



Research Report

Objective Measures of Family Welfare for Individual Targeting: Results from Pilot Project on Community Based Monitoring System in Indonesia

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ABSTRACT

This report documents the results of a pilot project on a new poverty monitoring system that improves the current system in three areas. First, it involves the locals in monitoring poverty in their own area. Second, the poverty indicators are sensitive to local conditions, accurate, and cannot be easily tampered. Third, the results are expeditious, with only five months needed between the start of data collection to final publication. Given Indonesia's geographical size and the decentralization that puts more power at the hands of the district governments in determining poverty alleviation programs, we believe that this monitoring system is the most suitable for Indonesia.

I. INTRODUCTION

In Indonesia, the government has relatively little problem in conducting regional targeting of the poor. Statistics Indonesia's relatively reliable Susenas and Podes surveys¹ have been the basis for distributing and allocating programs designed specifically to alleviate poverty in Indonesia. Problems, however, start to arise when local officials at the district level have to actually identify who the poor are and where they are located, because Susenas and Podes do not provide them with this information. In order to gain some sense of where the poor are, the program implementers turned to BKKBN (National Family Planning Coordination Board)² data, whose original purpose is to monitor the implementation of the national family planning program, and thus is not suited to undertake the task of identifying poor families. The use of this data has contributed to substantial undercoverage and leakage of government programs aimed at the poor (Suryahadi & Sumarto, "Principles and Approaches").

For precisely the reason mentioned above, during the 1997 crisis the importance of a proper household targeting mechanism gained recognition. Furthermore, in the light of the decentralization of budgetary power to local governments in 2001 and the new Law on Regional Government³ that stipulates that governors, regents (district heads) and village heads are now chosen through direct election in their respective areas, government officials are now under enormous pressure to significantly improve their performance.

There have been at least four major efforts carried out by local governments to improve monitoring of the poor and programs related to poverty in the decentralization era: three were conducted in 2001 by the Provinces of Jakarta, East Java and South Kalimantan in cooperation with Statistics Indonesia; and the other is still ongoing in the District of Sikka in East Nusa Tenggara. The cost of each of these "census of the poor" is not insignificant. The 2001 poor census cost each province around US\$600,000, while the bill for the ongoing census in Sikka is currently US\$170,000; an enormous amount of money for a district in the poorest province in Indonesia. The three 2001 censuses have been discontinued, although East Java is planning for a new poverty survey in 2005, while the census in Sikka has a very high probability of failing to produce satisfactory results.⁴ All have been plagued with weak methodology and inadequate personnel training.

¹ Susenas is the National Socioeconomic Survey, which collects detailed household and individual level socioeconomic data. The survey covers every district in Indonesia, although it is only representative down to the provincial urban/rural level. Every three years, it also collects detailed household consumption data that is used to calculate poverty lines and national/provincial/district poverty figures. Meanwhile, Podes (Village Potential) is a census of every village in Indonesia (currently about 68,000 villages) that collects information on basic village infrastructure and facilities.

² BKKBN is the only agency in Indonesia that annually collects household-level data covering the whole country and spanning 10 years. For more information and history on BKKBN, including weaknesses of using BKKBN as household targeting tool, see Sumarto *et al.*, "Local Monitoring System."

³ Law No. 32/2004 that replaced the old decentralization Law No. 22/1999.

⁴ According to a SMERU researcher who visited Sikka, there was much confusion and inefficiency among government officials there.

II. PURPOSE OF STUDY

In the quest to introduce a better monitoring tool in Indonesia, SMERU Research Institute proposed to pilot test a poverty monitoring system that is easy to collect, gives objective results, is sensitive to locally specific characteristics, and gives intuitive and speedy results. Since the system heavily involves local residents, the system is called Community Based Monitoring System (CBMS). Funding for the pilot is provided by the International Development Research Center, Canada through the CBMS Network Coordinating Team which is based at the Angelo King Institute for Economic and Business Studies, De La Salle University, Manila.

There are several major differences between CBMS and the traditional poverty monitoring system. Firstly, CBMS uses a questionnaire that is simple enough to be conducted by locals, which means it utilizes the advantage of local knowledge.⁵ As a result, village officials and residents can process and calculate several village-level indicators, such as those related to employment, education, health, and sanitation, and can readily work with government officials to overcome problems.

Secondly, since the locals can start analyzing a part of the information without having to wait for it to be processed and analyzed at higher government levels, results could be available in relatively shorter time and can speedily be acted upon.⁶

Thirdly, CBMS is sensitive to locally-specific conditions. This is very important because poverty conditions are often locally-specific. By being sensitive to local conditions, CBMS can provide guidance for the right policy to reduce poverty in an area. In contrast, other poverty monitoring systems usually use a universal set of poverty indicators for the whole country, which is often proved ineffective due to the complications posed by regional heterogeneity.

Finally, the data collected through the questionnaire can be sent to district level governments to be used for various purposes, such as budget allocation and program targeting. As a targeting tool and by utilizing a methodology called Principal Components Analysis (PCA), the data can be used to create a composite index that summarizes all the multidimensional aspects of poverty into a single figure for every family in a village.⁷ As a result, government officials can rank families in a village based on their welfare.

The indicators currently used for targeting only classify families into poor and non-poor, so there is no detailed breakdown on which families are the poorest among the poor. With family ranking based on welfare, government officials would have the information

⁵ This is also the path taken by BKKBN. In contrast, Statistics Indonesia (BPS) uses their own enumerators in conducting surveys.

⁶ According to our expectations, data collection and analysis should take five months, comparable to the current BKKBN system.

⁷ Explanation of the PCA Methodology is in the PCA Section of the accompanying CD.

on which family is the poorest or which families are the 10% poorest families in the village. This information would significantly improve targeting of government poverty alleviation programs, reducing leakage and undercoverage.

We use a household questionnaire for collecting household data, where both household head and the female member/s of the family would be the respondents for the respective relevant portions. Village level information is elicited using a structured checklist.⁸

A common grievance of BKKBN data is that it could be easily tampered with. To remedy this, the variables that we gather record more detailed household characteristics; village leaders and enumerators would not know the weighting/importance of each variable until it is processed; and tampering with data after processing would render the already-processed weightings obsolete, thus making the results invalid. In short, the data and the processing method that we use ensure that data-tampering is harder and the result more objective.

⁸ To make the enumeration process as simple as possible, there will be no Focus Group Discussion (FGD) or other qualitative methods of extracting information.

III. COLLABORATION WITH BKKBN

SMERU intended to collaborate with BKKBN from the beginning of the project because of several reasons. Firstly, BKKBN is experienced in conducting household-level census. In almost every village in Indonesia, it has cadres at the neighborhood level who are still collecting BKKBN data annually. Secondly, since BKKBN will continue to collect annual household level data, they are the agency which will benefit the most from the improved CBMS. Thirdly, in the long run SMERU hopes that local government will take charge of the monitoring process, which means a sense of ownership needs to be established from the outset. Furthermore, there is a greater chance that local government will formally adopt the CBMS if SMERU works together with a government agency rather than working alone.

IV. CBMS VILLAGES

The pilot project is restricted to the province of Java. Two *kabupaten* are selected, one where BKKBN is still in place and the other where BKKBN is no longer institutionalized. The first one is Cianjur in West Java and the other is Demak in Central Java.

From each *kabupaten* we choose two *kecamatan*, and one village in each *kecamatan*, making a total of four villages. Every household in the villages is visited. The *kecamatan* chosen takes into account the distance from the *kabupaten* capital. One *kecamatan* is far from the *Kabupaten* capital whereas the other will be near. The sample is not meant to be representative of the *kabupaten* or *kecamatan*.

Table IV.1 outlines basic socio-demographic information of Cianjur and Demak.

Table IV.1 Characteristics of Chosen *Kabupatens*

Name of <i>Kabupaten</i>	Cianjur	Demak
Number of Sub-districts/ <i>kecamatan</i>	26	14
Number of Villages	341	247
Number of Communities	2397	1223
Number of Neighborhoods	9246	5910
Population	2097336	991942
Number of Households	517337	257757
Number of Pre-prosperous and Just Prosperous Households in 2001-2002	177900	169637

Source: Podes 2003.

The villages chosen in Cianjur are Parakantugu in *Kecamatan* Cijati and Cibulakan in *Kecamatan* Cugenang, while the villages that will be visited in Demak are Jungpasir in *Kecamatan* Wedung and Kedondong in *Kecamatan* Demak. Basic information on each village is in Table IV.2.

Table IV.2 Basic Information on Chosen Villages

	Parakantugu	Cibulakan	Kedondong	Jungpasir
Number of Households	1173	1179	1164	1085
Number of Pre-prosperous and Just Prosperous Households in 2001-2002	226	337	668	535
Share of Agricultural Households (%)	60	73	90	65
Distance to <i>Kecamatan</i> Office (km)	2	7	10	11
Distance to <i>Kabupaten</i> Capital (km)	90	8	10	28

Source: Podes 2003.

V. RESEARCH METHODOLOGY

In order to measure welfare as accurately as possible, the ideal would be to collect consumption expenditure data of each household. The difficulty in collecting such data however, has been widely recognized. In addition, consumption data could be unreliable and could over/underestimate household welfare. In order to avoid this problem, we shall estimate long-run household wealth using a procedure introduced and defended by Filmer and Pritchett (“Estimating Wealth”). This method proposed the use of Principal Components Analysis (PCA), which takes advantage of asset ownership information such as house condition, toilet facilities, *etc.* as an alternative to recording detailed consumption expenditure. Since the result of estimating welfare using assets was only slightly different to using detailed consumption expenditure but much easier to collect, Filmer and Pritchett argued that their method is better, especially for calculating long-run household welfare.

In total, there are four PCA estimations: one for each village. The main advantage of using PCA is that it allows SMERU researchers to determine poverty indicators that are locally specific. This is the main difference of the CBMS compared to methodologies used by other poverty monitoring systems in Indonesia.

The analysis is at the family level and the variables used are listed in Table V.1. Only dummy variables are used in order to make analysis and understanding the results simpler. The PCA results are discussed separately for each village in Sections VIII to XI.

