Working Towards a Commune-Based Poverty Monitoring in Cambodia

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Abstract

Cambodia is committed to a long process of decentralization. The importance of local governance is well-recognized by all of Cambodia's stakeholders, and many are working to contribute to enhancing the success of this reform. Naturally, commune councils need adequate, systematic and reliable information in order to conduct their needs assessments, planning, monitoring and evaluation of development projects. The Community-Based Poverty Monitoring System (CBMS) in Cambodia generally aims to provide practical generated data to commune councils for their planning, monitoring and evaluation of development projects. To meet the

long-term objective of creating a sustainable system to locally monitor poverty reduction over time, the project emphasized institution and capacity building at the local level. A total of 11,937 households were surveyed as part of the Cambodia's pilot CBMS conducted from October 2003 to November 2004. These households represented two districts in two provinces of contrast in terms of socio-economic conditions. As a census at the commune level, knowledgeable villagers were recruited and trained to undertake the household interviews based on a five-page questionnaire. Data were processed manually under the management of the commune councils and under technical supervision of the project's Supervisory Team. As a result, six communes in this pilot undertaking could produce their own poverty statistics books that they can use for planning and monitoring purposes. In addition to poverty rates at the village level, the exercise provided scientifically generated statistics regarding demography, education, housing, land, water, health, household expenditure, occupation and income, assets, livestock, and domestic violence. It is expected that the data will be periodically updated, perhaps every two years. The results have been widely shared with various stakeholders for possible consideration of its adoption in other areas. As part of the successful advocacy for the pilot CBMS, the Government of Cambodia conducted a National Forum on Pre-Identification of Poor Households on 28 February 2005, which was an effort to discuss various approaches for the identification of poor households under the umbrella of its poverty reduction strategy. As a result of this workshop, a Technical Working Group on Pre-identification of poor households will be set up and led by the Ministry of Planning. With valuable experience of this project, the Cambodia Development Resource Institute (CDRI) will be an active member promoting CBMS replication and expansion. More external assistance in terms of both technical and financial resources will be critically important in taking this initiative forward.

Introduction

Background

Having emerged from two decades of civil war, Cambodia is one of the poorest countries in Southeast Asia today. It has a rather young population of 13 million, which grows at a rate of 2.5 percent annually. Despite a somewhat high economic growth rate of about 5 percent on average over the past 10 years, Cambodia's GDP per capita in 2001 has remained low at US$ 247, compared with US$ 405 in Vietnam and US$ 1,843 in Thailand (IMF, 2002). Applying the food calorie-based poverty line, which is about $0.50 per day, it was estimated in 1993-94 that 39 percent of the Cambodian population lived in poverty. In 1999, the figure stood at 36 percent, reflecting a reduction of only 3 percent over a period of 6 years (RGC, 2001). A national poverty rate has not been estimated since then. The national socio-economic survey conducted from October 2003 to December 2004 will allow poverty data to be updated and poverty profile to be updated.

Alleviating poverty, and at the same time maintaining peace and stability in this post-conflict nation, is the fundamental development challenge facing the Royal Government of Cambodia (RGC). In this connection, a National Poverty Reduction Strategy (NPRS) has been drawn up.

The NPRS draws on recent documents concerned with poverty reduction, including the Interim Poverty Reduction Strategy Paper (I-PRSP) and the Socio-Economic Development Plan II (SEDP II). However, the NPRS goes beyond both documents in seeking more practical and action-oriented approaches to reducing poverty. Nationally representative poverty data used for these papers are based on the Cambodia socio-economic surveys conducted in 1993/94, 1996, 1997 and 1999, and on the Participatory Poverty Assessment in 2001.

Existing poverty monitoring systems in Cambodia
At the national level: the Poverty Monitoring and Analysis Technical Unit (PMATU)

As part of poverty reduction efforts, the Royal Cambodian Government established in 2000 the Council for Social Development (CSD), a high level inter-ministerial body with the mandate to promote, coordinate and monitor development policies and programs aimed at poverty reduction. The General Secretariat of the CSD oversees the Poverty Monitoring and Analysis Technical Unit (PMATU), established in January 2002 under the sponsorship of Swedish International Development Cooperation Agency (SIDA) and United Nations Development Programme (UNDP) (GSCSD/PMATU, 2002). The Cambodia Development Resource Institute (CDRI) initially provided technical assistance to PMATU to develop a national poverty monitoring system.

At the local level: the Seila Programme/Partnership for Local Governance

The Cambodian government and donors have made a concerted effort to establish and implement a decentralized program called "Partnership for Local Governance" or PLG, which aims to reduce poverty through decentralized and improved local governance. The Seila programme, the predecessor of PLG, started in five provinces in 1996 and expanded gradually to cover 24 provinces and municipalities at present in the whole of Cambodia. The RGC has formally adopted the PLG program as an "aid mobilization and coordination framework for support to decentralization and deconcentration reforms" (RGC, 2003). PLG supports the programming of financial and technical resources at the commune, provincial and national levels to implement and develop the government's reform agenda to achieve an overarching goal of poverty alleviation (RGC, 2003). The RGC has stated that "the PLG's goal is to contribute to poverty alleviation through good governance and its development objective is to institute decentralization and

deconcentration systems and strategies to manage sustainable local development" (RGC, 2003).

The research issues

Cambodia is committed to undergoing a long process of decentralization. As part of this, a local election was conducted in February 2002 to elect "commune councils" charged with local development planning and implementation. The importance of local governance is well-recognized by all of Cambodia's stakeholders and many are working to contribute to enhancing the success of this reform process. CDRI, as such, has established a new research program on local governance and decentralization, a five-year commitment strongly supported by the Cambodian Government and major donors.

A community-based monitoring system (CBMS) will nicely complement such decentralization efforts in a concrete way and contribute to the successful functioning of the newly decentralized state apparatus. At present, Cambodia lacks a community-based poverty monitoring system (CBMS), although there is a commune database collected through administrative reports under the Seila/PLG Programme initiative. Naturally, commune councils need adequate information generated in a systematic and reliable way in order to effectively conduct their needs assessments, planning, monitoring and evaluation of development projects. The best way to achieve this is to establish a system and have it operated in a consistent manner by the commune councils, with technical support from the Provincial Statistics Office and other agencies.

