



Research Report

Developing a Poverty Map for Indonesia:

A Tool for Better Targeting in Poverty Reduction and Social Protection Programs

Book 4: Field Verification

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February 2005

**Developing a Poverty Map for Indonesia
(A Tool for Better Targeting in Poverty Reduction and
Social Protection Programs)**

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Submitted to:
Regional Research Initiative on Social Protection in Asia
The Ford Foundation

The SMERU Research Institute
Jakarta
February 2005

Developing a Poverty Map for Indonesia (A Tool for Better Targeting in Poverty Reduction and Social Protection Programs)/Asep Suryahadi et al. – Jakarta: SMERU Research Institute, 2005.

ii, 80p: il. ; 31 cm. -- Book 4: Field Verification. --

ISBN 979-3872-04-7

I.	Title	1. Poverty Map - Indonesia
II.	Suryahadi, Asep	2. Targeting

Developing a Poverty Map for Indonesia (A Tool for Better Targeting in Poverty Reduction and Social Protection Programs)

Abstract

This field verification study is part of the effort to develop small-area poverty maps for all regions in Indonesia. The small-area poverty maps that contain consumption based poverty estimates at the provincial, district, sub-district and village levels have been developed based on data available from the 1999 Socio-economic Survey (SUSENAS) core and consumption module, the 2000 Village Survey (PODES) and the 2000 Population Census, using the small-area estimation method (poverty mapping). This field verification study was conducted in three sample provinces (Riau, North Sulawesi and West Nusa Tenggara) and particularly covers three districts (Indragiri Hulu, Bolaang Mongondow and West Sumbawa).

The main objective of this study is to assess whether the poverty estimates calculated by poverty mapping match the poverty condition of the communities in the field. The assessment is done by comparing the rankings of regions based on poverty mapping and the rankings based on qualitative judgments which are determined through focus group discussions (FGDs) with relevant stakeholders at the provincial, district, sub-district and village levels. These comparisons found that the rankings of districts and sub-districts based on these two methods were fairly consistent, even with the rankings for 2004, and it indicates that the results from poverty mapping down to sub-district level can be used to date with a sufficient degree of confidence. The comparisons between the ranking of villages, however, vary across sub-districts, indicating the need to use the village level poverty estimates with caution. The findings of this study also highlight some possibilities to improve both the poverty mapping and the FGD methods for poverty analysis.

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I. INTRODUCTION

1.1. Background

This field verification study is part of the effort to develop small-area poverty maps for all regions in Indonesia conducted by the SMERU Research Institute with support from the Ford Foundation. The small-area poverty maps contain consumption based poverty estimates at provincial, district (*kabupaten*), sub-district (*kecamatan*) and village (*desa*) levels, based on data collected by Statistics Indonesia (BPS) in the 1999 SUSENAS 'core' and 'consumption module', the 2000 PODES¹ and the 2000 Population Census. The construction of these maps follows the recommendation from the pilot study covering three provinces that suggests it is feasible to construct small-area poverty maps using the data available from SUSENAS, PODES and Population Census.²

Various methods have been developed in an effort to produce high-resolution poverty maps as a means to study the spatial variation of poverty incidence as well as to make better geographical targeting for poverty reduction program.³ The small-area estimation method used in this study is one of the most advanced endeavors that has been applied in an increasingly large number of countries, including Nicaragua, Albania, South Africa, Madagascar, Cambodia, Kenya, Malawi and Mozambique (Davis, 6). The application of this model is facing a number of challenges including the large size of census data sets, non-normality, spatial autocorrelation and heteroscedasticity (Davis, 5). One of the common features of the results of small-area method is the rise of standard errors as the spatial desegregation increases beyond a certain level. This case has been reported in Ecuador (Hentschel et.al., 22) and in the pilot study in Indonesia (Suryahadi et.al.). The pilot study in Indonesia that covered three provinces – East Java, Jakarta and East Kalimantan - had showed that the standard errors of estimation at the provincial, district and sub-district levels are reasonably acceptable while the standard errors at the village level vary greatly.

Because of the complication involved in the construction of poverty maps using the small-area estimation method, there have been some efforts to look at the reliability of the poverty estimates produced. Fujii, Tomoko for example, have reported an effort in Cambodia to test the consistency between the results of small-area estimation, general welfare score construction using factor analysis and districts ranking based on the District Head perception. This study concluded that the ranking based on poverty estimate is consistent with the general welfare score, but less consistent with the District Head perception. The pilot study in Indonesia also conducted field verification by comparing the ranking of sample regions based on the small-area estimation method with the ranking based on qualitative judgment derived from a series of interviews with key informants, other relevant data and direct observation. This field verification covered 6 districts, 12 sub-districts and 36 villages, and it found that the poverty ranking of districts fully matched the poverty map ranking. The ranking of sub-districts that matched however was 83% and the ranking of villages that matched was only 33% of the samples.

¹ The 2000 PODES was carried out in September and October 1999 in preparation for the 2000 Population Census.

² The complete reports of this pilot study are published in series of SMERU Research Reports entitled "Developing a Poverty Map for Indonesia: An Initiatory Work in Three Provinces Part I, II and III". These reports are available at www.smeru.or.id.

³ Davis, Benjamin (*Choosing a Method*) has listed the various methods for poverty mapping.

1.2. Objectives

The main objective of this field verification study is to assess whether the poverty estimates calculated from the poverty mapping (small-area estimation) method match the poverty condition of the communities in the regions. This assessment will be done by comparing the ranking of regions based on poverty mapping with the ranking based on a qualitative judgment, which is determined through focus group discussions among relevant stakeholders. Because of the time differences between the secondary data used in the poverty mapping, which was collected in 2000, and the time of this field verification visit that was done in 2004, this study also tries to identify the changes in poverty conditions of the community and assess whether the results based on the 2000 data are still valid. In order to meet these objectives, this study will:

1. Compare the ranking of regions (districts, sub-districts and villages) based on poverty mapping with the ranking based on focus group discussions, referring to the conditions in 2004 and 2000;
2. Identify the changes in the poverty conditions of the people in the sample regions during the period of 2000-2004 that affect the relative poverty or welfare conditions across regions; and
3. Compare the proportion of the poor population based on poverty mapping with the estimation based on the perception of the local community, referring to the condition in 2004 and 2000 in the sample villages.

1.3. The Structure of This Report

This report consists of seven chapters:

- Chapter I provides the background to this field verification study, the objectives of the study and the structure of this report.
- Chapter II describes the methodology of this study. It consists of the time and the locations of this study, the approach of the study and the field activities during the study as well as the method for analyzing the results of this study.
- Chapter III presents the results of the focus group discussions (FGDs) at the provincial level, and discusses the comparison between the ranking of districts based on poverty mapping and the ranking of districts based on FGDs.
- Chapter IV presents the results of the FGDs at the district level, and discusses the comparisons between the ranking of sub-districts based on poverty mapping and the ranking of sub-districts based on FGDs.
- Chapter V presents the results of the FGDs at the sub-district level, and discusses the comparisons between the ranking of villages based on poverty mapping and the ranking of villages based on FGDs.
- Chapter VI presents the results of the FGDs at the village level, and discusses the comparisons between the proportion of poor population based on poverty mapping and the proportion of the poor according to the perception of the local community.
- Section VII highlights some important issues derived from the findings in this field verification study.

II. VERIFICATION METHOD

2.1. Time and Locations

This study was conducted from August to November 2004. The first month of this study was devoted to developing the instrument and preparing field activities. The study team that consists of six researchers then visited three sample provinces –Riau, North Sulawesi and West Nusa Tenggara (NTB) during the first two weeks of September 2004. A team that consisted of two SMERU researchers, with the assistance of a local researcher, visited each sample province and spent around 14 – 16 days conducting field activities. During this field study, the research team organized FGDs at the provincial, district, sub-district and village levels, interviewed key informants, conducted field observations in the sample villages and collected secondary data. The preliminary findings from this study were presented at a regional workshop in Mataram, West Nusa Tenggara, in December 2004, and in another regional workshop in Manado, North Sulawesi in January 2005. These regional workshops were intended to collect feedback and input for the preliminary findings of this study, and at the same time introduced the poverty mapping method to the regions.

This field verification study was carried out in three sample provinces – Riau, North Sulawesi and West Nusa Tenggara (NTB). The province of Riau is located on Sumatra Island. This province is rich in natural resources, particularly oil and gas, and also forest and tree crop plantations, especially rubber and palm oil. The poverty rate of this province is relatively low by national standards, but the income inequality of its population is high. The human development and human poverty condition of this province is almost the same as the national average. The province of North Sulawesi is located in the northern part of Sulawesi Island, sharing a border with the Philippines. This province's poverty rate is around the national average but the human development and human poverty condition is relatively better. On the other hand, the province of NTB, which is located in Nusa Tenggara archipelago, is relatively poor by national standards. Its poverty rate is far above the national average, and both human development and human poverty conditions are worse than the national average (Table 1).

Table 1. The Poverty Conditions of the Sample Provinces and Districts

Name of Region	Poverty Mapping Data, 2000*				Real GRDP per Capita in Thousand Rupiah (2000)**		Human Development Index (2002)**	Human Poverty Index (2002)**
	Number of Households	Number of Persons	Poverty Headcount	Standard Error	with oil and gas	without oil and gas		
Province								
Riau	1,047,856	4,307,940	0.0992	0.0156	2,668	2,050	69.1	25.1
North Sulawesi	515,283	1,882,618	0.1727	0.0211	1,695	1,695	71.3	17.8
West Nusa Tenggara	930,516	3,579,742	0.4065	0.0245	2,290	2,290	57.8	30.2
District								
Indragiri Hulu	56,263	235,479	0.0772	0.0200	1,401	1,401	65.6	32.6
Bolaang Mongondow	106,155	413,335	0.2446	0.0376	1,136	1,136	68.7	22.7
Sumbawa	64,122	252,637	0.3813	0.0408	3,769	3,769	61.0	28.8

Sources: * SMERU calculation; ** BPS, Bappenas, UNDP, *Indonesia Human Development Report 2004*

One sample district was selected purposively in each province. The districts selected as sample regions were Indragiri Hulu in Riau, Bolaang Mongondow in North Sulawesi and Sumbawa in NTB. Because Kabupaten Sumbawa was split into two districts in early 2004, this study only covers West Sumbawa, the newly formed district. Of the three sample districts, Indragiri Hulu has the lowest poverty rate, while Sumbawa has the highest poverty rate. In each district, two sub-districts were selected to represent sub-districts with relatively high and low poverty level. Because some sub-districts have been sub-divided into several sub-districts, the sample sub-districts were selected from the sub-districts where the old sub-district's administration was located. In each sub-district, three sample villages were purposively selected. These sample villages were selected from the villages that have not changed administratively since 2000. This conditionality was imposed to enable the team to get reliable qualitative information regarding community welfare conditions in the locations that are the same as the locations where the secondary data for poverty mapping was collected in 2000. The list of sample regions is presented in Table 2 and the map of sample regions are presented in Appendix 1 to 4. In total, this study covered 3 provinces, 3 districts, 6 sub-districts and 18 villages.

Table 2. The Locations of the Poverty Mapping Verification Study

Province	District	Sub-district	Village
Riau	Indragiri Hulu	Pasir Penyau	Rimpian Kembang Harum Petalongan
		Seberida	Pangkalan Kasai Beligan Paya Rumbai
North Sulawesi	Bolaang Mongondow	East Dumoga	Imandi Kanaan Pusian
		Bolaang Uki	Salongo Bakida Tolondadu
West Nusa Tenggara (NTB)	West Sumbawa	Seteluk	Meraran Air Suning Senayan
		Taliwang	Bugis Dalam Sampir

2.2. Study Approach and Field Verification Activities

This study follows a qualitative approach, primarily through focus group discussion (FGD). Various stakeholders in an FGD determine the relative welfare or poverty level across regions, because it is assumed that local stakeholders have better knowledge about their region. As is the case with the method used in the field verification study conducted during the pilot study, the ranking of regions is determined mainly based on the perception of local stakeholders.⁴ The interactive discussion in a FGD forum has limited subjective individual judgments and provided a more comprehensive assessment on the welfare and poverty

⁴ In the field verification study conducted during the pilot study, the research team interviewed various stakeholders one by one in order to obtain their perception on the relative welfare or poverty level among selected regions. See Suryahadi et.al. for an explanation of the methodology adopted in the pilot study.

condition of the regions. By using the ranking of regions that is defined by FGD participants, the researchers role was as facilitator. The FGD was done independently of the poverty mapping because the researcher and the FGD participants had not been informed about the poverty mapping results at the time of the field verification study. The poverty mapping results were given to the research team after the field visit was completed and the FGD reports were submitted.

With the assistance of local governments, the study team organized FGDs in the sample regions. The participants of FGDs at the provincial, district and sub-districts levels were relevant government officials, activists from non-government organizations and academics from local universities. The government officials participating in these FGDs were the technical staff who have sufficient knowledge about the region, particularly from planning, health, education, agriculture, public works, village or community development, family planning and statistics offices. The number of participants varies and it ranged from 8 to 23 (the number of participants in each FGD is presented in Appendix 5). FGDs at the province level discussed the community welfare or poverty conditions of all districts within the provincial boundary. The FGD at the district level discussed the conditions of all sub-districts within the district boundary, and the FGD at the sub-district level discussed the conditions of all villages within the sub-district boundary. If the districts, sub-districts and villages have been sub-divided during the 2000-2004 period, the FGD used the 2000 administrative arrangement that is the same as the administrative arrangement used in the poverty mapping.

The FGDs at the provincial, district and sub-district levels started with a discussion on potential observable indicators that could be used to assess and differentiate the welfare condition of the community. As the forum agreed on the welfare indicators to be used, they were asked to provide a score for each indicator for all regions (districts in FGD at provincial level, sub-districts in FGD at district level and villages in FGD at sub-district level) based on their knowledge. These scores were assigned for the current condition in 2004. The final result of this scoring was then discussed again to get an agreement on the ranking of regions for 2004. The highest rank (rank 1) is the region with the highest level of people's welfare, or the most affluent. The participants then were asked to reveal major developments or other factors that had changed the welfare condition of the community in their region during 2000-2004. This discussion was to help the FGD participants recall the 2000 condition. Finally, the FGD participants were asked to rank the regions based on their memories of the condition in 2000.

At the village level, the aim of the FGD was to reveal the welfare classification of the community in each village. One FGD was organized in each village, except in some villages where women's participation was so limited that the team had to organize an additional FGD for a women's group. The participants were men and women who have good knowledge on the situation of the people in all hamlets (*dusun*). The FGD participants were mainly heads of hamlets, community leaders, cadres, teachers and women who were active participants in neighborhood activities such as PKK (Family Welfare Improvement Activities) and *Posyandu* (Integrated Health Surveillance Post). In this FGD, the participants determined the classification of the community in their village based on their welfare state and revealed the characteristics of each class. The participants were then asked to estimate the proportion of people who belong to each class in the current situation (2004) and in 2000. After that, the participants were divided into a men's group and a women's group to discuss factors that had influenced their welfare condition. The results from these groups were discussed again in a plenary session. This FGD determined the welfare classification and the proportion of the population in each welfare class in 2000 and in 2004, and the various factors that affected the community welfare condition during this period, based on the perception of local villagers.

To complement the series of FGDs, the research team collected relevant secondary data and conducted interviews with key informants to get a better understanding of the overall condition of the regions. At the sub-district and village levels, the team also conducted structured interviews with the head of sub-district and the head of the village or other key informants to get detailed information about the sub-district and village dynamics, as well as community welfare condition and community livelihood. In addition, the team carried out direct observations at the village level including a visit to the remote hamlet if there was any. The interviews and direct observation are used as the basis for the research team to make a qualitative judgment about the ranking of poverty conditions in the sample sub-districts and villages.

2.3. Comparing the Poverty Mapping and the FGD Results

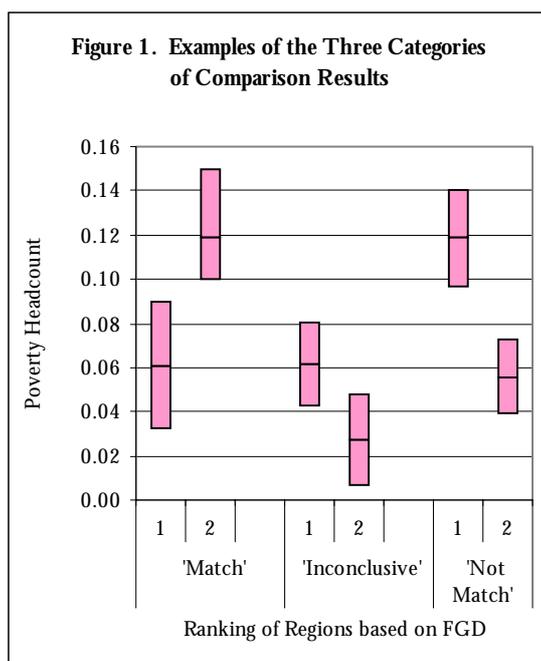
To assess whether the results from poverty mapping are in line with the real condition, the ranking of regions based on the poverty mapping is compared with the ranking of regions determined in FGDs. The simplest way to compare these two rankings is by calculating the rank correlation, which will provide an estimate of the degree of consistency between the ranking based on the calculated poverty headcount and the ranking based on the FGD. This calculation does not however, take into account the standard error of the poverty headcount estimate, which could underestimate its degree of consistency.

The report of the pilot study (Suryahadi et.al., 11) warned that the interpretation of the results from the poverty mapping exercise should be based on the pairing of the 'point estimate' and 'standard error'. As an example, the report stated:

“Suppose a headcount poverty indicator of 0.10 is listed for a location, along with a standard error of 0.03. This should be taken to mean that if there were to be found other locations, with similar patterns of household characteristics, and if one had direct measurements of poverty headcounts in these locations, then we shall predict that the poverty headcount in these locations is likely to fall between 0.07 and 0.13 (with a 70% confidence interval). In particular, we do not claim that all these similar locations share the same headcount, nor is there a good reason to attach too much significance to the ‘point estimate’ of 0.10. (11)”

Because of the nature of the poverty estimate produced by poverty mapping, the comparison between these two rankings is also done in pairs, and the result of the comparison is distinguished into three categories (Figure 1):

1. 'Match' when the ranking of two regions based on the FGD is the same as the rank based on the 'point estimate' of the poverty headcount from poverty mapping;
2. 'Inconclusive' when the ranking of two regions based on FGD contradicts the ranking based on the 'point estimate' of the poverty headcount from poverty mapping, but there is an overlap between the lowest poverty headcount estimate of one region and the highest



poverty headcount estimate of the other, after taking into account the 'standard error' calculated in poverty mapping;

3. 'Not match' when the ranking of the two regions based on FGD contradicts the ranking based on the 'point estimate' of poverty headcount from poverty mapping, and there is no overlap between the lowest poverty estimate of one region and the highest poverty estimate of the other, after taking into account its 'standard error'.

The poverty headcount calculated in the poverty mapping is also put side by side with the poverty estimates derived from the wealth classification exercise in the FGD at the village level. Although it is clear that the variables used in poverty mapping are different from the variables used by villagers, and that each village sets different poverty standards based on their subjective judgments and their living standards, it is of practical importance to see whether there is any similarities between these two estimates.

III. COMPARING POVERTY ACROSS DISTRICTS

Focus group discussions (FGD) at the provincial level were the most challenging discussions both in terms of attendance rate and the flow of discussion. In all provinces, the number of FGD participants at the province level was always less than the number of participants in FGDs at other levels despite the large numbers of invitations and the support of the provincial planning board (*Bappeda*) in organizing the discussion. In terms of substance, it seems that the participants were rather reluctant to give opinions about the condition of the districts mostly because they are not used to giving this kind of judgment and many of them were also afraid of the political consequences of their judgment.

The discussion on potentially easily observed indicators to be used in assessing the welfare level of the people across districts ran smoothly and the FGDs in the three provinces have come up with similar sets of indicators. These indicators consisted of income levels and types of occupation, physical accessibility and infrastructure condition, housing conditions, level of education and the quality of human resources, health conditions, assets ownership (particularly agriculture land and cattle), and social conditions such as attitude, social problems and security. The list of indicators proposed by participants in the FGDs at the provincial level in Riau, North Sulawesi and NTB is presented in Appendix 6.

The discussion became tougher as they had to judge the relative condition of the districts. In one province, the participants refused to give scores for the districts although they finally agreed to rank the districts based on the agreed indicators. It was rather difficult for the participants in assessing the districts' condition because of the wide area of the district and the high degree of disparity within district. In addition, some of the FGD participants had not visited some areas other than the capital city of some districts, and this made it difficult for them to assess the overall welfare conditions of the people in those districts. Input from other participants who had visited those areas helped them in making a final judgment. The results of the FGDs at the provincial level and the comparison with poverty mapping results are discussed below.

3.1. Riau Province

Based on the 2000 administrative arrangement, the Riau Province consisted of 15 districts, of which 3 are *kota* (cities) – Pekanbaru, Batam and Dumai, and 12 *kabupaten* (regencies). The capital city of the province is Pekanbaru. Batam is the center for industrial development and a free trade zone located on an island close to Singapore. Among the 15 districts, five districts (Batam, Bengkalis, Karimun, Kepulauan Riau and Natuna) are located in Riau Archipelago, while the others are located on Sumatra Island. In July 2004 this province was split into two provinces, Riau and Riau Archipelago (*Kepulauan Riau*). Pekanbaru is still the capital city of Riau Province, while Tanjung Pinang became the capital city of the new Province of Riau Archipelago.

The FGD participants ranked people in Pekanbaru as the wealthiest (rank 1) followed by Batam. The third rank in 2000 was Kepulauan Riau, but as Tanjung Pinang administratively separated from Kabupaten Kepulauan Riau, the rank of Kabupaten Kepulauan Riau dropped to 9, in 2004, lower than Rokan Hulu, while the rank of Tanjung Pinang is still in the third place. This implies that there is a high disparity between the relatively higher welfare levels of the people in Tanjung Pinang, and the people in the rest of Kepulauan Riau. The district ranking lowest is Natuna, mainly because it is located in the most remote part of the islands. One of the FGD participants stated however, that the nutritional status of the people in

Natuna is very good because they consume a lot of fish. Except for Kepulauan Riau, there are no differences between the rankings of districts in 2000 and in 2004.

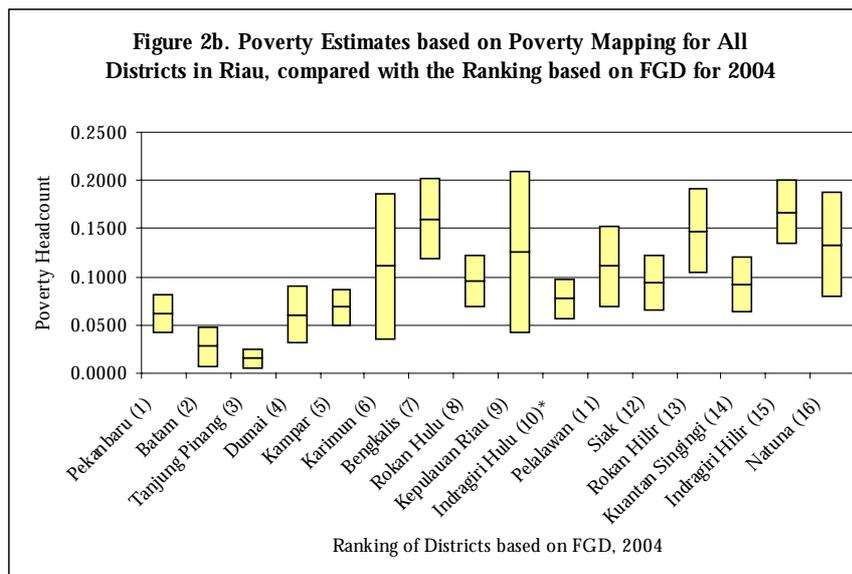
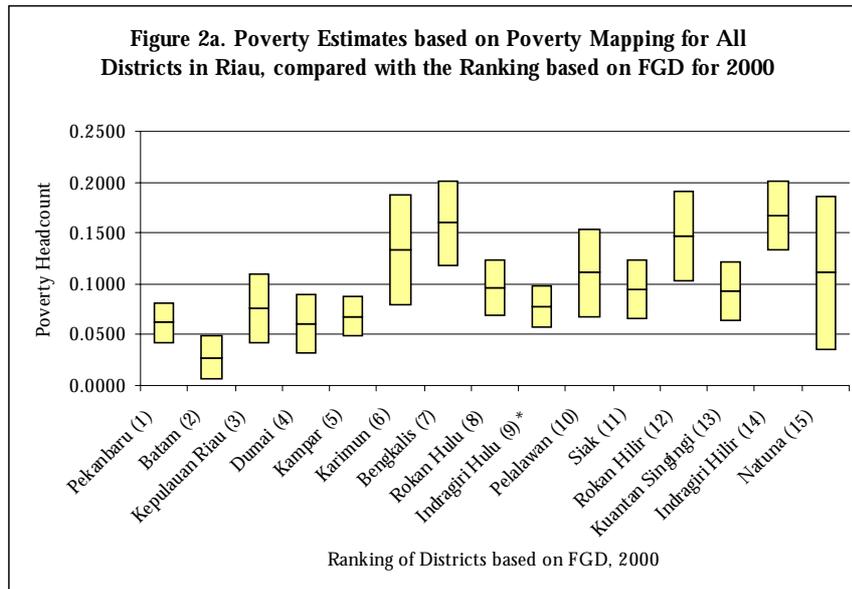


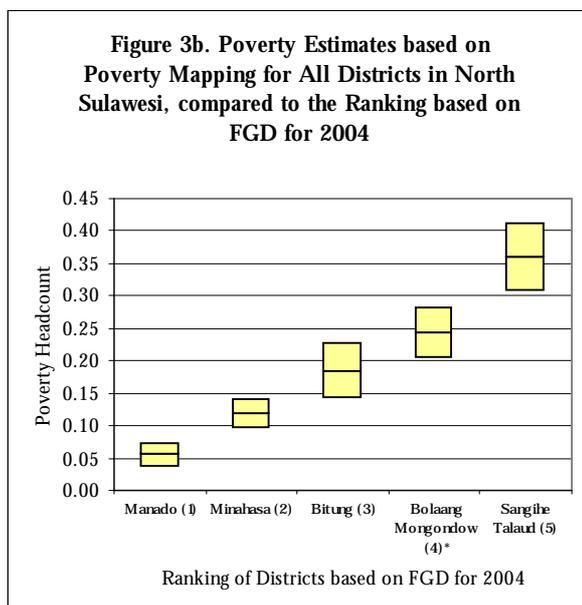
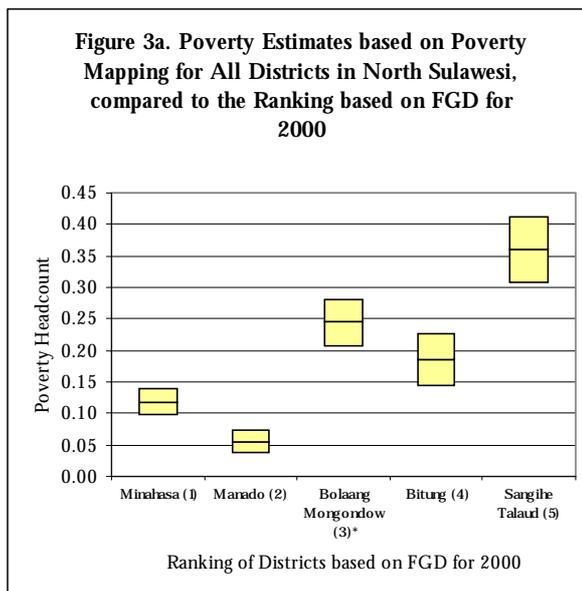
Figure 2a and 2b present the comparison between the ranking of districts based on FGD and the ranking based on poverty mapping (poverty mapping results are presented in Appendix 13). The rank correlations between these two rankings show relatively high correlation of 0.69 for the comparison with the FGD ranking for 2000 and 0.70 for the FGD ranking for 2004. If the standard error from poverty mapping is taken into account, the consistency is even higher. The comparisons of the 105 pairs of districts in 2000 have resulted in 75% matching cases, 24% inconclusive cases and only 1% non-matching cases. The comparisons of 120 pairs of districts in 2004 have resulted in 76% matches, 23% inconclusive and 2% non-matching cases.