Table V.1 CBMS Family Welfare Indicators

Variable Group	Variable
<i>Asset ownership</i>	Own refrigerator
	Own telephone
	Own fan
	Own air conditioner
	Own satellite dish
	Own DVD/VCD player
	Own color television
	Own black/white television
	Own radio
	Own tape recorder
	Own computer
	Own sewing machine
	Own cellular phone
	Own other electronic device
	Own motorcycle
	Own car
Own bicycle	
<i>Farm animals ownership</i>	Own land
	Own house
	Own chicken
<i>Marital status</i>	Own goat
	Own cow
	Family head is married

Variable Group	Variable	
<i>Sex of family head</i>	Family head is female	
<i>Family head and spouse education level</i>	Family head education: elementary	
	Family head education: junior secondary school	
	Family head education: senior secondary school	
	Family head education: diploma	
	Family head education: university	
	Spouse education: elementary	
	Spouse education: junior secondary school	
	Spouse education: senior secondary school	
	Spouse education: diploma	
	Spouse education: university	
<i>Working</i>	Family head is working	
	Spouse is working	
	At least one school-age child is working	
<i>Sector of employment</i>	Family in agriculture sector	
	Family in industrial sector	
	Family in trade sector	
	Family in services sector	
	Family receiving transfer (unemployed)	
<i>Access to financial institutions</i>	Own savings	
	Received credit from a formal financial institution in the past three years	
	Pawn assets in the past three years	
	Had to sell assets to pay debts	
<i>Food consumption and health indicators</i>	Eat two meals a day	
	Eat meat at least once a week	
	Eat fish at least once a week	
	Eat egg at least once a week	
	Sought modern medical treatment when sick	
	Drink water from protected source	
	Use private toilet	
	Per capita family house size is more than 8 square meters	
	Live in dirt floor house	
	Experienced death of an infant in the past three years	
	<i>Other welfare indicators</i>	Use electric light source
		At least one school-age child dropped out of school
		High dependency rate (more than half of the family members are younger than 15 years old)
Most members buy new clothes at least once a year		
Victim of crime in the past year		
<i>Political participation and access to information</i>	At least one family member voted in the last general election	
	Watch television or read newspaper at least once a week	

Note: omitted dummy variable “unfinished elementary education” in education level. Omitted dummy variable “other sector” in sector of employment.

VI. OVERVIEW OF CBMS VILLAGES

A. KEDONDONG

Kedondong is situated 10 kilometers from the capital of Demak, consisting of three neighborhoods, with a total of 20 hamlets (sub-neighborhoods). The village is arranged in blocks, each block is the same as one hamlet and is made up of around 60 houses.

In terms of education facilities, there are four primary schools but there is no junior secondary or senior secondary school. The nearest junior secondary school is three kilometers away, while the nearest senior secondary school is five kilometers from the village. Meanwhile, the nearest tertiary level educational facility is eight kilometers away, near the district capital. Furthermore, there is no non-formal education facility available. Transportation to aforementioned education facilities is not hard because there are several regular public transportation services to the village.

Although there is no permanent health facility in the village, both public and private, three midwives and two nurses visit the village at least once a week. Moreover, over-the-counter drugs are widely available in small shops throughout the village.

Access in and out of the village is quite adequate. The longest road type is *makadam*, a local term, which means that the road is already hardened and ready to be layered with asphalt. In short, it is the type of road that is one level below asphalt road. Thus, the road is passable throughout the year. Public transportation such as minivans and motorcycle-taxis are available everyday for at least eight hours.

In terms of sanitation, most residents bathe in a small river that runs on the west side of the village. This is quite surprising, given the village's proximity to the district capital and the availability of piped water system in every house. A resident told one SMERU researcher that only the very rich use private bathrooms, while most families, including those who can afford to build a private bathroom, still use the river because they can socially interact with their neighbors while bathing. In contrast, virtually everybody drinks water from the piped system.

For energy source, firewood is the source of cooking fuel used by most villagers, followed by kerosene and gas stoves. Meanwhile, every house is connected to the state energy company, although there are houses whose connection is through another house and not directly from the power company.

Only around one percent of the residents have private land line telephone and even fewer have cellular phones, however, public telecommunication booths are available in the village. On the other hand, there is no post office and the nearest one is located six kilometers away.

The only formal banks available in the village are government owned: BKK,⁹ a bank owned by the provincial government that specializes in providing credits to micro and small enterprises, and BKD,¹⁰ a smaller version of BKK owned by the village government. There is no other formal financial institution available in the village, although there are mobile banks and loan sharks that regularly visit the village.¹¹

B. JUNGPASIR

Jungpasir is one of 20 villages in the subdistrict of Wedung, in the district of Demak. The village is divided into five neighborhoods, with a total of 11 hamlets, and lies on the border of Demak and Jepara, a district east of Demak. It is located 25 kilometers from the district capital, and around 15 kilometers from the subdistrict capital.

Jungpasir is located far from the state road (roads built by the central government) that connects Demak to Jepara. Within the village itself, main roads are made from rough asphalt. The road shows considerable wear and tear and lack of maintenance. Public transportation, however, regularly pass through the village all day round, providing service to Demak and Jepara.

There are two main roads that lead to Jungpasir. The faster way is to take the state road to Jepara and through the side road along a river that separates Jepara from Demak. The condition of the side road in Jepara is, in contrast to side roads in Demak, very well maintained, so the trip to Jungpasir would only take one hour. The second path is to go through the capital of Wedung. The trip, however, would take more than two hours because of the atrocious road condition.

According to Statistics Indonesia's Village Potential database, in 2003 Jungpasir had an area of 353.1 hectares, where most (306.5 hectares) were paddy fields. Residential area only took up around 30 hectares and was clustered along the main village road. Other uses of land include public facilities, religious facilities, funeral grounds, *etc.*

As already shown by the proportion of land use, most residents are paddy farmers, either simply owning the paddy field, working in the field, or both. Other types of occupation include fruit or food trading. Most residents who work in this sector ply their trade in Demak, Jepara, or even Jakarta.

On access to sanitation, 70% of residents get their drinking water from wells, both protected and unprotected, while the rest use tap water provided by the provincial water company. As for source of light, every house uses electricity provided by the state power company. Meanwhile, most residents also have their own toilets, although there are still quite a few who use the river or their neighbor's toilet.

⁹ See www.gdrc.org/icm/bkk.html for a short description of BKK.

¹⁰ See www.gdrc.org/icm/country/id-mfi/idmfi-bkd.pdf for a short description of BKD.

¹¹ Mobile banks and loan sharks are informal money lenders that charge very high interest rates. Their customers are usually farmers who need capital advance at the beginning of planting season.

For a village that is far from the district capital, educational facilities are readily available. There are three primary schools, one private junior secondary school and one private senior secondary school. The nearest public junior secondary school is only five minutes away, while other senior secondary schools and tertiary level education facilities are only available in the district capital.

The only available formal health facility is a public polyclinic that has a midwife and a nurse. In addition, there are also two traditional midwives.¹² For medical doctors, both general practitioner or specialist, the residents would have to go to Demak.

In terms of telecommunication facilities, a small share of residents have private land line telephone. There are, however, also six telecommunication kiosks in the village. Other public facilities such as market, post office, and bank are not yet available in the village. The nearest market is in a neighboring village, which is technically already in Jepara, while the nearest post office is in the subdistrict capital and the nearest bank is in the district capital. Access to financial institutions, however, is easy because there are two small cooperatives in Jungpasir that provide similar services to a bank.

C. CIBULAKAN

Cibulakan is one of 16 villages in Cugenang subdistrict in Cianjur. The village is separated into three main residential blocks, in total comprising of six neighborhoods and 22 hamlets. The first five neighborhoods are located on the side of the village road, while the sixth neighborhood is located about two kilometers from the village road, surrounded by paddy fields.

The village is about six kilometers away from the capital of Cianjur and four kilometers from the capital of Cugenang. Although not located adjacent to intercity roads, this village can be accessed from two such roads: Cianjur-Jakarta and Cianjur-Sukabumi. Both roads are around 20 minutes by car from the village. Meanwhile, the road from the intercity roads to the village is relatively well-maintained, although quite narrow. This road has enabled public transportation—minibus—to service the village. This significantly helps the residents in getting to Cianjur.

Other than minibus, another public transportation roaming the village is motorcycle taxi that specializes in short distance travel. These taxis are especially used by the residents of Neighborhood 6, which is not serviced by the minibus. In addition, the road that leads to the hamlet can only be utilized by motorcycles during the rainy season.

According to latest data from Statistics Indonesia, in 2003 the area of Cibulakan was 200 hectares. The largest area, 138.3 ha, was used to cultivate paddy throughout the year. Meanwhile, the residential area took about 34.3 ha. The rest was used for fish ponds and public facilities.

¹² Traditional midwife is different from village midwife or midwife. Traditional midwives use traditional infant delivery practices, for example herbs, while (village) midwives refer to government-trained midwives skilled at modern and relatively safer procedures for delivering infants.

Most residents work as farmers; some own fields but do not work them, some work the fields that they own, and some work as farm laborers for others since they do not own any land. Most farmers plant paddy, while a few plant vegetables or farm fish. Other than farming, other occupations include trading, working at private companies, becoming a civil servant, and driving the minibuses or motorcycle taxis. Quite a large number of residents work as migrant workers, especially in Middle Eastern countries. Families of these foreign workers are relatively better off compared to other residents.

In general, people still use wells and springs as their main source of drinking water although the provincial water company (PDAM) is already servicing the area, which means most houses have access to purified tap water. Those whose houses have no tap water are able to bring buckets and take water for free from taps at the local mosque.

For source of light, virtually every house has access to electricity, although there are a few that still use oil-based lamps or torches.

Many residents have separate bathroom and toilet facilities. Most houses have a bathroom, albeit very simple ones that only consist of a bathtub that doubles as a fish pond,¹³ and also private toilet. A small number of families use public toilets, and an even smaller number still use the river for bathing and as a lavatory.

There are only limited education facilities in the village. There are four public primary schools and a private junior secondary school. Other schools, however, are relatively close. There is a public junior secondary school in the neighboring subdistrict, and a number of senior secondary schools and colleges are available in the capital of Cianjur. Furthermore, locally managed Islamic boarding schools (*pesantren*) are also available in the village.

There are also no public health facilities in the village. The only one available is already abandoned. There are, however, two nurses who have opened for private practice in their homes and also a village midwife. Furthermore, there are two other traditional midwives.

Telecommunication facilities are quite widely available. A fixed telephone network is available from the state telecom, although the number of subscribers is quite small. Meanwhile, there is a telecommunication kiosk available for the used of residents. In contrast, cellular phones have been gathering popularity. This is supported by a number of factors: availability of affordable phones, relatively good signal, and the very low airtime charges.

Other larger forms of infrastructure such as market, post office, police station, and bank are not yet available. Residents have to go to the capital of Cianjur for these services, although a bank is also available in the subdistrict capital. For credit purposes, residents usually go to this bank, the state pawn company, or the microfinance unit of Kecamatan Development Program (KDP).¹⁴

¹³ A bathtub in Indonesia is different from that in western countries. Indonesia's bathtub is only for water reservoir, so when someone takes a bath, s/he does not climb into the bathtub but scoops the water using a "water scoop".

¹⁴ KDP is a government project, funded by the World Bank.

D. PARAKANTUGU

Prior to 2005, Parakantugu was a part of Kadupandak Subdistrict. In January 2005, there was a segregation of the subdistrict into two subdistricts, Kadupandak and Cijati, and Parakantugu was included as a part of the new subdistrict. Parakantugu is located along Cibuni River, which regularly floods the village during the rainy season.

The village is about 90 kilometers from Cianjur capital and five kilometers from Cijati capital. Ironically, it is only two kilometers away from Kadupandak capital, which begs the question why it was assigned to become a part of Cijati. It takes around four to five hours by car from Cianjur capital to Parakantugu. There are three routes that can be taken:

- Cianjur – Sukanagara – Kadupandak – Parakantugu. This route is the worst because there is around 15 kilometers of atrocious road condition near Kadupandak. This route, however, is passed by public transportation.
- Cianjur – Sukanagara – Tanggeung – Cigadog – Parakantugu. This route is also in a bad condition where for about 20 kilometers there is only dirt road covered with stone. This route is also passed by public transportation.
- Cianjur – Sukanagara – Wedung – Parakantugu. Wedung – Parakantugu is a motorcycle-taxi-only road. Other public transportation is not allowed to pass after scuffles broke out several years ago between minibus drivers and the motorcycle taxi drivers. This is the best route to get to Parakantugu if one drives a private car, although the road is quite narrow.