Clearly, when local capacity is built to take over the CBMS, it will be much more cost effective than sending enumerators from the capital city as in the past national and community-based surveys. Ensuring local involvement and responsibility in the survey will contribute to local ownership and ensure local use of data. Currently, the national surveys generate data only for analysis at the national level and provide no database for the local authorities. In fact, a large

number of communes are statistically left out in the national sample surveys.

A proposed pilot CBMS project is supported by the MIMAP/CBMS Network. CDRI is able to pioneer this exercise within a two- or three-year timeframe. CDRI is actively engaging the National Institute of Statistics (NIS) and the PLG/Seila Programme in undertaking the exercise since it is envisaged that the Government will formally adopt and eventually take over the project for gradual expansion. A "Supervisory Team" composed of these institutions and led by CDRI has been formed to implement the project.

Objectives of CBMS

The specific objectives of the pilot CBMS Project are as follows:

- To select appropriate indicators for commune-based poverty monitoring and analysis.
- To provide practical and scientifically generated data to commune councils for their effective planning, monitoring and evaluation of development projects.
- To produce Commune Poverty Monitoring Reports based on the CBMS results.
- To build the capacity of the selected commune councils in survey methods and data processing, analysis and use.
- To promote the link between commune and provincial/national level planning processes in utilizing CBMS data.
- To cement the link between PMATU and NIS and commune councils and to prepare for an eventual nationwide CBMS.
- To promote a firm process of decentralization which has the high commitment of Government and donors.

Methodology

A plan for establishing a CBMS (mobilization)

The project was implemented over a period of 16 months in two phases. Phase 1 lasted 5 months from 1 August to 31 December 2003

and Phase 2 with the implementation of a pilot CBMS lasted 11 months from 1 January to 31 December 2004.

The community-based monitoring system (CBMS) is a tool to combat poverty and comprises the following constructive elements:

Identification of the area where the system is to be introduced

Six communes with about 12,000 households in two provinces were selected for the pilot CBMS sites. Three communes (Prek Norint, Samrong Khnong, and Prek Luong) were chosen from Ek Phnom district of Battambang province to represent a better-off province while three others (Snuol, Khsem, and Sre Char) were taken from Snuol district of Kratie province to represent a relatively poor province. Battambang is one of the provinces that had received relatively more financial support and capacity building from external sources in the past 10 years. Kratie is one of the more remote and poorer provinces. Such differences would provide insights on how the CBMS could be conducted in areas with poor and better-off socio-economic conditions. As expected, the communes in Battambang did the job more smoothly than those in Kratie. It was easier to hire enumerators with a reasonable capacity in Battambang while it was hard to find enumerators with adequate literacy and willingness to take up the job in Kratie. The communes in Kratie are dispersed and poorly connected by roads resulting to an increase in costs to cover the transportation of the enumerators. There were also more errors in completed questionnaires in Kratie than in Battambang.

In each related commune, a census of all the households was carried out. In line with the current decentralization efforts directed at the commune level, the selected communes were good target study areas. The pilot CBMS in Cambodia was not intended to represent all the districts or provinces.

In Cambodia, a "commune" is the lowest administrative unit. It comprises a few villages and has an average population of about 1,000 households, with sizeable variations. A commune is managed by a "commune council" whose members were elected in February

2002 for the first time in Cambodian history. Commune council members, which number 5 to 11 depending on the size of the population in the commune, come from various political parties and have an office term of five years. The commune councils produce a three-year moving development plan and manage development works in the communes. Normally, five to ten communes form a district.

Contact: meeting with relevant institutions and local populations
The planning offices in the two provinces expressed interest to adopt the CBMS into their regular structures and programs and provided an office for computerized data processing work for the project at the provincial level. This is because the project is in line with the national plan to strengthen the statistical systems at the local levels. It is envisaged that NIS will take over the work from CDRI when the pilot project is completed. This will be a very important development in terms of enhancing the likelihood of eventual nationwide CBMS. If the project is successful, it is hoped that more resources from other agencies can be mobilized to expand the system. Recently, many donor agencies have expressed interest in the outcome of the pilot CBMS, the more so because right now there is no other systems to monitor poverty reduction at the commune level.

Development of poverty monitoring indicators
A set of core indicators for the pilot project relating to demography, education, housing, land, water, health, household expenditure, occupation and income, assets, livestock, and domestic violence were chosen. It was drawn-up through consultations with partners and the study of their working documents. A number of variables may duplicate those already contained in the Seila Programme's Village Data Book, which must be filled out by the village chief. Since the CBMS employed a census approach and given the critical importance of these variables, they will remain in the core set in this pilot survey. Comparison and verification against each set of

data can be made between the two approaches for quality improvement. From this core set of indicators, a household questionnaire has been designed. The number and complexity of the questions were severely constrained by the fact that data were to be processed manually and local enumerators' capacities and experiences were limited.

Development of data collection and processing tools
Designing household and village and commune questionnaires
A participatory approach was used to develop the data collection and processing tools to meet the objectives of the project. A questionnaire was developed, pre-tested and revised, in continuous consultation with the commune councils.

Pre-test
Following the discussions with the Network Leader in November 2003, a pre-testing of research instruments was carried out, although not planned initially. Thus, the budget and timelines were modified and a time extension was requested and approved without additional costs incurred. These issues were addressed in the final CBMS design. The household questionnaire and the tally sheets were developed and implemented in one village per commune as a pre-test. All the responsible commune council members, village chiefs and enumerators for the pre-tested village were trained in early February 2004 to conduct interviews with all the households in the village in February and March 2004. The training took three days. The first day dealt with the purpose of the CBMS and all the questions in the questionnaire. The second day was spent on testing the questionnaire in the village. Each enumerator had to interview two households, one small and one large, to gain experience with households of different sizes. The third day was spent to collect feedback from the enumerators and clarify/rectify any question that was unclear or not applicable. As a result, the pre-test helped to improve training methods, questionnaires, interviewing facilitation and data analysis.

Designing data processing tools

Data processing tools have been developed for both manual and computerized processing. Manual processing was divided into three parts: (i) filling up of spreadsheet frames by the enumerators; (ii) tabulation of data to produce a village statistics base; and (iii) aggregation of all the village data to produce a commune statistics book. The commune statistics book will be further analyzed by commune council members for the production of a "commune poverty report" which constitutes a major CBMS output at the commune level.

