

Experiences with the Development and Use of Poverty Maps

Case Study Note for CAMBODIA*

1. Background information on the poverty mapping initiative

When Cambodia's first elected government was established in 1993, in-country data were lacking; for example, no census had been conducted since 1960. Due to this lack of data, the World Food Programme (WFP), with a mandate to provide food aid, has since 1995 developed poverty maps—relying primarily on qualitative assessments (see Section 2)—as an important tool to help target the most food-insecure communes in the country.¹ Once the poorest communes have been identified, provincial-level field staff from WFP and the Cambodian Ministry of Rural Development are mobilized to provide food aid in these communes. WFP's use of poverty maps is expected to help allocate US\$50 million in food aid for 2001-03 (see Section 3).

2. Process of poverty mapping

Methodologies used to develop poverty maps in Cambodia have evolved over time, ranging from the use of qualitative assessments to econometric modeling using small-area estimation. In 1997, for example, commune-level poverty maps were developed based on qualitative assessments conducted by experts in government, NGOs, and donor agencies. These assessments were used to select the poorest 550 communes. To produce a more detailed socioeconomic picture of poverty in these areas, half the villages in each commune (a total of 2,751 villages) were surveyed using a detailed questionnaire. Compilation and weighing of 27 socioeconomic indicators yielded a poverty score for each of the 550 communes. Communes falling in the poorest quartile were identified as being in need of “food for work” interventions, a program that accounts for 85% of WFP's food aid in Cambodia. Other methodologies were used to develop WFP's poverty maps in 1998, 1999, and 2000. Most of these methodologies have heavily relied on the use of qualitative assessments.

With increased availability of in-country data, WFP used a more sophisticated methodology to develop its 2001 poverty map. A small-area estimation technique was used to combine data from the 1999 Cambodia Socio-Economic Survey (CSES) and the 1998 National Population Census. The CSES was used to develop a prediction model of

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¹ Cambodia contains four municipalities, 20 provinces, 183 districts, 1,609 communes, and 13,406 villages (Population Census 1998).

consumption, where consumption was based on self-production and purchased consumption expenditures. The model's coefficients were in turn applied to 1998 census data to estimate consumption for all 2.1 million households in Cambodia. Due to time constraints, the detailed statistical tests required by this methodology were not conducted. The results were, however, extensively crosschecked with previous poverty analysis results from 1997, 1998, 1999, and 2000.² In addition, field staffs' local-level knowledge of poor communes was used to crosscheck the 2001 poverty map results.

While the 2001 poverty map provides the most comprehensive and reliable data set on poverty in Cambodia, there are some concerns. Poverty is inadequately depicted for some communes, especially those near the border (such as Banteay Meanchey, Battambang, and Oddar Meanchey) where there has been significant immigration and resettlement.³

The statistical estimations and poverty maps themselves were developed by a small group at WFP's Vulnerability Analysis and Mapping Unit.⁴ Field verification of the poverty mapping results and qualitative assessments have been carried out jointly by field staff at the Ministry of Rural Development and WFP. In addition, WFP has worked closely with the Ministry of Planning (which includes the National Institute of Statistics) throughout its vulnerability assessments. Institutional collaboration has helped ensure data access, such as access to the full 1998 census, for the development of the 2001 poverty map.

Lack of skilled staff raises concerns about the long-term sustainability of poverty mapping-related activities in Cambodia. For example, the WFP consultant involved in developing statistical estimations was an expatriate. When WFP ultimately phases out its work in Cambodia (within five or 10 years), poverty mapping at the current level of sophistication will likely be implemented at agencies with strong analytical skills, such as the Asian Development Bank (ADB), the United Nations Development Program (UNDP), and the World Bank.