Parakantugu residents have easy access to public transportation from within their village, both minibus and motorcycle taxi, although it is not available around the clock. Minibuses only operate between 6 am to 4 pm, while motorcycle taxis are mainly used for intra-village travel.

The main road in Parakantugu is not well maintained. It is a mix of stone road, dirt road, and patches of asphalt. Smaller roads leading into residents' houses, however, are all asphalted using KDP fund. Unfortunately, there is no maintenance fund and it is only a matter of time before these roads deteriorate.

According to Statistics Indonesia in 2003, Parakantugu had an area of 351 hectares. Sixty percent of the area was paddy field, which yields one harvest per year due to the long dry season. The residential area took up about 17.4% of total area. Most residents were born in the village. There are very few migrants from other areas.

Most residents work as paddy farmers. A small portion work as traders, civil servants, and employees. There are also pensioners. Most younger people work as construction workers, porters, and motorcycle taxi drivers. In addition, many women in the village work as overseas workers, mainly in Saudi Arabia. Going away to work overseas is traditionally quite normal among residents, since most older people also have such experience.

There is no health facility in the village, although there is a village midwife. There are also three traditional midwives, whose services are in demand. The nearest public health center is in Kadupandak, about 15 minutes away by motorcycle, and the residents have to go to Cianjur to get more modern health treatment.

In terms of education facilities, there are four public primary schools and one private junior secondary school. The nearest senior secondary school is one hour away by car, which is the reason why most school age children drop out after finishing junior secondary school.

VII. QUANTITATIVE PROFILE OF CBMS VILLAGES

This section provides profiles of CBMS villages, divided into six categories.

A. POPULATION

Table VII.1 provides the population characteristics of the four CBMS villages.

Table VII.1 Population Related Characteristics in CBMS Project Sites

	Cibulakan	Parakantugu	Kedondong	Jungpasir
Number of Residents	5,313	3,958	4,426	5,051
Number of Families	1,428	1,295	1,386	1,272
Average Family Size	4.54	3.76	3.70	4.73
Sex ratio (Female:Male)	47:53	49:51	49:51	50:50
Share of Female Family Heads (%)	14.34	12.97	12.12	15.09

There are 1,428 families in Cibulakan, with an average family size of 4.5 persons. This is a bit higher than BKKBN's ideal family size of 4. Meanwhile, 53% of the residents are male, while 14.3% of families are headed by females, usually widows and divorcees.

There are 1,295 families in Parakantugu. The average family size is ideal, 3.8 people per family. There are slightly more males than females in the village, and 13% of families are female-headed. As is the case with other villages, these are usually single-parent families. Kedondong also has a relatively small average family size, 3.7, which means that the target of the national family planning program of two children per family is well within range. Meanwhile, 12.1% of the families are female-headed. Sixty percent of these families are single-parent families, mostly families headed by old widows and widowed/divorced mothers with one or two children.

In Jungpasir, there are 1,272 families. Average family size is quite large, 4.7 persons per family. There are equal numbers of males and females in Jungpasir. Meanwhile, only 15% of the families have female heads, mostly widows or divorced females.

B. OCCUPATION AND EDUCATION

Table VII.2 provides occupation characteristics and employment rates in the four villages.

Some 93.7% of family heads in Cibulakan are working. Of families whose head is not working, there are usually other members who are working. There are, however, 5% of families that have no working member. These are usually single-parent families that receive transfers from their relatives.

Table VII.2 Occupation-related Characteristics in CBMS Project Sites (%)

	Cibulakan	Parakantugu	Kedondong	Jungpasir
Employment Rate of Family Head	93.71	94.83	96.47	97.41
Crude Employment Rate				
Male	77.94	82.14	88.79	81.93
Female	27.78	30.4	63.7	59.7
Total	54.04	56.38	76.37	70.67
Number of Working Family member				
0	4.98	4.06	2.92	1.81
1	64.59	65.05	34.99	28.77
2	22.37	26.11	46.53	45.52
3 or more	8.06	4.78	15.56	23.9
Sector of Employment				
Receiving transfer	7.91	7.1	3.67	3.07
Agriculture	38.94	48.03	58.21	39.07
Industry	3.85	3.17	9.37	3.38
Trade	15.2	16.76	9.29	41.12
Services	34.03	24.86	18.95	13.21

The employment rate in Cibulakan is quite low, especially among females. In total, only a little more than half of adult residents are working. The employment rate among adult females is at a very low 27.8%. As already mentioned in Section VI, the largest type of occupation is in the agriculture sector, followed by services sector.

In Parakantugu 94.8% of family heads are employed and they are usually the only source of income in a family, which is shown by the fact that 65.1% families only have one breadwinner. Meanwhile, 26.1% have two sources of income, usually family head with spouse or a child.

As already mentioned in Section VI, almost half of the population are employed in the agricultural sector. Around 24.9% work in the services sector, mainly as drivers, construction workers, and teachers. The others are working in small industry or opening small shops. There are also families that receive transfers.

The employment rate among the working age population in Parakantugu is quite low, where only 56.4% are working. The female employment rate is even lower, 30.4%, while male employment rate is at 82.1%. This is in line with the observation that the role of males as breadwinners is quite ingrained, while most females stay at home.

In Kedondong, the employment rate of family head is 96.5%, which means virtually every family in the village has at least one member who is working. This is also shown by the number of working family members, where only 2.9% of families have no working member. Meanwhile, almost half have two members who are working. It is interesting, however, to note that the overall crude employment rate of working-age residents is only 76.4%, with males and females at 88.8% and 63.7% respectively.

The majority of residents are in the agriculture sector, which is quite the norm in rural Java. Most of the residents working in the services sector are taxi and bus drivers and construction workers. Finally, those receiving transfers consist of pensioners and senior couples receiving regular money transfers from their already-married children.

From Table VII.2 one can also gather that only 2.6% of family heads in Jungpasir are unemployed. This is further strengthened by the fact that only 1.8% of families do not have any working members. The families that are included in the 1.8% classification are usually single-parent families that receive transfers from other families.

The same table shows that the male employment rate is much higher than female's. This could be caused by the fact that females concentrate more on taking care of the family. Based on the number of working family member, almost half the families in Jungpasir (45.5%) have two members who are working, while 23.9% of the families have three or more working members. Meanwhile, most residents are in trade (41.1%) and agriculture (39.1%) sectors, and only 13.2% are in the services sector.

There seem to be district specific conditions that affect employment. In Cianjur, the employment rate is lower than Demak, which is also indicated by the fact that more families in the two villages in Cianjur only have one working member. In contrast, around half the families in Demak have two members who are working.

Meanwhile, Table VII.3 provides the literacy rate and education level of the working-age population in these villages. In Cibulakan, almost every adult is literate, with males having a higher literacy rate (97.9%) compared to females (94.2%). In terms of education level, adults in Cibulakan have a relatively low level of education. The majority, 70.3% only finished primary school, with 10.9% not even finishing primary level. Only 2.2% have tertiary-level education.

Table VII.3 Education Level of Working Age Population who Already Left School in CBMS Project Sites (%)

	Male	Female	Total
<i>Cibulakan</i>			
Literacy Rate	97.91	94.17	96.13
Education Level			
Unfinished Primary Education	9.44	12.39	10.85
Primary	68.75	71.92	70.25
Junior Secondary	8.26	6.47	7.43
Senior Secondary	9.78	6.96	8.43
Diploma/university	2.98	1.40	2.22
<i>Parakantugu</i>			
Literacy Rate	99.19	98.28	98.71
Education Level			
Unfinished Primary Education	1.97	2.70	2.33
Primary	68.36	73.22	70.78
Junior Secondary	19.73	17.19	18.45
Senior Secondary	7.68	5.18	6.42
Diploma/university	1.76	1.28	1.52
<i>Kedondong</i>			
Literacy Rate	90.78	80.80	85.79

	Male	Female	Total
Education Level			
Unfinished Primary Education	18.93	27.27	23.07
Primary	62.13	58.86	60.58
Junior Secondary	12.29	10.51	11.35
Senior Secondary	4.67	2.29	3.48
Diploma/university	1.97	1.07	1.52
<i>Jungbasir</i>			
Literacy Rate	91.27	79.85	85.48
Education Level			
Unfinished Primary Education	21.77	32.71	27.31
Primary	31.13	30.82	30.97
Junior Secondary	27.70	23.04	25.34
Senior Secondary	16.47	11.19	13.79
Diploma/university	1.74	1.34	1.54

Most adults in Parakantugu are literate and there is a very high literacy rate among both males and females. Those who are illiterate can also be easily identified from the percentage of adults not finishing primary school, although there are few of those who did not finish primary but are literate.

Education levels among the working age population are quite low. Some 70.8% have only six years of education, with a higher percentage of females than males having only attained this level of education. A higher share of males than females have also finished higher levels of education. It seems that males, in general, have more opportunity for higher education.

In Kedondong, the male literacy rate is 90.8% while the female literacy rate is 10 percentage points lower at 80.8%. Overall, 85.8% of adults can read and write. Some 83.7% of working age residents have six years of education or less. Only 1.5% have a tertiary level of education. This is consistent with the sector of employment in the village, where 58% families derive their main income from agriculture.

Finally in Jungpasir, the education level of the working age population is also relatively low, although it is more scattered compared to other villages. Only 13.8% of the population have finished senior secondary school and just 1.5% have a tertiary level of education. Moreover, 27.3% did not even finish primary school. Around 15% of them are illiterate, and more females are illiterate compared to males. Those who are illiterate are usually adults who have not read for extended periods, so although they used to be able to read when they were young, they no longer have the ability.

After looking at the education level of the working-age population, Table VII.4 shows the net enrollment rates of each education level. The primary enrollment rates in the two villages in Cianjur are relatively low compared to the villages in Demak. In Cibulakan, the primary net enrollment rate is only 78.7%, while the junior secondary enrollment rate plunges to 42.7% and the senior secondary net enrollment rate is only 20.7%. The female primary enrollment rate is higher than males, but females' rates are lower in both secondary levels.

Observations indicate that the low enrollment rates in Cibulakan are because education is still relatively unaffordable for many residents and parents are unaware of the importance of a formal education. Distance does not seem to be an important barrier, because all educational facilities, from primary to tertiary schools, are at most 30 minutes away from the village.

Table VII.4 School Net Enrollment Rate in CBMS Project Sites (%)

	Male	Female	Total
<i>Cibulakan</i>			
Primary	76.82	80.64	78.70
Junior Secondary	44.13	41.10	42.68
Senior Secondary	22.60	18.67	20.73
<i>Parakantugu</i>			
Primary	77.30	76.92	76.95
Junior Secondary	82.00	80.00	80.10
Senior Secondary	20.18	17.98	18.91
<i>Kedondong</i>			
Primary	90.60	93.36	91.49
Junior Secondary	66.67	62.50	64.94
Senior Secondary	30.48	23.77	26.64
<i>Jungpasir</i>			
Primary	96.12	94.29	95.23
Junior Secondary	96.48	95.24	95.85
Senior Secondary	68.59	60.21	63.98

Net enrollment rates for primary and junior secondary schools in Parakantugu are 77% and 80.1% respectively, while the senior secondary net enrollment rate dives to 18.9%, mainly caused by the unavailability of nearby senior secondary schools. Meanwhile, female net enrollment rates are lower in all three levels of schooling.