In addition, a data entry frame in SPSS was developed for computerized processing by the provincial statistics office. This was used to verify the accuracy of manual processing at the village and commune level.

Selection and training of enumerators and data processors

Selection of enumerators and data processors

The initial idea of employing schoolteachers has proved not appropriate for the project although they had worked on the population census and the general election administration in Cambodia. The CBMS survey took around one month of full time work, making it impossible for full time teachers to participate during the school period. Members of the Village Development Committee, which had become part of the voluntary Commune Planning and Budgeting Committee, and knowledgeable villagers were recruited jointly by the commune councils and the Supervisory Team. They were later trained to become enumerators. Those with a good command of quantitative skills were also trained to work as data processors

Initially, the village chief was not considered for any substantial role in the survey. However, after consultations with the commune councils, it was clear that the village chief had a lot to offer and could play a more helpful role than acting as an interviewer. The village chief guided the enumerators to every house to conduct the household listing. He was asked to guide the enumerators to the right households

and if necessary, would make appointments for the enumerators. He received a minimal allowance as part of the honorarium for commune council members.

Training of enumerators

Training was conducted on 03-04 May 2004 at the communes of Prek Norint, Prek Luong and Samraong Knong in Battambang province, and 07-08 May 2004 in Kratie province for the communes of Sre Char, Snuol and Khsem. An additional training day was conducted in Kratie due to the weaker absorptive capacity in this relatively poor province. The purpose of the training was to make sure that all enumerators could do their jobs effectively. A total of 122 people were trained by the CBMS Supervisory Team. The questionnaire was delivered to all the enumerators before the training and they were asked to study it in advance. During the training, the trainers discussed the questions one by one and made sure every enumerator understood their points. It was really useful to use a participatory training approach that allowed all enumerators to express their concerns and share experiences, especially those who had participated in the pre-test in February 2004. The most difficult parts of the questionnaire were the questions on household income and expenditure that need a high level of analysis and people's willingness to respond.

Training of data processors

In each province, the training of data processors was conducted in two parts: (a) manual data processing at the village and commune level; and (b) computerized data processing at the provincial level.

At the village and commune level, about 60 participants were trained in manual processing, or roughly 2-3 persons per village. They used a calculator to do additions and calculate the percentages. The problem in this step was the error margin in the manipulation of too many numbers, especially the percentage of farmland, income, expenditure, asset, and poverty derived from expenditure per capita.

At the provincial level, 10 statistics officials at the provincial statistics office were selected and trained to do the computerized data entry. An application frame in SPSS was developed and installed for them. It was useful to have the statistics officials involved in this work because some had an experience already in data entry. Unfortunately, there were not enough computers with the capacity to install the SPSS program.

It was a valuable exercise because after explanation and presentation of examples of data processing, all participants could start practicing in data processing and pointing out difficulties. It should be noted that data processors with high school education did better than others of lower education.

Conduct of survey

Data/information was collected through two instruments: the household questionnaire, and village and commune questionnaire. A total of 84 enumerators conducted the interviews under direct assistance and supervision from 43 heads of village, 21 commune council members, and two provincial counterparts. The enumerators were able interview 11,937 households.

The survey was preceded by a household listing. The enumerators and the village chief spent the first one or two days to list all the households in the village in the order of the existing group system. In a Cambodian village, there are a number of "groups" ordered sequentially from one side of the village to the other side. There can be 10 to 30 groups per village. The number of households in each group varies from 10 to 50. The household listing exercise was to provide the ordinal number of households from one side of the village to another, and starting from Group 1 in the village. A form for household listing was provided to the village chief and enumerators. With pre-printed ordinal numbers of households, this form provides space for group number, house number, name and sex of household head. The ordinal number of household is used as a serial number on

the questionnaire for the household. It is also used as an identification number for the relevant household.

The household listing exercise is useful in the verification as well as the updating of the number of households in the village, in accordance with the definition adopted for the CBMS system. Based on this exercise, an actual counting of all the households in the village is made so as to obtain an exact figure. Each enumerator keeps a copy of the new household list, which will give household ID number to be recorded on the questionnaire. The village chief and the commune councils can also use the household list for other purposes.

Depending on the size of the village, all the interviews took about 20 to 30 days for a village. The enumerators worked reasonably well under the supervision of a commune council member and the provincial partner who must report directly to the Supervisory Team. The village chief assisted the enumerators with geographical guidance and appointment arrangements. At the end of March 2004, a meeting with all the enumerators, village chiefs and commune council members in each area was held to solicit their experiences in the implementation of the pre-tests.

During the interviews, all the enumerators reported difficulty in obtaining information about household income and expenditure, and domestic violence. Most of the interviewees tried to disguise their monthly income or could not recall how much they earned monthly and annually. This problem occurred in all villages. As a result, the income and expenditure in a household do not always match.

Some enumerators reported that it was difficult to find the head of the household for the interview because they were working far away from home. Moreover, in some villages, there were houses located very far from the village centre and difficult to access by road.

The village and commune questionnaires were also completed by chiefs of villages and heads of communes. The questionnaire contains questions about the village as a whole. The village chiefs filled them out under the supervision of the commune councils.

In addition, the provincial partner took part in supervising the enumerators as well as the commune council members. Members of the supervisory team carried out the spot checks to ensure quality and smooth implementation of the survey.

Consolidation and processing of data

All the 11,937 completed questionnaires were checked and verified by 20 commune council members from the six communes. Less than two percent of the questionnaires contained errors, which require the responsible enumerators to re-interview the households. Errors were mostly related to the household's income and expenditure, and own assets.

After data cleaning, manual data entry and tallying were performed by the enumerators for each village. In some communes where the enumerators did not have good numeric skills, the commune council members assumed the responsibility to process the data. The commune council members responsible for the project also checked and validated the data processing.

During the reporting time, the commune councils were responsible for processing, aggregating and producing tabulations for the commune level statistics, which will be used for the writing of the "Commune Poverty Report". Meanwhile, the computerized data entry is being undertaken by the provincial statistics offices of the two provinces.