In general it can be concluded that for the districts in Riau, the results from poverty mapping are quite acceptable since most inconclusive cases were actually also highly debated in the FGD. One example is the comparison between Pekanbaru and Batam that were ranked 1 and 2 in the FGD. The FGD participants acknowledged that people in Batam have the highest income, but the Batam residents do not own land and houses because the Batam Authority owns all land and houses. The FGD participants claimed that the people in Pekanbaru are richer because they have more job opportunities, a higher level of education and higher assets ownerships. The only non-matching case is the comparison between Bengkalis and Indragiri Hulu. The poverty headcount estimate for Bengkalis is higher than for Indragiri Hulu, but the FGD ranked Bengkalis at number 7 and Indragiri Hulu at number 9. The FGD participants claimed that although Bengkalis is located on a small island, the productivity of its forest and rubber plantation was higher than those in Indragiri Hulu, so that they consider the people's welfare level in Bengkalis to be higher.

3.2. North Sulawesi Province

In 2000, the Province of North Sulawesi consisted of 5 districts, 2 cities and 3 regencies. The capital city is Manado, and the other city is Bitung that is located north of Manado and has been developed as a new industrial area. Sangihe Talaud is the only district that is located in the archipelago in the northern part of Sulawesi, sharing a border with the Philippines. Some of the districts in this province have recently been sub-divided. In 2002, Kabupaten Sangihe Talaud was split into two districts - Kabupaten Sangir and Kabupaten Talaud. In 2003, Kabupaten Minahasa was split into three districts - Kota Tomohon, Kabupaten Minahasa and Kabupaten South Minahasa. In 2004, Kabupaten Minahasa was split again into two - Kabupaten Minahasa and Kabupaten North Minahasa. At the time of the study, Kabupaten Bolaang Mongondow was also in a process of splitting into two or three districts.

Based on the 2000 administrative arrangement, the FGD participants ranked Manado the wealthiest in the year 2004 (current condition). Minahasa ranked second, followed by Bitung, Bolaang Mongondow, while Sangihe Talaud ranked the last. When the participants were asked to rank based on the condition in 2000, they ranked Minahasa first, followed by Manado because after the 1998 economic crisis the farmers in Minahasa enjoyed high prices for tree crop produce, particularly cloves, while economic activity in Manado was hit by the crisis. The economic activity in Manado has recovered in recent years with the massive development of shopping malls and trade centers. A similar case was revealed for Bitung and Bolaang



Mongondow. In 2000, Bitung ranked fourth while Bolaang Mongondow was placed third. It was because people in Bolaang Mongondow also enjoyed the high price of tree crops and fisheries produce, while many industries in Bitung closed down due to the economic crisis. The industries in Bitung have now recovered with the opening of some new industrial establishments, particularly in the fisheries sector.

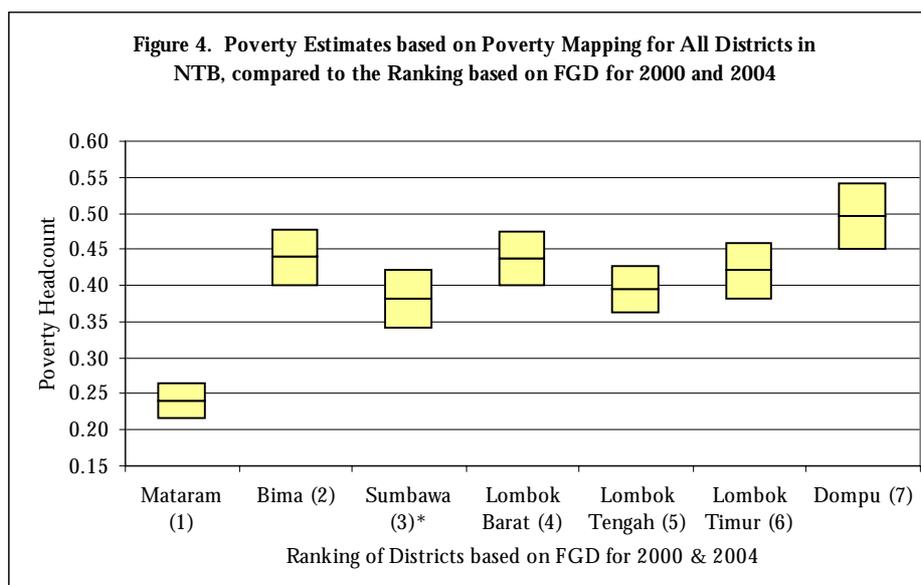
The comparison of FGD results for all districts in North Sulawesi and the results from poverty mapping are presented in Figure 3a and 3b (see Appendix 13 for the complete results from poverty mapping). Interestingly, the ranking of districts determined by FGDs for 2004 is perfectly matched with the ranking produced by poverty mapping, while the ranking for 2000 does not fully match the ranking based on poverty mapping. The correlation between ranking of districts based on FGDs for 2000 and the ranking based on poverty mapping is 0.8, and the pairing comparisons from the total of 10 pairs of districts have resulted in 8 matching cases, 1 inconclusive case and 1 non-matching case. The reasons for this could be because the FGD participants were influenced by their memory of the condition during the crisis, which happened before 2000, or the impacts of the economic crisis that they had taken into consideration were not impacting much on the consumption rate of the people since consumption tends to be less affected by temporary shock. This temporary shock might not be impacting on the variables used in the poverty mapping as presented in Appendix 7 and 8.

3.3. West Nusa Tenggara Province

Administratively, in 2000, the Province of West Nusa Tenggara (NTB) consisted of 7 districts, 1 city and 6 regencies. The capital city of this province is Mataram. Mataram, West Lombok, Central Lombok and East Lombok are located on Lombok Island. The other 3 districts – Sumbawa, Dompu and Bima are located on Sumbawa Island. In 2004, Kabupaten Sumbawa was split into two districts - Kabupaten West Sumbawa and Kabupaten Sumbawa.

Using the 2000 administrative arrangement as a reference, the FGD participants ranked Mataram as the highest, since the people in this capital city of NTB are considered as the wealthiest compared to the people in other districts. Dompu is placed at the lowest rank because the area of this district is very large and the population density is low. The condition of the people in Dompu was considered to be lacking in all aspects, including health condition, education level, income and infrastructure. Bima, located in the eastern part of Sumbawa Island, was ranked second because this region is the gateway to and from East Nusa Tenggara, as well as the center for development in the eastern part of NTB. Many people from Bima have also become successful emigrants to other Islands.

The FGD participants experienced difficulties in ranking West Lombok, Central Lombok and East Lombok because the welfare levels of the people in these districts are similar. The government participants at first stated that the welfare level of the people in West Lombok was the lowest compared to the other two districts. As the other participants argued however, that the infrastructure in West Lombok was better and the economic activity is more dynamic, this district then ranked higher than Central Lombok. East Lombok was ranked lower than Central Lombok because the people have lower education levels, lower health status and a high rate of divorce cases. The FGD participants stated that the ranking of districts in 2000 and in 2004 were the same because there were no significant changes that altered the relative welfare levels of the people in these districts.



The comparison of the FGD result with the poverty mapping result as presented in Figure 4 shows a relatively good match. Although the rank correlation is only 0.69, out of the 21 pairing comparisons, 15 are matches, 6 are inconclusive while there were no non-matching cases. The districts at the highest and lowest ranks are fully matched, while poverty mapping reveals that the poverty levels of the districts at the second to the sixth ranks were not significantly different. This might be the reason why the FGD participants found it difficult to rank these districts.

3.4. Summing Up: Poverty Comparison Across Districts

The ranking of districts derived from FGDs and from poverty mapping in the three pilot provinces have showed a sufficient degree of consistency. The summary of the comparison results is presented in Table 3. As has been discussed in the previous sections (Section 3.1 – 3.3), despite the low rank correlations for Riau and West Nusa Tenggara, most pairing comparisons of the districts are matches. Overall, around 75% cases are matches, 25% are inconclusive and less than 1% are non-matching. Interestingly, the rankings based on poverty mapping, which used secondary data from 2000, are more consistent with the rankings determined by FGD participants for the current condition (2004), although there were few changes in the ranking of districts during the period of 2000-2004. This finding could imply two things. Firstly, it is possible that the FGD participants have provided a better judgment of the current condition compared to their judgment based on past memories. Secondly, development during the last 4 years has not changed the relative level of people's welfare across districts so that the poverty mapping results for district level poverty comparisons are still valid.

Table 3. Summary of the Comparisons between the Ranking of Districts based on FGDs and Poverty Mapping in Three Sample Provinces

Province	Number of Districts	N	Rank Correlation		Pairing Comparisons of Ranking based on Poverty Mapping and:					
			2000	2004	FGD Ranking for 2000			FGD Ranking for 2004		
					Match	Inconclusive	Not Match	Match	Inconclusive	Not Match
Riau	15/16	105/120	0.69	0.70	75%	24%	1%	76%	22%	2%
North Sulawesi	5	10	0.80	1.00	80%	10%	10%	100%	0%	0%
West Nusa Tenggara	7	21	0.54	0.54	71%	29%	0%	71%	29%	0%
Total	27/28	136/141			75%	21%	4%	82%	17%	1%

IV. COMPARING POVERTY ACROSS SUBDISTRICTS

The FGDs in the three sample districts have successfully ranked community welfare across sub-districts. The discussions ran smoothly and the participants actively shared their opinions and perceptions. As was the case with discussions at the provincial level, the easily observed indicators proposed for distinguishing welfare levels across sub-districts consisted of income and types of occupation, asset ownership (particularly agriculture land), health conditions and nutritional status, level of education and skills, infrastructure (particularly roads and electricity), physical conditions of the houses, the attitude of the local community towards development and the susceptibility to natural disaster (see Appendix 14).

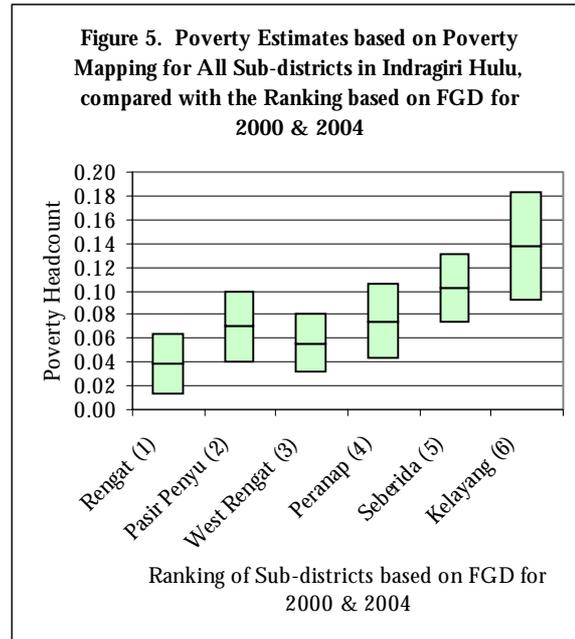
The FGD participants at the district level appeared quite confident in providing judgments about the conditions of the sub-districts as most of them have never visited the areas. The discussion, however, was sometimes quite heated, particularly when the participants had different opinions regarding sub-district performance against certain indicators and where there was a high disparity within a sub-district such as the presence of remote villages or less developed communities. Despite the disagreements in some aspects, the FGD participants were finally able to reach agreement on the ranking of sub-districts as presented in the following sections.

4.1. Kabupaten Indragiri Hulu

Kabupaten Indragiri Hulu is located on Sumatra Island, southeast of the capital city of Riau Province, Pekanbaru. The capital city of Kabupaten Indragiri Hulu is West Rengat. This district is mostly covered by forest and plantations with rubber as the primary commodity. This district has recently developed large scale palm oil plantations and it has significantly increased the income of the people in some regions. Administratively, in 2000, this district consisted of 6 sub-districts. After the administrative sub-divisions of the last four years, it now consists of 9 sub-districts. The sub-districts that have been split were Pasir Penyu that split into two sub-districts (Pasir Penyu and Lirik) and Seberida that split into three sub-districts (Seberida, Batang Gangsal, and Batang Cenaku).

Based on the 2000 administrative arrangement, the FGD participants ranked Rengat in first place as most economic facilities such as banks, shops and hotels are located in this sub-district. Recently, some district government's offices have been moved from Rengat to West Rengat. Pasir Penyu was ranked second followed by West Rengat. Despite the proximity of West Rengat to the center of economic activity in Rengat, the FGD participants argued that the people in Pasir Penyu are better off than the people in West Rengat. The economic activity in Pasir Penyu has accelerated since 2000 with the development of shops and marketplaces. In addition, the infrastructure development has also significantly increased the marketing of agricultural products from Pasir Penyu. Ranked at four and five are Peranap and Seberida respectively, while the sub-district at the lowest rank is Kelayang. The people in Kelayang were rated the lowest in almost all indicators that have been used to assess welfare conditions across sub-districts in Kabupaten Indragiri Hulu. The discussion regarding the condition in 2000 has revealed that the ranking of sub-districts is the same as in 2004. The study team that has visited sample sub-districts – Pasir Penyu and Seberida, also reconfirms the finding that the people in Pasir Penyu are better off than the people in Seberida.

The comparison between these findings and the results from poverty mapping is presented in Figure 5 (see appendix 15 for the results from poverty mapping). This figure shows that the two results are almost perfectly matched. The rank correlation is 0.94, and out of the 15 pairs of districts, 14 cases are matches and only 1 case is inconclusive. The inconclusive case (the comparison between Pasir Penyu and West Rengat) has also been debated in the FGD. Despite better housing conditions in West Rengat, as this sub-districts is developed to be the new capital city of Indragiri Hulu, the economic activity in Pasir Penyu is more dynamic. The quantitative estimates might have resulted in a lower poverty estimate for West Rengat because most houses in this sub-district are permanent houses and most of the people in this sub-district are civil servants or employees with higher education levels than the people of Pasir Penyu.



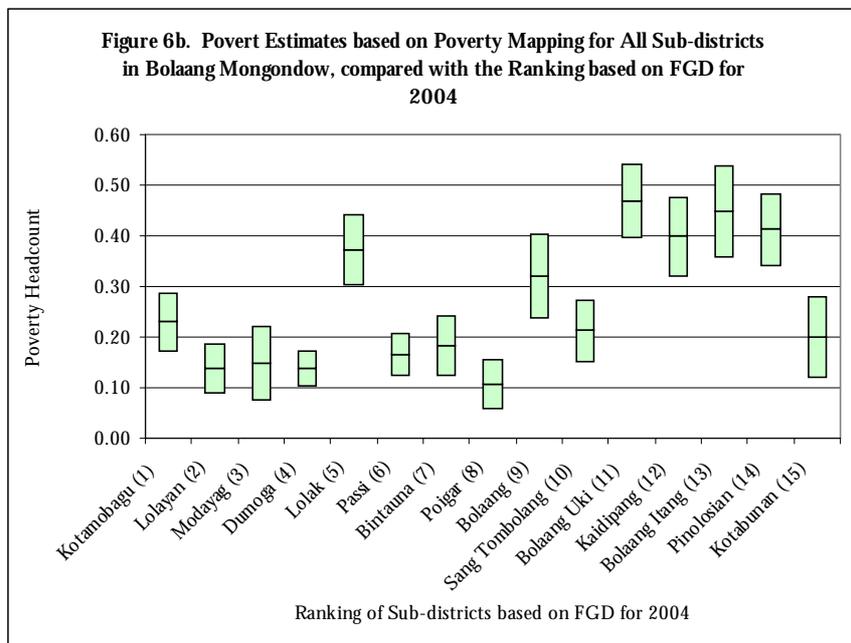
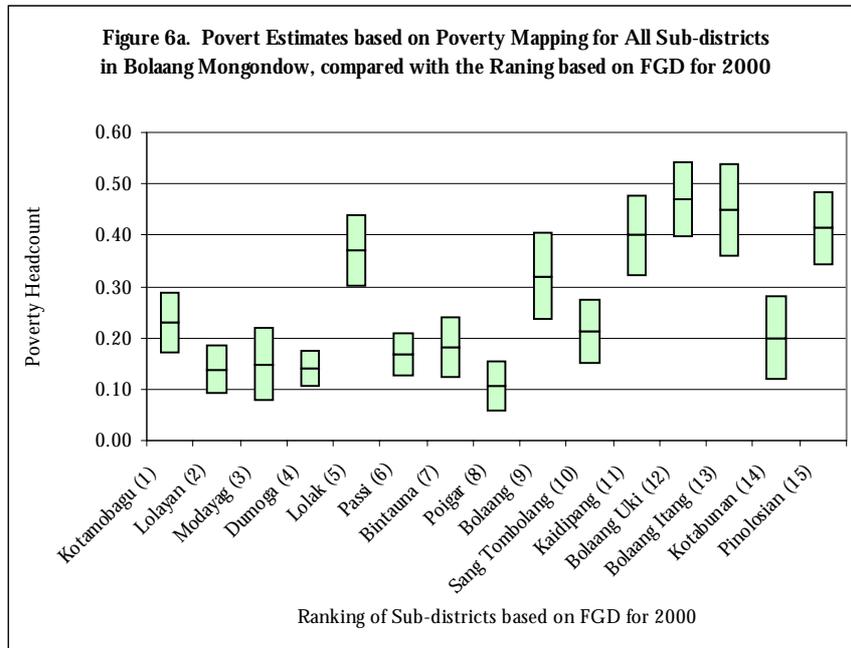
4.2. Kabupaten Bolaang Mongondow

Kabupaten Bolaang Mongondow is located in the southern part of North Sulawesi Province, sharing a border with Gorontalo Province. The Bolaang Mongondow area covers more than 50% of North Sulawesi's land area. In 2000, this sub-district was administratively divided into 15 sub-districts, with the capital city located in Kotamobagu. During 2000 to 2004, 6 sub-districts have been administratively fragmented; they are Bolaang Uki, Dumoga, Kotabunan, Sang Tombolang, Kaidipang and Kotamobagu. By the time this verification was conducted, this district consists of 24 sub-districts and it is already in the process of administrative fragmentation at the district level. One of the proposals is a split into three districts (1 city and 2 regencies).

Using the 2000 administrative arrangement as a reference, the FGD participants have produced the ranking of sub-districts for 2000 and 2004 as presented in Figure 6a and 6b. In general, they pointed out that the welfare levels of the people living in the sub-districts along the north coast are lower than those living in the sub-districts along the south coast. In terms of transportation, the sub-districts along the north coast are better but the employment opportunities and natural resources in this region are limited compared to the south coast region. For 2004, FGD participants ranked Kotamobagu in first position, followed by Lolayan, Modomang and Dumoga. The last three sub-districts are agricultural areas where the population is relatively well-off, and it was rather difficult to rank them. The FGD participants consider that the people in Kotamobagu are the wealthiest because this sub-district has been economically developed into a city and a center of economic activities. The sub-district in the lowest rank is Kotabunan. Katabunan was scored lowest in terms of income and occupation, health condition and education level. This sub-district also scored very low in transportation accessibility because of the bad condition of the roads in this area, with only one entry road to this sub-district, and no other connection to neighboring sub-districts.

The ranking of sub-districts in 2000 was slightly different from the ranking in 2004, although the ranking for the first 10 sub-districts was the same. The changes in the ranking of the 5 sub-districts in the lowest positions were mainly due to the construction of roads that have improved accessibility to some of these sub-districts. Bolaang Uki that is ranked 11 in 2004 was ranked 12 (below Kaidipang) in 2000. The construction of a road that connects this sub-

district to Gorontalo Province has increased the marketing of agriculture products from this sub-district. The construction of a road from Pinolosian to the capital of Bolaang Uki has also increased the welfare of the people in Pinolosian so that its ranking increased from 15 in 2000 (below Kotabunan) to 14 in 2004. Besides the road construction, the welfare level of people in Bolaang Uki has been improved because of the opening of a fish processing industry in Kota Bitung, which absorbs fisheries produce, particularly tuna from Bolaang Uki.

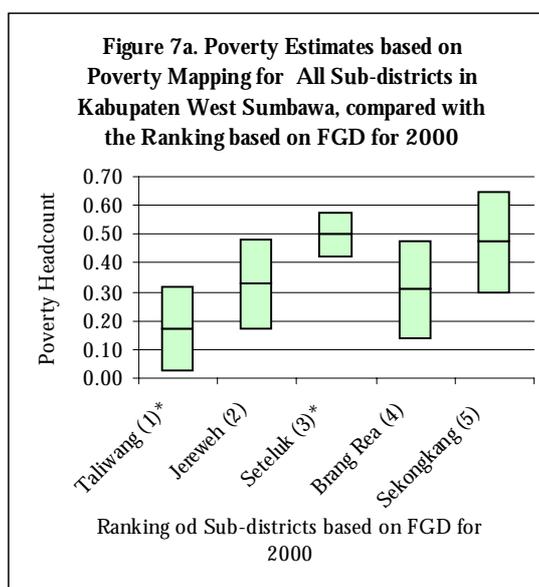


The correlations between the ranking of sub-districts determined in FGDs and the ranking based on poverty mapping are quite low, particularly for the FGD ranking in 2004 that is 0.54. The correlation with the FGD ranking for 2000 is slightly higher at 0.6. Compared to the FGD ranking for 2000, out of the 205 pairs of districts, 77 cases are matches, 18 cases are inconclusive and 10 cases are non-matching. The comparison between the two sample sub-districts, which are Dumoga and Bolaang Uki, is however, a match and the direct observation also supports this conclusion. This consistency might be due to the fact that these two sub-districts are very different. Dumoga is a rich irrigated rice farming area located close to the capital city and has developed into a more urbanized economy. On the other hand, Bolaang Uki is located far from the capital city with less access to transportation and information. Its main source of income is tree crops, particularly coconuts and cloves, although some regions are mainly sea-fishing communities.

The relatively large numbers of non-matching cases has raised concerns about the results from poverty mapping. A more detailed observation shows that most non-matching cases are due to the high poverty estimate for Lolak and the low poverty estimate for Kotabunan. Lolak is located along the coast, north of Kotamobagu and it is mainly a sea-fishing community. This sub-district is ranked 5 by FGD participants because the scores for income/occupation, health condition, education level, infrastructure and natural resources are relatively high. The only low score is for the housing condition. The score for housing conditions in Lolak is less than Kotabunan, but the scores of other indicators, particularly transportation/accessibility, for Katabunan is less than Lolak. Given the specific characteristics of the community in Lolak, particularly regarding the housing condition, the poverty-mapping models for rural households could produce an over estimate of poverty headcount for this sub-district. The problems in poverty mapping could also occur in estimating poverty in Poigar, Bolaang, Kotabunan and Pinolosian. Poigar and Bolaang are neighboring sub-districts with very similar welfare conditions, but the poverty estimates are very different. The same situation also occurs with Kotabunan and Ponolosian, which are also neighboring sub-districts that share similar welfare conditions, but the poverty estimate for Kotabunan is much lower than Pinolosian.