The net primary school enrollment rate in Kedondong is high, 91.5%, although is slightly lower than the national net enrollment rate of 93% (UNDP). Meanwhile, the net junior and senior secondary school enrollment rates are 64.9% and 26.6% respectively, which indicates that many students drop out of school after finishing a level, either after finishing primary level or junior secondary level, rather than midway through a level. The high drop out rates may be compounded by the fact that the nearest junior secondary school is three kilometers away while the nearest senior secondary school is even farther. Looking at net enrollment rates between boys and girls, girls have a higher rate only at the primary level, and the gap between boys and girls' rates increases at higher levels of education.

In Jungpasir, the net enrollment rate in primary and junior secondary levels are quite high, at 95.2% and 95.9% respectively, while it is 64% at senior secondary level. The drop out rate after junior secondary school is caused by, *inter alia*, an inability to finance education, but in addition there is a tendency among residents to choose public schools. This is not a problem at the junior secondary level since a public school is available in

the village, but is at the senior secondary level since the nearest public school is in the district capital. Overall, net enrollment rates among boys and girls are similar, although boys still have higher rates, especially at the senior secondary level.

Since schooling, or lack of it, is possibly related to child labor, Table VII.5 breaks down the activity of school age children in the four villages into the four combinations of schooling and working.

Table VII.5 Child Schooling and Working in CBMS Project Sites (%)

	Drop out	Working	In school and working	In school and not working	Drop out and working	Drop out and not working
<i>Cibulakan</i>						
Primary school-age	21.3	0.8	0.23	78.47	0.57	20.73
Junior secondary school-age	57.32	7.01	1.22	41.46	5.79	51.52
Senior secondary school-age	79.27	23.78	0	20.73	23.78	55.49
<i>Parakantugu</i>						
Primary school-age	23.05	0.4	0	76.95	0.4	22.65
Junior secondary school-age	19.9	3.14	1.57	78.53	1.57	18.33
Senior secondary school-age	81.09	14.43	0	18.9	14.43	66.67
<i>Kedondong</i>						
Primary school-age	8.51	1.47	0.98	90.51	0.49	8.02
Junior secondary school-age	35.06	11.55	2.39	62.55	9.16	25.9
Senior secondary school-age	73.36	45.85	0.44	26.2	45.42	27.95
<i>Jungpasir</i>						
Primary school-age	4.77	0.31	0	95.23	0.31	4.46
Junior secondary school-age	4.15	2.42	0	95.85	2.41	1.73
Senior secondary school-age	36.02	19.88	2.02	61.96	17.87	18.16

As shown by Table VII.5, child drop out in Cibulakan begins at a very early stage. Some 21.3% of children between six and 12 years old are out of school. The drop out rate continues to increase in higher levels, 57.3% and a staggering 79.3% among junior and secondary-age school children respectively. The table shows, however, that those who drop out are not necessarily engaged in employment. In total only 0.8%, 7%, and 23.8% of school age children at each level actually work. The third column shows that virtually no school-going children are working, while the last column shows that more than half of all children aged 13 to 18 are neither working nor in school.

The drop out rate in Parakantugu mirrors the net enrollment rate in Table VII.4. Interestingly, most of those who dropped out are not working, which shows that children drop out not so much because schooling is unaffordable but because of other factors.

In Kedondong, 1.5% of primary school age children are working, while almost half of senior secondary school age children are working. The village has the highest share of school age children working compared to the other three. Furthermore, the table also shows that only a very small fraction of children are both working and in school, the highest is 2.4% at the junior secondary level. This proves that work and school are also virtually two mutually

exclusive activities in Kedondong, although the rate of child labor in this village is highest compared to other villages. Finally, the table also shows that there is quite a high proportion of children who are not in school and also not working, amounting to around a quarter of children 13-18 years old and 8% of 6-12 year old children.

In the meantime, children in Jungpasir have dropped out of school even at the primary level, and it increases up to senior secondary level. Although the proportion is relatively small, there are 0.3% and 2.4% of primary and junior secondary school age children who have stopped going to school and are working. In contrast, there are no children at the primary and junior secondary levels who are both in school and working, while 2% of those in senior secondary school age engage in work and school at the same time. Meanwhile, half of senior secondary school age children who have dropped out are working (17.9% over 36%)

C. HEALTH AND FOOD CONSUMPTION PATTERN

Table VII.6 provides the health-related characteristics of the villages, including contraceptive usage rate, immunization rate, access to formal medical treatment, and access to safe drinking water.

Table VII.6 Health and Sanitation Characteristics in CBMS Project Sites (%)

	Cibulakan	Parakantugu	Kedondong	Jungpasir
Contraceptive usage rate (%)	52.64	58.46	76.26	66.18
Immunization rate among infants (%)				
BCG	49.34	68.77	77.75	87.87
DPT	45.73	68.49	74.08	87.41
Polio	58.44	67.12	78.4	86
MMR	44.02	57.81	69.98	75.06
Hepatitis B	45.16	56.16	64.58	77.35
Complete Immunization	32.64	53.42	58.32	67.51
Share of Infants delivered by doctor/midwife	32.83	76.71	76.03	85.81
Share of infants receiving antenatal treatment	77.42	74.79	86.39	97.03
Share of infants receiving postnatal treatment	65.46	75.62	77.11	94.97
Share of families with dirt floor house	0.42	0.31	40.14	28.38
Share of families drinking safe water	99.79	100	96.85	99.69
Sought formal medical treatment when sick	91.18	89.73	95.25	94.03

The contraceptive usage rate in Cibulakan is relatively low at 52.6%. The most widely used contraception is through injection, followed by pill. SMERU researchers believe that the cause of this low usage rate is the expensive price of the contraceptive tools; scarceness of the tools at local level; and the culture of a small number of residents that tends to believe that limiting the number of children in a family is against Islamic teachings.

Furthermore, the immunization rate is also low in Cibulakan. Only 32.6% of infants have received complete immunization, and the ratio for each type of immunization varies between 44% and 58.4%. Child delivery by doctor or midwife is also at a lowly 32.8%. This shows that most children were delivered by the traditional midwife, while a doctor or midwife is only called when the mother encounters problems. In a sense, this practice is quite understandable since traditional midwives usually charge very low fees. The

majority of mothers, however, have received antenatal and postnatal treatment. For medical conditions other than pregnancy or child delivery, modern facility usage is very high. Some 91.2% of families resort to modern health facilities during illness. Moreover, virtually every family, 99.8%, drink boiled water. Finally, only 0.4% of families still live in dirt floor houses. According to the residents, the first investment that families make when they have money is to buy floor tiles.

Only 58.5% of reproductive age families in Parakantugu use contraception. Furthermore, immunization is also still far from universal, although much higher than Cibulakan. Rates for compulsory immunizations such as BCG, DPT, and Polio are less than 70%, while other types of immunization have less than a 60% prevalence rate. In total, a little more than half the infants received complete immunization. Furthermore, three-quarters of infants were delivered by doctor/midwife and similarly around 75% of mothers received antenatal and postnatal treatment.

Almost 90% of families seek modern medical treatment during sickness and every family in Parakantugu drinks boiled water. In addition, only 0.3% families still live in dirt floor houses.

In Kedondong, although many residents still take a bath in nearby rivers, 96.8% of the families drink safe drinking water and 95% of them sought formal medical treatment during sickness. Meanwhile, 76.3% of fertile couples use contraceptive tools, which partly explains the low average family size in the village.

Immunization rates among infants are still relatively low, although most vaccines are provided free of charge by the government. Some 58.3% of infants have received complete immunization, while 20% of infants have not received polio vaccination. Some 76% of infants were delivered by a doctor or midwife, while the rest were delivered using traditional methods. Furthermore, 86% of mothers received antenatal treatment and around 77% received postnatal treatment. These conditions can probably best be explained by the fact that there is no permanent health facility in the village, although the residents are still in a better situation compared to other more remote villages since the district capital is only a short trip away by bus. Finally, almost half of the families still live in houses with dirt floors.

From Table VII.6 one sees that in Jungpasir only 66.2% of couples in reproductive age use contraceptive tools. The commonly used contraceptive tool is injection.

There are still quite a high percentage (32.5%) of infants that did not receive complete immunization. When examined from each type of immunization, around 75% – 88% of children are immunized.

Formal medical treatment usage is quite high in Jungpasir. Some 86% of infants were delivered by doctor or midwife. In virtually every pregnancy, mothers receive antenatal and postnatal treatment. Moreover, 94% of families have used modern medical facilities when ill. Finally, 99% of families drink boiled water, although 28.4% still live in dirt floored houses.

To look at the consumption pattern among families in the four villages, Table VII.7 provides information on the number of meals a family usually has in a day and their consumption of meat, fish, and egg.

Table VII.7 Food Consumption Pattern in CBMS Project Sites (%)

	Cibulakan	Parakantugu	Kedondong	Jungpasir
Share of families whose members eat twice daily	97.90	98.53	97.98	98.66
Share of families who consumed meat weekly	50.42	95.14	56.03	46.38
Share of families who consumed fish weekly	77.38	96.99	98.92	94.42
Share of families who consumed egg weekly	85.71	97.99	83.54	91.90

In general, the family consumption pattern in all four villages is quite favorable. Almost every family eats at least twice daily. Regular meat consumption, however, is only prevalent in Parakantugu, while the rate hovers around 50% in the other three villages. Egg consumption is relatively high in all four villages, while fish consumption is lowest in Cibulakan, which is landlocked, compared to the other three villages, which are relatively closer to a river or sea.

D. FINANCIAL CHARACTERISTICS

Financial characteristics are looked at in four aspects, as shown in Table VII.8.

Table VII.8 Financial Characteristics in CBMS Project Sites (%)

	Cibulakan	Parakantugu	Kedondong	Jungpasir
Share of families with access to formal credit market	9.80	12.59	23.63	6.37
Share of families with savings in formal institution	14.08	11.58	15.92	15.64
Share of families who had to pawn their asset	4.13	0.93	2.52	1.65
Share of families who had to sell assets to pay off debt	2.66	1.08	3.10	2.20

As already written in Section VI.C, there is no formal credit institution in Cibulakan. Thus, residents who want to apply for credit must go to the BRI (*Bank Rakyat Indonesia*, Indonesian People's Bank) at the capital of Cugenang or to other financial institutions in the district capital. An estimate of 9.8% of Cibulakan families have received formal credit in the past three years, almost exclusively given by banks. For informal credit, on the other hand, residents usually borrow from their neighbors. Meanwhile, 14.1% of families have savings. Since the number of families who have savings is much higher than those who have credit, the banking system has moved capital from rural to urban areas. Another way of securing money is by mortgaging assets. Some 4.1% of families have done so in the past three years and 2.7% of families had to sell assets to pay off debt.