Analysis and validation of the survey results

The most challenging effort was to determine the poverty line for each commune and the proportion of poor households in the village and commune. This was done on the basis of consumption expenditure per capita, in line with the adopted national definition. However, based on the preliminary results, the poverty line of 1,200 Riels adapted from the commune poverty report of the government seemed too low. The main reason appeared to be the inflation that has occurred since 1998 when the Government commune poverty

line was established. After consultations with the enumerators and the commune councils, this poverty line was raised to 1,500 Riels (US$0.38) per day per person in line with the national poverty line. The main argument here is that the intent of the CBMS exercise is not only to estimate poverty at one point in time but also to measure poverty over time. Thus, as long as the poverty line is fixed and adjusted by inflation, it can serve the purpose of measuring changes, if any, in the number of households living below the poverty line.

Disseminations of results
The CBMS results were disseminated at local and national levels as follows:

National level
The pilot CBMS results were disseminated through a national workshop for all partners of the project and relevant government and non-government institutions. Both governmental and non-governmental agencies were invited to use the CBMS data for a diagnostic study of the poverty situation in the selected communes. The information can also be useful in the design of policy interventions and the targeting of vulnerable groups, including the poorest of the poor in the communes.

Efforts will be made to "market" the project to prospective donor agencies and the government so that they will continue to expand the CBMS. Ideally, the joint government-donor PLG Programme will take ownership of the CBMS and incorporate it into its nationwide program.

Local level
The pilot CBMS results were also disseminated to all communes from the Ek Phnom and Snuol districts through the two local workshops. All heads of communes who participated in the workshop expressed a positive interest in developing the Commune Poverty Monitoring Report in their communes. They have, thus, begun asking the

commune council members, who had experience with the pilot CBMS project, some questions. Moreover, it is expected that the provincial authorities will further disseminate the pilot CBMS experience to other communes through their regular meetings for consideration and potential adoption.

The outcomes from the CBMS will provide the basis for the production of a "commune poverty monitoring report", which will be the main tool for the commune council members to better monitor and evaluate the impacts of development policies and programs undertaken in their communities, and to make informed decisions about the allocation of resources. A combination of community poverty monitoring reports will provide information for the national poverty monitoring system. The flow of information on data results is presented in Figure 1.

Figure 1. Flow of information on data results
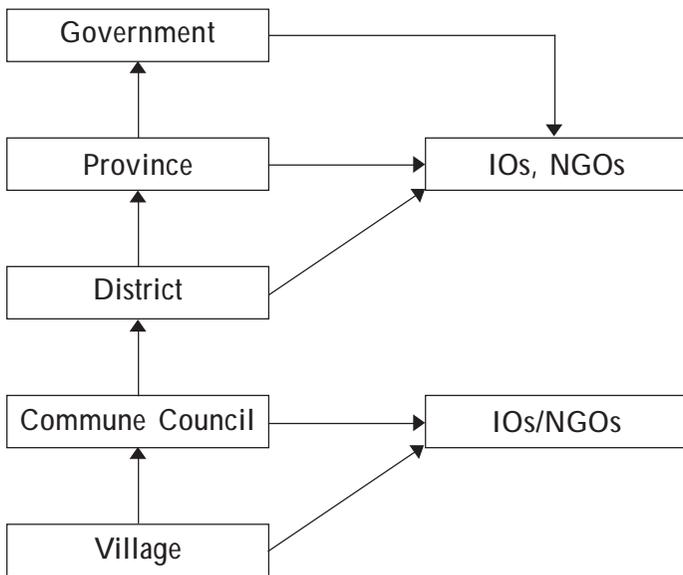
Survey results

This section examines the different CBMS indicators in the study areas which reflect the multidimensional nature of poverty, namely: poverty rate, demography, education, housing and land, health, income and expenditure, household asset and violence, and security and order. The description and analysis of these areas will be made using indicators derived from the survey results.

Poverty rate

In this survey, the poverty rate was assessed through household expenditures. The poverty line was set at US$ 0.38 per person per day in the rural areas. The household expenditures represented the value of the following items: rice, other food (meat, fish, eggs, vegetables, oil, etc.), sweets and similar items (noodles, cakes, desserts, drinks, refreshments, etc.), alcohol, cigarettes, education, health care, other expenses (ceremonies, clothing, soap, water, and electricity). In this calculation, the production costs are excluded.

Before this study, there was no poverty rate documented at the commune and village levels. This rate will therefore be used to identify the poor villages or communes and can also be used to measure the progress of development in the communities.

Table 1 shows the poverty rates by village and commune in the study areas. In Ek Phnom district, the average poverty rate in three communes was 43.2 percent and in Snuol district, 53.5 percent. The Table also shows that the poverty rate by village varies widely from 13.0 percent to 95.2 percent. This shows that there is a big gap in poverty between the villages. For the Snuol district which represents the poor area, the result showed that it was really poorer than Ak Phnom district which represents a better-off area. Some of the characteristics of the poorest villages are the following: remoteness, poor roads, no school, no hospital, no market, no irrigation system, no formal credit, flooding in the village, and small agricultural land.

Table 1. Poverty rate by village/commune in the study areas

Commune	Name of village	Households below poverty line (%)
Ek Phnom district, Battambang (3 communes)		43.2
Prek Norint		42.9
	Prek Ta Chraeng	24.1
	Prek Krouch	52.3
	Svay Chrum	31.6
	Prek Norint	41.7
	Sdei	46.7
	Rohal Suong	38.7
	Duong Mea	74.0
	Reach Daun Kaev	55.7
	Ansang Sak	40.3
	Prek Trab	53.4
Samraong Knong		34.5
	Samraong Knong	28.6
	Kompong Sambuor	13.0
	Samraong Snao	47.8
	Samraong Ou Trea	38.4
	Samraong Ta Kok	40.6
Prek Luong		54.7
	Prek Luong	46.5
	Sdei Leu	45.3
	Sdei Kraom	52.8
	Rohal Suong	57.2
	Bak Amraek	51.2
	Daun Ent	80.1
	Bak Roteh	70.3
Snuol district, Kratie (3 communes)		53.5
Khsuem		69.0
	Mil	95.2
	Choeng	75.3
	Doung	87.8
	Khsuem Knong	90.6
	Khsuem Krau	42.9
	Samrang	91.1
	Srae Roneam	60.3
	Srae Thmei	62.0
Snuol		42.7
	Kat Dai	37.8
	Kbal Snuol	22.4
	Krong	76.7

Table 1. Cont'd.