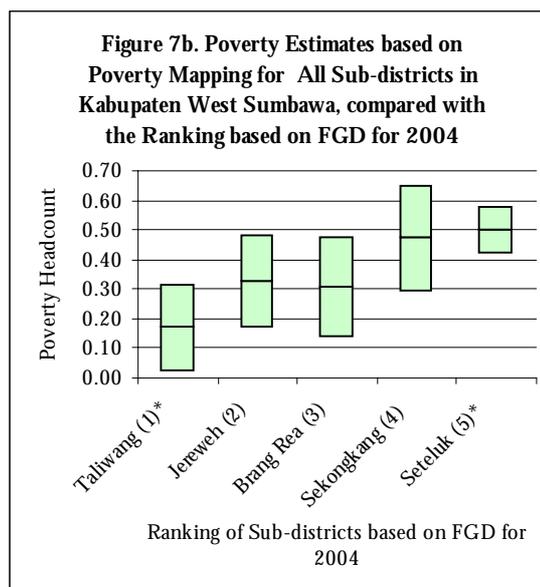
4.3. Kabupaten West Sumbawa

Kabupaten West Sumbawa is a new district that has been separated from Kabupaten Sumbawa in early 2004. In 1999, the area that now belongs in West Sumbawa consisted of 3 sub-districts –Taliwang, Jereweh and Seteluk. In 2000 Taliwang was administratively subdivided into Taliwang and Brang Rea, and Jereweh was divided into Jereweh and Sekongkang. The capital city for Kabupaten West Sumbawa is Taliwang. Out of these five sub-districts, the FGD participants ranked Taliwang the first for 2004, followed by Jereweh, Brang Rea, Sekongkang and Seteluk respectively. In 2000, the FGD participants agreed that Taliwang and Jereweh were ranked first and second. At the third rank was Seteluk, followed by Brang Rea and Sekongkang at the fourth and fifth positions. The welfare levels of the people in Brang Rea and Sekongkang have improved because a mining industry has been opened since 2002 and it has increased the economic activity in this region. Many people are recruited, while some others have opened small stalls or restaurants, or become motorbike taxi drivers to serve the



employees of this industry. The infrastructure in these sub-districts has been improved since 1999 when the mining industry started their construction, and this has developed more business opportunities in transportation services and trading services. The welfare condition of the people in Seteluk is more stagnant. They are still depending largely on agriculture or fresh water fisheries. Only a few people in Seteluk have become better off lately because they have become migrant workers.

The comparisons between the ranking of sub-districts for 2000 and 2004 with the ranking based on poverty mapping reveals that the correlation with the ranking for 2004 is more consistent than the ranking for 2000. The rank correlation for 2000 is 0.42 while the rank correlation for 2004 is 0.83. Despite the low rank correlation for 2000, out of the 10 pairs of sub-district combinations, there is no non-matching case. For the FGD ranking for 2000, 7 pairs are matches and the other 3 pairs are inconclusive while for the 2004 ranks, 9 pairs are matches and only one pair is inconclusive. The direct observation of the research team in Taliwang and Seteluk is also consistent with the FGD and quantitative assessments that the people's welfare condition in Taliwang is better than in Seteluk.



4.4. Summing Up: Poverty Comparison Across Sub-districts

The summary of the comparisons between the rankings of sub-districts determined in FGDs and the rankings based on poverty mapping is presented in Table 4. Overall, the results from the FGDs are quite consistent with the rankings based on poverty mapping, although the degree of consistency is lower than the comparisons across districts. The matching cases are around 75%, the inconclusive cases are around 18% and the non-matching cases are around 8%. As the consistency has not changed much between 2000 and 2004, the results of poverty mapping seem to remain valid for 2004.

Despite the fairly consistent results, the degree of consistency varies across districts. Only in one district – Indragiri Hulu is the consistency very high. The consistency is problematic in the case of Bolaang Mongondow, and this could raise a concern about the reliability of the household consumption model in providing estimations for such a diversity of community types in this district. The quantitative models used to estimate household consumption only differentiate urban and rural communities at the provincial level. Since Bolaang Mongondow covers a very wide area with diverse types of livelihoods, there is a possibility that the rural model does not fit well with poverty characteristics in specific localities. The urban/rural specification could also prove problematic for semi-urban regions and could lead to the under or over estimation of poverty headcount. Another possible source of weaknesses could also originate from the quality of the secondary data used in the poverty mapping. The quality of PODES data, for example, has been questioned in some regions. With regard to the FDG, questions could also be raised as to whether the assessment of the condition in 2000 that is based on past memories is credible enough.

Table 4. Summary of the Comparisons between the Rankings of Sub-districts based on FGDs and Poverty Mapping in Three Sample Districts

District	Number of Sub-districts	N	Rank Correlation		Pairing Comparisons of the Ranking based on Poverty Mapping and					
					FGD Ranking for 2000			FGD Ranking for 2004		
			2000	2004	Match	Inconclusive	Not Match	Match	Inconclusive	Not Match
Indragiri Hulu	6	15	0.94	0.94	93%	7%	0%	93%	7%	0%
Bolaang Mongondow	15	105	0.60	0.57	73%	17%	10%	70%	20%	10%
West Sumbawa	5	10	0.69	0.69	70%	30%	0%	90%	10%	0%
Total	20	115			75%	17%	8%	74%	18%	8%

V. COMPARING POVERTY ACROSS VILLAGES

In all sub-districts, the FGDs went well with very dynamic discussions dominated by local officials from various sectors. In general, the welfare indicators proposed at the sub-district level FGDs were similar to the ones agreed at the provincial and district levels. The indicators include accessibility and infrastructure, education level, health condition, housing condition, daily lives such as fulfillment of food and clothing, assets ownership and ownership of cars and motorbike, income and ways to earn their living, and security level. There were however, some more specific indicators such as the number of people going to haj pilgrimage (see Appendix 16).

The scoring and ranking of villages also turned out well as most participants have sufficient knowledge and understanding about the community in the villages. It was observed that in a few cases, one or two participants were biased in their assessments for certain villages as they expected that there will be assistance provided for poorer villages, but these seems minimal as most other participants did not have this intention. Some difficulties, however, appeared in ranking some villages that share lots of common characteristics. In one district the participants agreed to assign the same rank for a number of villages, as they could not rank among them. Another difficulty was in assessing villages in sub-districts with large numbers of villages. Although there was always someone who was familiar with, or had visited each village, the exercise became very time-consuming and exhausting. The ranking of villages in the sample sub-districts determined in the FGDs and the comparison with the poverty-mapping results are presented in the following sections.

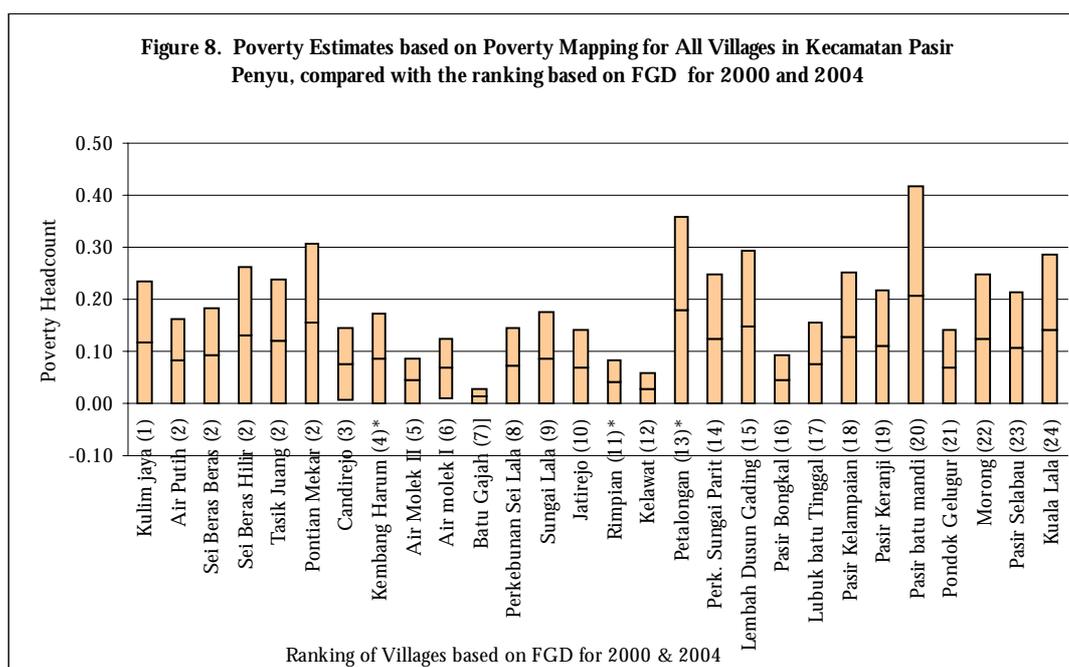
5.1. Kecamatan Pasir Penyu, Kabupaten Indragiri Hulu

Kecamatan Pasir Penyu located around 40 km from Rengat, the capital city of Kabupaten Indragiri Hulu. This sub-district lies on a plain passed by the Indragiri River that often inundate villages along the river during rainy season. Most parts of the sub-district are covered with rubber and palm oil plantations. Palm oil plantations have grown very fast lately and this has attracted migrants of Javanese origin from North Sumatra to work in the palm oil plantation and processing industries that also operate in this sub-district. The growth of palm oil plantation, managed either by government owned enterprises, private firms or individuals, has improved the welfare of the people in some villages where the palm oil is cultivated, mostly the ex-transmigration areas. In general the FGD participants distinguished the welfare levels of the people based on their location. The people in the ex-transmigration areas are considered wealthier because they grow palm oil and it has started to be harvested. On the contrary, the natives who lived in the villages along the Indragiri River are usually poorer because they still depend on collecting rubber in the forest, collecting sand and gravels from the river, or fishing in the river, which provides them with a lower income compared to the income from palm oil. In addition, the villages along the river are usually inundated for 3-5 months of every year.

Kecamatan Pasir Penyu consists of a large number of villages even after it was administratively sub-divided into two sub-districts in September 1999, when areas that now belong to Kecamatan Lirik were separated from Kecamatan Pasir Penyu. Currently, Kecamatan Pasir Penyu covers 28 villages (2 *kelurahan* and 26 *desa*). The ranking of villages determined by the FGD participants are presented in Figure 8. The rankings for 2000 are the same as for 2004. The villages in the highest rank are all the ex-transmigration villages, with Kulim Jaya considered the wealthiest. It was difficult for the participants to rank the other 5 ex-transmigration villages as they share very similar conditions. Villages located in and near the capital of these sub-districts that have been developed into urban or semi-urban areas are

placed after these ex-transmigration villages. Villages along the rivers are positioned last and the village in the lowest rank is Kuala Lala that is considered as the poorest of all.

The ranking of villages determined in the FGD is completely different from the ranking based on poverty mapping and it is reflected in the low value and negative rank correlation, which is -0.15 . Out of the 378 pairs of village combinations, only 174 cases are matches, which is less than half of all the combinations. The rest are inconclusive because the standard errors of the poverty mapping are very high, so that the minimum estimate is not different from 0. This also results in no non-matching cases. One possible cause of this inconsistency is that the poverty estimations produced by poverty mapping are very low for villages where many civil servants and employees of government owned plantations live. The poverty mapping also tends to produce high poverty estimates for the ex-transmigration villages. This is because the models for estimating household consumption level as presented in Appendix 7 and 8 are using variables that tend to provide higher consumption estimates for villages with better facilities and higher level of education. The rural model for Riau (Appendix 8), for example, only includes a variable on occupation or trade, but does not have a variable related to the ownership of palm oil plantation that seems to be the main factor according to the perception raised in the FGD. On the other hand, the FGD claimed that despite the relatively better education level, infrastructure and housing condition in the villages in and near the capital of Kecamatan Pasir Penyu, the income of the people in ex-transmigration villages is higher.



The direct observation in the three sample villages, Petalongan, Kembang Harum and Rimpian, concludes that Kembang Harum is the wealthiest followed by Rimpian. Petalongan is considered the poorest. Kembang Harum is the capital of Kecamatan Pasir Penyu and it is an urban area with relatively good housing and infrastructure. Rimpian ranks lower because only people who live along the main roads are better-off, while people who live in the plantation areas far from the main roads are poorer. Petalongan is located along the river, it is inundated every rainy reason, and the main source of income for the people is tapping rubber and collecting sand and gravel from the river. This ranking is in line with the FGD result, but it is different from the results of the poverty mapping. The poverty estimate for Kembang Harum calculated by poverty mapping is higher than the poverty estimate for

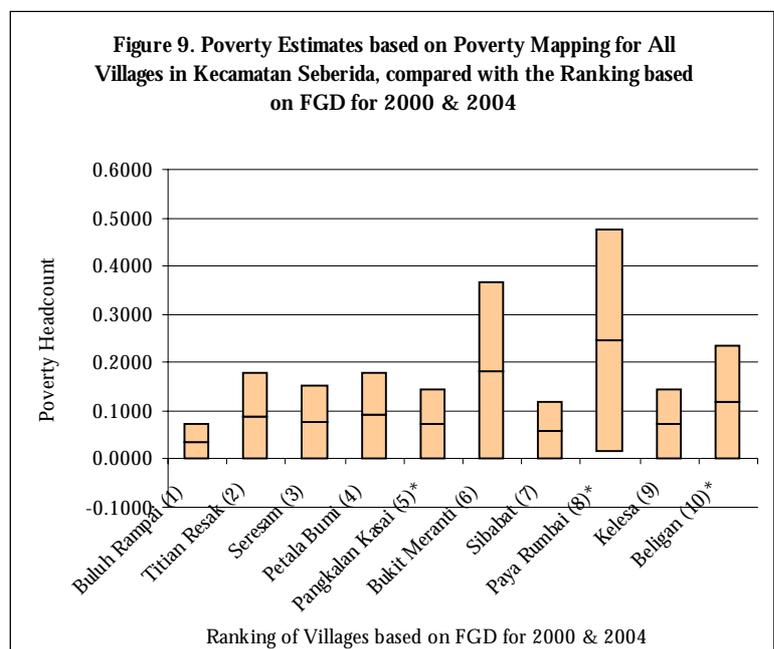
Rimpian. The relatively higher poverty estimate for Petalongan, compared to Rimpian and Kembang Harus is in line with the results from FGD and direct observation.

5.2. Kecamatan Seberida, Kabupaten Indragiri Hulu

Kecamatan Seberida shares some similar characteristics with Kecamatan Pasir Penyu but it is less developed compared to Kecamatan Pasir Penyu. Palm oil trees have just recently been planted in Kecamatan Seberida and the topography of some areas in Kecamatan Seberida is mountainous. Because of this similarity, the FGD participants also raised similar opinions regarding the welfare condition of the people in the villages. In general they differentiated the villages into ex-transmigration villages that grow palm oil and native villages that still depend on rubber plantations, and they claimed that the native villages were relatively poorer. In addition, they also distinguished the people's welfare level based on the ownership of palm oil plantations. The welfare level in the villages where the plasma system is implemented is considered better off than where the plantation is owned by private company.

After the administrative sub-division of 1999, Kecamatan Seberida consists of 10 villages, one *kelurahan* (Pangkalan Kasai) and 9 *desa*. Out of these villages Buluh Rumbai is ranked first. This village is a palm oil producer and some of the residents also work as traders. The villages ranked 2, 3 and 4 are also the palm oil producing villages. Pangkalan Kasai, the capital of this sub-district, is ranked 5. Ranked at 6 and 7 are Bukit Meranti and Sibabat, which are mainly rubber plantation areas. The three districts in the lowest positions were Paya Rumbai, Kelesa and Beligan. The rankings for 2000 are the same as those for 2004.

The consistency between the ranking based on poverty mapping and the ranking determined in the FGD is fairly low. Although the poverty estimate calculated by poverty mapping for Buluh Rumpai is the lowest, which is the same as the FGD result, the village with the highest poverty estimate based on poverty mapping is Paya Rumbai, which is ranked seventh in the FGD. The rank correlation between the results of these two measures is low (0.39), however, out of the 45 combinations of villages, 29 cases (64%) are matches and the other 16 cases are inconclusive. The high standard errors from poverty mapping that set the minimum estimates not different from zero for all villages results in no non-matching cases.



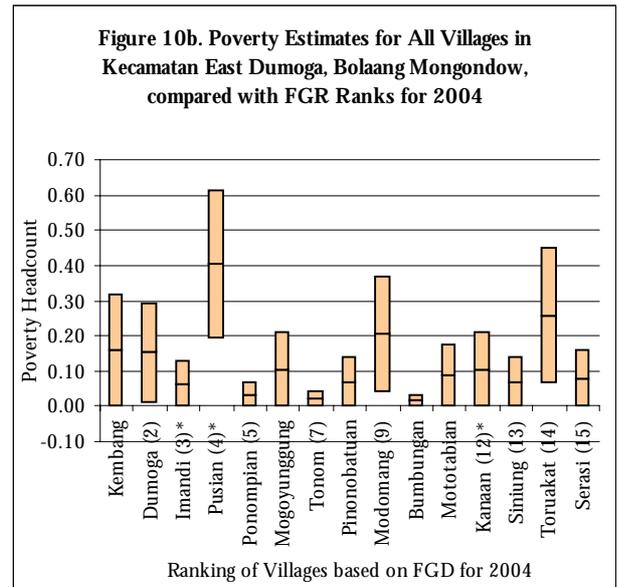
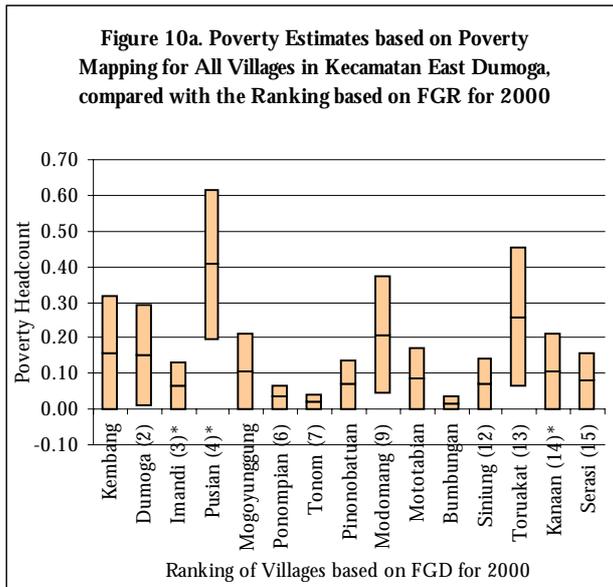
Direct observation based on the team visit to three sample villages –Pangkalan Kasai, Paya Rumbai and Beligan- concludes that the wealthiest village is Pangkalan Kasai, the second wealthiest is Paya Rumbai and the poorest is Beligan. This is in line with the judgment of the FGD participants but rather different from the poverty mapping results. The three estimates, direct observation, FGD judgment and poverty mapping, have resulted in the same judgment that among the three sample villages, Pangkalan Kasai is the wealthiest. Pangkalan Kasai is

the center of trading activities and is the most economically developed area in this sub-district where most local civil servants reside. The results from poverty mapping for Paya Rumbai and Beligan are different from the judgment from both direct observation and FGD. According to poverty mapping, the poverty estimate for Paya Rumbai is higher than Beligan, although the high standard error has caused an overlap between the minimum estimate for Paya Rumbai and the maximum estimate for Beligan, and this implies that the level of poverty between these villages is not significantly different. The FGD and direct observation have concluded that Beligan is poorer than Paya Rumbai although both villages are categorized poor native villages where the communities still depend mostly on rubber plantation. According to FGD participants, people in Paya Rumbai are considered better off because they have other means of income earning activities, such as collecting rattan and woods in the forest and fishing in the river not far from their village. There are also lots of migrants who live in this village and they mostly work in the palm oil processing industries. In addition, an oil company located in this village has constructed village roads and provided scholarships for children from this village. The people in Beligan, on the other hand, do not have income sources other than collecting rubber. A palm oil processing industry located in this village does not recruit local people because they have low education levels. Most of the employees in the factory located in Beligan are from neighboring villages such as Pangkalan Kasai. The road access to Beligan is however, better than the road access to Paya Rumbai.

5.3. Kecamatan East Dumoga, Kabupaten Bolaang Mongondow

Kecamatan East Dumoga is located in the southwest of the capital city of Kabupaten Bolaang Mongondow - Kotamobagu, on the way to Kecamatan Bolaang Uki. This sub-district can be reached in 40 minutes by car from Kotamobagu. This sub-district is one of the better-off sub-districts in Kabupaten Bolaang Mongondow because it is the main rice producer in this district. Most areas are irrigated rice fields and only a small area consists of dry land cultivating of corn, mung bean and tree crops, especially coconut, cloves and candlenuts. Another source of income for the people in this sub-district is from traditional gold mining.

Before administrative sub-division in 2000, Kecamatan East Dumoga was part of Kecamatan Dumoga. The 2000 administrative arrangements split Kecamatan Dumoga into three sub-districts, East Dumoga, West Dumoga and North Dumoga. Kecamatan East Dumoga consists of 15 villages (1 *kelurahan* and 14 *desa*) 10 of which are located along the southern main roads to Gorontalo Province, while 4 others – Kanaan, Serasi, Kembang Mertha and Pinonobatuan- are located away from the main road. The FGD participants ranked Kembang Merta in first position in 2004 ahead of Dumoga, the village where the sub-district level government offices are located. Despite its location off the main roads and its simple housing conditions, the people Kembang Merta are considered better-off than the people in Dumoga because the productivity of rice fields in Kembang Merta is higher and the Kembang Merta residents who originate from Bali manage their money better. Ranking third is Imandi, the only *kelurahan* in this sub-district where the economic infrastructure such as bank, post office, main market and hotel are located. The poorest village is Serasi, the only village in this sub-district that could not be reached by car and which is very difficult to reach during the rainy season. The ranking of villages in 2000 was slightly different. The villages that have changed their relative welfare levels during the 2000 – 2004 period are Ponompiaan, Bumbungan and Kanaan. Ponompiaan was ranked 6 in 2000 and increased to rank 5 in 2004 because of the improvements in road conditions and irrigation canals. Bumbungan has also moved up from rank 11 in 2000 to rank 10 in 2004 as the people started to seek opportunities in gold mining exploration. Kanaan has jumped from rank 14 in 2000 to rank 12 in 2004 because of the construction of a road that has opened access from this village to the main road in Pusian.



The comparisons between the ranking determined in the FGD and the ranking based on poverty mapping are presented in Figure 10a and 10b. It is apparent that there is no correlation between the ranking of villages based on FGDs and poverty mapping as indicated by the rank correlation of -0.11 for the FGD ranking for 2000 and -0.06 for FGD ranking for 2004. Out of the 105 pairs of village combinations, only 47 cases (47%) are matches for the FGD ranking for 2000 and 51 cases (49%) for the ranking for 2004. The inconclusive cases are 47 for the comparison with the ranking for 2000 and 43 for comparison with the ranking for 2004 while there are 9 non-matching cases for the ranking for 2000 and 10 for ranking for 2004.

Among the three sample villages, Pusian, Imandi and Kanaan, the direct observation by the study team concluded that Imandi is the wealthiest, followed by Pusian. Kanaan is considered as the poorest. This conclusion is the same as the ranking determined in the FGDs, however these two judgments are in line with the results from poverty mapping only for the relative position of Imandi. The rankings of Pusian and Kanaan based on poverty mapping are the opposite to the FGD and direct observation judgments. Direct observation found that the condition of the people in Pusian is very similar to Imandi and is much better-off than Kanaan. Both Pusian and Imandi are rice field areas. The houses are located along the main roads to Gorontalo Province and most houses are permanent. These two villages have market places and the economy seems to resemble a semi-urban environment. Because of these similarities, the FGD predicted similar poverty estimates of these two villages. On the other hand, the poverty mapping produced a very high level of poverty for Pusian, much higher than the poverty estimate for Kanaan. Kanaan is an ex-transmigration area located around 30 km off the main road. The construction of an asphalt road to Kanaan was only completed in 2002, but one hamlet in this village is still isolated. This hamlet can only be reached by motorbike, but in the rainy season, people have to walk to reach this isolated hamlet. Most areas in this village are dry land that is not particularly fertile. They mostly grow tree crops that have just started producing although the production is still limited. Since this village was a transmigration area, the government had however, provided a wooden house and 2 hectares of land for every household. One possible cause of the high poverty estimate for Pusian in the poverty mapping is because this village is categorized as rural in the poverty mapping (see Appendix 19), while in reality it is closer to urban characteristics.

5.4. Kecamatan Bolaang Uki, Kabupaten Bolaang Mongondow

Kecamatan Bolaang Uki is located along the south coast in the far eastern part of Kabupaten Bolaang Mongondow. This sub-district can be reached in 5 hours by car from Kotamobagu. The main products of this sub-district are copra and cloves. In some areas, people also cultivate rice, cacao and vanilla, and some others also engage in sea-fishing activities. Before the road to Gorontalo Province was completed in 2002, this sub-district was rather isolated, although the natural resources were abundant. Nowadays, an alternative road that connects Manado and Gorontalo passes it, and this has increased the marketing of the agriculture and fisheries products from this sub-district.

In 2002, Kecamatan Bolaang Uki was administratively sub-divided into 2 sub-districts –Kecamatan Bolaang Uki and Kecamatan Pinolosian that share a border with Gorontalo Province. After this administrative division, Kecamatan Bolaang Uki consists of 12 villages. Among these villages, the FGD participants assessed the 3 villages surrounding the capital of this sub-district, Popodu, Sondana and Toluaya, as the wealthiest villages in 2004. Popodu is ranked first, Sondana is the second, Toluaya third, Salongo fourth while the poorest is Bakida. The rankings for 2000 are slightly different because Sondana was at rank 6 and Duminanga was at rank 10 although in 2004 it has moved up to rank 8. The welfare level of the people in Sondana has increased dramatically because better road conditions have increased the marketing of fish to the fish processing industries in Bitung, and various service industries such as a fish auction place, market and hotels have been developed in this village. The welfare level of the people in Duminanga has also improved because of the construction of an asphalt road and pathway that has opened access to the plantation areas as well as the renovation of irrigation canals.

The rankings of villages based on poverty mapping are quite consistent with the ranking of villages determined in the FGD, particularly the ranking in 2000.