Residents of Parakantugu usually go to BRI in Kadupandak when dealing with formal financial institutions. Some 12.6% of families have received formal credit and 11.6% have savings. Only a small percentage, 0.9%, have pawned their assets, while 1.1% of families had to sell their assets to pay back debt.

Although Kedondong is only eight kilometers away from the district capital and there are formal financial institutions available in the village, only a small portion of families

have a relationship with them, although admittedly they have the highest rates compared to the other three villages. Table VII.8 shows that less than a quarter of families have taken out formal credit in the last three years and only 16% have savings. On the other hand, 2.5% of the families pawned their assets in the past three years, while 3.1% were so heavily indebted they had to sell their assets.

Although there are two cooperatives in Jungpasir, only 6.4% of families have secured loans in the past three years. According to interviews with residents, most of those who received loans obtained them from banks, while the cooperatives are only the third-choice institution after banks and informal moneylenders, such as loan sharks. Some 15.6% of families have savings. Finally the percentage of families that have pawned their assets is relatively small, around 1.7%. Finally, only 2.2% of families have sold their assets to pay for debts.

E. POLITICAL PARTICIPATION, SAFETY, AND ACCESS TO INFORMATION

According to several people in Cibulakan there have been several break-ins in the past year, mostly done by locals themselves. They believe this is caused by the fact that there is an increasing number of teenagers who have dropped out from school and cannot secure employment. This is in accordance with the data shown in Table VII.5, where half of children aged 13 to 18 in Cibulakan are neither in school nor working. Table VII.9 shows that 2.8% of families were victims of crime in the past year, virtually all of them had their houses broken into.

On the other hand, the other three villages are quite safe with less than one percent of residents suffering from crime, and most of these cases happening outside the village.

Table VII.9 Political Participation, Safety, and Access to Information in CBMS Project Sites (%)

	Cibulakan	Parakantugu	Kedondong	Jungpasir
Share of families who were crime victims (%)	2.8	0.31	0.72	0.16
Share of families who voted (%)	98.32	98.69	98.7	99.33
Share of families who accessed television or newspaper weekly (%)	82.91	74.67	95.1	88.92

Residents in all villages are also politically active. More than 98% of the adults voted. This does seem to have been caused by the easy access to information. However, political participation in Parakantugu remained high although only around 75% of residents regularly watch television or read newspapers.

F. BKKBN STATUS AND SOCIAL SAFETY NET PROGRAMS

Since BKKBN status is the official tool for identifying poor family, it is important to see the share of each classification in each village and the distribution of the social safety net program beneficiaries. Officially, only families in the two lowest categories (Pre-prosperous and Prosperous I) are entitled to receive the social safety net (SSN) programs.¹⁵

There are only 6.7% of families in Cibulakan who are classified as Pre-prosperous, while there is no Prosperous III+ family. Some 37.1% are classified as Prosperous I. So in theory, 44% of residents in the village should receive SSN programs.

In practice, one observes both undercoverage and leakage: only 72.6% and 68.5% of residents in the two respective lowest categories received Rice for the Poor¹⁶ program (RP), while 38.2% and 15.6% of Prosperous II and III respectively received it. In terms of number of families, the number of Pre-prosperous families who received the program is less than the number of Prosperous I and II families who benefited from the program.

Similar phenomenon can be seen from the distribution of health card for the Poor¹⁷ program (HCP) beneficiary. Moreover, the number of non-poor families receiving the program is also greater than the number of Pre-prosperous families receiving it.

Table VII.10 BKKBN Status and Social Safety Net Beneficiary

	Pre-prosperous	Prosperous I	Prosperous II	Prosperous III	Prosperous III+
<i>Cibulakan</i>					
Share in village (%)	6.65	37.11	34.1	22.06	0
Receive Rice for the Poor Program (%)	72.63	68.49	38.19	15.56	-
Receive Health Card for the Poor Program (%)	16.84	14.91	4.11	4.13	-
<i>Parakantugu</i>					
Share in village (%)	33.9	41.47	16.53	6.72	0.31
Receive Rice for the Poor Program (%)	22.1	17.69	4.21	0	0
Receive Health Card for the Poor Program (%)	5.47	3.72	4.67	8.05	0
<i>Kedondong</i>					
Share in village (%)	50.29	26.45	14.16	7.95	0.79
Receive Rice for the Poor Program (%)	96.26	93.44	93.88	76.36	63.64
Receive Health card for the Poor Program (%)	19.25	11.2	8.16	10.91	9.09
<i>Jungpasir</i>					
Share in village (%)	22.96	46.23	25.86	4.4	0.16
Receive Rice for the Poor Program (%)	92.81	88.78	75.08	42.86	100
Receive Health card for the Poor Program (%)	56.51	44.73	25.53	7.14	50

¹⁵ See Suryahadi and Sumarto for a thorough explanation of the SSN targeting.

¹⁶ This program entitles its beneficiaries to buy rice at a subsidized price, less than half the normal price.

¹⁷ Beneficiaries of this program are given a health card that entitles them to free service at public health facilities.

In Parakantugu, 33.9% and 41.5% of families are classified in the two lowest classes, while 7% are in the two highest categories. There is more undercoverage than leakage in Parakantugu, with only 22.1% and 17.7% of eligible families in the two lowest categories respectively receiving subsidized rice. Meanwhile, leakage is more apparent in the health card program, where 8.1% of rich families benefited from it while only 5.5% and 3.7% of families entitled to the program received it.

In Kedondong, the poverty rate based on BKKBN is 50.3%, while 76.8% families are entitled to government assistance. We found that close to 95% of those who are supposed to receive RP received them, implying the existence of undercoverage, but more worryingly we also found that 76% and 64% of families classified in the two highest BKKBN categories also received the aid. Overall, around 70% of the non-poor benefited from the program. This is consistent with information from residents who state that the subsidized rice is usually distributed among the residents, irrespective of status.

Only 20% of the poor received HCP and around 10% of non-poor families received Health Care Cards under the program. Overall, we found undercoverage and considerable leakage of both the RP and HCP programs.

Table VII.10 also shows that Jungpasir has a high poverty incidence; 23% of the families are classified as pre-prosperous, while almost half are in the Prosperous I category. Only 4.6% of the families in Jungpasir are classified in the top two categories.

Looking at access to government assistance programs, whose intended targets are families in the bottom two categories, families from every category benefit from the program. The share of families receiving the programs decreases from the lowest to the Prosperous III category, and then increases again in the highest category, where every Prosperous III+ family received subsidized rice. Village officials admitted that the Rice for the Poor program is evenly divided among residents to avoid any jealousy that may lead to conflict.

This result shows that the targeting mechanism is still inadequate. Many reasons can be thought of, starting from weak methodology to corrupt officials on the ground, as well as demands by the rich residents to also receive the programs. This means much improvement could be made to ensure better targeting.

The next four sections discuss the PCA results in each village as we provide evidence that PCA has the potential to improve targeting methodology.

VIII. PCA RESULT: POVERTY PROFILE OF KEDONDONG

A. SIGNIFICANT INDICATORS OF WELFARE

Out of the 63 welfare indicators listed in Table V.1, the most positive variable is owning a color television and the most negative variable is if the family has a female head. Table VIII.1 provides the 10 welfare indicators with the highest coefficients, either positive or negative.

Table VIII.1 Ten Highest Ranked Welfare Indicators in Kedondong

Variable	Score	Rank
Own color television	0.28	1
Own fan	0.26	2
Own DVD/VCD player	0.25	3
Family head is female	-0.23	4
Own motorcycle	0.23	5
Own tape recorder	0.23	6
Family head is married	0.22	7
Own bicycle or boat	0.22	8
Use private toilet	0.21	9
Live in dirt floor house	-0.21	10

Asset ownership variables make up six of the 10 variables in the table, which means they best differentiate a family's welfare from the others. Meanwhile, the two variables with negative coefficients that make it to the list are living in a dirt floor house and having a female family head. The richest family has a welfare score of 8.98 and the poorest family's score is -7.98. The richest family's head is a male with a university degree, the spouse also has a university degree, and the family is in the services sector. On the other hand, the poorest family is headed by a female who did not finish primary school and is unemployed.

The next section describes the characteristics of the top 10% and bottom 10% of families in Kedondong.

B. CHARACTERISTICS OF THE RICHEST AND POOREST FAMILIES

Characteristics of the richest and poorest 10% of families in Kedondong are listed in Table VIII.2. Since it is already clear that asset ownership causes the most difference in welfare conditions, we only discuss other differences in the characteristics of the rich and the poor in Kedondong.

In terms of education, only 20.3% of the poor families' heads finished primary school with none having higher levels of education levels. In contrast, almost 60% of the rich families' heads finished primary school, with almost 30% also having finished junior or

senior secondary schools, and close to 10% having completed tertiary education. There are almost no rich families whose heads have less than six years of education. The gap between the rich and the poor is even wider in terms of education level of the spouses.

In occupation characteristics, virtually every rich families' head is working, compared to only 75% of the poor families' heads. Moreover, 74% of the spouses in rich families also work, while only 3% of those from poor families are working. The incidence of school-age children in the labor force is the same between rich and poor families.

Table VIII.2 Characteristics of the 10% Richest and Poorest Families in Kedondong

Variable group	Variable	Share of 10% richest families (%)	Share of 10% poorest families (%)
<i>Asset ownership</i>	Own refrigerator	43.17	0
	Own telephone	7.91	0
	Own fan	94.97	3.62
	Own air conditioner	3.6	0
	Own satellite dish	0.72	0
	Own DVD/VCD player	91.37	0
	Own color television	99.28	2.17
	Own black/white television	2.16	2.17
	Own radio	80.58	14.49
	Own tape recorder	85.61	0.72
	Own computer	3.6	0
	Own sewing machine	14.39	0
	Own cellular phone	50.36	0
	Own other electronic device	20.86	0.72
	Own motorcycle	87.05	0.72
	Own car	11.51	0
	Own bicycle	94.25	12.32
	Own land	99.28	84.78
	Own house	96.4	74.64
<i>Farm animals ownership</i>	Own chicken	37.41	59.42
	Own goat	0	1.45
	Own cow	0	0.72
<i>Marital status</i>	Family head is married	100	29.71
<i>Sex of family head</i>	Family head is female	0.72	80.44
<i>Family head and spouse education level</i>	Family head education: elementary	59.71	20.29
	Family head education: junior secondary school	14.39	0
	Family head education: senior secondary school	13.67	0
	Family head education: diploma	5.76	0
	Family head education: university	5.04	0
	Spouse education: elementary	3.6	28.26
	Spouse education: junior secondary school	58.99	1.45
	Spouse education: senior secondary school	18.71	0
	Spouse education: diploma	12.23	0
	Spouse education: university	4.32	0

Variable group	Variable	Share of 10% richest families (%)	Share of 10% poorest families (%)
<i>working</i>	Family head is working	99.28	75.36
	Spouse is working	74.1	2.9
	At least one school-age child is working	0.72	0.72
<i>Sector of employment</i>	Family in agriculture sector	14.39	68.39
	Family in industrial sector	12.23	2.17
	Family in trade sector	26.62	4.34
	Family in services sector	46.04	2.17
	Family receiving transfer (unemployed)	0	23.91
<i>Access to financial institutions</i>	Own savings	64.03	0.72
	Received credit from a formal financial institution in the past three years	46.76	2.17
	Pawned assets in the past three years	6.48	0.72
	Had to sell assets to pay debts	5.04	2.9
<i>Food consumption and health indicators</i>	Eat two meals a day	100	97.82
	Eat meat at least once a week	86.33	26.09
	Eat fish at least once a week	99.28	93.48
	Eat egg at least once a week	97.84	65.94
	Sought modern medical treatment when sick	97.48	83.33
	Drink water from protected source	94.96	78.26
	Use private toilet	92.81	11.59
	Per capita family house size is more than 8 square meters	98.56	93.48
	Live in dirt floor house	3.6	80.43
	Experienced death of an infant in the past three years	2.16	2.17
<i>Other welfare indicators</i>	Use electric light source	100	93.48
	At least one school-age child dropped out of school	8.63	1.45
	High dependency rate (more than half of family members are younger than 15 years old)	6.48	0.72
	Most members buy new clothes at least once a year	93.53	75.36
	Victim of crime in the past year	2.88	0
<i>Political participation and access to information</i>	At least one family member voted in the last general election	100	91.3
	Watch television or read newspaper at least once a week	100	81.88

Almost half of the rich families are in the services sector, a further quarter in the trade sector, and only 14% are in agriculture. In contrast, 68% of poor families are in the agriculture sector and almost a quarter are unemployed. For this reason it is important to develop the agriculture sector in order to reduce poverty.