Commune	Name of village	Households below poverty line (%)
Prek Kdei		62.9
Snuol Kaeut		60.7
Thpong		54.2
Snuol Lech		83.1
Srae Char		57.3
Roha		39.7
Kbal Trach		61.2
Mak Kandal		62.2
Meanchey		76.4
Treak Anhchanh		59.8
S'at 40.4		

Source: CBMS survey, 2004.

Demographic characteristics

Demographic data provide specific information on the total number of households and total population per commune broken down into the percentage of male, female, and various age groups as well as the average household size and the percentage of woman-headed households.

Table 2 shows the average number of household in a commune is 2,063. Household size in the study area is almost the same for all communes and stands at 5 individuals per household. Most households are headed by men and the ones headed by women accounted for only 21.1 percent. It should be noted that most of the women household heads are widows. The analysis of age groups shows that the populations of these communes are very young, with 45.1 percent with age of less than 18 years old. Moreover, children less than 5 years old constitute the most vulnerable group (high mortality) and they represent 13.2 percent of the population.

Education

Education as a poverty monitoring indicator was assessed through factors which reveal its effectiveness and efficacy. The education data

Table 2. Demographic characteristics by commune

Indicator	Ek Phnom District				Snuol District				Total Simple Average
	Prek Norint	Samraong Knong	Prek Luong	Simple Average	Khsem	Snuol	Srae Char	Simple Average	
Total number of households	2589	2217	1731	2179	1243	2500	2096	1946	2063
Total population	12924	11042	8721	10896	6427	12358	10627	9804	10350
% of female	51.5	51.6	51.8	51.6	50.3	51.0	50.1	50.5	51.1
% of male	48.5	48.4	48.2	48.4	49.7	49.0	49.9	49.5	49.0
% of 0-5 year old	10.1	9.4	10.8	10.1	17.8	14.6	16.7	16.4	13.2
% of 6-11 year old	13.9	13.5	14.6	14.0	19.1	16.6	17.7	17.8	15.9
% of 12-17 year old	17.0	16.9	17.1	17.0	13.0	15.9	15.8	14.9	16.0
% of 18-59 year old	51.5	52.8	50.5	51.6	45.1	48.2	45.5	46.3	48.9
% of over 59 year old	7.4	7.4	7.1	7.3	4.9	4.4	4.2	4.5	5.9
Average household size	5.0	5.0	5.0	5.0	5.0	4.9	5.1	5.0	**5.0**
Women headed households (%)	27.4	25.0	31.3	27.9	10.2	17.4	15.3	14.3	**21.1**

Source: CBMS survey, 2004.

tries to capture the level of enrolment, illiteracy and high school graduation in villages and to evaluate the impact of educational infrastructures on these localities. The objective was to verify the principle that education plays a predominant role in the economic development of a country. If the percentage of educated people is high enough in a given locality, then the human resources can acquire more qualifications and the population as a whole would be more open to a better use of appropriate technologies. Table 3, however, shows that the level of education is very low, and the number of high school graduates is very small; thus it is very difficult for the local people to understand and use modern techniques.

The survey results show that the enrolment rate for female students aged 6-11 years old is, on average, higher than the male students. However, the enrolment rate for female student aged 12-17 years old is lower than the male students. A point of concern here is that the illiteracy rate of females is much higher than for males. From the standpoint of gender and in terms of level of enrolment and literacy, the survey confirms the predominance of the male in education not

Table 3. Education data by commune

Indicator	Ek Phnom District				Snuol District				Total
	Prek Norint	Sam-raong Knong	Prek Luong	Simple Average	Khsem	Snuol	Srae Char	Simple Average	Simple Average
Enrolment (%)									
Female, aged 6-11	80.9	81.8	78.0	80.2	67.5	67.2	42.4	59.0	69.6
Male, aged 6-11	79.0	80.0	71.0	76.7	63.4	62.3	41.5	55.7	66.2
Female, aged 12-17	79.7	77.5	76.7	78.0	56.9	63.3	45.0	55.1	66.5
Male, aged 12-17	77.6	83.2	83.8	81.5	75.4	76.3	53.5	68.4	75.0
Illiteracy rate (Aged 18-59 year) (%)									
Female	12.1	13.1	12.7	12.6	35.1	17.2	44.8	32.4	22.5
Male	6.3	6.0	9.0	7.1	23.3	11.8	22.8	19.3	13.2
High School Graduate									
Total	159	402	94	218.3	4	38	8	16.7	117.5
Average per household	0.06	0.18	0.05	0.1	0.003	0.02	0.004	0.01	0.1

Source: CBMS survey, 2004.

only in the study area but also in the entire county. In all these villages, the probability of finding a woman who has reached secondary school level is very low.

Housing and land
Housing and land data provide specific information on type of house, house owner, household lighting and cooking, and agricultural land. For some status determinants, a house with a corrugated iron sheet roof, tile roof or concrete wall normally reflects a more comfortable living condition than a thatched house. Moreover, a household with access to state or private electricity supply is one with a relatively better living condition. Agricultural land is also very valuable for the rural livelihood and the very poor households or vulnerable groups are usually without this asset.