The rank correlation with the FGD ranking for 2000 is 0.89, while the rank correlation with FGD ranking for 2004 is 0.74. Out of the 66 pairs of the village combinations, for the FGD ranking in 2000, 56 cases (85%) are matches, 10 cases (15%) are inconclusive and there are no non-matching cases. The direct observation in the three sample villages, Tolondadu, Salongo and Bakida, also concludes that people in Salongo are the wealthiest, people in

Figure 11a. Foverty Estimates based on Poverty Mapping for All Villages in Kecamatan Bolaang Uki, compared with the ranking based on FGD for 2000

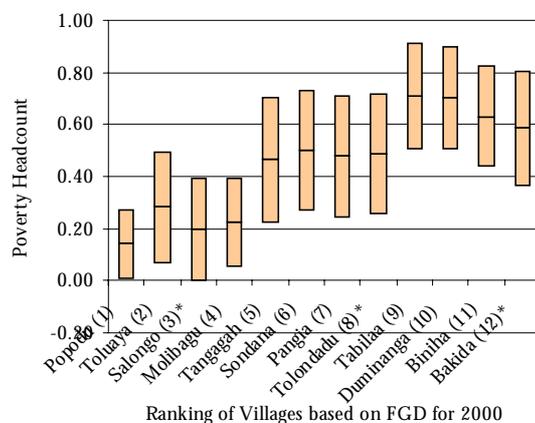
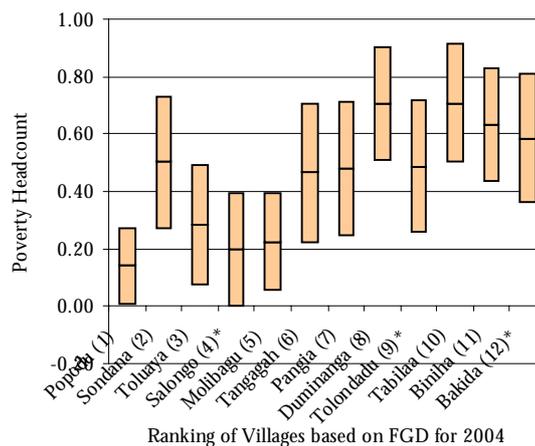


Figure 11b. Foverty Estimates based on Poverty Mapping for All Villages in Kecamatan Bolaang Uki, compared with the Ranking based on FGD for 2004



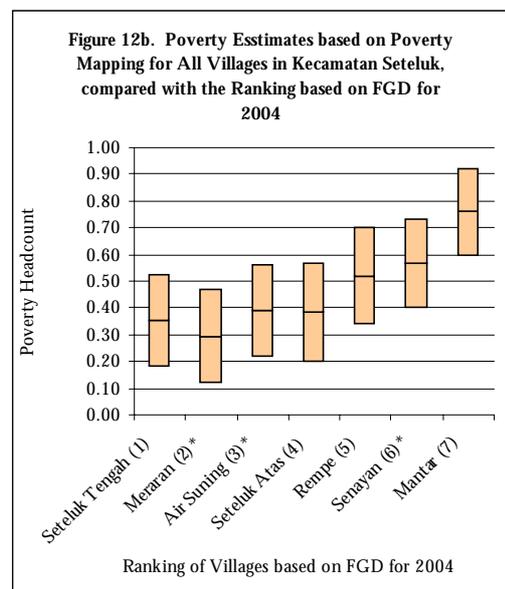
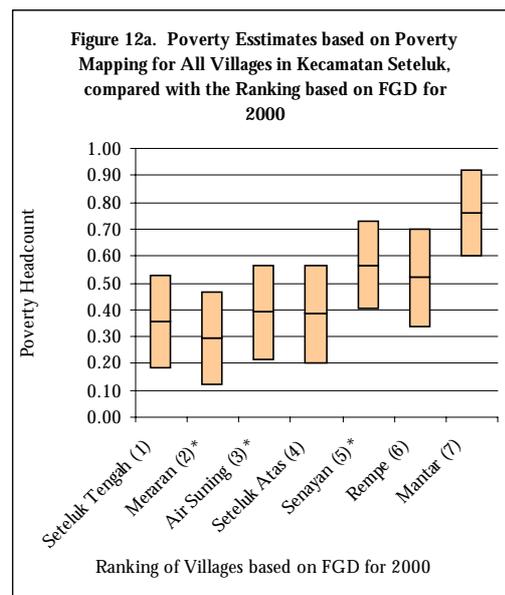
Tolondadu are poorer than people in Salongo, and people in Bakida are the poorest. This ranking is in line with the rankings based on both the FGD and the poverty mapping.

5.5. Kecamatan Seteluk, Kabupaten West Sumbawa

Kecamatan Seteluk is located on Sumbawa Island, approximately 13 km from the capital city of Kabupaten West Sumbawa. Part of this sub-district is located in the mountainous high land areas, and the other part is in a low land area. The main source of income of the people in this sub-district is from the agriculture sector. They cultivate rice, corn, soybean and mung bean, raise buffalos, cattle and horses, catch fish in the ponds or collect rattan and woods in the forest. A lot of men and women have also gone abroad as migrant workers.

Administratively, Kecamatan Seteluk consists of 10 villages in 2004, but it consisted of only 7 villages in 2000. Out of the 7 villages under the 2000 administrative arrangement, people in Seteluk Tengah are considered as the wealthiest because this village is located along the main provincial road and most of its residents are civil servants and employees. At the second rank is Meraran and at the third rank is Air Suning. These two villages are also located along the main provincial road, their residents are mostly farmers or fishermen and many work as migrant workers overseas. In general, the migrant workers from Meraran are considered more successful than the workers from Air Suning. The poorest village is Mantar that is located in a remote area in the mountains. This village is very difficult to access because of the steep roads, and people have to walk for 2 hours to reach this village. The rankings for 2000 were different only for the ranking of Rempe and Senayan. Rempe that is at rank 5 in 2004, ahead of Senayan at rank 6, was poorer than Senayan in 2000. The people in Senayan become poorer than people in Rempe in 2004 because the fishing industry based on the brackish-water fishponds in Senayan went bankrupt so that the welfare level of many people who used to work there are worse off.

The ranking of villages based on FGDs are quite consistent with the rankings produced from the poverty mapping. The rank correlation between the ranking based on poverty mapping and based on FGD for 2000 is 0.89, while the rank correlation with the FGD ranking for 2004 is 0.93. For almost all of the 21 pairs of villages, the ranking based on FGD matches the ranking based on poverty mapping. Only 3 cases for the 2000 FGD ranking and 2 cases for the 2004 FGD ranking are inconclusive. The ranking for the three sample villages, Meraran, Air Suning and Senayan, based on both FGD and poverty mapping are also in line with the impression from direct observation. All of the three sample villages are located in one dry field plain. The welfare level of the people in Meraran is the highest among them because many women have become migrant workers and most of



them are successful. There are also a lot of women migrant workers from Air Suning, but they are less successful. In Senayan, almost no women go abroad as migrant workers and most village residents only earn their living from traditional agriculture sector activities.

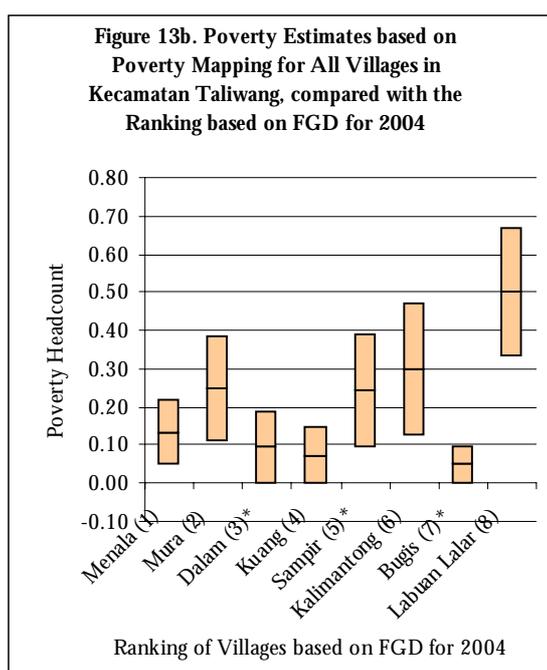
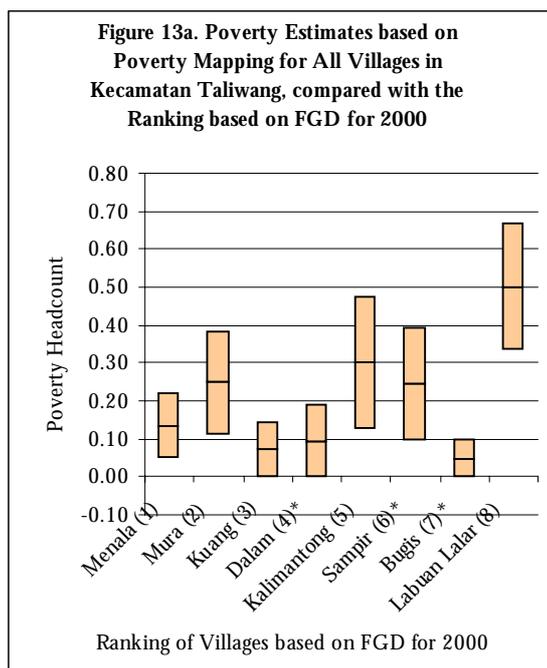
5.6. Kecamatan Taliwang, Kabupaten West Sumbawa

Kecamatan Taliwang became the capital city of Kabupaten West Sumbawa after this district was administratively separated from Kabupaten Sumbawa in early 2004. The economy of this sub-district was mainly based on the agriculture sector particularly rice production. In addition, there are other natural resources such as forests, limestone and gravel. The current development as the capital city of West Sumbawa and the newly operated PT Newmont Mining has induced economic growth in this sub-district and developed it into a more urbanized economy.

In 2000, Kecamatan Taliwang consisted of 8 villages, but it has been administratively sub-divided into 11 villages. Out of the 8 villages under the 2000 administrative arrangement, the FGD participants ranked Menala at the first position in 2004. Mura and Dalam follow it in second and third rank. Labuan Lalar is considered the poorest village. The ranking of villages in 2000 was slightly different, as Kuang was at third rank and Dalam at 4, while Sampir ranked 6 and Kalimantanong 5. The economic condition of Dalam has improved during 2000-2004 because this village has been developed as a trading center. On the other hand, the infrastructure condition in Kuang is deteriorating because it is often flooded. The welfare level of the people in Kalimantanong is also decreasing because its infrastructure, including irrigation canals and roads are deteriorating. The agricultural produce and its marketing are also getting worse.

The consistencies between the ranking of villages based on poverty mapping and the ranking determined in FGD, both for 2000 and 2004, are fairly low. The rank correlations are 0.19 for the comparison with the FGD ranking for 2000, and 0.21 for the comparison with the FGD ranking for 2004. Out of the 28 pairs of village combinations, only 16 cases (57%) are matches, 9 cases are inconclusive and the other 3 cases are non-matching.

The ranking of the three sample villages, Sampir, Bugis and Dalam, produced from poverty mapping are different from the FGD result. Based on the poverty mapping, the



poverty level of Bugis was the lowest, Dalam was the second lowest and Sampir was the highest. The FGD result, on the other hand, concluded that Dalam was the wealthiest, Sampir was the second wealthiest and Bugis was the poorest. The direct observation in these three sample villages, unfortunately, could not come up with a firm judgment because all of them are sharing borders and located in the newly developed capital city of Kabupaten West Sumbawa. In some regards, the direct observation tends to be in line with the FGD result based on the following arguments. Bugis was considered as the poorest among the three villages because some hamlets in this village are located far from the village capital and are rather isolated. The people in these hamlets are mostly farmers and they own relatively large fields. Dalam and Sampir are similar in many ways but the people in Dalam are considered better-off because most of them are civil servants and employees. There is only one small hamlet in Dalam that is located separately and the housing conditions are crowded and dirty. Almost all government offices and other economic infrastructure such as banks and a post office are located in Dalam. On the other hand, the biggest market place is located in Sampir, but the people in Sampir have low education levels and they mostly work as traders in the market. Some of them earn their living from agriculture activities in rice-fields that are usually inundated during the rainy season, or from fishing in the pond located near this village. The poverty estimate calculated in poverty mapping for Sampir is very high compared to Bugis and Dalam although the FGD and the direct observation perceived that the three sample villages share lots of similarities, including the poverty levels. One possible cause of this divergence is the fact that Sampir is categorized as rural in the poverty mapping, while Dalam and Bugis are already categorized as urban (see Appendix 19).

5.7. Summing Up: Poverty Comparison Across Villages

Table 5 presents the summary of the comparisons between the rankings of villages based on poverty mapping with the ranking determined in FGDs in all sample sub-districts. It can be seen that the results vary across sub-districts. In two sub-districts, Seteluk and Bolaang Uki, the rankings from these two measures are quite consistent. These two sub-districts are characterized as a relatively less developed region with a strong agriculture-based economy, and located far from the district's capital city. The comparison for another less developed sub-district of Seberida is also fairly consistent. The sub-districts where the consistencies between the two ranking estimates are very low are sub-districts where some of the villages have been economically developed and become more urbanized. Although this phenomenon might be just coincidental, it could imply the possibility that the models developed for estimating poverty in the poverty mapping are less appropriate for estimating welfare levels of the household in semi-urban and urban villages. There are also other possible causes of the inconsistency. One possible cause is the fact that the judgment in FGD is based on a completely different set of arguments that are not directly correlated with the level of household consumption level. In many cases, there is a tendency for FGD participants to consider the welfare level of the people in remote areas to be lower than people in or near the center of economic activity. Another possible cause concerns the quality of the secondary data used to calculate poverty estimation. The concern regarding the quality of the secondary data arises from the fact that the poverty estimates have produced different poverty levels for two villages that share very similar conditions, both based on FGD result and direct observation by the study team. From the two cases in Kecamatan East Dumoga and in Kecamatan Taliwang that have been pointed out in the previous sections, the urban/rural categorization for villages that have been developed into semi-urban areas is also problematic. Categorizing semi-urban villages as rural villages could over-estimate their poverty level.

Table 5. Summary of the Comparisons between the Ranking of Villages based on FGDs and based on Poverty Mapping in Six Sample Sub-districts

Sub-district	Number of Villages	N	Rank Correlation		Pairing Comparisons of the Ranking based on Poverty Mapping and					
			2000	2004	FGD Ranking for 2000			FGD Ranking for 2004		
					Match	Inconclusive	Not Match	Match	Inconclusive	Not Match
Pasir Penyu	28	378	-0.15	-0.15	46%	54%	0%	46%	54%	0%
Seberida	10	45	0.39	0.39	64%	36%	0%	64%	36%	0%
East Dumoga	15	105	-0.11	-0.06	47%	45%	9%	49%	41%	10%
Bolaang Uki	12	66	0.89	0.74	85%	15%	0%	83%	17%	0%
Seteluk	7	21	0.89	0.93	86%	14%	0%	90%	10%	0%
Taliwang	8	28	0.19	0.21	57%	32%	11%	57%	32%	11%
Total	15	49			53%	45%	2%	53%	44%	2%

VI. COMPARING THE RESULTS OF POVERTY MAPPING AND THE COMMUNITY'S WEALTH CLASSIFICATION

Local people have their own perspective about the welfare levels of the community based on various indicators that can be easily observed. In this verification study, an FGD is conducted with women and men in each sample village to obtain local people's perceptions about the welfare levels of the people living in their village. The FGD at the village level, organized with the assistance of the village head and staff, went well in all sample villages. In general, the FGD participants assess the welfare levels based on physical conditions of house and the status of land where the house is built, ownership of farm land and farm animals, the way the household earns their living, ownership of household utensils and vehicles, the way the household seek treatment if someone is sick or in case of the delivery of a baby, the clothes they wear and where they buy the clothes, and what they eat, particularly the staple food and the frequency of meals in a day (see Appendix 18).

Using local terms, local people distinguished their community into several welfare categories or classes. Out of the 18 sample villages, only in two villages did the FGD participants distinguish the households in their village into two classes – the better off and the poor. In 8 villages they classified welfare classes into 3 categories – the rich, the better off and the poor. In another village, the households were also classified into 3 categories, but the categories are the better off, the poor and the very poor, because FGD participants claimed that there were no rich people in their village. In 7 villages, welfare classes were separated into 4 categories – the rich, the better off, the poor and the very poor. The percentage of households belonging to each category estimated by FGD participants in each sample village for the 2004 and 2000 conditions are presented in Appendix 19.

In most sample villages FGD participants stated that their welfare level has improved during 2000 – 2004. Only in two villages, Dalam and Air Suning, did people claim that their welfare had deteriorated during this period. In Dalam, this was the result of a flood that destroyed their rice fields and caused the death of their farm animals, particularly buffaloes and cattle. In Air Suning, the decline in the welfare level is due to the deterioration of the irrigation canals for their rice field, caused by sedimentation in the dam. In addition to the decrease in rice productivity, their income has decreased as the price of rice produce has also decreased in recent years. In another village, Bakida, the people claimed that their welfare level was relatively stagnant, while in two other villages – Tolondadu and Paya Rumbai - it was stated that, despite the general welfare improvement for the majority of the villagers, the welfare level of a particular welfare class is declining, so that the wealth disparity increases. In Tolondadu some of the poor have fallen into the very poor class because the increased population has not been followed by new job opportunities. In Paya Rumbai, some of the better off have slipped into the poor class because the quality and productivity of natural resources as their main source of income is deteriorating. Meanwhile, their low education levels limit their ability to access job opportunities in the newly established palm oil processing industry.

As for the current condition in 2004, the estimated proportion of the poor and the very poor ranges between 11% for Air Suning in Kecamatan Seteluk, West Sumbawa and 95% for Kanaan in Kecamatan East Dumoga, Bolaang Mongondow; while the proportion estimated for 2000 ranged between 8% for Air Suning and 98% for Kanaan. For the 2000 estimations, in 12 out of the 18 sample villages, the proportion of the poor and the very poor were more than 55%, while for 2004 it was estimated that the poor and the very poor is more than 50% in only 8 villages.

Table 6a. Comparison of the Poverty Estimates based on Poverty Mapping and the Local Community's Perception for the Condition in 2000

Province - District Sub-district Village	Urban/ Rural	Administrative Status	FGD Result (2000)			Poverty Mapping Estimate		
			Poor	Very Poor	Poor & Very Poor	Minimum	Maximum	Point Estimate
Riau – Indragiri Hulu								
Pasir Penyau								
Petalongan	R	Desa	55%		55%	-2%	34%	16%
Rimpian	R	Desa	43%		43%	-2%	7%	2%
Kembang Harum	U	Kelurahan	57%	4%	61%	-1%	17%	8%
Seberida								
Beligan	R	Desa	55%		55%	-2%	21%	10%
Paya Rumbai	R	Desa	60%		60%	2%	48%	25%
Pangkalan Kasai	R	Kelurahan	64%		64%	-2%	13%	5%
North Sulawesi - Bolaang Mongondow								
East Dumoga								
Imandi	R	Kelurahan	46%		46%	-1%	12%	5%
Kanaan	R	Desa	10%	88%	98%	-1%	20%	10%
Pusian	R	Desa	59.5%	10.0%	70%	20%	62%	41%
Bolaang Uki								
Salongo	R	Desa	39%		39%	0%	39%	19%
Bakida	R	Desa	30%	52%	82%	37%	81%	59%
Tolondadu	R	Desa	60%	18%	78%	26%	72%	49%
West Nusa Tenggara - West Sumbawa								
Seteluk								
Meraran	R	Desa	55%	11%	66%	12%	47%	29%
Senayan	R	Desa	64%		64%	40%	73%	57%
Air Suning	R	Desa	8%		8%	22%	56%	39%
Taliwang								
Sampir	R	Desa	28%		28%	10%	39%	24%
Bugis	U	Desa	49%	32%	81%	-1%	9%	4%
Dalam	U	Desa	16%	10%	26%	-2%	17%	7%

The comparisons between the proportions of the poor and the very poor estimated by FGD participants and the estimation calculated by poverty mapping is presented in Table 6a and 6b. In general, these comparisons indicate that the FGD estimations for 2004 are relatively closer to the estimates calculated by poverty mapping than the FGD estimations for 2000. For the 2004 estimations, the proportion of the poor and the very poor according to FGD estimates in 8 villages lies within the range of poverty mapping. The FGD estimate in one village is less than the minimum boundary. The FGD estimates in 3 villages are slightly larger than the maximum boundary, and in another 6 villages are far above the maximum boundary. For the 2000 estimates, only in 4 villages, does the FGD estimate lie within the poverty level range calculated by poverty mapping, in one village it is lower than minimum boundary, in 5 villages slightly larger than the maximum boundary, and in 8 villages far above the maximum boundary.

Table 6b. Comparison of the Poverty Estimates based on Poverty Mapping and the Local Community's Perception for the Condition in 2004

Province - District Sub-district Village	Urban/ Rural	Administrative Status	FGD Results (2004)			Poverty Mapping Estimate		
			Poor	Very Poor	Poor & Very Poor	Minimum	Maximum	Point Estimate
Riau - Indragiri Hulu								
Pasir Penyau								
Petalongan	R	Desa	21%		21%	-2%	34%	16%
Rimpian	R	Desa	33%		33%	-2%	7%	2%
Kembang Harum	U	Kelurahan	28%	1%	29%	-1%	17%	8%
Seberida								
Beligan	R	Desa	36%		36%	-2%	21%	10%
Paya Rumbai	R	Desa	64%		64%	2%	48%	25%
Pangkalan Kasai	R	Kelurahan	58%		58%	-2%	13%	5%
North Sulawesi - Bolaang Mongondow								
East Dumoga								
Imandi	R	Kelurahan	43%		43%	-1%	12%	5%
Kanaan	R	Desa	28%	67%	95%	-1%	20%	10%
Pusian	R	Desa	48%	8%	56%	20%	62%	41%
Bolaang Uki								
Salongo	R	Desa	11%		11%	0%	39%	19%
Bakida	R	Desa	32%	48%	80%	37%	81%	59%
Tolondadu	R	Desa	45%	20%	65%	26%	72%	49%
West Nusa Tenggara - West Sumbawa								
Seteluk								
Meraran	R	Desa	36%	6%	42%	12%	47%	29%
Senayan	R	Desa	61%		61%	40%	73%	57%
Air Suning	R	Desa	11%		11%	22%	56%	39%
Taliwang								
Sampir	R	Desa	23%		23%	10%	39%	24%
Bugis	U	Desa	23%	18%	41%	-1%	9%	4%
Dalam	U	Desa	36%	14%	50%	-2%	17%	7%

It can also be observed that the FGD estimates are above the maximum level of the poverty mapping in all villages classified as urban areas, where a model for poverty estimation of urban households is applied in the poverty mapping. A similar pattern is also observed in a study that compiled various participatory poverty assessments (Suharyo et.al., 25). Interestingly, the FGD estimates are more consistent with the poverty mapping in the villages located in Bolaang Uki and Seteluk, the sub-districts where the correlations between the rankings of villages based on sub-district level FGDs and the ranking based on poverty mapping are also very high. This could imply that for regions with certain characteristics, the poverty mapping results are closer to the poverty estimate based on the perception of local people.

VII. CONCLUDING REMARKS

Ideally, a verification of poverty maps that provides poverty estimates of small administrative areas should be based on a household level census or survey that collects consumption data and can provide poverty estimates at the village level at least in some areas as a sample. This would allow for a perfect comparison with the poverty estimates produced by the poverty mapping method. This kind of effort, however, could be very expensive and impractical since large-scale household censuses or surveys should be carried out in order to compare poverty rates up to the district level. This verification study chose a more practical way of assessing the results of the poverty mapping exercise by comparing the ranking of regions based on the perception of local stakeholders through focus group discussion, which is assumed to reflect the real condition in the field.

From an academic point of view, comparing poverty conditions (whether it is poverty ranking or poverty rate) based on local people's perspectives with the poverty estimates based on quantitative calculations could be very contestable. Such a comparison is like comparing two different animals, as the two estimates are using different indicators and different benchmarks. From the perspective of practical application, however, this kind of comparison could be of particular importance, since no one will trust an estimation that appears to be completely different to what local people perceive on the basis of their field observation. The consistency of the relative wealth across regions produced from the poverty mapping and the observable conditions could imply the reliability of the poverty mapping and increase the acceptability for its result.

This verification study indicates that the comparison of poverty rankings across districts and across sub-districts based on poverty mapping and FGDs is fairly consistent. It implies that the results of the quantitative estimates at the district and sub-district levels reflect the real condition relatively well. The correlation with the FGDs results for the current (2004) condition is also fairly high, and it implies that the result of the poverty mapping can still be used at the present time, although any major development that potentially affects the welfare condition of the people in certain areas after 2000 should be taken into consideration in using the results of this poverty mapping.

The consistency between the ranking of villages derived from FGDs and the ranking based on poverty mapping, however, varies across sub-districts. The evidence that the consistency of village rankings is quite high in some sub-districts reflects the ability of the small-area estimate model to provide a reliable poverty estimate down to village level, particularly for villages characterized as rural agriculture-based communities. The comparison between the poverty estimates based on poverty mapping and the ranking based on local community perspectives at the village level also reconfirms this potential. In spite of this, the village level poverty estimates should be used with caution in the regions with distinct rural characteristics as well as in regions with urban and semi-urban characteristics. It indicates the room for improving the poverty mapping method in the future.

The inconsistent cases uncovered in this study reflect some potential problems in the application of both the poverty mapping and the FGD methods contained in this study. With regard to the small-area estimation method, it is well understood that the ability of this method in providing a good estimate is limited by the availability of data used to develop the estimation model. Since this study has pointed to the weaknesses in estimating poverty in urban and semi-urban communities and in communities other than the rural agriculture-based, there is a need to expand the indicators covered in the data sources to better reflect the poverty condition in these communities. Another potential weakness in the poverty

mapping might come from the quality of survey and census data used in the calculation, including the rural/urban categorization of a village. This problem is noticeable from the finding that in a small number of cases poverty mapping has produced very different poverty estimates for two villages with very similar conditions. It shows the importance of improving the quality of the data sources, which are SUSENAS and PODES.

With regard to the FGD method, it is widely acknowledged that, despite the benefits that result from the interactive nature of FGDs, it also has some limitations. Although the FGDs in this study have been carefully planned in accordance with the objectives of this study, there are still some potential weaknesses in the discussion process. Some of the potential weaknesses that have been observed including judgments that bias towards physical accessibility of regions, difficulties in ranking similar regions that used indicators not directly related to welfare level such as security or divorce rate, and judgment based on temporary shock. There are also some potential flaws in memorizing past conditions and limited knowledge of FGD participants about community conditions in some regions. The FGD also becomes more difficult at higher levels of administration. It might be better to use FGDs at district, sub-district and village levels where the participants are more likely to have sufficient knowledge of the regions being discussed. It also seems that FGDs are more suitable for discussing current conditions than those in the past.