When looked at from the perspective of access to formal financial institutions, 64% of the rich families have savings, while only 0.7% of the poor families do. Moreover, close to half of the rich families have taken out credit from formal institutions and only 2% of the poor families have done so. This, however, could be endogenous as the rich families can take out credits simply because they are rich.

The other two variables in the financial variable group also show glaring differences between rich and poor families. Some 6.5% of rich families have pawned assets, while only 0.7% of the poor families have done so. Again, this could stem from the fact that the poor have no assets to be pawned. Similarly, 5% of the rich families have had to sell assets to pay debt, while only 2.9% of the poor have had to.

From the perspective of food consumption and health indicators, the largest difference is in meat consumption. Eighty-six percent of rich families eat meat every week, while only a quarter of poor families do so. The percentage of families seeking modern medical treatment is high for both types of families, although there is a 14 percentage point difference. On the other hand, 93% of rich families have their own toilets, while only 12% poor families have private toilets. Similarly, 80% of the poor live in dirt floor houses while only 3.6% of the rich live there.

An interesting fact is that among rich families, 8.6% of them have at least one child dropping out of school while the rate is much lower among poor families at 1.5%. This might again be endogenous to their condition, although one would have to do more investigation in order to determine the causes.

Finally, both families show no big differences in terms of political participation and access to information, although rich families still have higher rates of participation in both activities.

IX. PCA RESULT: POVERTY PROFILE OF JUNGPASIR

A. SIGNIFICANT INDICATORS OF WELFARE

Table IX.1 lists the 10 indicators that have the highest coefficients in Jungpasir from the estimated 63 indicators. Since the score of the 9th to 11th indicators are only slightly different, the table also includes the 11th indicator. From the table it is evident that nine of the highest indicators are asset ownership. This shows that asset ownership, especially ownership of electronic goods and motorcycles, acts as the best differentiator of welfare between families. Out of the eleven indicators, only one is negative: living in a dirt floored house. The richest family has a welfare score of 6.94, while the poorest has a score of -7.33.

Table IX.1 Eleven Highest Ranked Welfare Indicators in Jungpasir

Variable	Score	Rank
Own fan	0.27	1
Own color television	0.26	2
Own DVD/VCD player	0.26	3
Own tape recorder	0.25	4
Own motorcycle	0.25	5
Own refrigerator	0.23	6
Own cellular phone	0.22	7
Use private toilet	0.21	8
Own other electronic device	0.19	9
Own radio	0.19	10
Live in dirt floor house	-0.19	11

B. CHARACTERISTICS OF THE RICHEST AND POOREST FAMILIES

Table IX.2 provides the characteristics of the 10% richest families compared to the 10% poorest families based on the 63 indicators of welfare. As was the case with Table VIII.2, Table IX.2 shows that there is a huge gap in terms of asset ownership between the rich and the poor. No family among the poorest 10% has a refrigerator, telephone, AC, satellite dish, computer, or car. Only a very small percentage of the poor have a fan, DVD/VCD player, color television, radio, tape recorder or motorcycle. All those things are owned by most of the rich. The only assets that are widely owned by the rich and the poor are land and house. The poor might inherit these assets because these are the most prized assets in the village. A second probability, however, is that the size of land/house owned by the rich is much larger than the poor's. Not many families, however, own large farm animals like cows and sheep since Jungpasir is mainly a paddy farming village.

According to marital status, almost every rich family still has a head and a spouse (98.4%), while only 30.7% of the poor families are married and the rest are made up of single-member families, usually old-aged widows.

The education level of family heads from the rich families is also higher than the poor families. Some 81.3% of rich families' head finished formal schooling, where 14.8%

finished senior secondary school, and almost 11% possess some tertiary level qualification. In contrast, only 15.8% of family heads among poor families finished formal schooling (12.6% finished primary school, 3.2% finished junior secondary school), while the rest have less than six years of education. Education levels of spouses show a relatively similar picture. Some 94.5% of spouses in rich families finished formal schooling, compared to 30.7% among poor families. Furthermore, 24.2% of spouses in rich families finished senior secondary school and 21.1% graduated from academy/university. Among the poor only 3.9% finished junior secondary school and 3.2% finished senior secondary school.

In terms of occupation, the heads of rich families are all employed, while the poor only have a 77.2% employment rate. Furthermore, 85.9% of spouses among rich families also work, while only 8.7% of spouses in poor families work. There is no child labor among the rich, while 1.6% of children from poor families are working. Children from poor families might be forced to work in order to support their family.

Around a quarter of the poor families are unemployed and rely on transfers. Meanwhile, most rich families (74%) are in the trade sector and 14% are in the services sector. Only 8.7% and 6.3% of poor families are engaged in those two sectors respectively. On the other hand, only 7.8% of rich families are in agriculture sector, compared to 58.3% among the poor. This result can generate two opposing policy implications. First, the agriculture sector should be developed further to increase the welfare of those in the sector, or, second, agricultural families need to move to trade or services in order for them to increase their welfare.

Table IX.2 Characteristics of the 10% Richest and Poorest Families in Jungpasir

Variable group	Variable	Share of 10% richest families (%)	Share of 10% poorest families (%)
<i>Asset ownership</i>	Own refrigerator	81.25	0
	Own telephone	23.44	0
	Own fan	96.09	2.36
	Own air conditioner	7.81	0
	Own satellite dish	0.78	0
	Own DVD/VCD player	93.75	0.79
	Own color television	99.22	7.09
	Own black/white television	7.81	2.36
	Own radio	82.03	7.09
	Own tape recorder	92.97	1.57
	Own computer	10.94	0
	Own sewing machine	21.88	0.79
	Own cellular phone	79.69	0.79
	Own other electronic device	67.19	1.57
	Own motorcycle	91.41	0.79
	Own car	18.75	0
	Own bicycle	85.94	22.83
	Own land	91.41	81.11
Own house	85.16	72.44	

Variable group	Variable	Share of 10% richest families (%)	Share of 10% poorest families (%)
<i>Farm animals ownership</i>	Own chicken	21.88	31.5
	Own goat	2.34	3.15
	Own cow	0	0
<i>Marital status</i>	Family head is married	98.44	30.71
<i>Sex of family head</i>	Family head is female	1.56	69.29
<i>Family head and spouse education level</i>	Family head education: elementary	39.06	12.6
	Family head education: junior secondary school	16.41	3.15
	Family head education: senior secondary school	14.84	0
	Family head education: diploma	6.25	0
	Family head education: university	4.69	0
	Spouse education: elementary	19.53	23.62
	Spouse education: junior secondary school	29.69	3.94
	Spouse education: senior secondary school	24.22	3.15
	Spouse education: diploma	16.41	0
	Spouse education: university	4.69	0
<i>Working</i>	Family head is working	100	77.17
	Spouse is working	85.94	8.66
	At least one school-age child is working	0	1.57
<i>Sector of employment</i>	Family in agriculture sector	7.81	58.27
	Family in industrial sector	3.12	0.79
	Family in trade sector	74.22	8.66
	Family in services sector	14.06	6.29
	Family receiving transfer (unemployed)	0	25.2
<i>Access to financial institutions</i>	Own savings	62.5	0.79
	Received credit from a formal financial institution in the past three years	17.97	0
	Pawned assets in the past three years	3.91	0
	Had to sell assets to pay debts	4.69	0.79
<i>Food consumption and health indicators</i>	Eat two meals a day	100	92.91
	Eat meat at least once a week	87.5	16.54
	Eat fish at least once a week	100	77.17
	Eat egg at least once a week	99.22	66.14
	Sought modern medical treatment when sick	93.75	95.28
	Drink water from protected source	73.44	37.01
	Use private toilet	97.66	21.26
	Per capita family house size is more than 8 square meters	94.53	92.13
	Live in dirt floor house	0	67.72
	Experienced death of an infant in the past 3 years	3.13	0
<i>Other welfare indicators</i>	Use electric light source	100	94.49
	At least one school-age child dropped out of school	4.69	2.36
	High dependency rate (more than half of family members are younger than 15 years old)	11.72	3.15
	Most members buy new clothes at least once a year	93.75	40.16
	Victim of crime in the past year	1.56	0
<i>Political participation and access to information</i>	At least one family member voted in the last general election	100	99.21
	Watch television or read newspaper at least once a week	99.22	51.18

Most rich families have savings in formal institutions, while almost no poor families have savings. Unlike rich families, no poor family has ever pawned any assets or received credit from formal financial institutions. This possibly happens because the poor have no asset to be pawned or to act as collateral. There are, however, poor families that have to sell assets to settle their credits.

Although almost all poor families eat twice daily (92.9%), only 16.5% of them regularly consume meat. In contrast, 87.5% of rich families regularly consume meat. Although egg and fish consumption is relatively high in both types of families, the difference in prevalence of fish and egg consumption between the rich and the poor are still 22.8 and 33.1 percentage points respectively.

There is no discernible difference in terms of formal health facility usage among the rich and the poor. Furthermore, the poor even have lower prevalence of health problems in some indicators. For example, there is no infant death among the poor but 3% of rich families experienced it. Most rich families, however, use drinking water taken from a protected source, while only 37% of poor families do so. In general, rich families use their own toilet, but only 21.3% of poor families have their own toilet. Although almost every family has sufficient per capita house size, 67.7% of the poor still live in dirt floored houses.

Interestingly, the share of rich families that have children who dropped out of school is 2.3 percentage points higher than poor families. There are some possible causes of this phenomenon: fewer school age children in poor families; low preference for school among rich children; or lower recognition of the importance of education among rich families. The last conjecture might be implausible since the education level of the parents in rich families is relatively high. The first conjecture might have some truth in it, since 11.7% of rich families have high dependency rates, compared to 3.2% in poor families. Rich families, however, have significantly higher incomes, shown by their asset ownership and other indicators.

