need to be established. This may require amendments in both AOP structure as well as in current budget organization in the MOH and MEF. Moves towards more program budgeting need to be accompanied by a performance monitoring system that would be able to link expenditures and activities to outcomes.

The 2005 AOP estimates the cost of the public health program to be US\$ 7.70 per capita. The Government would be able to contribute US\$3.48 per capita, leaving a gap to be supported by international partners and donors. Such gaps are likely to continue in the short- and medium-term. To accurately predict the financing needs for the priority public health objectives and ensure financing, Cambodia will need to develop and adhere to a medium-term

expenditure framework that would provide some certainty about available government funding in the medium term.

*Second*, the delivery of public health services and programs need to become more effective. This would require not just establishing and equipping new public health centers and hospitals. Facilitating and rewarding good performance should become part of the institutional culture in the health sector. Cambodia has experimented with contracting NGOs to manage and/or take over the provision of public health service providers, with encouraging results. Although the future of scaling-up contracting in Cambodia is unclear, the lessons learned should be supported to improve health service performance, either through continued NGO involvement, or in internalized public service delivery and implementation of equity funds.

Similarly, the ongoing civil service pay reform process may provide instruments to improve health service delivery. Different approaches are likely to be needed for motivating health administrators on central, provincial and operational district levels, and for front line staff actually delivering services to the population. The need for greatest service improvement is in rural areas where distances are longer and where more of the poor reside.

There is also scope for improving the performance of selected health programs. The 2004 CSES indicated that only the immunization program was evenly available while others were more available in villages with relatively wealthier populations. In particular, the nutrition program needs to be strengthened, given the importance of the problem and apparent lack of improvement over the last four years. This would require improved coordination of various initiatives

underway, adequate resources, and institutional strengthening.

Given that only 20 percent of the population uses publicly-provided health services, there is clearly scope for integrating the role of the private sector in helping to achieve public health goals. The Government has already recognized the need to enact laws and regulations and to strengthen institutions to provide adequate oversight and ensure standards of private providers. But these initiatives can go further and include public-private partnerships in service delivery. In selected cases, the Government could become a purchaser of health services rather than the integrated provider it is now (e.g. through equity funds). Private providers could also be integrated into referral systems by training them to recognize health conditions and symptoms for which referral to more qualified providers should be considered. Work on facilitating community participation in local health services delivery should also be continued.

*Third*, it needs to be acknowledged that the determinants of health outcomes are multi-faceted and multi-sectoral. Time and again, this report presents evidence that the level of schooling of women and mothers is a key factor for improved outcomes in fertility, infant and child mortality, nutrition and breastfeeding, and knowledge of HIV/AIDS. In particular, secondary education seems to make a significant difference. Similarly, improvements in health status are critically dependent on further poverty reduction and improved living standards (including nutrition), access to clean drinking water and sanitation, and improved knowledge, attitudes and behavior with regards to behavioral health risk factors.