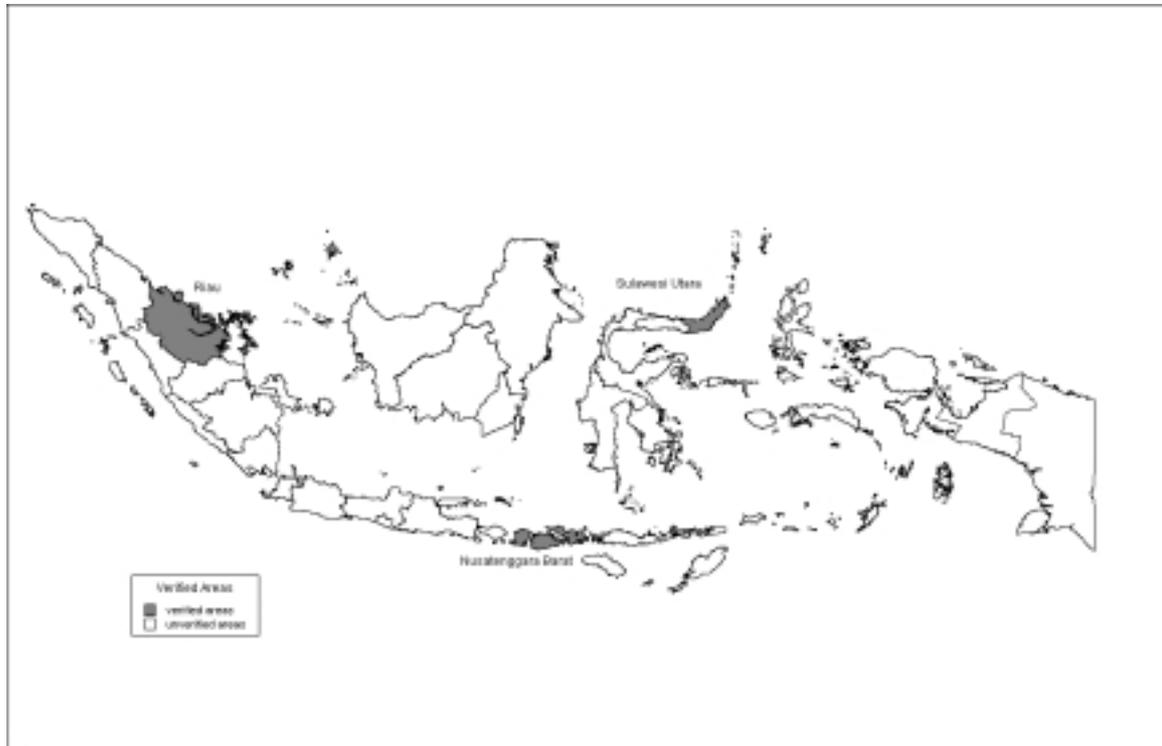
Finally, based on the field experience in conducting this study, it is highly recommended that both quantitative and qualitative approaches be combined for a more comprehensive poverty assessment. In this field verification study, the members of the study team did not know about the results of the poverty mapping when they went to the region. This was to avoid bias in making qualitative judgments. The FGDs only discussed the perspectives of the participants regarding the poverty and relative welfare conditions in the regions. So, in a sense, the qualitative and quantitative approaches were applied separately. It becomes apparent in analyzing the field verification results that it could be better if an FGD is also carried out to discuss the inconsistencies between the results from these two measures. This kind of discussion would potentially enrich the knowledge and understanding of the poverty condition of the region. Given that the relatively high standard errors of the poverty estimates at the village level in some regions has limited the ability of poverty mapping to provide reliable poverty comparisons across villages, an FGD at the sub-district level is highly recommended to sharpen the geographical targeting.

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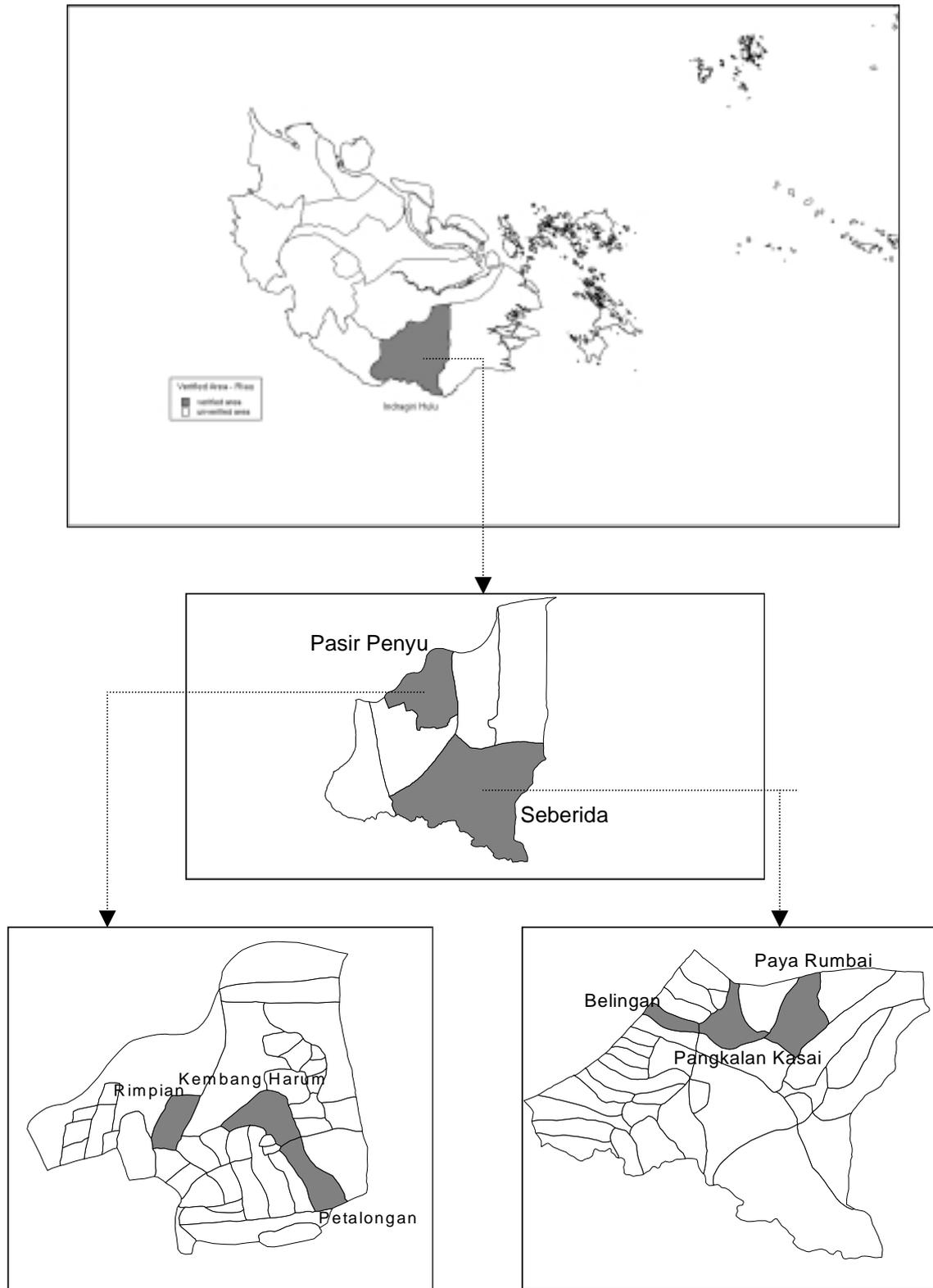
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APPENDICES

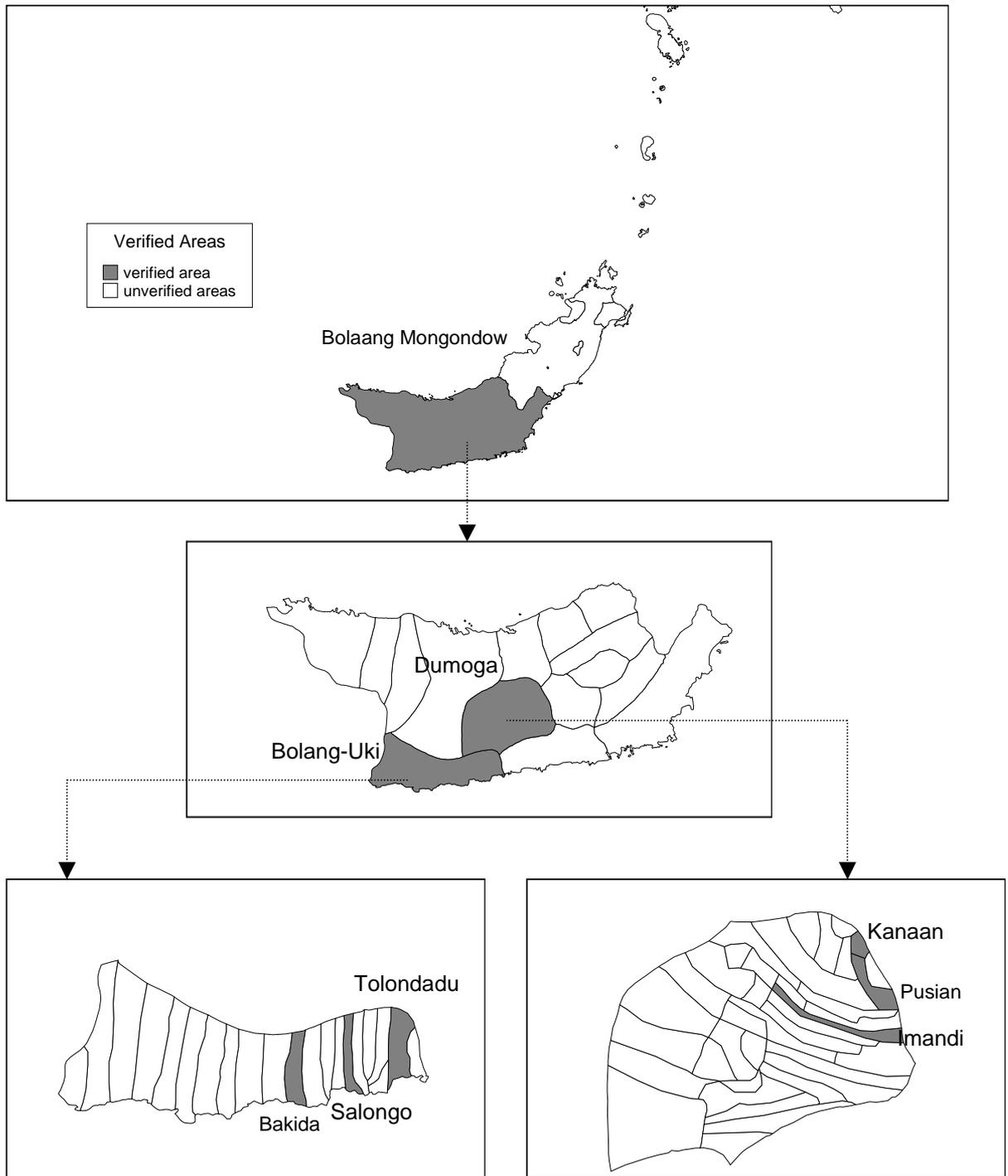
Appendix 1.
Map of the Sample Provinces



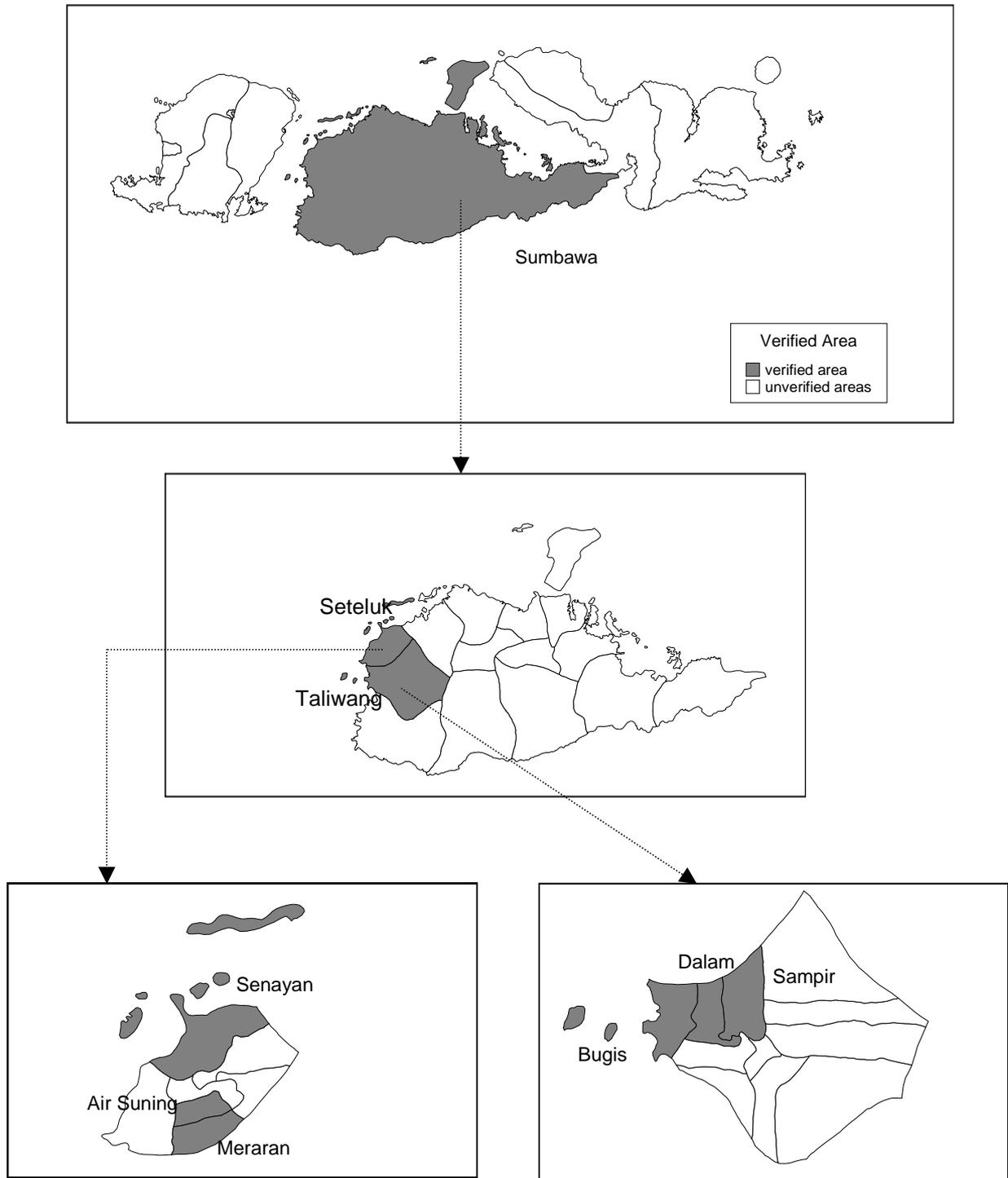
Appendix 2.
Maps of Sample Regions in Riau



Appendix 3.
Maps of Sample Regions in North Sulawesi



Appendix 4.
Maps of Sample Regions in West Nusa Tenggara



Appendix 5.
Numbers of Participants in Focus Group Discussions

Level	Location	Number of Participants		
		Total	Male	Female
Province	Riau	10	9	1
	North Sulawesi	16	12	4
	West Nusa Tenggara	8	6	2
		34	27	7
District	Indragiri Hulu	16	11	5
	Bolaang Mongondow	23	22	1
	West Sumbawa	19	19	0
		58	52	6
Sub-District	Pasir Peny	20	19	1
	Seberida	14	9	5
	East Dumoga	22	13	9
	Bolaang Uki	13	12	1
	Seteluk	18	12	6
	Taliwang	12	7	5
		99	72	27
Village	Rimpian	26	20	6
	Kembang Harum	12	7	5
	Petalongan	21	11	10
	Pangkalan Kasai	11	8	3
	Beligan	27	16	11
	Paya Rumbai	17	12	5
	Imandi	13	7	6
	Pusian	21	9	12
	Kanaan	23	14	9
	Salongo	25	14	11
	Tolondadu	20	12	8
	Bakida	21	13	8
	Meraran	22	16	6
	Air Suning	16	8	8
	Senayan	24	12	12
	Bugis	22	16	6
Dalam	18	16	2	
Sampir	14	9	5	
		353	220	133

Appendix 6.
Indicators Proposed by FGD Participants at the Province Level

Riau	North Sulawesi	West Nusa Tenggara
<u>Income and assets:</u> <ul style="list-style-type: none"> - Employment status - Income level - Capital ownership - Business performance 	<u>Occupation:</u> <ul style="list-style-type: none"> - Unemployment level - Subsistence farming - Farmers who do not own land - Lots of people collecting rattan in the forest - Traditional fishermen - No permanent job/occupation - Low income 	<u>Income and occupation:</u> <ul style="list-style-type: none"> - Household without fixed income - Working as low paid laborer - Limited job opportunities - Have no capital - Migrant workers
<u>Education:</u> <ul style="list-style-type: none"> - Free education - Children going to school 	<u>Education:</u> <ul style="list-style-type: none"> - Level of education - Number of school drop outs - Level of drop out in junior high school 	<u>Education:</u> <ul style="list-style-type: none"> - Do not obtain basic education - Narrow minded
<u>Health:</u> <ul style="list-style-type: none"> - Consume 2,200 calorie per day - Free health service - Maternal mortality - Infant mortality - Safe water facility 	<u>Health:</u> <ul style="list-style-type: none"> - Health condition of the community – Tuberculosis, diarrhea, 'kudis' - Availability of, and accessibility to, health facilities (health center, village clinic, sub health center) - Number of visits to health facilities - Number of people whose staple food is corn - Malnourished or low nutritional status - Infant and maternal mortality 	<u>Health:</u> <ul style="list-style-type: none"> - Seek treatment only at health center (<i>Puskesmas</i>) - Seek treatment to traditional healers
<u>Housing condition:</u> <ul style="list-style-type: none"> - Physical condition of houses 	<u>Housing condition:</u> <ul style="list-style-type: none"> - Physical condition of the house - Water and sanitation - Nomadic people 	<u>Housing condition:</u> <ul style="list-style-type: none"> - Houses in bad condition - Slum area - Bad sanitation - Drainage in bad condition - Houses with dirt floor - Do not own house
<u>Infrastructure:</u> <ul style="list-style-type: none"> - Not physically isolated - Access to information - Access to transportation - Access to basic services 	<u>Physical accessibility/ infrastructure:</u> <ul style="list-style-type: none"> - Road condition and availability of transportation to bring agriculture produce to market place - Accessibility to market in Gorontalo Province 	<u>Infrastructure:</u> <ul style="list-style-type: none"> - Bad road condition
	<u>Social conditions:</u> <ul style="list-style-type: none"> - Trafficking and child labor - Prostitution - Unmarried couples because the cost of getting married too expensive - Theft 	<u>Attitude and behavior:</u> <ul style="list-style-type: none"> - Low participation due to low self-esteem - Isolated from social life
<u>Ownership:</u> <ul style="list-style-type: none"> - Having enough food and clothing 	<u>Land ownership:</u> <ul style="list-style-type: none"> - Small land holdings - Land occupied by Forest Production Company (HPH) - Land ownership 	<u>Asset ownership:</u> <ul style="list-style-type: none"> - Do not own farmland - Having dry land and cultivate once a year - Do not own cattle

Appendix 7.
The Econometric Model for Poverty Mapping in Riau Province – Urban

Coefficients and standard errors from GLS model. Dependent variable: log per capita consumption		
Variable	Parameter Estimate	Standard Error
Constant	12.6931	0.5312
Household size	-0.2580	0.0223
Household size squared	0.0164	0.0022
Household living in rented house	-0.0885	0.0233
Housing facility: toilet	0.1601	0.0317
Housing facility: electricity	0.2697	0.0345
Household head is female	-0.1946	0.0346
Education level of household head: upper secondary education	0.1062	0.0203
Education level of spouse of household head: lower secondary education	-0.0534	0.0225
Working status of spouse of household head: self employed/employer	-0.0867	0.0397
Working status of spouse of household head: employee	-0.0771	0.0376
Proportion of adults who are employed	0.1542	0.0410
Proportion of children 5 years old or younger	-0.2663	0.0626
Dependency ratio	-0.1513	0.0461
Proportion of tertiary educated people aged 20 years or older	0.2738	0.0628
Topography of village: hill	0.1161	0.0825
Distance from village office to subordinating district office	-0.0017	0.0006
Distance from village office to nearest district capital	0.0012	0.0007
Common source of water for drinking/cooking of village people: piped water	0.1470	0.0701
Common income sector of village people: industry	0.0808	0.0880
Proportion of households owning telephone	0.4386	0.1422
Proportion of fertile age couple who are participating in family planning program	0.2639	0.1539
Village mean of length of years of study of adults	-0.0827	0.0368
Village mean of proportion of children 5 years old or younger	4.7810	1.6884
Village mean of dependency ratio	-1.8716	1.1072

Appendix 8.
The Econometric Model for Poverty Mapping in Riau Province – Rural

Coefficients and standard errors from GLS model. Dependent variable: log per capita consumption		
Variable	Parameter Estimate	Standard Error
Constant	12.6912	0.5385
Household size	-0.1859	0.0140
Household size squared	0.0097	0.0012
Household living in permanent house	0.0686	0.0210
Housing facility: toilet	0.0869	0.0195
Housing facility: electricity	0.1040	0.0194
Years study of household head	0.0102	0.0021
Years study of spouse of household head	-0.0026	0.0022
Occupation sector of spouse of household: Trade	0.0738	0.0330
Proportion of occupants aged less than 15 years and 65 years or older (Dependency ratio)	-0.2641	0.0336
Proportion of tertiary educated people aged 20 years or older	0.2677	0.1034
Village's geography: non coastal	0.1271	0.0702
Presence of lower secondary school	-0.0551	0.0564
Presence of cooperative	-0.1690	0.0576
Proportion of electrified houses	0.1513	0.1125
Village mean of proportion of permanent houses	0.1259	0.1018
Village mean of proportion of male	-0.9810	1.0477
Village mean of proportion of houses with toilet facility	0.0713	0.1001

Appendix 9.
The Econometric Model for Poverty Mapping in North Sulawesi Province – Urban

Coefficients and standard errors from GLS model. Dependent variable: log per capita consumption		
Variable	Parameter Estimate	Standard Error
Constant	14.4696	0.7564
Household size	-0.2122	0.0313
Household size squared	0.0116	0.0030
Household living in owned house	0.1209	0.0322
Age of spouse of household head	0.0041	0.0015
Household head is female	-0.1085	0.0601
Household head is married	-0.3319	0.0844
Education level of household head is: completed primary education	0.0545	0.0419
Education level of household head is: lower secondary education	0.1808	0.0509
Education level of household head is: upper secondary education	0.2534	0.0473
Education level of household head is: tertiary education	0.2898	0.0974
Education level of spouse of household head is: upper secondary education	0.1325	0.0405
Proportion of tertiary educated people to aged 20 years old or older	0.3613	0.1078
Population density	0.0011	0.0002
Proportion of households who have telephone in the village	-0.4655	0.2387
Village mean of proportion of agriculture household	-0.3876	0.2242
Village mean of years of study of spouse of household head	-0.0324	0.0417
Village mean of proportion of houses with toilet	0.4043	0.1729
Village mean of proportion of persons aged 6-24 who are enrolled in school	1.8057	0.6713
Village mean of dependency ratio	1.5440	0.7941
Village mean of proportion of male in household	-6.8764	1.6384

Appendix 10.**The Econometric Model for Poverty Mapping in North Sulawesi Province – Rural**

Coefficients and standard errors from GLS model. Dependent variable: log per capita consumption		
Variable	Parameter Estimate	Standard Error
Constant	12.7519	0.4828
Household size	-0.2217	0.0171
Household size squared	0.0126	0.0018
Housing facilities: toilet	0.1619	0.0175
Education level of household head: upper secondary school	0.0607	0.0237
Education level of spouse of household head: upper secondary level	0.0964	0.0278
Proportion of children 5 years old or younger	-0.1869	0.0523
Dependency ratio	-0.1332	0.0330
Proportion of tertiary educated people aged 20 years or older	0.3694	0.0748
Proportion of electrified house in the village	0.2661	0.1066
Presence of cooperative institution in the village	0.0588	0.0684
Proportion of agriculture household in the village	0.2581	0.1368
Proportion of permanent house in the village	0.1755	0.0869
Proportion of household who has TV in the village	0.6738	0.1891
Village mean of age of household head	-0.0232	0.0125
Village mean of proportion of employee workers	-0.3549	0.1552
Village mean of households living in their own house	-0.2986	0.2657
Village mean of houses with toilet facility	0.3233	0.1203

Appendix 11.**The Econometric Model for Poverty Mapping in West Nusa Tenggara Province – Urban**

Coefficients and standard errors from GLS model. Dependent variable: log per capita consumption		
Variable	Parameter Estimate	Standard Error
Constant	12.1904	0.1801
Household size	-0.4723	0.0710
Household size squared	0.0675	0.0152
Household cubed	-0.0035	0.0010
Household living in owned house	-0.0877	0.0399
Housing facilities: clean water	0.1923	0.0397
Housing facilities: toilet	0.2732	0.0386
Household head is married	0.1426	0.0402
Education level of spouse of household head: upper secondary	0.1742	0.0425
Working status of household head: Employee/salaried workers	-0.0669	0.0296
Proportion of 6-24 year olds who are enrolled in schools	0.1494	0.0346
Proportion of persons less than 15 years old and 65 years or older (Dependency ratio)	-0.3975	0.0582
Proportion of adults who are employed	0.1286	0.0474
Proportion of male	0.1562	0.0562
Proportion of tertiary educated people aged 20 years or older	0.4788	0.0910
Geography of village: non-coastal	-0.1879	0.0730
Distance of the village to other nearest district	0.0026	0.0013
Common source of drinking water for households in the village: piped water	0.0568	0.0678
Presence of small industry	0.2318	0.0870
Mean of years of study of household heads	-0.1051	0.0613
Mean years of study of adult people	0.1435	0.0779

Appendix 12.**The Econometric Model for Poverty Mapping in West Nusa Tenggara Province – Rural**

Coefficients and standard errors from GLS model. Dependent variable: log per capita consumption		
Variable	Parameter Estimate	Standard Error
Constant	10.5376	0.5614
Household size	-0.2989	0.0440
Household size squared	0.0378	0.0097
Household size cubed	-0.0018	0.0006
Household living in permanent house	0.1580	0.0153
Housing facilities: clean water	0.1686	0.0208
Education level of household head: upper secondary	0.1968	0.0279
Education level of spouse of household head: lower secondary	0.1460	0.0278
Education level of spouse of household head: upper secondary	0.1090	0.0366
Occupation sector of household head: Trade	0.1257	0.0238
Occupation sector of household head: Services	0.1439	0.0207
Working status of household head: Employee/salaried worker	-0.0614	0.0167
Working status of spouse of household head: Self employed/employer	0.0744	0.0206
Proportion of adults who are employed	0.0892	0.0777
Proportion of children 5 years of age or younger	-0.1681	0.0435
Proportion of male	0.1192	0.0325
Proportion of persons less than 15 years of age and 65 years or older (Dependency ratio)	-0.2010	0.0302
Proportion of tertiary educated people aged 20 years or older	0.3054	0.0672
Presence of vocational course in the village	-0.1492	0.0709
Geographical position of village: non-coastal	0.0608	0.0463
Proportion of households who are sending their own children/families to study in university	-3.8040	1.5116
Years of village head occupied the position	0.0046	0.0116
Presence of small industry in the village	0.0739	0.0447
Proportion of families in the village who participate in family planning program	0.1129	0.1264

Appendix 13.