In Jungpasir every family has access to electricity. Meanwhile, 1.6% of rich families suffered from criminal acts, while no poor families were victimized in the past year. This is logical since the poor may have no asset to begin with.

Political participation is equally high, although only half of poor families' members have access to newspaper or television, compared to 99.2% access to information rate among rich families.

X. PCA RESULT: POVERTY PROFILE OF CIBULAKAN

A. SIGNIFICANT INDICATORS OF WELFARE

Table X.1 provides the 10 indicators with the highest coefficients in Cibulakan from the 63 indicators used. Eight of the 10 are ownership variables and the top five welfare indicators are ownership of electronic goods.

Table X.1 Ten Highest Ranked Welfare Indicators in Cibulakan

Variable	Score	Rank
Own refrigerator	0.26	1
Own color television	0.26	2
Own cellular phone	0.26	3
Own DVD/VCD player	0.23	4
Own fan	0.22	5
Own savings	0.22	6
Own tape recorder	0.2	7
Use private toilet	0.2	8
Eat meat at least once a week	0.18	9
Own motorcycle	0.18	10

B. CHARACTERISTICS OF THE RICHEST AND POOREST FAMILIES

Based on the welfare score of each family, we are able to isolate the 10% richest and poorest families. Table X.2 provides their characteristics to prove that there are indeed significant differences between them.

There are very large gaps in asset ownership between the rich and the poor. There are 13 assets (out of 19 recorded) owned by the rich but not by the poor, for example refrigerator, telephone, fan, air conditioner, and satellite dish. Of the assets that some of the poor own, such as radio, tape recorder, and bicycle, there is a notable gap in quantity, and, most likely, quality, however the questionnaire did not record the quality of assets. The two assets that are widely owned by both the rich and the poor are house and land. There could be several reasons: these two assets are perceived to be the most important and thus are prioritized, or these assets are passed on as inheritance. Meanwhile, farm animal ownership other than chicken is not widespread because the village is a traditional paddy producing village.

Table X.2 Characteristics of the 10% Richest and Poorest Families in Cibulakan

Variable group	Variable	Share of 10% Richest Families (%)	Share of 10% Poorest Families (%)
<i>Asset ownership</i>	Own refrigerator	72.92	0
	Own telephone	22.92	0
	Own fan	62.5	0
	Own air conditioner	2.08	0
	Own satellite dish	2.08	0
	Own DVD/VCD player	69.44	0
	Own color television	99.31	0
	Own black/white television	2.78	9.09
	Own radio	54.17	4.2
	Own tape recorder	70.14	2.1
	Own computer	14.58	0
	Own sewing machine	40.28	0
	Own cellular phone	75.69	0
	Own other electronic device	6.94	0
	Own motorcycle	43.75	0
	Own car	26.39	0
	Own bicycle	43.06	0.7
	Own land	94.44	86.01
	Own house	91.67	83.22
	<i>Farm animals ownership</i>	Own chicken	20.14
Own goat		2.08	0.7
Own cow		0.7	0
<i>Marital status</i>	Family head is married	99.31	33.57
<i>Sex of family head</i>	Family head is female	1.39	58.04
<i>Family head and spouse education level</i>	Family head education: elementary	34.72	60.14
	Family head education: junior secondary school	10.42	0.7
	Family head education: senior secondary school	33.33	0
	Family head education: diploma	9.72	0
	Family head education: university	10.42	0
	Spouse education: elementary	2.08	20.98
	Spouse education: junior secondary school	43.06	12.59
	Spouse education: senior secondary school	13.19	0
	Spouse education: diploma	30.56	0
	Spouse education: university	5.56	0
<i>Working</i>	Family head is working	100	60.84
	Spouse is working	27.78	11.89
	At least one school-age child is working	1.39	2.8

Variable group	Variable	Share of 10% Richest Families (%)	Share of 10% Poorest Families (%)
<i>Sector of employment</i>	Family in agriculture sector	9.03	54.55
	Family in industrial sector	2.78	1.4
	Family in trade sector	22.92	4.9
	Family in services sector	60.42	2.8
	Family receiving transfer (unemployed)	4.86	36.36
<i>Access to financial institutions</i>	Own savings	67.36	0.7
	Received credit from a formal financial institution in the past three years	32.64	0
	Pawned assets in the past three years	6.25	0
	Had to sell assets to pay debts	4.86	0
<i>Food consumption and health indicators</i>	Eat two meals a day	97.92	97.2
	Eat meat at least once a week	90.97	13.99
	Eat fish at least once a week	96.53	33.57
	Eat egg at least once a week	98.61	40.56
	Sought modern medical treatment when sick	95.14	74.83
	Drink water from protected source	94.44	49.65
	Use private toilet	95.14	13.29
	Per capita family house size is more than 8 square meters	94.44	82.52
	Live in dirt floor house	0	0.7
	Experienced death of an infant in the past three years	5.56	0.7
<i>Other welfare indicators</i>	Use electric light source	100	94.41
	At least one school-age child dropped out of school	14.58	21.68
	High dependency rate (more than half of family members are younger than 15 years old)	10.42	7.69
	Most members buy new clothes at least once a year	95.14	41.96
	Victim of crime in the past year	4.86	1.4
<i>Political participation and access to information</i>	At least one family member voted in the last general election	99.31	92.31
	Watch television or read newspaper at least once a week	100	44.06

Based on marital status, virtually every rich family head is still married and only 33.6% of the poor family heads are married. Most of the poor are single member families.

The education level of the heads of rich families are markedly different than poor families. 99.3% of rich family heads finished at least six years of formal schooling. Moreover, 33.3% and 20.1% of the rich finished senior secondary and tertiary level education respectively. In contrast, virtually all of the 60.8% poor family heads that went to formal schooling have only six years of education and none finished higher than junior secondary level.

The gap between education levels of the rich and the poor is even wider among spouses. Some 21% and 12.6% of spouses in poor families have six and nine years of education respectively, none higher than junior secondary level, while 30.6% of spouses in rich families have a diploma degree and 5.6% have university degrees. Only 2% have no more than a primary school education.

In terms of occupation, every family head among the rich families has a job while only 60.8% of poor family heads are employed. There are, however, few working spouses among either rich or poor families. Only 27.8% and 11.9% of rich and poor spouses respectively are working. Surprisingly, 1.4% of rich families have at least one school age child who is working.

Many rich families are engaged in the services and trade sectors, while a small number of poor families are in these sectors. In contrast, 54.4% of the poor families are engaged in agriculture. Only 9% of rich families are in this sector. The fact that many poor families are in agriculture can be the result of several factors, such as inadequate land and low agricultural technology. Finally, 36.4% of poor families rely on transfers to fulfill their needs, while only 4.9% of rich families receive transfers. The difference lies in the amount and type of transfer: poor families receive irregular transfers from families or friends while rich families usually receive pensions.

In accordance with their asset ownership, rich families have greater access to formal financial institutions. Most rich families (67.4%) have savings accounts, while virtually no poor families have one. In the past three years, 32.6% of rich families have received credit from formal institutions and 6.3% have pawned their assets. In contrast, no poor families have either received formal credit or pawned their assets. As a consequence, however, none of the poor had to sell their assets to pay debt, while 4.9% of rich families were forced to do so.

There are also considerable contrasts in terms of consumption patterns. Although just about every family eat two meals a day, the protein intake is very different. More than 90% of rich families consume meat, fish, and egg at least once a week, while only 14%, 33.6%, and 40.6% of poor families regularly consume meat, fish, and egg respectively.

Health indicators between rich and poor families are also very different. An amount of 95.1% of rich families seek modern health service during sickness, while only 74.8% of poor families do so. The percentage of rich families drinking safe water is twice that of the poor. In terms of toilet facilities, 95.1% rich families have a private toilet and only 13.3% of poor families have one. The rest use public toilets or their neighbor's. Furthermore, more rich families have at least 8 m² per capita house size and, although very few, 0.7% of poor families still live in a dirt floor house. Although the percentage of rich families suffering from infant death is 4.9 percentage points higher than for poor families, we believe the deaths among rich families are not related to poverty or lack of access to healthy living conditions.

The percentage of school age children dropping out is quite high among both poor and rich families, with a rate 7.1 percentage points higher among poor families. Meanwhile, more rich families have high dependency ratios. This does not seem to matter, however, since 95.1% of rich families' members buy clothes at least once a year while only 42% of poor families do so.

Electricity supply is prevalent in the village, so both the rich and the poor have access to electricity. In terms of being a crime victim, the rate is 3.5 percentage points higher among rich families. Again, this could stem from the fact that they have more assets. Political participation is equally high, above 90%, but there are marked difference in access to information. Every rich family has access to either television or newspaper, while less than half of poor families have such access.

XI. PCA RESULT: POVERTY PROFILE OF PARAKANTUGU

A. SIGNIFICANT INDICATORS OF WELFARE

Table XI.1 provides the 10 most welfare-differentiating variables in Parakantugu. Eight of them are ownership variables, while the other two are savings and education level of the family head. Refrigerator ownership is the variable with the highest coefficient, while a family whose head only finished six years of education would most probably be poor.

Table XI.1 Ten Highest Ranked Welfare Indicators in Parakantugu

Variable	Score	Rank
Own refrigerator	0.26	1
Own telephone	0.25	2
Own savings	0.24	3
Own fan	0.24	4
Own satellite dish	0.24	5
Own DVD/VCD player	0.24	6
Own color television	0.24	7
Own motorcycle	0.22	8
Family head education: elementary	-0.20	9
Own tape recorder	0.19	10

B. CHARACTERISTICS OF THE RICHEST AND POOREST FAMILIES

Table XI.2 provides the comparison of characteristics between the rich and the poor in Parakantugu. Poor families only own black and white television and radio, while rich families own every ownership variable. Both the rich and the poor own land and house. As is the case with other villages, the house and land are usually inherited from their parents. In terms of farm animals, more poor families own chicken and goats.

In terms of marital status, 95.4% of rich families have a family head and a spouse, while only 60.5% of poor families have that configuration. Only 4.7% of rich families are female headed, compared to 34.9% among poor families.

The education level of the majority of rich family heads is junior or secondary senior level, while 90% of poor families' heads only have six years of education. Interestingly, however, 60% of spouses in poor families have nine years of education while almost all of the other 40% did not finish primary school. In comparison, the education levels of spouses in rich families are more evenly scattered, with more than 50% having 12 years of education or higher.

In the occupation category, 99.2% of rich family heads are working and only 73.6% of poor family heads have a job. Moreover, 33.3% of rich family spouses are also working compared to 4.7% among poor family spouses.