Table 4 shows that 85.7 percent of households in the study areas own their houses, 12.3 percent live in their relatives' houses and only 2 percent rented the house. About 60 percent of houses are made of corrugated iron sheet roof, tile roof or concrete wall. In the poor areas in Snuol district, though, up to 60 percent of houses are thatched

Table 4. Housing and land data by commune

Indicator	Ek Phnom District				Snuol District				Total Simple Average
	Prek Norint	Samraong Knong	Prek Luong	Simple Average	Khsem	Snuol	Srae Char	Simple Average	
% own house	85.2	84.5	83.4	84.4	89.9	82.8	88.5	87.1	**85.7**
% house of a relative	14.5	14.7	16.2	15.1	9.6	12.8	6.1	9.5	**12.3**
% rented house	0.3	0.8	0.5	0.5	0.5	4.4	5.4	3.4	**2.0**
% thatched house	18.4	9.5	18.9	15.6	63.2	44.7	73.4	60.4	**38.0**
% wooden house with iron roof	70.3	73.1	74.0	72.5	19.7	45.4	22.3	29.1	**50.8**
% wooden house with tile roof	7.3	10.7	6.5	8.2	17.0	6.3	4.3	9.2	**8.7**
% concrete house	2.9	6.2	0.6	3.2	0.0	3.2	0.1	1.1	**2.2**
% household with state electricity	0.4	29.8	0.0	10.1	0.0	15.0	9.5	8.2	**9.1**
% household with private electricity	17.5	7.1	8.3	11.0	0.9	16.1	0.7	5.9	**8.4**
% household using kerosene lamp	74.1	57.6	83.3	71.7	93.1	62.6	83.3	79.7	**75.7**
% household using car battery	7.9	5.3	8.1	7.1	4.7	5.7	6.1	5.5	**6.3**
% household using own generator	0.2	0.2	0.3	0.2	1.4	0.6	0.3	0.8	**0.5**
% household using firewood for cooking	95.5	73.8	93.5	87.6	99.8	90.4	99.3	96.5	**92.1**
% household with no agricultural land	42.4	61.3	35.2	46.3	25.6	44.0	17.3	29.0	**37.6**
Average agricultural land size (ha)	1.5	1.4	1.1	1.3	1.3	1.1	2.0	1.5	**1.4**

house. Only 15 percent use the state or private electricity supply while all the others use kerosene lamp or car battery for lighting houses. More than 90 percent of households use firewood for cooking. The average agricultural land size is about 1.4 ha per household and more than one third of all households have no agricultural land. The main reasons for losing agricultural land are crop failure (caused by drought/ flood), indebtedness and health problems.

Health
Health is the most important factor that contributes to individual and social well being. The survey data are also used to evaluate household

sanitation, extent of diseases and access to health services. The sanitation level can be assessed through the household use of toilet and boiled water as well as the use of mosquito net. The everyday use of toilet, boiled water and mosquito net helps the individual to stay healthy. Extent of diseases and access to health service, meanwhile, are very important poverty indicators because they can give an idea about the active workforce, the money and time spent on treating diseases and the use of health services.

Table 5 shows that 58.4 percent of all households in the study areas do not have toilet at home and 43.0 percent of households drink unboiled water. This result reveals the need for households to improve sanitation. The disease rate is also very high especially for typhoid and malaria. In year 2002-2003, 11 percent of the people had malaria and 6.8 percent had typhoid. As for the more minor diseases, the result revealed that 43.5 percent of households go to the pharmacy or a non-skilled medical shop for treatment and only 7.7 percent of households use the health center in the commune. For serious diseases, more and more households are using the health center in the commune, or the district and provincial hospitals. The health service provided at the commune level is very small. Some of the reasons for a low rate of households using the health center in the commune are the lack of medicine, lack of qualified staff and irregular presence of the medical personnel.

Income and expenditure

Household income and expenditure, as the main poverty indicators, can provide useful insights into the economic conditions of households. They show the ability of households to generate income and to spend on food. Agriculture is the main source of employment and income generation in the study areas as well as in the whole country. Table 6 shows that about 40 percent of households can generate income of less than US$ 500 per year. This helps to explain the low level of household expenditure with about 50 percent of all individuals spending less than US$ 0.38 per day.

Table 5. Health data by commune over the last 12 months

Indicator	Ek Phnom District				Snuol District				Total
	Prek Norint	Samraong Knong	Prek Luong	Simple Average	Khsem	Snuol	Srae Char	Simple Average	Simple Average
Sanitation (%)									
Household with no toilet	59.5	46.7	71.6	59.3	62.2	27.1	83.1	57.5	58.4
Household drinking un-boiled water	44.4	34.6	49.2	42.7	53.1	28.6	47.9	43.2	43.0
Household using no mosquito net	1.0	1.7	0.8	1.2	0.0	11.8	8.1	6.6	3.9
Disease (% population)									
Dengue fever	3.2	1.6	2.3	2.4	3.7	2.0	3.5	3.1	2.7
Typhoid	5.8	5.3	6.5	5.9	11.5	4.0	7.6	7.7	6.8
TB	0.6	0.7	1.1	0.8	1.0	0.4	1.1	0.8	0.8
Malaria	1.5	1.3	1.6	1.5	20.5	11.3	30.1	20.6	11.1
HIV/AIDS	0.3	0.2	0.3	0.3	0.3	0.1	0.0	0.1	0.2
Access to health service in case of minor disease (%)									
Provincial hospital	0.6	1.0	0.1	0.6	0.0	0.8	0.0	0.3	0.4
District hospital	3.6	0.6	0.3	1.5	0.6	16.2	1.9	6.2	3.9
Health center in commune	0.9	20.5	11.5	11.0	12.3	1.0	0.0	4.4	7.7
Private clinic	2.0	0.8	0.5	1.1	19.1	21.7	26.8	22.5	11.8
House of doctor/ medical personnel	31.1	17.5	39.5	29.4	27.2	13.5	47.9	29.5	29.5
Pharmacy or non-skilled medical shop	59.4	59.2	47.3	55.3	38.7	43.2	13.2	31.7	43.5
Traditional healer	1.7	0.3	0.6	0.9	1.8	3.8	8.6	4.7	2.8
Access to health service in case of serious disease (%)									
Provincial hospital	28.2	44.8	49.5	40.8	3.5	0.8	1.0	1.8	21.3
District hospital	18.4	2.0	6.1	8.8	8.7	28.9	48.9	28.8	18.8
Health center in commune	14.6	10.4	10.6	11.9	11.7	31.3	4.5	15.8	13.9
Private clinic	9.8	14.5	4.9	9.7	37.6	15.6	32.0	28.4	19.1
House of doctor/ medical personnel	18.0	27.1	28.1	24.4	35.2	7.1	6.9	16.4	20.4
Pharmacy or non-skilled medical shop	4.6	0.9	0.4	2.0	2.2	14.2	0.1	5.5	3.7
Traditional healer	1.0	0.2	0.0	0.4	1.0	0.4	0.6	0.7	0.5