Poverty Mapping Results for All Districts in Riau, North Sulawesi and West Nusa Tenggara

Province/District	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio	
			Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error
RIAU	1,047,856	4,307,940	164,787	5,705	9.92%	1.56%	1.54%	0.33%	0.38%	0.10%	0.2363	0.0084
KUANTAN SINGINGI	53,782	211,738	146,000	7,112	9.23%	2.88%	1.35%	0.60%	0.33%	0.19%	0.2112	0.0093
INDRAGIRI HULU	56,263	235,479	151,046	7,457	7.72%	2.00%	1.04%	0.35%	0.23%	0.09%	0.2098	0.0088
INDRAGIRI HILIR	121,174	504,184	129,969	6,347	16.74%	3.36%	2.67%	0.73%	0.66%	0.23%	0.2160	0.0094
PELALAWAN	34,263	138,406	144,498	14,348	11.08%	4.25%	1.74%	1.03%	0.44%	0.37%	0.2152	0.0092
SIAK	40,314	167,513	152,641	11,103	9.41%	2.85%	1.44%	0.63%	0.36%	0.21%	0.2248	0.0205
KAMPAR	104,722	441,527	152,400	7,108	6.84%	1.92%	0.90%	0.34%	0.19%	0.10%	0.2116	0.0099
ROKAN HULU	58,395	237,989	146,208	10,513	9.60%	2.68%	1.30%	0.49%	0.28%	0.13%	0.2100	0.0091
BENGKALIS	107,990	484,553	137,873	8,465	15.98%	4.17%	2.66%	0.89%	0.69%	0.27%	0.2161	0.0104
ROKAN HILIR	59,810	268,663	134,048	12,083	14.72%	4.35%	2.30%	0.92%	0.57%	0.30%	0.2100	0.0112
KEPULAUAN RIAU	57,996	235,179	196,209	13,518	7.64%	3.34%	1.24%	0.67%	0.32%	0.20%	0.2278	0.0112
KARIMUN	35,876	157,220	153,989	12,865	13.32%	5.38%	2.18%	1.18%	0.55%	0.36%	0.2167	0.0180
NATUNA	18,952	74,955	149,978	29,853	11.13%	7.52%	2.18%	2.66%	0.73%	1.34%	0.2123	0.0167
PEKAN BARU	139,515	570,245	188,598	8,904	6.18%	1.88%	0.94%	0.36%	0.23%	0.10%	0.2328	0.0093
BATAM	121,850	413,915	260,738	20,543	2.76%	2.07%	0.41%	0.43%	0.10%	0.13%	0.2573	0.0141
DUMAI	36,954	166,374	182,369	14,436	6.11%	2.88%	0.89%	0.58%	0.21%	0.18%	0.2227	0.0146
SULAWESI UTARA	515,283	1,882,618	141,820	4,222	17.27%	2.11%	3.36%	0.62%	1.01%	0.24%	0.2474	0.0106
BOLAANG MENGONDOW	106,155	413,335	118,491	4,926	24.46%	3.76%	4.62%	1.08%	1.33%	0.41%	0.2249	0.0089
MINAHASA	213,206	741,995	146,949	5,167	11.86%	2.16%	2.06%	0.59%	0.58%	0.23%	0.2315	0.0107
SANGIHE TALAUD	65,519	257,370	106,659	5,716	36.07%	5.24%	8.06%	1.83%	2.65%	0.79%	0.2365	0.0126
MANADO	95,949	339,725	188,128	7,832	5.59%	1.68%	0.97%	0.43%	0.27%	0.16%	0.2366	0.0115
BITUNG	34,454	130,193	135,328	7,635	18.56%	4.11%	3.65%	1.07%	1.13%	0.40%	0.2291	0.0145

Appendix 13. (Continued)

Province/District	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio	
			Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error
WEST NUSA TENGGARA	930,516	3,579,742	110,724	3,242	40.65%	2.45%	9.65%	0.95%	3.29%	0.44%	0.2565	0.0080
LOMBOK BARAT	165,208	636,797	104,760	4,740	43.72%	3.69%	10.73%	1.44%	3.74%	0.66%	0.2516	0.0095
LOMBOK TENGAH	202,177	739,977	105,490	3,606	39.49%	3.14%	8.60%	1.07%	2.72%	0.45%	0.2302	0.0072
LOMBOK TIMUR	260,455	961,058	106,153	4,424	42.03%	3.80%	9.91%	1.38%	3.38%	0.62%	0.2469	0.0075
SUMBAWA	64,122	252,637	119,051	12,909	38.13%	4.08%	9.07%	1.36%	3.10%	0.59%	0.2475	0.0093
DOMPU	41,733	179,660	100,343	5,838	49.61%	4.44%	12.51%	1.79%	4.39%	0.82%	0.2459	0.0087
BIMA	117,379	499,349	106,453	5,102	43.91%	3.86%	10.80%	1.50%	3.79%	0.70%	0.2535	0.0092
MATARAM	79,442	310,264	156,985	7,187	24.08%	2.47%	5.90%	0.89%	2.12%	0.41%	0.3209	0.0131

Appendix 14.
Indicators Proposed by FGD Participants at District Level

Indragiri Hulu	Bolaang Mongondow	West Sumbawa
<u>Education:</u> <ul style="list-style-type: none"> - Low education level - Low skill - High unemployment level - Low human capital - High drop-out rate 	<u>Education:</u> <ul style="list-style-type: none"> - Limited human capital in terms of education level - Proportion of population graduated from primary school 	<u>Education:</u> <ul style="list-style-type: none"> - Drop out from primary school because could not pay school fee - Low education level - Low skill
<u>Health:</u> <ul style="list-style-type: none"> - Low nutritional status - Malnourished mother and children under five years old - Low health service due to insufficient numbers of health providers - Have no money to pay health treatment - Low sanitation - Using river as toilet 	<u>Health:</u> <ul style="list-style-type: none"> - Nutritional status of the people, particularly children under five years old - Consumption pattern - Portion of expenditure for consumption - Affordability of treatment at health facility 	<u>Health:</u> <ul style="list-style-type: none"> - Have no money to seek treatment from health center, nurse or doctor - Disabled people
<u>Income:</u> <ul style="list-style-type: none"> - Limited income - Limited job opportunities - Could not fulfill food and clothing needs - Low purchasing power - Expenditure for consumption lower than saving and investment 	<u>Occupation:</u> <ul style="list-style-type: none"> - Farmers without land - Job opportunity - Unemployment level - Capital ownership - Income level - Low purchasing power - Low saving level 	<u>Income:</u> <ul style="list-style-type: none"> - Income below minimum wage - No fixed job - Trapped in loan - Use wood fire - Do not own land or have limited size of land
<u>Infrastructure:</u> <ul style="list-style-type: none"> - No electricity - Isolated region (in the forest or across the river) - Limited road and transportation facilities 	<u>Infrastructure:</u> <ul style="list-style-type: none"> - Limited access to information - Hard to reach - Limited transportation to the city 	<u>Infrastructure:</u> <ul style="list-style-type: none"> - Isolated region - Limited access to information - No school and health facility
<u>Housing condition:</u> <ul style="list-style-type: none"> - Bad physical condition of house - Small houses without ventilation - Houses with single room 	<u>Housing condition:</u> <ul style="list-style-type: none"> - Physical condition of the house - House with dirt floor - Sanitation facility 	<u>Housing condition:</u> <ul style="list-style-type: none"> - Houses without sanitation facility - Very small house - House with roof made from leaves - Dirt floor
<u>Social condition:</u> <ul style="list-style-type: none"> - Low working ethos - Low motivation - Limited social relations, both formal and informal - Religious beliefs influence views about poverty 		<u>Food and Clothing:</u> <ul style="list-style-type: none"> - Eat rice only once a day - Only have one piece of cloth - Could not afford to fulfill daily needs
<u>External condition:</u> <ul style="list-style-type: none"> - Prone to flood that affect the welfare level of the people - High and unstable price of consumption goods 	<u>Typology of the region:</u> <ul style="list-style-type: none"> - Natural resources - Food crops potential - Limited farmland ownership - Coastal area or plain area or city 	

Appendix 15.
Poverty Mapping Results for All Sub-districts in the Sample Districts

District/Sub-district	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio		
			Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	
INDRAGIRI HULU													
PERANAP	6,079	25,621	143,661	8,707	7.40%	3.11%	0.93%	0.47%	0.19%	0.11%	0.1995	0.0118	
SEBERIDA	11,867	48,293	135,613	6,164	10.19%	2.87%	1.38%	0.51%	0.30%	0.14%	0.1978	0.0115	
KELAYANG	6,817	27,561	131,942	8,140	13.80%	4.58%	2.02%	0.90%	0.47%	0.25%	0.2094	0.0127	
PASIR PENYU	14,977	62,461	156,227	10,248	6.98%	2.99%	0.95%	0.52%	0.22%	0.14%	0.2087	0.0124	
RENGAT BARAT	6,046	26,171	153,037	10,161	5.62%	2.46%	0.69%	0.39%	0.14%	0.10%	0.2029	0.0148	
RENGAT	10,477	45,372	174,968	16,943	3.82%	2.52%	0.47%	0.39%	0.10%	0.10%	0.2047	0.0129	
BOLAANG MENGONDOW													
BOLANG-UKI	6,763	28,038	91,422	5,307	46.98%	7.22%	10.29%	2.58%	3.23%	1.08%	0.2036	0.0169	
DUMOGA	16,565	62,189	133,559	7,589	13.93%	3.43%	2.20%	0.69%	0.55%	0.21%	0.2168	0.0112	
PINOLOSIAN	4,728	18,894	95,291	6,529	41.35%	7.09%	8.72%	2.01%	2.70%	0.77%	0.1995	0.0158	
KOTABUNAN	7,350	29,242	118,403	9,987	20.04%	8.01%	3.15%	1.72%	0.77%	0.52%	0.1877	0.0135	
MODAYAG	7,105	27,547	124,891	9,554	14.89%	7.16%	2.06%	1.36%	0.45%	0.37%	0.1940	0.0177	
LOLAYAN	8,022	32,455	127,504	8,655	13.85%	4.72%	1.90%	0.86%	0.41%	0.23%	0.1975	0.0106	
KOTAMOBAGU	14,954	58,611	128,238	8,539	22.96%	5.82%	4.84%	1.78%	1.55%	0.72%	0.2301	0.0142	
PASSI	9,340	34,479	125,525	7,290	16.70%	4.16%	2.57%	0.87%	0.62%	0.26%	0.2062	0.0133	
POIGAR	4,172	15,141	140,933	11,259	10.76%	4.78%	1.51%	0.86%	0.34%	0.23%	0.2147	0.0193	
BOLAANG	5,760	22,785	105,173	7,795	31.98%	8.31%	6.24%	3.27%	1.80%	1.45%	0.1905	0.0127	
LOLAK	4,745	18,418	112,192	7,891	37.17%	6.88%	8.04%	2.31%	2.51%	0.98%	0.2697	0.0346	
SANGTOMBOLANG	3,881	14,806	113,880	7,776	21.24%	6.02%	3.29%	1.23%	0.79%	0.37%	0.1868	0.0127	
BINTAUNA	3,005	11,485	121,363	7,960	18.28%	5.85%	2.82%	1.26%	0.68%	0.38%	0.1992	0.0177	
BOLANG ITANG	5,208	21,906	94,819	6,854	44.90%	8.99%	9.26%	2.84%	2.74%	1.07%	0.2090	0.0155	
K AidIPANG	4,557	17,339	96,201	6,069	39.94%	7.71%	7.99%	2.38%	2.35%	0.90%	0.1937	0.0135	

Appendix 15. (Continued)

District/Sub-district	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio		
			Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	
WEST SUMBAWA (before administrative sub-division of the sub-districts)													
JEREWEH	5,016	17,418	110,452	13,614	35.98%	10.57%	8.00%	3.21%	2.58%	1.24%	0.2358	0.0131	
TALIWANG	11,166	43,532	161,287	28,830	20.32%	6.54%	4.12%	1.70%	1.26%	0.62%	0.2528	0.0132	
SETELUK	4,904	20,538	93,259	7,156	50.03%	7.64%	12.30%	3.08%	4.23%	1.43%	0.2235	0.0166	

Appendix 16.
Indicators Proposed by FGD Participants at the Sub-district Level

Pasir Penyu	Seberida	East Dumoga	Bolaang Uki	Seteluk	Taliwang
<u>Housing condition:</u> - Good sanitation - Good house (with separated rooms) - Permanent house - Healthy house	<u>Housing condition:</u> - Good housing condition - Permanent house	<u>Housing condition:</u> - Sanitation facility - Dirt floor - Physical condition of house - Simple houses	<u>Housing condition</u> - Physical condition of houses	<u>Housing condition:</u> - Roof from grass - No sanitation - Broken drainage - Do not have house	<u>Housing condition:</u> - Roof made of bamboo, coconut leaves or grass - House built on other people's land - Houses made of wood and bamboo - Dirt floor
	<u>Infrastructure:</u> - Electricity	<u>Transportation:</u> - Very limited transportation access - Limited farm roads	<u>Transportation:</u> - Availability of inland and sea transport	<u>Infrastructure:</u> - Lack of information infrastructure - Isolated - No electricity	<u>Infrastructure:</u> - Isolated region - No sanitation facilities
		<u>Security and Order:</u> - Intensity of land dispute - Low law and order and lots of communal violence - Unfair distribution of irrigation induces violence among farmers	<u>Social condition:</u> - Number of people going to hajj - Number of children - Low motivation (lazy) - Community behavior		

Appendix 16. (Continued)

Pasir Penyu	Seberida	East Dumoga	Bolaang Uki	Seteluk	Taliwang
<u>Health:</u> <ul style="list-style-type: none"> - Good health (physically and mentally) - Place to seek treatment (the poor go to traditional healer, the wealthier go to specialist doctor) 	<u>Health:</u> <ul style="list-style-type: none"> - Low maternal mortality - Nutritional status - House sanitation - Place to seek treatment (doctor or traditional healer) 	<u>Health:</u> <ul style="list-style-type: none"> - Low nutritional status among children under five years old - Awareness to use contraception - Limited health service facilities - Under- age marriage - Social security card holders - Birth delivery assisted by traditional healers 	<u>Health:</u> <ul style="list-style-type: none"> - Limited health facility - Number of health providers 	<u>Health:</u> <ul style="list-style-type: none"> - Low nutritional status - Lack of knowledge about healthy lifestyles - Unhealthy lifestyles 	<u>Health:</u> <ul style="list-style-type: none"> - Could not afford to seek treatment at health center - Having children with low nutritional status - Could not afford to buy milk for children
<u>Education:</u> <ul style="list-style-type: none"> - Can afford to pay school fees - Sufficient education level 	<u>Education:</u> <ul style="list-style-type: none"> - Children's minimum education level of junior high school - Can send children to university - Can exploit natural resource - Have high motivation to get high education 	<u>Education:</u> <ul style="list-style-type: none"> - Drop out rate among school-age children - Scholarship assistance - Low creativity - Capability to send children to school 	<u>Education:</u> <ul style="list-style-type: none"> - Education level - Drop out from primary and secondary schools - Number of children who did not graduate from junior and senior high schools - Number of children going to school - Graduated from university 	<u>Education:</u> <ul style="list-style-type: none"> - Lack of awareness and capability to support children until graduated from primary school 	<u>Education:</u> <ul style="list-style-type: none"> - Could not afford to send children to primary school - Drop out from junior high school due to economic reason

Pasir Penyu	Seberida	East Dumoga	Bolaang Uki	Seteluk	Taliwang
<u>Income:</u> - Fixed income of more than Rp1.2 million per month - Income higher than expenditure	<u>Income:</u> - Enough to fulfill basic needs - Can save to go on hajj pilgrimage	<u>Occupation:</u> - Unemployment - Farmer status (own land, rent, working in other's land) - Unskilled workers - Non-permanent job - Income below Rp15,000 per day - Lack of working capital - Dependency on land lord/big traders	<u>Income/Occupation:</u> - Low income - Low job opportunities - Unemployment level - Growth of small stalls - Traditional fishermen - No working capital	<u>Occupation and income:</u> - Income less than Rp10,000 per day - No permanent job - Farm labor	<u>Income/Occupation:</u> - No permanent job/income - No skill to work
<u>Food and Clothes:</u> - Have enough food and clothes - Eat with good menu		<u>Daily live condition:</u> - Eat only 2 times a day - Consumptive behavior - Recipients of rice for the poor	<u>Natural Resource:</u> - Natural resource potential - Forest degradation - Farmland condition		<u>Daily live condition</u> - Could not afford to eat 2 times a day - Buy cloth once a year - Lack of sufficient food
<u>Assets ownership:</u> - Have hand phone, telephone or internet - Have vehicle (car) - Have palm oil plantation, minimum 2 ha. - Have cattle - Have sufficient home appliances	<u>Assets ownership:</u> - Have electronic tools - Have vehicles (car, motorbike), bought cash or credit - Have farmland - Have cattle - Have enough clothes			<u>Asset ownership:</u> - Do not have farmland	<u>Asset ownership:</u> - Rice field less than 0.25 ha - Do not own land - Have no capital - Do not have productive asset

Appendix 17.

Poverty Mapping Results for All Villages in the Sample Sub-districts

Sub-district/Village	Urban/Rural	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio	
				Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error
KECAMATAN PASIR PENYU													
PERKEBUNAN SUNGAI PARIT	Rural	224	897	134,758	28,004	8.42%	12.49%	1.09%	1.99%	0.24%	0.49%	0.133	0.009
PASIR BONGKAL	Rural	237	965	157,006	26,878	1.77%	4.60%	0.16%	0.50%	0.03%	0.09%	0.141	0.009
MORONG	Rural	231	1,080	135,242	24,857	7.15%	12.49%	0.83%	1.84%	0.16%	0.40%	0.138	0.009
PASIR KELAMPAIAN	Rural	114	549	138,087	28,373	6.54%	12.65%	0.77%	1.92%	0.15%	0.44%	0.130	0.010
KUALA LALA	Rural	112	552	133,038	25,887	7.95%	14.24%	0.91%	2.16%	0.17%	0.48%	0.127	0.009
PASIR BATU MANDI	Rural	59	284	119,006	26,726	17.69%	20.85%	2.47%	4.24%	0.55%	1.25%	0.124	0.012
PASIR SELABAU	Rural	75	311	139,228	22,956	6.88%	10.71%	0.81%	1.69%	0.15%	0.38%	0.141	0.012
PASIR KERANJI	Rural	92	480	132,787	23,323	5.87%	10.92%	0.52%	1.17%	0.07%	0.20%	0.115	0.011
AIR MOLEK I	Urban	1,261	4,987	174,686	27,219	6.75%	5.76%	1.03%	1.01%	0.25%	0.28%	0.195	0.008
CANDI REJO	Urban	752	3,313	165,661	28,344	7.67%	6.98%	1.12%	1.20%	0.27%	0.32%	0.178	0.009
AIR MOLEK II	Urban	349	1,484	180,013	24,813	4.34%	4.28%	0.56%	0.67%	0.12%	0.17%	0.184	0.010
LEMBAH DUSUN GADING	Rural	70	301	136,816	27,870	9.77%	14.67%	1.24%	2.56%	0.26%	0.68%	0.140	0.013
PETALONGAN	Rural	220	1,029	118,749	24,374	16.27%	17.92%	2.17%	3.11%	0.46%	0.78%	0.138	0.010
KEMBANG HARUM	Urban	1,534	6,237	166,088	28,037	7.97%	8.56%	1.20%	1.57%	0.29%	0.44%	0.184	0.008
BATU GAJAH	Rural	358	1,375	210,628	44,144	0.82%	1.39%	0.07%	0.14%	0.01%	0.02%	0.180	0.009
JATIREJO	Rural	438	1,682	160,322	32,751	4.94%	7.06%	0.55%	0.93%	0.10%	0.19%	0.190	0.009
KELAWAT	Rural	283	1,230	180,576	33,660	1.36%	2.87%	0.15%	0.36%	0.03%	0.07%	0.157	0.010
SUNGAI LALA	Rural	322	1,367	146,285	27,037	7.97%	8.79%	0.98%	1.39%	0.20%	0.34%	0.180	0.009
PERKEBUNAN SUNGAI LALA	Rural	444	1,913	152,114	30,228	5.40%	7.31%	0.63%	0.92%	0.13%	0.19%	0.169	0.009
RIMPIAN	Rural	283	1,228	164,576	33,111	2.36%	4.20%	0.23%	0.50%	0.04%	0.10%	0.157	0.008
PONDOK GELUGUR	Rural	79	268	150,345	24,270	3.67%	7.00%	0.37%	0.93%	0.06%	0.18%	0.141	0.013

Appendix 17. (Continued)

Sub-district/Village	Urban/Rural	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio	
				Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error
KECAMATAN PASIR PENYU													
SEI SEBERAS HILIR	Rural	305	1,238	134,793	28,719	9.16%	13.06%	1.15%	2.21%	0.24%	0.55%	0.147	0.009
KULIM JAYA	Rural	695	2,852	135,750	24,679	8.05%	11.74%	0.98%	2.01%	0.20%	0.53%	0.153	0.007
SEI BERAS-BERAS	Rural	437	1,851	135,843	24,546	7.63%	9.21%	0.84%	1.22%	0.15%	0.25%	0.152	0.008
TASIK JUANG	Rural	234	967	135,048	25,549	10.00%	11.90%	1.31%	1.86%	0.27%	0.43%	0.159	0.009
PONTIAN MEKAR	Rural	415	1,640	118,966	20,542	15.34%	15.38%	2.02%	2.64%	0.42%	0.67%	0.147	0.007
AIR PUTIH	Rural	759	2,960	150,062	29,345	5.51%	8.15%	0.65%	1.10%	0.13%	0.24%	0.161	0.009
LUBUK BATU TINGGAL	Rural	618	2,459	152,619	29,759	5.15%	7.68%	0.62%	1.12%	0.12%	0.25%	0.164	0.008
KECAMATAN SEBERIDA													
BUKIT MERANTI	Rural	452	1,876	116,711	22,649	18.29%	18.22%	2.77%	3.47%	0.65%	0.95%	0.145	0.007
PAYARUMBAI	Rural	185	855	112,754	23,081	24.73%	22.91%	4.08%	5.27%	1.01%	1.61%	0.161	0.011
KELESA	Rural	525	1,903	158,044	29,560	4.52%	7.21%	0.52%	1.05%	0.10%	0.25%	0.178	0.008
BELIGAN	Rural	509	2,160	129,498	22,586	9.57%	11.67%	1.14%	2.01%	0.22%	0.52%	0.151	0.007
SERASAM	Rural	330	1,276	154,749	33,215	5.11%	7.68%	0.63%	1.09%	0.13%	0.25%	0.158	0.010
PETALA BUMI	Rural	605	2,121	142,867	27,514	6.87%	9.02%	0.83%	1.36%	0.16%	0.31%	0.161	0.008
TITIAN RESAK	Rural	747	3,177	150,576	27,979	5.10%	8.94%	0.65%	1.41%	0.14%	0.33%	0.159	0.006
SIBABAT	Rural	327	1,288	151,891	26,444	4.77%	5.86%	0.54%	0.75%	0.10%	0.15%	0.165	0.010
PANGKALAN KASAI	Rural	979	4,162	143,071	23,364	5.20%	7.32%	0.54%	0.89%	0.09%	0.16%	0.161	0.005
BULUH RAMPAI	Rural	780	3,176	160,981	28,174	2.89%	3.65%	0.33%	0.45%	0.06%	0.09%	0.164	0.008

Appendix 17. (Continued)