3. Use and Impact

Cambodian poverty maps have been used primarily by the WFP to target communes in need of food aid, especially for WFP's "food for work" programs (see Section 2). Once the poorest communes as depicted in the poverty map have been identified, provincial officers and field staff (e.g., at the Ministry of Rural Development) are mobilized to provide food aid to the selected communes. The field staff are responsible for further identifying the poorest villages and households that qualify for food aid within the selected communes. In 2001-03, the "food for work" program is expected to entail the

² Results from the 1997, 1998, 1999, and 2000 poverty maps were combined to identify three poverty categories (see map): 1) areas categorized as poor in 1997, 1998, 1999, and 2000; 2) areas categorized as poor in 1997, 1998, and 2000; and 3) areas categorized as poor in 2000. These maps were used to validate the 2001 poverty results.

³ Note that 1998 census data do not reflect immigration and resettlement into communes since 1998.

⁴ Work on poverty mapping at this unit has been conducted by primarily Mack Ramachandran, Boreak Sik, and Venkatesh Sundararaman (a WFP consultant).

allocation of approximately US\$50 million of food aid. The use of the poverty maps has helped establish WFP as a reputable institution whose decisions are viewed as objective and transparent.

WFP has made a concerted effort to disseminate its poverty mapping results to other potential users. A WFP report containing the poverty maps has been disseminated (150 copies were distributed in 2001). Furthermore, numerous discussions have been held with and presentations given to various ministries, donors, and other agencies. Approximately 15% of the WFP Vulnerability Analysis and Mapping Unit's time is spent on assisting agencies with understanding and using poverty mapping results.

Besides WFP, a user of Cambodian poverty maps has been the ADB, which used the 2001 map in its Northwestern Rural Development Project. The project has three components: rural infrastructure, capacity building, and micro-enterprise development. In particular, the project's core component is the development of rural infrastructure, including the rehabilitation of tertiary roads; building of bridges, culverts, drifts, and other structures; reconstruction of primary schools; construction of wells; building of multipurpose community halls; and building of community storage and drying facilities. The poverty map has been used to: identify provinces with high incidence of poverty during the early stages of the project; confirm target districts proposed by provincial authorities during project preparation; and identify target populations within districts during the project design. Recognized as the most comprehensive and reliable data set on poverty in Cambodia, the poverty map provides a clear spatial estimate of poor areas and households. Over a five-year period, project expenditures will total approximately US\$30 million.

The 2001 poverty map was also recently used by the Ministry of Planning to help select communes for focus group discussions on poverty as part of a Participatory Poverty Assessment (PPA).⁵ The focus group discussions are geared toward finding the causes of and solutions to poverty. This nationwide assessment is intended to link the causality of poverty to specific poor areas. Participatory Rural Appraisals (PRA) and field-level assessments have been used to further identify villages within the selected communes in which focus groups will be conducted. While the poverty map was considered very helpful in identifying poor communes, a village-level map would have been preferable. The poverty map has been requested by a number of other organizations, such as the Ministry of Education, Ministry of Planning, European Union, UNDP, SEILA,⁶ World Bank, and the International Fund for Agricultural Development. Several of these agencies have sent letters to WFP commending the poverty map and indicating their intention to use it.

Poverty maps are increasingly being compared to other data sets in Cambodia. For example, these maps have been overlaid with information on flood- and drought-prone areas under Cambodia's Qualitative Disaster Study, which is being conducted for the

⁵ This assessment is funded by the ADB.

⁶ SEILA is a Cambodian government program promoting decentralized governance and poverty alleviation. In Khmer, SEILA means "foundation stone."

World Health Organization's Western Pacific regional office. However, the full potential of the poverty maps has not yet been reached. For instance, the maps could influence decisions made by the Public Investment Program, the main Cambodian program targeting government investment and national expenditure for rural and urban social projects. Stronger coordination between institutions, such as the Ministry of Finance, Ministry of Planning, and Ministry of Rural Development, is needed to help ensure that the poverty maps and other available data are used to better target national development and planning. Another pressing need is to coordinate work among international agencies with poverty analysis mandates.