Source: CBMS Survey, 2004

Table 6. Income and expenditure data by commune

Indicator	Ek Phnom District				Snuol District				Total
	Prek Norint	Samraong Knong	Prek Luong	Simple Average	Khsem	Snuol	Srae Char	Simple Average	Simple Average
Household income per year (%)									
<250 US$	9.1	19.3	17.9	15.4	15.4	9.3	4.0	9.6	**12.5**
250-500 US$	23.0	19.8	33.0	25.3	37.2	21.4	28.1	28.9	**27.1**
501-750 US$	22.2	17.4	22.4	20.7	26.8	23.0	35.6	28.5	**24.6**
Over 750 US$	45.7	43.4	26.7	38.6	20.6	46.3	32.4	33.1	**35.9**
Expenditure per capita per day (%)									
Under 0.38 US$ (1500 Riels)	42.9	34.5	54.7	44.0	69.0	42.7	57.3	56.3	**50.2**

Source: CBMS Survey, 2004

Household assets

Household assets provide information on means of transport and communications as well as agricultural factors. Just briefly, the bicycle and motorcycle are means of transport while tractors, pumping machines, threshing machines, ox-carts and livestocks are used for farming activities. Television (TV) sets and radios are used for communication. Table 7 shows that 44.4 percent of households have bicycles and 38.7 percent have motorcycles. TV and radio receivers are not very widespread in the villages. Only 27.9 percent of households in the communes own a TV set (most of them are black and white, operating on a car battery) and 28.4 percent own a radio. As for livestock, all communes have some livestock but the results show that a household raised only about 2-3 chicken and fewer or no pigs and/or cows. The main reasons for these were animal diseases and the shortage of animal feed.

Domestic violence and security by commune

Domestic violence and security are also important poverty indicators. For this, the survey focused on violence in the household, sexual abuse in the household and the authority to ask for help when these problems occur. The figures in Table 8 may be too low because

Table 7. Asset data by commune

Indicator	Ek Phnom District				Snuol District				Total Simple Average
	Prek Norint	Samraong Knong	Prek Luong	Simple Average	Khsem	Snuol	Srae Char	Simple Average	
Property per household (%)									
Motorcycle	41.0	39.9	31.8	37.6	44.9	32.2	42.1	39.7	**38.7**
Bicycle	58.2	67.2	59.4	61.6	30.7	21.6	29.1	27.1	**44.4**
Car	1.9	2.3	0.8	1.7	0.7	2.0	0.3	1.0	**1.3**
Tractor	0.2	0.3	0.1	0.2	0.1	0.0	0.1	0.1	**0.1**
Motor pump	9.7	7.0	22.5	13.1	1.6	3.6	4.9	3.4	**8.2**
Threshing machine	0.2	0.4	1.4	0.7	3.1	0.8	1.2	1.7	**1.2**
Ox-cart	1.9	4.7	3.9	3.5	37.4	10.8	20.1	22.8	**13.1**
TV	40.0	47.7	45.1	44.3	9.6	17.4	7.3	11.4	**27.9**
Radio	26.0	30.6	27.2	27.9	35.6	19.2	31.6	28.8	**28.4**
Generator	2.1	1.4	1.8	1.8	3.5	1.6	2.6	2.6	**2.2**
Car battery	53.6	33.9	59.5	49.0	37.2	24.3	26.5	29.3	**39.2**
Fan	8.2	16.3	3.6	9.4	2.5	11.0	2.1	5.2	**7.3**
Livestock per household (Average quantity)									
Cow	0.8	0.7	0.9	0.8	1.8	0.9	1.1	1.3	**1.0**
Buffalo	0.0	0.0	0.0	0.0	1.6	0.3	0.5	0.8	**0.4**
Pig	0.6	0.5	0.4	0.5	1.1	0.6	0.7	0.8	**0.7**
Chicken	1.7	1.4	2.3	1.8	3.8	2.3	4.9	3.7	**2.7**
Duck	0.3	1.2	0.3	0.6	0.8	0.3	0.3	0.5	**0.5**

Source: CBMS Survey, 2004

many households tried to hide their cases but they show that 2.9 percent of households suffered from violence in the household and that for some communes like Srechar and Prek Leuong, the violence rates are much higher than other communes. When there is violence occurring, about 80 percent of the households reported the case to the local authority.

Local capacity development and linkage

Cambodia is committed to undertaking the long process of decentralization. It means that the lower levels of the government will take more responsibility in the planning, management, resource raising and allocation at the local level. The project has helped to develop the capacity of the local authorities to implement and take responsibility for this work. As such, the six communes in the study areas now possess the commune poverty monitoring reports by village

Table 8. Domestic violence and security by commune in the last 12 months

Indicator	Ek Phnom District				Snuol District				Total
	Prek Norint	Samraong Knong	Prek Luong	Simple Average	Khsem	Snuol	Srae Char	Simple Average	Simple Average
Violence in the household (%)	4.1	0.5	4.5	3.0	1.3	0.0	7.1	2.8	**2.9**
Sexual abuse in household (%)	0.1	0.0	0.5	0.2	0.0	0.0	0.1	0.0	**0.1**
Authority to ask for help when problems occur (%)									
Village authority	88.7	72.8	87.8	83.1	90.5	70.0	73.1	77.9	**80.5**
Commune authority	1.5	3.3	2.5	2.4	0.6	5.8	0.1	2.2	**2.3**
District authority	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	**0.1**
Policemen	2.2	1.9	1.2	1.8	0.0	2.6	0.4	1.0	**1.4**
Relative	6.2	21.1	7.7	11.7	8.9	20.4	27.2	18.8	**15.3**
Educated elderly	0.3	0.6	0.7	0.5	0.0	0.1	1.0	0.4	**0.5**

Source: CBMS Survey, 2004

and the local authorities also have the capacity to do the CBMS in their commune by themselves. The commune council leaders in the study areas made requests for continuation of the CBMS survey during the district level and national workshops. They declared that they would use the CBMS data for their communes' three-year rolling plan as part of the decentralization effort facilitated by the SEILA program. They have also shared the information gathered from the CBMS regarding health, education and agriculture, to the NGOs in their districts.