Sub-district/Village	Urban/Rural	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio	
				Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error
KECAMATAN EAST DUMOGA													
TONOM	Rural	251	683	195,938	34,755	1.31%	2.12%	0.18%	0.33%	0.04%	0.09%	0.155	0.015
MOGOYUNGGUNG	Rural	672	2,349	134,369	23,674	8.75%	10.59%	1.14%	1.70%	0.24%	0.41%	0.160	0.008
IMANDI	Rural	950	3,639	145,394	22,479	5.10%	6.48%	0.57%	0.88%	0.11%	0.19%	0.167	0.008
DUMOGA	Rural	1,063	4,140	120,549	20,909	15.29%	14.10%	2.04%	2.41%	0.43%	0.59%	0.156	0.007
MODOMANG	Rural	219	797	116,123	20,241	20.76%	16.32%	3.23%	3.44%	0.78%	1.01%	0.165	0.009
PINONBATUAN	Rural	607	1,998	147,480	25,412	5.42%	6.92%	0.61%	0.91%	0.11%	0.19%	0.166	0.007
KEMBANG MERTHA	Rural	500	1,917	124,977	23,818	13.29%	15.79%	1.79%	2.64%	0.38%	0.65%	0.153	0.008
SINIYUNG	Rural	464	1,682	141,334	23,334	5.93%	7.06%	0.70%	1.10%	0.14%	0.27%	0.155	0.008
BUMBUNGON	Rural	293	1,023	180,312	31,442	1.00%	1.67%	0.08%	0.18%	0.01%	0.05%	0.154	0.009
MOTOTABIAN	Rural	137	474	143,001	23,746	7.86%	8.64%	1.06%	1.53%	0.23%	0.44%	0.169	0.013
PONOMPIAAN	Rural	434	1,573	166,250	27,360	1.83%	3.43%	0.17%	0.38%	0.03%	0.07%	0.163	0.008
SERASI	Rural	282	972	144,129	23,557	5.82%	7.92%	0.72%	1.26%	0.15%	0.31%	0.153	0.012
KANAAN	Rural	250	866	135,718	26,691	9.85%	10.55%	1.24%	1.56%	0.25%	0.36%	0.155	0.014
PUSIAN	Rural	669	2,486	95,936	18,845	40.62%	20.96%	8.76%	6.20%	2.77%	2.36%	0.173	0.010
TORUAKAT	Rural	522	2,051	109,205	19,040	25.92%	19.19%	4.06%	4.17%	0.97%	1.28%	0.168	0.012

Appendix 17. (Continued)

Sub-district/Village	Urban/Rural	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio	
				Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error
KECAMATAN BOLAANG UKI													
PANGIA	Rural	253	1,028	88,889	17,293	48.00%	23.25%	10.13%	7.31%	3.04%	2.82%	0.149	0.009
BAKIDA	Rural	263	1,116	81,384	14,111	58.66%	22.06%	13.41%	8.43%	4.32%	3.63%	0.149	0.010
DUMINANGA	Rural	207	861	73,346	12,897	70.56%	19.64%	18.74%	9.42%	6.64%	4.43%	0.151	0.011
BINIHA	Rural	282	1,084	78,785	13,171	63.22%	19.49%	15.63%	8.08%	5.32%	3.57%	0.164	0.010
TANGAGAH	Rural	331	1,233	90,205	17,092	46.51%	24.14%	9.35%	7.42%	2.71%	2.78%	0.148	0.009
SALONGO	Rural	441	1,784	115,694	21,811	19.33%	19.59%	2.73%	3.91%	0.60%	1.07%	0.156	0.008
TOLUAYA	Rural	337	1,305	106,624	18,757	28.29%	21.00%	4.82%	4.82%	1.26%	1.50%	0.163	0.010
MOLIBAGU	Rural	296	1,295	113,468	19,541	22.48%	16.87%	3.44%	3.45%	0.80%	0.96%	0.164	0.008
POPODU	Rural	388	1,625	127,454	21,599	14.11%	13.12%	1.91%	2.25%	0.42%	0.57%	0.177	0.010
SONDANA	Rural	360	1,508	86,222	14,027	50.19%	22.93%	9.68%	6.87%	2.68%	2.45%	0.134	0.008
TOLONDADU	Rural	532	2,164	88,344	16,372	48.78%	22.98%	10.40%	7.86%	3.21%	3.29%	0.155	0.008
TABILAA	Rural	181	910	73,070	13,707	70.85%	20.40%	19.08%	9.80%	6.79%	4.65%	0.148	0.010

Appendix 17. (Continued)

Sub-district/Village	Urban/Rural	Number of Households	Number of Persons	Monthly Per Capita Expenditure (Rp)		Poverty Headcount		Poverty Gap		Poverty Severity		Gini Ratio	
				Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error	Point Estimate	Standard Error
KECAMATAN SETELUK													
MERARAN	Rural	598	2,466	110,728	18,828	29.37%	17.28%	5.23%	4.43%	1.41%	1.51%	0.178	0.007
AIRSUNING	Rural	559	2,386	100,855	15,000	38.97%	17.21%	7.57%	4.91%	2.16%	1.75%	0.181	0.006
REMPE	Rural	634	2,681	90,397	14,811	51.98%	17.99%	12.07%	6.21%	3.93%	2.51%	0.185	0.008
SETELUK ATAS	Rural	375	1,580	102,350	16,916	38.49%	18.08%	7.65%	5.45%	2.22%	2.04%	0.184	0.009
SETELUK TENGAH	Rural	760	3,079	110,147	20,916	35.45%	17.07%	7.81%	5.40%	2.50%	2.14%	0.215	0.008
SENAYAN	Rural	1,366	5,351	86,971	14,425	56.68%	16.47%	14.91%	7.36%	5.39%	3.49%	0.204	0.007
MANTAR	Rural	612	2,995	71,614	12,272	75.95%	16.06%	21.72%	9.46%	8.08%	4.79%	0.159	0.007
KECAMATAN TALIWANG													
LABUAN LALAR	Rural	1,031	4,041	92,946	15,194	50.25%	16.56%	12.56%	6.49%	4.38%	2.88%	0.209	0.007
MURA	Rural	559	2,303	119,930	19,049	24.92%	13.55%	4.67%	3.45%	1.31%	1.19%	0.199	0.009
KALIMANTONG	Rural	465	1,634	112,105	18,921	29.99%	17.28%	5.62%	4.58%	1.57%	1.56%	0.188	0.009
MENALA	Urban	1,303	5,336	171,686	29,249	13.48%	8.46%	2.70%	1.96%	0.87%	0.67%	0.264	0.011
KUANG	Urban	1,338	5,200	235,627	54,646	5.39%	7.29%	0.95%	1.85%	0.27%	0.69%	0.271	0.013
BUGIS	Urban	966	3,655	245,935	55,927	3.84%	4.97%	0.66%	0.96%	0.19%	0.30%	0.270	0.012
DALAM	Urban	1,892	7,308	218,945	55,336	7.09%	9.52%	1.28%	2.21%	0.37%	0.75%	0.270	0.013
SAMPIR	Rural	1,204	4,816	118,632	18,666	24.46%	14.66%	4.32%	3.40%	1.17%	1.08%	0.195	0.007

Appendix 18.
Characteristics of Each Welfare Class in the Sample Villages

Petalongan, Kecamatan Pasir Penyu, Kabupaten Indragiri Hulu

Characteristics	Wealth Class		
	Poor (<i>Miskin</i>)	Better-Off (<i>Menengah – Hidup Pas-Pas an</i>)	Rich (<i>Sederhana – Agak mencukupi</i>)
Cattle Ownership		<ul style="list-style-type: none"> - Have 1 or 2 cows - Have less than 4 goats - Have a couple of chickens 	<ul style="list-style-type: none"> - Have around 4 cows
Farmland ownership	<ul style="list-style-type: none"> - Have small plot around 10 m. x 10 m near the house 	<ul style="list-style-type: none"> - Have farmland less than 1 ha - Have coconut trees in the garden for daily consumption - Have several banana trees 	<ul style="list-style-type: none"> - Some have palm oil plants 1 or 2 ha
House	<ul style="list-style-type: none"> - House with wall made of wood - Wood floor - Roof made from grass - Going to the river for bathing - Lighting from torch - Cooking using fire wood 	<ul style="list-style-type: none"> - House with wall made of wood - Wood floor - The main pillar of the house made of stone/brick - Roof made from corrugated iron sheet - Lighting using <i>petromax</i> - Cooking using kerosene and fire wood 	<ul style="list-style-type: none"> - House with wall made of brick - Porcelain flooring - Staircase from concrete - Roof made from corrugated iron sheet - Have toilet in the house - Lighting using diesel oil - Cooking using kerosene or gas - Have TV, parabola
Occupation	<ul style="list-style-type: none"> - Fishermen - Women collecting fish from the river - Men collecting rubber sap - Cultivating vegetables in small plots of 10 x 10 square meters 	<ul style="list-style-type: none"> - Fishermen as main occupation - Farmer - Vegetable trader 	<ul style="list-style-type: none"> - Various permanent jobs such as civil servants, employee in private companies. - Farmers - Raise cattle - Traders (store, gravel) - Traders
Vehicle	<ul style="list-style-type: none"> - Have small boat for transportation - Children going to school by foot 	<ul style="list-style-type: none"> - Have bicycle (to transport farm produce to the market) - Have 2 small boats (one to bring children to school and another one to make a living) - Children going to school by bicycle 	<ul style="list-style-type: none"> - Have 1 motorbike - Children going to school by motorbike - Have boat to collect sand and gravel from the river
Clothing	<ul style="list-style-type: none"> - Wear everyday until torn 		<ul style="list-style-type: none"> - Change clothes everyday
Health	<ul style="list-style-type: none"> - Have health card - Seek treatment from traditional healer or hospital 	<ul style="list-style-type: none"> - Seek treatment from traditional healer or hospital 	<ul style="list-style-type: none"> - Seek treatment from traditional healer or hospital - Better nutritional status

Appendix 18. (Continued)

Rimpian, Kecamatan Pasir Penyu, Kabupaten Indragiri Hulu

Characteristics	Wealth Class	
	Poor (<i>Miskin</i>)	Better Off (<i>Sedang</i>)
Education	<ul style="list-style-type: none"> - Children drop out from primary school because they were asked to collect rubber sap - Low motivation of the parent to send children to school - Many school-age children do not go to school 	<ul style="list-style-type: none"> - Children going to school until junior and senior high schools
House	<ul style="list-style-type: none"> - Roof made of palm leaves - Wall made of planks - Bathing and toilet in the river - Lighting using oil lamp 	<ul style="list-style-type: none"> - House made of concrete brick - Wall made of brick, and only the back part of the house has a wooden wall - Roof made of corrugated iron sheet - Well in the house - Toilet in the house - Electric lighting
Occupation	<ul style="list-style-type: none"> - Collecting rubber sap from unproductive rubber trees - Rubber plantation managed traditionally - Cultivate vegetables in the garden - Non-permanent jobs - Wasting time fishing to improve food nutrition 	<ul style="list-style-type: none"> - Have permanent job (employee in state owned company or private business) - Around 25% of the 100 households have permanent jobs
Income	<ul style="list-style-type: none"> - Not enough to cover daily necessities (Rp1 million per year) 	<ul style="list-style-type: none"> - More than Rp500,000 /month
Health	<ul style="list-style-type: none"> - Low nutritional status - Dirty housing complex - Live in swamp area 	<ul style="list-style-type: none"> - Good nutritional status
Shopping	<ul style="list-style-type: none"> - Buy daily necessities from traditional market (Sie Lala market or neighboring village on Saturday) - Buy in credit from local shop 	<ul style="list-style-type: none"> - Often shopping at the supermarket "serba 6000 rupiah" in Air Molek
Culture	<ul style="list-style-type: none"> - Consumptive 	<ul style="list-style-type: none"> - Productive
Asset ownership	<ul style="list-style-type: none"> - Do not have saving - Only have bicycle - Have small boat but in poor condition - Farm animal: only 1-3 chickens 	<ul style="list-style-type: none"> - Have saving (rural saving in BRI) - Have 2 cows - Have motorbike (although credit) - Have TV, radio & tape recorder, freezer - Have 1 plot of palm oil plantation (2ha) or 2 ha rubber plants

Appendix 18. (Continued)

Kembang Harum, Kecamatan Pasir Penyu, Kabupaten Indragiri Hulu

Characteristic	Wealth Class			
	Very Poor (<i>Fakir</i>)	Poor (<i>Miskin</i>)	Better Off (<i>Menengah</i>)	Rich (<i>Rich</i>)
House	<ul style="list-style-type: none"> - Do not have house (sleep in security post, mosque or in other people's house) 	<ul style="list-style-type: none"> - Roof made of corrugated iron sheet - Simple toilet in the house - Build house in steps (up to 7 years) - Electricity connection through neighbor 	<ul style="list-style-type: none"> - Permanent house - Simple house - Medium size - Roof made of corrugated iron sheet - Healthy house with ventilation - Toilet in the house - Good well - Electricity from PLN, plus diesel 	<ul style="list-style-type: none"> - Very good house - Multi-storied building - Complete sets of household appliances (freezer, VCD, TV) - Electricity from PLN
Health	<ul style="list-style-type: none"> - Not in good health - Do not care about health condition 	<ul style="list-style-type: none"> - Seek treatment at <i>Puskemas</i> or traditional healer 	<ul style="list-style-type: none"> - In good health - Seek treatment from private doctor in the village capital or Ibnu Sina 	<ul style="list-style-type: none"> - In good health - Seek treatment from private doctor or in Pekanbaru (Awal Bross Hospital)
Occupation/ Income	<ul style="list-style-type: none"> - Do not have income or job - Do not have money 	<ul style="list-style-type: none"> - Low income - Work for other people (in workshop, daily paid labor, carpenter, washer) - Income less than daily needs 	<ul style="list-style-type: none"> - Income can cover daily needs - Have permanent job (civil servant, employee in private business) - Have permanent business (cultivate their own farmland) 	<ul style="list-style-type: none"> - Permanent job with high income (director, supervisor, office head) - Traders, businessman (groceries, electronic tools) - Own business (contractor) - Some become member of legislative
Education	<ul style="list-style-type: none"> - Do not go to school - Do not graduate from primary school 	<ul style="list-style-type: none"> - Children have low education level (primary school) 	<ul style="list-style-type: none"> - Children attend school, at least senior high school, some going to university 	<ul style="list-style-type: none"> - Mostly, children going to university - Send children to study in another location (Pekanbaru or Java) - Pocket money for children up to Rp20,000/day for junior high school
Food	<ul style="list-style-type: none"> - Undernourished - Eat from other people's gift 	<ul style="list-style-type: none"> - Sufficient 	<ul style="list-style-type: none"> - Sufficient with good nutrition 	<ul style="list-style-type: none"> - More than sufficient
Clothing	<ul style="list-style-type: none"> - Do not have clothes - Never buy clothes - Torn clothes 	<ul style="list-style-type: none"> - Simple 	<ul style="list-style-type: none"> - Sufficient 	<ul style="list-style-type: none"> - Good clothes - Have jewelry
Asset ownership		<ul style="list-style-type: none"> - Have a plot of farmland (0.5 – 2 ha) but have no time to cultivate because they have to work for other people to earn money 	<ul style="list-style-type: none"> - Have motorbike 	<ul style="list-style-type: none"> - Have large size of land, usually for shops, or rented - Have palm oil plantation, minimum 5 plots or 10 ha - Have cars, hand phone and savings in the bank - Have houses for rental
Live style				<ul style="list-style-type: none"> - Shopping in Pekanbaru on the weekend or holiday - Often going for recreation

Appendix 18. (Continued)

Beligan, Kecamatan Seberida, Kabupaten Indragiri Hulu

Characteristic	Wealth Class	
	Poor (<i>Miskin</i>)	Better Off (<i>Pra-Sejahtera</i>)
Health	<ul style="list-style-type: none"> - Seek treatment from traditional healer - Often sick - Low awareness of healthy lifestyles (afraid to go to doctor) - Do not have money to pay for medical treatment - Low nutritional status 	<ul style="list-style-type: none"> - Seek treatment at health post, nurse, or hospital in Pematang Reba if having serious illness
Occupation/Income	<ul style="list-style-type: none"> - Do not have permanent job (collect sap or woods) - Work as sap collector in other people's land using profit sharing system - Sell the product to big trader or collector 	<ul style="list-style-type: none"> - Working as daily paid labor in PT Mega - Have income around Rp600 thousand per month - Collect sap from their own farm
Education	<ul style="list-style-type: none"> - Children going to school maximum only primary school - Lots of drop outs - Do not have money to send children to school 	<ul style="list-style-type: none"> - Minimum graduate from primary school, some can go to junior or senior high school
House	<ul style="list-style-type: none"> - Low quality wooden house - Location far from economic center - Bad quality house without window - Roof made of palm leaves - Wall made of flattened bamboo - Floor made of bamboo - House pillars from woods - Bathing and toilet in the river 	<ul style="list-style-type: none"> - Size of the house 4x5 square meters with windows - Roof made of corrugated iron sheets - Part of the wall made of planks and stone floor - Toilet in or outside the house - Drinking water from well
Asset ownership	<ul style="list-style-type: none"> - Have only 2-3 chickens - Have only 0.5 ha farmland - Lighting using oil lamp - Do not have praying place 	<ul style="list-style-type: none"> - Have cattle - Have rubber plant around 1 ha - Have motorbike (although buying on credit) - Lighting using <i>petromax</i> - Some have diesel - Have praying place

Appendix 18. (Continued)

Paya Rumbai, Kecamatan Seberida, Kabupaten Indragiri Hulu

Characteristic	Wealth Class		
	Poor (<i>Kurang Mampu</i>)	Better Off (<i>Menengah</i>)	Rich (<i>Mampu</i>)
Occupation	<ul style="list-style-type: none"> - Rice farming (lots of rice fields not ready for cultivation) - Fishermen - Farm labor, industrial labor 	<ul style="list-style-type: none"> - Small traders (own small shops) - Marketing of product not sufficient 	<ul style="list-style-type: none"> - Big traders of woods or fish, buying from fishermen/farmers to be sold in the market at the city - Profit can be invested again to build office and buy hand phone
Asset ownership	<ul style="list-style-type: none"> - Do not have palm oil plot - Having small plot of rice field, around 0.3 – 0.5 ha - Irrigation canals still under construction - Do not have bicycle or motorbike 	<ul style="list-style-type: none"> - Have motorbike (although buying on credit) - Have baskets to bring palm oil - Have palm oil plot maximum 2 ha 	<ul style="list-style-type: none"> - Have palm oil plot, maximum 10 ha - Have motorbike - Have cars - Have office - Have hand phone
Access to capital	<ul style="list-style-type: none"> - Often borrow money from big traders 	<ul style="list-style-type: none"> - Borrow money from big trader - Limited working capital 	<ul style="list-style-type: none"> - Have savings in the bank - Have big working capital
Education	<ul style="list-style-type: none"> - Lots of the children drop out from primary school 	<ul style="list-style-type: none"> - Education level of the children minimum junior high school, some going to senior high school 	<ul style="list-style-type: none"> - Children going to university
House	<ul style="list-style-type: none"> - Poor housing condition - Located in the remote area - Do not have bedrooms and kitchen - Crowded - Do not have household utensils 	<ul style="list-style-type: none"> - Very simple house - Located near main road but not yet asphalted - Simple household utensils - Cooking using kerosene and fire woods 	<ul style="list-style-type: none"> - Luxury house - Located on the main road - Have complete sets of household utensils - Cooking using gas
Infrastructure	<ul style="list-style-type: none"> - Small roads to rice field - Lighting using torch 	<ul style="list-style-type: none"> - Rather small road, not yet asphalted - Lighting: diesel with capacity 800 watt 	<ul style="list-style-type: none"> - Main road - Lighting: own diesel machine, minimum 30 k watt, and can distribute electricity to other people
Health	<ul style="list-style-type: none"> - Seek free treatment at <i>Puskesmas</i> - Seek treatment from traditional healer - Self treatment using local knowledge - Do not have money to pay medical treatment - Have little attention to sanitation 	<ul style="list-style-type: none"> - Easy to get health facility - Good nutritional status - Seek treatment at <i>Puskesmas</i> - Have clean environment 	<ul style="list-style-type: none"> - In good health - Good nutritional status - Seek treatment from doctor
Education	<ul style="list-style-type: none"> - Children do not attend primary school - Some do not graduate from primary school 	<ul style="list-style-type: none"> - Minimum graduated from high school (<i>SLTA</i>), some can go to university 	<ul style="list-style-type: none"> - Minimum graduated from high school (<i>SLTA</i>), some can go to university - Capable of sending children to study in Kabupaten even Java.

Appendix 18. (Continued)

Pangkalan Kasai, Kecamatan Seberida, Kabupaten Indragiri Hulu

Characteristic	Wealth Class		
	Poor (<i>Miskin</i>)	Better Off (<i>Sederhana</i>)	Rich (<i>Kaya</i>)
Occupation	<ul style="list-style-type: none"> - Do not have permanent job (fishing, collect wood) - Work for other people - Nomad cultivating 	<ul style="list-style-type: none"> - Cultivate rubber or palm oil - Most of the land is individually owned - Employ family member - Employee in private business (palm oil plant), minimum graduated from high school (SMA) 	<ul style="list-style-type: none"> - Have rented house (around 5 houses) - Private business: (cultivating their own farmland, employ poor people as labor force) - Have 'private market'; rented kiosk on private land)
Land Ownership	<ul style="list-style-type: none"> - Do not have farmland 	<ul style="list-style-type: none"> - Have rubber plantation (minimum 2 ha) - Have palm oil plantation (minimum 2 ha) 	<ul style="list-style-type: none"> - Have rubber plantation (around 10-15 ha) - Have palm oil plantation (around 10 ha-60 ha)
Income	<ul style="list-style-type: none"> - Do not have permanent income - Sometimes have adequate income , sometimes don't 	<ul style="list-style-type: none"> - Have permanent income - Can fulfill daily needs 	<ul style="list-style-type: none"> - Income is more than enough (enable saving, buying new plot)
House	<ul style="list-style-type: none"> - House located on Cinaku river bank - Living in shack - Wall made of flattened bamboo - Have wood staircase to anticipate flood - Roof made from palm leaves - Living nomadic lifestyles - Inadequate sanitation - Bathing and toilet in the river - Lighting using torch 	<ul style="list-style-type: none"> - House located near the road (close to transportation facilities) - Permanent house - Have beautiful and clean house - Have smaller size house compare to the rich - Have wood fence to keep the house clean - Electric lighting (PLN or genset) 	<ul style="list-style-type: none"> - House located in strategic position, close to market area - House is permanent and beautiful - Have concrete iron gate - Walls made of bricks - Toilet inside the house - Electric lighting (PLN or genset)
Asset Ownerships	<ul style="list-style-type: none"> - Have small boat (<i>sampan</i>) 	<ul style="list-style-type: none"> - Have savings in the bank (BRI, post office) - Have electronic devices (TV, parabola, buy on credit) - Have motorcycle (credit) 	<ul style="list-style-type: none"> - Household electronic utensils are complete - Have private vehicles, buy in cash (car, motorcycle around 1-3) - Have rented small shops/house/<i>ruko</i>, maximum 5, rented price is around Rp3million/year.
Cattle Ownership	<ul style="list-style-type: none"> - Have chicken farm 	<ul style="list-style-type: none"> - Have 2 or more cows - Have couple of chickens - Cattle are individually managed 	<ul style="list-style-type: none"> - Have minimum 10 cows, managed by others

Appendix 18. (Continued)

Imandi, Kecamatan East Dumoga, Kabupaten Bolaang Mongondow

Characteristics	Wealth Class		
	Poor (<i>Miskin</i>)	Better off (<i>Menengah</i>)	Rich (<i>Mampu</i>)
House	<ul style="list-style-type: none"> - House made of bamboo - Roof made of palm leaves - Nomadic living - Bathing and toilet in the river 	<ul style="list-style-type: none"> - House is semi-permanent - Floor made of cement - Walls made of stone/wood - Roof made of corrugated iron sheets - Bathroom is outside the house 	<ul style="list-style-type: none"> - House is permanent - Floor made of ceramics - Walls made of concrete stone - Roof made of corrugated iron sheets - Bathroom is inside the house. - Traditional house made of polished wood
Vehicle Ownerships		Motorcycle	Car
Occupation	<ul style="list-style-type: none"> - Unskilled labor (mining, construction) - Income is minimum, only to fulfill daily needs 	<ul style="list-style-type: none"> - Civil servants - Farmer (own land) - Landless farmer - Fixed income 	<ul style="list-style-type: none"> - Businessman (contractor, have shops) - Farmer - Entrepreneur - Fixed income
Education	<ul style="list-style-type: none"> - Children go until primary school 	<ul style="list-style-type: none"> - Children go until high school (SLTP/SMU) 	<ul style="list-style-type: none"> - Children go until high school (SLTP/SMU) even to universities
Medical Facilities	Seek treatment from health cadre (<i>Mantri Kesehatan</i>) or buy medicine in local shops	Seek treatment at <i>puskesmas</i> , doctor or doctor in Kotamubago city	Seek treatment from specialist (doctor) in Kotamubago, Manado, Jakarta, Singapore
Land Ownership, Agriculture, Farming	Do not own cattle	<ul style="list-style-type: none"> - Own cattle - 2 cows or pigs - Have farmland around 2 ha 	<ul style="list-style-type: none"> - Have plenty of cattle - Have more than 10 cows - Have more than 2 ha farm land

Appendix 18. (Continued)

Kanaan, Kecamatan East Dumoga, Kabupaten Bolaang Mongondow

Characteristic	Wealth Class		
	Poor (<i>Lemah</i>)	Better Off (<i>Mendekati Sedang</i>)	Rich (<i>Sedang</i>)
House	<ul style="list-style-type: none"> - Do not have house - Dirt floor - Wall made of bamboo - Do not have bathrooms (use neighbor's facilities) 	<ul style="list-style-type: none"> - Simple/plain house - Floor made of wood - Wall made of wood - Emergency toilet 	<ul style="list-style-type: none"> - House is semi permanent - Floor made of concrete stone - Walls made of wood/stone - Have bathroom and closet
Vehicle Ownerships			Motorcycle (buy on credit)
Occupation	<ul style="list-style-type: none"> - Lack of employment opportunity - Do not have farmland - Do not have permanent occupation (10 days in a month) - Farmer, but lack of facilities 	<ul style="list-style-type: none"> - Farmer - Do not have working capital - Do not have permanent occupation (15-20 days in a month) 	<ul style="list-style-type: none"> - Farmer - Small businessman (own local shops) - Have working capital
Electronics (TV) Ownerships	Do not own TV	Have TV/radio	Have TV and Parabola
Cattle Ownership	Do not own cattle	Have only couple of chicken	Have cattle; pig, chicken and cows
Income	<ul style="list-style-type: none"> - Have income around Rp 150,000-200,000/month - Only to cover daily needs 	Have income around Rp 300,000 – 700,000/month	Have income more than Rp 900,000/month
Education	<ul style="list-style-type: none"> - Lack of education - Children drop out from primary school 	Children go to school until junior high school (SLTP)	Children go until senior high school (SMU)
Health	<ul style="list-style-type: none"> - Medicine bought in local shops - Traditional healer 	<ul style="list-style-type: none"> - Go to <i>puskesmas</i> (if have money) - Medicine bought in local shops 	<ul style="list-style-type: none"> - Seek treatment from doctor or <i>puskesmas</i>
Nutrition	<ul style="list-style-type: none"> - Have meal 2 times a day - Children do not drink milk 	<ul style="list-style-type: none"> - Have meal 2 times a day - Children have milk occasionally 	<ul style="list-style-type: none"> - Have meal 3 times a day - Children drink milk
Clothing	Wear used clothes	Wear used clothes but still relatively good	New