Table XI.2 Characteristics of the 10% Richest and Poorest Families in Parakantugu

Variable Group	Variable	Share of 10% Richest Families (%)	Share of 10% Poorest Families (%)
<i>Asset ownership</i>	Own refrigerator	66.7	0
	Own telephone	50.4	0
	Own fan	68.2	0
	Own air conditioner	1.6	0
	Own satellite dish	54.3	0
	Own DVD/VCD player	73.6	0
	Own color television	96.1	0
	Own black/white television	3.9	3.9
	Own radio	65.1	4.7
	Own tape recorder	67.4	0
	Own computer	4.7	0
	Own sewing machine	34.1	0
	Own cellular phone	7.0	0
	Own other electronic device	39.5	0
	Own motorcycle	72.9	0
	Own car	10.9	0
	Own bicycle	42.6	0
	Own land	99.2	90.7
	Own house	99.2	92.3
<i>Farm animals ownership</i>	Own chicken	32.6	44.2
	Own goat	6.2	12.4
	Own cow	2.3	2.3
<i>Marital status</i>	Family head is married	95.4	60.5
<i>Sex of family head</i>	Family head is female	4.7	34.9
<i>Family head and spouse education level</i>	Family head education: elementary	33.3	90.7
	Family head education: junior secondary school	27.1	0.8
	Family head education: senior secondary school	27.9	0
	Family head education: diploma	3.1	0
	Family head education: university	7.8	0
	Spouse education: elementary	1.6	0.8
	Spouse education: junior secondary school	34.1	59.7
	Spouse education: senior secondary school	25.6	0
	Spouse education: diploma	25.6	0
	Spouse education: university	4.7	0
	Family head is working	99.2	73.6
	Spouse is working	33.3	4.7
	At least one school-age child is working	0.8	0
	Family in agriculture sector	11.6	70.5
Family in industrial sector	1.6	0	
Family in trade sector	31.0	2.3	
Family in services sector	50.4	3.1	
Family receiving transfer (unemployed)	5.4	24.0	

Variable Group	Variable	Share of 10% Richest Families (%)	Share of 10% Poorest Families (%)
<i>Access to financial institutions</i>	Own savings	65.9	0
	Received credit from a formal financial institution in the past three years	41.9	0
	pawned assets in the past three years	2.3	0
	Had to sell assets to pay debts	2.3	0.8
<i>Food consumption and health indicators</i>	Eat two meals a day	98.5	96.1
	Eat meat at least once a week	100	84.5
	Eat fish at least once a week	100	90.7
	Eat egg at least once a week	98.5	94.6
	Sought modern medical treatment when sick	99.2	69.8
	Drink water from protected source	100	85.3
	Use private toilet	99.2	16.3
	Per capita family house size is more than 8 square meters	99.2	86.8
	Live in dirt floor house	0	3.1
	Experienced death of an infant in the past three years	1.6	1.6
<i>Other welfare indicators</i>	Use electric light source	100	91.5
	At least one school-age child dropped out of school	10.1	11.6
	High dependency rate (more than half of family members are younger than 15 years old)	6.2	4.7
	Most members buy new clothes at least once a year	88.40	9.3
	Victim of crime in the past year	0	0
<i>Political participation and access to information</i>	At least one family member voted in the last general election	100	92.25
	Watch television or read newspaper at least once a week	100	14

When examined by sector of employment, 70.5% of poor families are in the agricultural sector, while rich families are mostly engaged in services (50.4%) and trade (31%). Only 11.6% of rich families are in the agricultural sector. In addition, almost a quarter of poor families rely on transfers from other parties.

Access to financial institutions is exclusive to the rich, where 66% have savings and 42% have received credit.

Although different, both the rich and the poor have good consumption patterns and protein intake. On the other hand, there is a wide gap in other health indicators. Virtually every rich family seeks modern medical treatment while only 70% of the poor do so. Moreover, almost every rich family has a private toilet, which is only owned by 16.3% of the poor. Finally, there are also a small number of poor families that still have no access to electricity.

Both the rich and the poor have school age children who dropped out of school, 10.1% and 11.6% respectively. Furthermore, more rich families still have high dependency rate, although it does not seem to be a problem.

Rich families are more politically active. Every adult from those families voted in the last general election, while only 92.3% of adults from poor families voted. A large gap between rich and poor can also be seen from access to information, where only 14% of poor families regularly watch television or read newspaper, compared to 100% among rich families.

XII. COMPARISON OF PCA RESULTS

It is imperative to note that the PCA has allowed estimation of local specific poverty indicators. Table XII.1 shows different poverty indicators in the four CBMS villages, and it is quite clear that although in general asset ownership variables are the best predictors of poverty in each village, there are quite discernible differences in the types of asset.

On the other hand, non-asset ownership variables that can predict poverty in Jungpasir are the type of floor in house and ownership of private toilet. Meanwhile, in Kedondong, although in the same district as Jungpasir, sex of family head and his/her marital status are more important predictors than toilet type.

There are also different significant poverty indicators in the villages in Cianjur. In Parakantugu only one non-asset variable is in the top ten: education level of family head, while in Cibulakan consumption pattern is included in the ten most important variables. Thus, we have provided evidence that there are indeed different poverty indicators between villages. More importantly, these locally specific indicators can be unearthed using the methodology we employed.

Table XII.1 Ten Highest-weighted Variables in CBMS Pilot Project Villages

Jungpasir		Kedondong	
Variable	Weight	Variable	Weight
Own fan	0.27	Own color television	0.28
Own color television	0.26	Own fan	0.26
Own DVD/VCD player	0.26	Own DVD/VCD player	0.25
Own tape recorder	0.25	Family head is female	-0.23
Own motorcycle	0.25	Own motorcycle	0.23
Own refrigerator	0.23	Own tape recorder	0.23
Own cellular phone	0.22	Family head is married	0.22
Use private toilet	0.21	Own bicycle or boat	0.22
Own other electronic device	0.19	Use private toilet	0.21
Own radio	0.19	Live in dirt floor house	-0.21
Live in dirt floor house	-0.19		
Parakantugu		Cibulakan	
Variable	Weight	Variable	Weight
Own refrigerator	0.26	Own refrigerator	0.26
Own telephone	0.25	Own color television	0.26
Own savings	0.24	Own cellular phone	0.26
Own fan	0.24	Own DVD/VCD player	0.23
Own satellite dish	0.24	Own fan	0.22
Own DVD/VCD player	0.24	Own savings	0.22
Own color television	0.24	Own tape recorder	0.20
Own motorcycle	0.21	Use private toilet	0.20
Family head education: elementary	-0.20	Eat meat at least once a week	0.18
Own tape recorder	0.19	Own motorcycle	0.18

XIII. LESSONS LEARNED FROM LOCAL INVOLVEMENT

We recruited BKKBN cadres to be CBMS enumerators. Enumerator recruitment was initially arranged by BKKBN district offices. Since BKKBN Cianjur is still fully operational and funded by the district government, it had no problems in identifying cadres in the village near the Cianjur capital and instructing them to attend the training. For the other village, however, there is only one BKKBN cadre.

In contrast, BKKBN Demak did not have data on cadres in each village. When SMERU researchers visited the villages in Demak in the preliminary survey, they found that the two villages in Demak had never had more than two or three cadres. BKKBN data collection has always been mainly conducted by village officials with the help of PPLKB.¹⁸ Thus, the task of recruiting enumerators was given to village heads of the two villages, assisted by the PPLKB and PLKB. They assigned mostly village officials as enumerators. In addition, residents with a minimum of nine years of schooling and who are socially active were also recruited to obtain the required number of enumerators. These requirements were necessary to ensure that the enumerators can fully understand the questionnaire and those recruited are people known by their neighbors.

Each enumerator conducted the census in the hamlet that they reside in or a neighboring hamlet within the same neighborhood. This policy was implemented to save time and to ensure that the enumerators were already well recognized and trusted by the respondents. Furthermore, this policy also helped to minimize the number of respondents giving false information because it was more likely the enumerator would have known if a respondent gave false responses. Thus, there was at least one enumerator for each hamlet in every village.

In addition to using BKKBN cadres, SMERU researchers also assigned the PLKB and PPLKB to supervise data collection. As already known, these officials are BKKBN officials at the village and subdistrict levels and are the supervisors in the usual BKKBN data collection. Since SMERU is committed to using the BKKBN traditional data collection structure, the PLKB and PPLKB were fully involved. In addition, they collected the completed questionnaires and arranged them into each hamlet.

There were several mistakes that occurred uniformly in all four villages. They are: (1) the enumerators sometimes failed to ask every question because they felt there was no need to ask questions whose answers they already knew; (2) they entered the wrong code in the questionnaire; and (3) some answers were inconsistent with each other. The first, third, and most of the second mistakes were directly rectified on the first day during the initial checks, while the rest of the coding mistakes were corrected during data cleaning in SMERU office.

¹⁸ PLKB (Family Planning Field Worker) and PPLKB (Family Planning Field Worker's Supervisor). Usually a PLKB is responsible for one village, while a PPLKB is responsible for all PLKBs in one subdistrict.

SMERU researchers found that enumerators' education level is quite influential in limiting mistakes during data collection, although it is not as important as their level of enthusiasm. Higher educated enumerators were less accurate than more enthusiastic enumerators with lower education. A good example is the village officials. The officials in two of the four villages were not particularly enthusiastic about conducting data collection (they agreed to do it because of the remuneration) and did not take the importance of correctly filling out the questionnaire seriously. As a result, the quality of their enumeration is relatively lower than the rest and SMERU researchers had to check their questionnaires more thoroughly.

Prior data collection experience was only significant in the initial training, where experienced enumerators (cadres and village officials) understood the content of the questionnaire faster while inexperienced enumerators needed more time. Once they understood the questionnaire, however, the benefit of experience quickly dissipated.

Although there is still room for improvement, we find that our questionnaire is simple enough to be administered by locals. We note that BKKBN officials at village and subdistrict levels (PLKB and PPLKB) have the potential to play a crucial role in mobilizing the locals and supervising data collection. On the other hand, village officials should not be involved in order to ensure that data is not tampered with. Moreover, we find that village officials are more prone to making mistakes in data collection. At the district level, commitment from government agencies other than BKKBN is necessary, especially in areas where BKKBN is in a comatose state.

XIV. CONCLUSIONS

The purpose of this pilot project is to introduce a better poverty monitoring system to policymakers in Indonesia. Given Indonesia's size, both geographical and population, it is important that the new monitoring system is easy to administer and can be expeditiously processed to provide the stakeholders with information on poverty conditions of an area. Since poverty is very much a local phenomenon, the new system that this project introduces is sensitive to local poverty conditions and ensures that local residents play a significant role in carrying it out. Involvement of locals is important for another reason: the system can be conducted simultaneously in every village in Indonesia. This means that there is a possibility that data collection for the whole country can be completed in less than a month.

The main purpose of the project is to identify poor families in a village, hence it is very important that the methodology used is able to do so. Since recording detailed family consumption expenditure is out of the question, we employ 63 indicators as proxy for welfare. They range from asset ownership and health characteristics to political participation and access to information. We process these characteristics using the Principal Components Analysis method and calculate the welfare score of every family in the four villages. We find that asset ownership variables are the most significant welfare indicators, although education, health, and consumption patterns are also important.

One way of testing the robustness of the welfare score is to isolate the richest and poorest families and look at their characteristics. We find in all villages that there is indeed a wide gap between those considered rich and those considered poor in almost every indicator.

In conclusion, we believe that our chosen methodology is successful in enabling us to identify the poor in every village. We have also demonstrated that given enough support and supervision, locals were able to conduct their own poverty monitoring.

By introducing CBMS, we hope that interested stakeholders will know that there exists a poverty monitoring system that is relatively accurate, involves the locals, is specific to local characteristics while remaining objective, and is feasible to be undertaken by the district governments, which can help them in their efforts to more effectively increase the welfare of their people.

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