The pilot project has successfully built a link between commune, provincial and national level planning processes through the use of CBMS data. As part of a successful advocacy work for the pilot CBMS, the Government of Cambodia, Ministry of Planning hosted a National Forum on Pre-Identification of Poor Households on 28 February 2005. This was part of an effort to discuss various approaches for the identification of poor households under the umbrella of the poverty reduction strategy.

Suggestion for expanding CBMS activity in Cambodia

During the national dissemination workshop, the Department of Census and Survey within NIS, represented by its Deputy Director, showed a positive interest in adopting the CBMS exercise for use in poverty monitoring. However, the lower administrative systems capable of handling the data management and processing are not yet in place because of resource constraints. NIS has support from various donors and can take up this initiative if there is more seed money from the CBMS Network. With the valuable experience of this project, CDRI can be an active member promoting CBMS replication and expansion. External assistance for the NIS in terms of both technical and financial resources will thus be critical in taking this initiative forward. Table 9 shows the key persons and possible monitoring roles at each administrative level in expanding CBMS activity in Cambodia.

Lessons learned and recommendations

The pilot project encountered a number of problems during the implementation phase. All these issues were solved along the way though but any replication of the project should take careful account of them, as follows:

- The training period was not enough for some enumerators to acquire the necessary skill.
- The education level of some selected enumerators was too low to meet the work requirement.

Table 9. Key persons and possible monitoring roles at each administrative level

Item	Village	Commune	District	Province	NIS
Role	Assist CBMS	Monitor/ Report	Monitor/ Report	Monitor/ Report	Monitor/
Key person	Chief	Head	Head	Governor	Director

- Some parts of the designed questionnaire were difficult to obtain a correct answer (ex: household income).
- The period to do the interviews was not so appropriate for Battambang province (should not be in the rainy season).
- The announcement to recruit enumerators through local authorities was not widely disseminated.
- Data crosschecking could not be done with all relevant institutions (ex: type of diseases).
- A few village chiefs did not fully support our work.
- A lot of respondents tried to hide information on land and household violence.
- Two enumerators in one village tried to estimate some figures by themselves to fill in some parts of the questionnaire.
- Many respondents expected to get some donation and assistance from the project.
- A few rich families did not fully cooperate with the enumerators in providing correct information.
- Manual data processing was very difficult for certain villages where the village chief had a very low level of education.

To address these problems, the following recommendations were made:

Selection of sites: Selecting the sites that have the willingness and capacity of people in the commune should be the main determinants.

Designing questionnaires: The questions should be very clear, simple and easy to understand for both interviewers and respondents. They have to be tested and revised before being put to use.

Selection of interviewers: All interviewers should come from the villages (commune in some cases) where they interview and should at least have some interviewing experience, and good numeric skills. A better way to select candidates would have been to post a public announcement at the school or in other communal places.

Data collection: The enumerators have to be trained and supervised closely because their experience and knowledge are still limited.

Timing of survey: The survey should be conducted during the non-farming period which in most places, will be February and March or August and September.

Data processing: It is necessary to process data manually in the village. Manual data processing is too difficult for certain villages where skill levels are relatively weak. However, one option is to do it using resources from the commune. The other option is to use schoolteachers or qualified high school students in the commune. Training of data processors is also necessary.

Interviewers' fee: A rate of 1,000 riels ($0.25) per household, which takes one hour to interview on average, on the expectation that six households can be interviewed per day, is appropriate for most villages. However, this amount was not suitable for interviewers who interviewed in remote areas where they could reach only two or three households per day. There is a need to increase the fee for interviewers who conduct such interviews and to pay for their transportation.

Conclusion

The pilot CBMS has been tested in Cambodia, providing valuable results that satisfactorily describes the different facets of poverty in 6 communes in two economically different provinces. The pilot project has successfully promoted links among the communes and between provincial and national level planning processes through the use of CBMS data. The project has developed the capacity of local authorities to implement and take responsibility to upgrade CBMS in their localities. Six communes in this pilot undertaking could produce their own poverty statistics books that can be used for planning and monitoring purposes. In addition to poverty rates at the village level, the exercise provided scientifically generated statistics regarding demography, education, housing, land, water, health, household

expenditure, occupation and income, assets, livestock, and domestic violence. The results have been widely shared with various stakeholders for consideration for the replication of the CBMS in other areas. As a result of this workshop, a Technical Working Group on Pre-identification of poor households will be set up and led by Ministry of Planning.

The NIS had expressed a keen interest in adopting the CBMS to gradually nationalize it. However, the lower administrative systems capable of handling the data management and processing are not yet in place because of resource and capacity constraints. The NIS has support from various donors and can take up this initiative if there is more seed money from the CBMS Network. With the valuable experience gained from this project, CDRI can be an active member promoting CBMS replication and expansion. Thus, external assistance for NIS in terms of both technical and financial resources will be very important in taking this initiative forward.

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Comments

- The work done by the Cambodian team is very successful. The institutionalization of the CBMS process is also well done.
- The CBMS has its very special characteristics; CBMS is designed for localities and done by local people. That means attention should be paid on building capacity of local people. In addition, when the CBMS survey was designed, the indicator set (content of the survey) should be defined or limited since the capacity of local data collectors is not enough to collect more comprehensive data. For example, to collect household expenditure data, interviewers may not have the required capacity to ask these questions from households. In this study, quantitative survey was used. Some information could not be generated by this method such as to understand about domestic/ household violence. In order to collect such information, in-depth interviews with focus group discussions should be conducted along with a very carefully designed sociological survey.
- This paper has done some analysis to calculate the poverty rate and poverty line. CBMS data can be used for poverty assessment or poverty reduction. Poverty analysis could be done more deeply. For example, who are poor in the village and how and why do they get poor? In the commune in Cambodia, 60 percent of households are landless. Provide explanation whether this affects poverty or not and why this percentage is so high and if the Cambodian local government consider this as a reason for poverty.
- The analysis of impact between income generation activities and poverty is also useful to see the reasons for poverty. It would be better to provide details on what will be done next — whether to

repeat the same kind of census or conduct a sample survey regularly to monitor.

➢ Provide information on whether or not these proxies can be used in other communes and how the author assesses the capability of expansion of this CBMS practice.

➢ The unit survey cost is particularly high. Provide information on how to sustain the system with the high cost relative to the poverty line.

➢ Provide details about the plans to build the local level capacity and whether the data are validated in the community