Appendix 18. (Continued)

Pusian, Kecamatan East Dumoga, Kabupaten Bolaang Mongondow

Characteristic	Wealth Class			
	Rich (<i>Atas</i>)	Better Off (<i>Menengah</i>)	Poor (<i>Lemah</i>)	Very Poor (<i>Terbelakang</i>)
House	<ul style="list-style-type: none"> - Permanent house - Wall made of stone/steel frame 	<ul style="list-style-type: none"> - Semi permanent - Wall made of wood or stone with wood frame 	<ul style="list-style-type: none"> - Dirt floor - Wall made of bamboo - Roof made of palm leaves 	<ul style="list-style-type: none"> - Dirt floor - Wall made of bamboo - Roof made of palm leaves - House built on rented land
Transportation Ownership	Car	Motorbike		
Occupation	<ul style="list-style-type: none"> - Businessman - Own rice mill 	<ul style="list-style-type: none"> - Have permanent occupation - Farmer - Own local shops (Small business) 	<ul style="list-style-type: none"> - Landless farmer - Unskilled labor 	Daily (landless) farmer, hard to find a job because of laziness
Land Ownerships	Have farmland and ricefield more than 10 ha	Have farmland or ricefield more than 5 ha	Have ricefield less than 1 ha	Do not have farmland
Education	<ul style="list-style-type: none"> - Minimum graduated from junior high school (SLTP) - Have education more than SLTA 	Minimum SLTP	Graduated from primary school (SD)	Did not finish primary school (SD)
Household Utensils	<ul style="list-style-type: none"> - Complete household utensils - TV - Some kitchen utensils use electricity 	<ul style="list-style-type: none"> - Complete household utensils - Some kitchen utensils use electricity 	<ul style="list-style-type: none"> - Household utensils minimum - Bed made of bamboo without mattress - Have simple chair 	<ul style="list-style-type: none"> - Household utensils (including bed) made of bamboo
Toilet	Have toilet	Have toilet	Do not have toilet (use river)	Do not have toilet (use river)
Medical Facilities (Health)	<ul style="list-style-type: none"> - Seek treatment from doctor - Puskesmas (village health center) - Traditional healer 	<ul style="list-style-type: none"> - Seek treatment from doctor - Puskesmas (village health center) - Traditional healer 	<ul style="list-style-type: none"> - Seek treatment from traditional healer - Puskesmas (village health center) 	<ul style="list-style-type: none"> - Seek treatment from traditional healer
Social Environment	<ul style="list-style-type: none"> - Have wide social relations - Widely known by society 	<ul style="list-style-type: none"> - Have wide social relations - Widely known by societ 	Lack of social relations	Limited social relations

Appendix 18. (Continued)

Salongo, Kecamatan Bolaang Uki, Kabupaten Bolaang Mongondow

Characteristic	Wealth Class		
	Rich (<i>Bos</i>)	Better Off (<i>Sederhana</i>)	Poor (<i>Susah</i>)
House	<ul style="list-style-type: none"> - Luxurious house - Wall made of concrete stone - Steel frame - Ceramics floor - Roof made of corrugated iron sheets 	<ul style="list-style-type: none"> - Semi permanent house - Wall with wood frame - Floor made of cement - Roof made of corrugated iron sheets 	<ul style="list-style-type: none"> - Do not have house in the village - House made of bamboo in garden
Occupation	<ul style="list-style-type: none"> - Businessman - Have several workers - Have rice field, farmland around 3 – 5 ha 	<ul style="list-style-type: none"> - Have farmland around 1 – 2 ha - Fisherman - Farmer - Civil Servants 	<ul style="list-style-type: none"> - Unskilled labor - Landless farmer
Education	Have higher education; bachelor (Sarjana/SMU)	Have education until high school (SMU)	Can not afford to continue to higher education (maximum SMP)
Health (Medical treatment)	Seek treatment from specialist (doctor / <i>puskesmas</i>)	Seek treatment at <i>puskesmas</i>	Seek treatment from traditional healer
Clothing	Buy in supermarket (in Cabo)	Buy in Cabo	Limited, used clothes given by other people
Social condition	<ul style="list-style-type: none"> - Able to help people who are less fortunate - Able to give donation to village - Able to send poor children to school 	Give minimum donation	Receive assistance

Appendix 18. (Continued)

Bakida, Kecamatan Bolaang Uki, Kabupaten Bolaang Mongondow

Characteristic	Wealth Class			
	Rich (Kaya)	Better Off (Sederhana)	Poor (Miskin)	Very Poor (Melarat)
House	<ul style="list-style-type: none"> - House is permanent - Roof made of tile or corrugated iron sheets - Floor made of ceramics/tile - Have TV, VCD, Refrigerator, Parabola - Have sofa 	<ul style="list-style-type: none"> - House is semi permanent - The main pillar of the house is made of wood - Wall made of brick - Cement floor - Roof made of corrugated iron sheets or palm leaves - Do not have electronic devices 	<ul style="list-style-type: none"> - House made of bamboo - Dirt floor - Roof made of palm leaves - The main pillar of the house made of beam of wood - Have separate bedroom and dining room 	<ul style="list-style-type: none"> - Have pillar made of round trunk - Do not have separate bedroom and dining room - Size of the bamboo house 4x5 square meters
Education	Have education until university	Have education until primary and senior high school (SMP)	Children drop out from primary school	Children are abandoned
Occupation	<ul style="list-style-type: none"> - Traders - Civil servants - Have rice mills - Have plenty of clove plants and coconut tree - Have unirrigated agricultural field 	<ul style="list-style-type: none"> - Income is barely enough - Production from unirrigated agricultural field is inadequate - Fisherman with motor boat 	<ul style="list-style-type: none"> - Only plant chili (<i>rica</i>) - Landless farmer working for the rich - Fishermen with wood boat with oar 	<ul style="list-style-type: none"> - Landless farmer - Daily paid labor
Transportation	Have car	Have bicycle	Do not have means of transportation	Do not have means of transportation
Clothes	Have fine, beautiful clothes	Have a plain, modest clothes	Wear used clothes	Use torn clothes
Food	Have a good quality rice	Dolog rice; medium quality	Have rice plus corn	Consume corn, cassava, banana

Appendix 18. (Continued)

Tolondadu, Kecamatan Bolaang Uki, Kabupaten Bolaang Mongondow

Characteristic	Wealth Class			
	Rich (<i>Kaya</i>)	Better Off (<i>Sederhana</i>)	Poor (<i>Miskin</i>)	Very Poor (<i>Fakir Miskin</i>)
House	<ul style="list-style-type: none"> - Luxurious house - Concrete floor - Roof made of tile or corrugated iron sheets - Brick walls - Have Parabola, TV 	<ul style="list-style-type: none"> - Have house with concrete, cement floor - Roof made of corrugated iron sheets - Brick walls - Have TV, Parabola 	<ul style="list-style-type: none"> - Simple house - Dirt floor - Wall made of bamboo - Roof made of bamboo - Furniture made of rattan 	<ul style="list-style-type: none"> - Live in shacks in other's plot - Wall made of leaves or tree bark - Roof made of coconut leaves - Living in other people's house
Income	<ul style="list-style-type: none"> - Have business assets - Income is around Rp 2 million/month 	<ul style="list-style-type: none"> - Have working assets - Income is around Rp1million/month 	<ul style="list-style-type: none"> - Do not have working assets - Income is around Rp 250,000/month 	<ul style="list-style-type: none"> - Low paid labor - Income is Rp50,000/month
Education	Have education until university	Have education until senior high school (SLTA)	Mostly go to primary school, few go to senior high school (SLTP)	Children do not attend school
Clothing	<ul style="list-style-type: none"> - Neat - Have high quality 	<ul style="list-style-type: none"> - Neat and decent, but simple/modest 	<ul style="list-style-type: none"> - Clean - Cheap 	Ragged clothes
Transportation	Own car	<ul style="list-style-type: none"> - Have motorbike, - Bicycle - Have oxcart (<i>roda sapi</i>) 	Do not have means of transportation	Do not have means of transportation
Medical Facilities (Health)	Seek treatment in Kotamobagu/ Manado	Seek treatment in Kotamobagu/ Molibagu	<ul style="list-style-type: none"> - Have health card - Seek treatment at <i>puskesmas</i>, or sub health center (<i>pustu</i>) 	Seek treatment from traditional healer
Social Relations	Have a wide social relation (in the village and in the city)	Have relation with the rich, poor and the very poor	Lack of/have limited social relations (feel inferior)	Felt isolated

Appendix 18. (Continued)

Meraran, Kecamatan Seteluk, Kabupaten West Sumbawa

Characteristic	Wealth Class			
	Very Poor (<i>Rara Kepret</i>)	Poor (<i>Rara</i>)	Better Off (<i>Tepang-tepang</i>)	Rich (<i>Sugih</i>)
House	<ul style="list-style-type: none"> - Living nomadic lifestyles - Bad physical condition of house (wall made of bamboo, roof made of grass) - Sleeping on rug made of leaves - Bathing and washing in the river or other people's well 	<ul style="list-style-type: none"> - House made of wood and bamboo - Sleeping on rugs - Do not have well 	<ul style="list-style-type: none"> - Semi permanent house - Have electricity - Have TV - Well inside house - Roof made of tile - Toilet inside house 	<ul style="list-style-type: none"> - Permanent house made of concrete or bricks - Multi-storied building - Complete household utensils
Education	Children do not finish primary school	Able to send children to junior high school (SMP)	Able to send children to senior high school (SMA)	Children go until university
Land Ownership	Do not have farmland	Do not have farmland	Have 2 plot rice field (25 are)	Have rice field 2-4 ha
Cattle Ownership	Do not own cattle	Do not own cattle	Have 2 buffaloes	Have more than 50 buffaloes
Food and Cloth	<ul style="list-style-type: none"> - Asking for food from neighbor - Wear torn clothes - Living dependent to other people 	<ul style="list-style-type: none"> - Have meals 2 times a day - Have simple/modest clothes 	<ul style="list-style-type: none"> - Eat rice with enough side dish - Food crops only enough for one year 	<ul style="list-style-type: none"> - Have sufficient food - Drink mineral water
Health	Seeking treatment from traditional healer	Seek treatment at village health center (<i>polindes</i>) asking for poor certificate (<i>surat miskin</i>)	Seek treatment at <i>puskesmas</i> , doctor	Seek treatment at doctor/ <i>puskesmas</i> /hospital
Occupation	Low paid labor (washing other people's clothes)	<ul style="list-style-type: none"> - Fisherman - Farmer - Carpenter - Daily labor - Do not have permanent job - Some children are migrant workers overseas (Arab) 	<ul style="list-style-type: none"> - Farmer - Civil servants - Teachers - Migrant workers with enough income for one month 	<ul style="list-style-type: none"> - Businessman - Migrant workers - Have shops - Modern farmer (equipped with tractor)
Transportation facilities	Do not have means of transportation	Do not have means of transportation	Have motor bike	Have motorbike, car
Saving	Do not have savings	Do not have savings	Have savings around Rp 1-2 million	<ul style="list-style-type: none"> - Have savings more than 20 million - Have plenty of jewelry

Appendix 18. (Continued)

Senayan, Kecamatan Seteluk, Kabupaten West Sumbawa

Characteristic	Wealth Class		
	Poor (<i>Rara</i>)	Better Off (<i>Tepang Balong</i>)	Rich (<i>Sugih</i>)
House Condition	<ul style="list-style-type: none"> - Decrepit shacks - Located in the mountain - Roof made of coconut leaves 	<ul style="list-style-type: none"> - Wall made of bamboo - Roof made of coconut leaves - Electricity from neighbor - Have well 	<ul style="list-style-type: none"> - Two story house with concrete stone - Have springbed mattress - Have housekeeper
Land Ownership	Do not have farmland	Have 1 plot rice fields (2 are)	<ul style="list-style-type: none"> - Have 7 ha coconut plant - Have 5 ha rice fields
Occupation	<ul style="list-style-type: none"> - Do not have permanent job - Collecting woods 	<ul style="list-style-type: none"> - Farmer (owner) and as landless farmer at the same time 	<ul style="list-style-type: none"> - Cattle trader - Coconut plant businessman
Food and Clothing	<ul style="list-style-type: none"> - Have one meal a day - Asking for clothing from neighbor 	<ul style="list-style-type: none"> - Buy clothes two times a year - Have barely enough food 	Have enough clothes, to be given to the poor
Education	Could not finish primary school because the location is too far	Children graduated from primary school can go to high school (SMP) with recommendation letter	Children can go until university
Health	Seek treatment from traditional healer	Seek treatment from traditional healer	Seek treatment from doctor
Cattle Ownership	Do not own cattle	<ul style="list-style-type: none"> - Have two chickens - Keeping and managing other people's cattle 	Have around 50 buffaloes and cows
Savings	Do not have savings	Do not have savings	Have saving in the bank (as much as hundreds of million)

Appendix 18. (Continued)

Air Suning, Kecamatan Seteluk, Kabupaten West Sumbawa

Characteristic	Wealth Class		
	Poor (<i>Rara Kepret</i>)	Better Off (<i>Rara</i>)	Rich (<i>Sugih</i>)
House condition	Live in shacks made of bamboo	<ul style="list-style-type: none"> - Wall made of wood - Have glass window - Roof made of corrugated iron sheets - Permanent house - Have electricity - Have well inside house 	<ul style="list-style-type: none"> - Wall made of concrete stone/bricks - Have garage - Have small plot for cattle - Have electricity - Have complete household utensils
Cattle Ownership	Do not have cattle or maximum two chickens	Have 4 cows	Have hundreds of cows or buffaloes
Occupation	Do not have permanent job (selling fire wood, landless farmer)	<ul style="list-style-type: none"> - Teachers - Have members of family as migrant workers or work in private company 	<ul style="list-style-type: none"> - Modern farmer - Trading food crops and cattle
Education	Do not finish primary school	Children go until high school (SMP/ SMA)	Able to send children to university
Health	Seek alternative treatment or traditional healer	Seek treatment at <i>puskesmas</i> or midwife (<i>bidan</i>)	Seek treatment to hospital or private doctor
Food and clothes	<ul style="list-style-type: none"> - Eat corn rice less than two times a day - Do not have side dish - Have simple clothes 	Have healthy food	<ul style="list-style-type: none"> - Eat nutritious and healthy food - Have nice clothes
Land Ownership	Do not have farmland	Have 1 ha land which produce 2 ton	Have 2-5 ha cultivated land
Transportation	Do not have means of transportation	Have horse-drawn buggy (<i>dokar/cidomo</i>) dan motorbike as source of income	<ul style="list-style-type: none"> - Often go for picnic with their own car. - Have motorbike

Appendix 18. (Continued)

Sampir, Kecamatan Taliwang, Kabupaten West Sumbawa

Characteristic	Wealth Classification		
	Poor (<i>Rara</i>)	Better Off (<i>Tepang Balong</i>)	Rich (<i>Sugih</i>)
House condition	<ul style="list-style-type: none"> - House made of bamboo - Do not have well 	<ul style="list-style-type: none"> - House made of wood - Roof made of tile 	<ul style="list-style-type: none"> - House made of concrete stone - Floor made of ceramics
Education	Children drop out from primary school	Able to send children to high school	Able to send children to university
Occupation	Do not have permanent job (landless farmer, labor, construction)	<ul style="list-style-type: none"> - Farmer - Fisherman - Small traders 	<ul style="list-style-type: none"> - Cattle traders - Big scale traders - Have their own businesses
Food and Clothes	<ul style="list-style-type: none"> - Have barely enough food, only for daily consumption - Do not change clothes regularly 	Have meals two times a day with sufficient menu	Have complete menu
Cattle Ownership	Do not have cattle	Have couple of buffaloes to plow the field	Have around 30 cows and buffaloes
Health	Seek treatment from traditional healer	Seek treatment from <i>puskesmas</i>	Seek treatment from hospital or private doctors
Savings	Do not have savings	Have savings in the bank (Rp 1-2 million)	Have savings in the bank (hundreds millions)

Appendix 18. (Continued)

Bugis, Kecamatan Taliwang, Kabupaten West Sumbawa

Characteristics	Wealth Class			
	Very Poor (Rara Kepret)	Poor (Rara)	Better Off (Tepang-tepang)	Rich (Sugih)
House	<ul style="list-style-type: none"> - House built on other people's land - Do not have bathroom - Floor and staircase made of bamboo - Sleep on rug - Do not have electricity 	<ul style="list-style-type: none"> - Stage house - Wall made of bamboo - Roof made of local tile - Bamboo's well - Light from kerosene lantern, - Toilet and bathroom made of bamboo 	<ul style="list-style-type: none"> - Wall made of cement - Roof made of tile - Have cement fence - Have pump well - Have electricity - Have motorbike, TV and refrigerator 	<ul style="list-style-type: none"> - Two story house with shops on the first floor - Have truck for business - Have car - Have housekeeper
Land Ownership	Do not have farmland	Only have small plot of land (25 are)	Have rice field (1-2 ha) and small plot of land around house	<ul style="list-style-type: none"> - Have land around 5-10 ha - Have backyard around 10 are
Clothes and Food	<ul style="list-style-type: none"> - Eat cassava occasionally - Wear torn clothes - Have only one meal per day without side dish 	<ul style="list-style-type: none"> - Have hardly enough food - Use second hand clothes 	<ul style="list-style-type: none"> - Buy new clothes 3 times a year - Have healthy food/meals 3 times a day 	<ul style="list-style-type: none"> - Have healthy and nutritional meals. - Changes clothing twice a day - Able to buy clothes more than Rp 50,000 per piece.
Household Utensils	Do not have household utensils	Do not have TV because do not have electricity	Have TV and refrigerator	Have complete household utensils (AC, washing machine, TV, fridge and parabola)
Education	Children do not go to school	<ul style="list-style-type: none"> - School fee is covered by other people. - Asking for (state of poor) recommendation to send children to school 	Children go until senior high school (SMA)	Children go until university
Health	<ul style="list-style-type: none"> - Children are often sick - Malnourished children - Seek treatment from traditional healer 	<ul style="list-style-type: none"> - Do not know about family planning program - Seek treatment from traditional healer 	Seek treatment from <i>puskesmas</i> or private doctor	Seek treatment from hospital /private doctor
Cattle Ownership	Have two chickens	Have around 10 chickens and ducks	Have cows, buffaloes and chickens	Have hundreds of buffaloes and cows
Occupation	<ul style="list-style-type: none"> - Landless farmer - Do not have permanent job 	Children working as migrant workers	<ul style="list-style-type: none"> - Civil servants - Farmer (own land) 	<ul style="list-style-type: none"> - Businessman - Trading
Savings	Do not have savings	Do not have savings	Have savings around Rp 1-2 million	Have savings of thousand millions rupiah

Appendix 18. (Continued)

Dalam, Kecamatan Taliwang, Kabupaten West Sumbawa

Characteristic	Wealth Class			
	Very Poor (<i>Rara Kepret</i>)	Poor (<i>Rara</i>)	Better-Off (<i>Menengah</i>)	Rich (<i>Sugih</i>)
House condition	<ul style="list-style-type: none"> - Roof made of coconut leaves - Built house on other people's land - Dirty environment - Do not have household utensils 	<ul style="list-style-type: none"> - Have stage house - Roof made of bamboo (<i>santek</i>) - Have electricity 	<ul style="list-style-type: none"> - House made of concrete - Clean house - Almost complete household utensils (no washing machine) 	<ul style="list-style-type: none"> - Multi-storied and permanent building - Have wide backyard. - Roof made of Bali's tile (<i>pejaten</i>) - Have car and motorbike - Have complete household utensils
Education	Children drop out from primary school	Children finished primary school	Children can go to high school	Children can go to university
Clothes and Food	Use donated clothing	<ul style="list-style-type: none"> - Eat corn-rice as staple food - Simple side dish - Buy clothes once a year 	<ul style="list-style-type: none"> - Have enough nutrition in the food - Buy clothes 2-3 times a year 	<ul style="list-style-type: none"> - Buy clothes every month - Eat meat and nutritious food everyday
Health	Seek treatment from traditional healer	Seek treatment from traditional healer or health cadre (<i>malenears</i>)	Seek treatment at <i>puskesmas</i> or doctor	Seek treatment from doctor
Occupation	<ul style="list-style-type: none"> - Do not have permanent job - Beggar 	Landless farmer	<ul style="list-style-type: none"> - Civil servants - Small traders 	<ul style="list-style-type: none"> - Traders - Businessman
Cattle Ownership	Do not own cattle	Have 2-3 chickens	Have 2 buffaloes	Have more than 125 cows/buffaloes
Land Ownership	Do not have farmland	Do not have farmland	Have rice field around 50 are/1 ha-2 ha	Have plots more than 5 ha
Savings	Do not have savings	Do not have savings	<ul style="list-style-type: none"> - Income enough for one month - Have savings around 1-2 million 	Savings can reach 1 billion rupiah

Appendix 19.

Summary of the Results from the Wealth Classification Exercise with Local Community at the Village Level

Province – District	Sub-district	Village	Urban/Rural	Administrative Status	Year	Welfare Class				Notes
						Rich	Better Off	Poor	Very Poor	
Riau - Indragiri Hulu	Pasir Penyu	Petalongan	R	Desa	2000	6%	39%	55%		Welfare level improves because of better price of rubber, new employment opportunities, palm oil start to produce and flooding less frequent.
					2004	16%	63%	21%		
		Rimpian	R	Desa	2000		57%	43%		Welfare level improves because palm oil and rubber plantations start to produce, success in raising cattle, better price of rubber, and more palm oil industries.
					2004		67%	33%		
		Kembang Harum	U	Kelurahan	2000	3%	36%	57%	4%	Welfare level improves because more land was cleared for plantation and it starts to produce, more hotels and shops, and transportation is better.
				2004	14%	57%	28%	1%		
	Seberida	Beligan	R	Desa	2000		45%	55%		Welfare level improves because of better price of rubber.
					2004		64%	36%		
		Paya Rumbai	R	Desa	2000	7%	33%	60%		Welfare level of the better-off declines because the natural resources have deteriorated since the opening of palm oil plant. Only a few local people work in the plant because of low education level.
					2004	9%	27%	64%		
Pangkapan Kasai	R	Kelurahan	2000	9%	27%	64%		Welfare level improves because more people plant palm oil and it starts to produce.		
			2004	13%	29%	58%				
North Sulawesi - Bolaang Mongondow	East Dumoga	Imandi	R	Kelurahan	2000	4%	50%	46%		Welfare level improves because more people seek their fortune in gold mining exploration. It improves income but the income is unstable.
					2004	8%	49%	43%		
		Kanaan	R	Desa	2000		2%	10%	88%	Welfare level improves because the tree crops start to produce and the transportation is better.
					2004		5%	28%	67%	
		Pusian	R	Desa	2000	0.5%	30.0%	59.5%	10.0%	
				2004	0.5%	43.5%	48.0%	8.0%	Welfare level improves because of better transportation, new job opportunities as motorbike taxi drivers and employees in small scale industries, and better rice production technology.	
	Bolaang Uki	Salongo	R	Desa	2000	1%	60%	39%		Welfare level improves because of better transportation infrastructure, construction of dam, and better marketing of fish and agricultural produce.
					2004	3%	86%	11%		
		Bakida	R	Desa	2000	3%	15%	30%	52%	Welfare level almost stagnant although there are some improvements in irrigation system and provision of safe water.
					2004	3%	17%	32%	48%	
Tolondadu		R	Desa	2000	2%	20%	60%	18%	In general welfare level improves because of better transportation, but the welfare of some of the poor deteriorates because the size of farmland declined while new job opportunities are limited.	
			2004	5%	30%	45%	20%			

Appendix 19. (Continued)

Province - District	Sub-district	Village	Urban/Rural	Administrative Status	Year	Welfare Class				Notes
						Rich	Better Off	Poor	Very Poor	
West Nusa Tenggara - West Sumbawa	Seteluk	Meraran	R	Desa	2000	2%	32%	55%	11%	Welfare level improves because more people become migrant workers in Saudi Arabia, better agriculture technology and more credits to buy motorbike so that they can be motorbike taxi drivers.
					2004	3%	55%	36%	6%	
		Senayan	R	Desa	2000	9%	27%	64%		Welfare level improves because of new job opportunities as migrant workers overseas, laborer in PT Newmont Mining, and as traders.
					2004	11%	28%	61%		
		Air Suning	R	Desa	2000	28%	64%	8%		Welfare level declines because the sedimentation in the small dam has reduced the water for their rice field so that they can only plant once a year. The rice productivity declined and the price of rice also declined. The new job opportunities as migrant workers overseas and as employees in PT Newmont Mining and lots of assistance in the form of cattle, seeds, small credits for traders and scholarship have helped them in maintaining their welfare level.
					2004	18%	71%	11%		
	Taliwang	Sampir	R	Desa	2000	12%	60%	28%		Welfare level improves because of new job opportunities as migrant workers overseas, as civil servants, motorbike taxi drivers, and as small-scale traders.
					2004	12%	65%	23%		
		Bugis	U	Desa	2000	1%	18%	49%	32%	Welfare level improves because of new job opportunities as migrant workers overseas, as civil servants, employees in PT Newmont Mining, workers in sand mining and logging, motorbike taxi drivers, and as small scale traders. There is also assistance in the form of seeds and engine for fishing boat.
					2004	2%	48%	36%	14%	
		Dalam	U	Desa	2000	11%	63%	16%	10%	Welfare level declines because the big flood in 2000 has ruined rice fields and caused the death of many buffaloes and cattle.
					2004	7%	52%	23%	18%	