Food Security Assessment and Phase Classification Pilot, Indonesia

December 2006

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF MAPS

LIST OF ANNEXURE

EXECUTIVE SUMMARY

Indonesia has made significant strides in reducing poverty and strengthening democracy since the economic crisis and political transformation of 1997-1998. However, a number of problems remain. Over 50% of the population lives on less than US$2 per day and an estimated 37 million people live below the poverty line according to the national definition[1]. The number of the 'near poor' in Indonesia is estimated to be 115 million[2]. The country is still designated a low-income food-deficit country, ranking 108th of 177 countries in the United Nations Development Programme (UNDP) Human Development Report, 2006.

As part of WFP preparation for the next PRRO, starting in January 2008, a Food Security Assessment took place using secondary data available from various sources. WFP took this opportunity to form a technical assessment team[3] that would also pilot the Integrated Phase Classification in Indonesia. The objectives were:

- Review the food security and nutritional situation in Indonesia, including who is affected, where they reside and trends (past and future).

- Review the underlying causes of food insecurity and malnutrition.

- Review the need for eventual continuation of food aid and nutritional rehabilitation programmes.

- Prioritize any related food aid needs to serve as the basis for planning WFP's new PRRO.

AVAILABILITY

Rice is by far the most important food crop Indonesia produces, followed by corn, cassava, soybeans and peanuts. Sweet potatoes and Sago play a less important role at the national level but are main staples for some population groups, particularly in parts of eastern Indonesia. Indonesia's anticipated overall food production for the year 2006 is forecast to have remained relatively stable. The observed late onset of the main rainy season in some parts of the archipelago is expected to postpone main 2007 rice harvests in certain production centres by some one to two months. Approximately 70 percent of rice produced in Indonesia is traded. For many other food commodities this percentage is at a similar level or even higher. Functioning markets are therefore essential for food security in both rural and urban areas. Private traders, millers, wholesalers and retailers operating in an open local market situation largely determine local consumer prices of rice and other food commodities.

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[1] Indonesia uses its own National Poverty line– based on the per capita Rupiah value of an individual's need to fulfil minimum requirements for food (2100 kcal per day), this equal to 152.847Rp per capita per month in 2006.

[2] According to BPS, national statistics office.

[3] Yvonne Forsen, Dipayan Bhattacharyya, Asif Niazi, Rene Suter and Linny Ayunahati. Nick Haan was IPC technical back stopper in Nairobi.

ACCESS

The National Poverty line is around USD 1.55 per capita per day (Purchasing Power Parity). According to this poverty line, there are 17.75% people below poverty line. Whereas, according the World Bank's USD 2 per capita per day yardstick, the percentage goes up to around 50%. This clearly shows that there is a sizeable population in the country who are precariously hanging just around the poverty line and any shock/disturbances can pull them below the poverty line. With consistent increase in the price of rice since 2005 and certain other essential commodities, it is some of those borderline people who would have fallen below poverty line in recent times. In this context, the current trend of extended dryness and lack of rainfall, mostly in central and eastern Indonesia, could pull more people below the poverty line, if proper safety-net programmes are not put in place.

If looking beyond 'income poverty', many people who might not be categorized as poor in terms of income, do not have access to essential infrastructures and basic services, and as a result have poor human development and health outcomes. Huge challenges remain hence within the utilization pillar of food security and the decentralization process introduced in 2003 has resulted in some setbacks in the health provision due to lack of capacity and guidance at provincial and district level. Indonesia has seen some progress over the past 10 years but health and nutrition indicators remain poor. It is not only localized problems but rather a nationwide complexity, contributing to inadequate indicator results.

NUTRITION AND HEALTH

Malnutrition rates are high (stunting and underweight) and have even risen in recent years in some regions: a third of children below the age of five are malnourished (underweight). Maternal health is much worse than comparable countries in the region: Indonesia's maternal mortality rate (307 deaths in 100,000 births) is three times that of Vietnam and six times that of China and Malaysia; Education outcomes are weak even though the enrolment rate in primary education is high, reaching almost 100%. Transition rates from primary to secondary school are low, particularly among the poor with costs being the main reason. Access to safe water is grossly inadequate, especially among the poor. Access to safe water in rural areas is only 48 percent, against 78 percent in urban areas. Access to sanitation is a chronic problem. Eighty percent of the rural poor and 59 percent of the urban poor do not have access to septic tanks, while less than 1 percent of all Indonesians have access to piped sewerage services. Exclusive breastfeeding is on average practiced only a couple of months (0.6 – 4 months). Weaning practices are not well documented in this vast country, but is believed to be poor and family food is generally introduced around 1 year old.

All the above indicators for availability, access and utilization have huge regional differences which are in detail presented in the report. The IPC approach facilitated greatly in presenting the differences in the form of a map where Eastern Indonesia in particular is highlighted as an area of concern.

RECOMMENDATIONS

- It is recommended that the IPC map is updated in 6 months to fully investigate the potential of such a map in order to capture seasonal differences in food insecurity that would call for specific interventions or as a post shock assessment statement. The subsequent IPC exercises should maintain technical neutrality and ensure a "broad based" stakeholder participation.

- It is recommended that WFP's Food for Education revises it's objectives to also improve attendance rate amongst children in rural schools, as this is shown to be a problem that is masked by high enrolment rates.

- The Food for Education should further support and initiate the FRESH initiative as water/sanitation conditions in schools are particularly poor.

- Food For Work (FFW) in rural areas could include soil and water conservation, water harvesting works on farm land, latrine constructions at primary and secondary schools. Rural road construction is another activity that could have a huge impact on households living in very remote areas. All these, of course, will depend on ability of the proposing NGOs in providing non-food items necessary for construction works. Efforts should also be made to use food under proposed Community Development Projects in Madura, Lombok and West Timor.

- WFP should investigate the possibility to increase the micronutrient fortification in the biscuits to improve the impact on micronutrient deficiencies in children under 5 and school children.

- It is recommended that traditional weaning practices are investigated and documented in order to find the best suitable fortified weaning foods. As Indonesia is a vast country it might not be possible to find one product that suits all locations but maybe develop one that is maize based and one rice based.

- WFP should continue the support to TB patients and increase this programme to other locations than currently covered by the PRRO.

- WFP, with partners to provide technical support to the GoI in the development of surveillance system that will collect food Security and Nutrition data on a regular basis that would allow for quicker and thus more appropriate interventions.

- Due to the high proness to natural disasters a contingency plan is recommended with a matching contingency stock that would enable WFP to continue to respond to emergencies in a timely manner.

- An inventory of cash activities carried out by organizations other than the Government of Indonesia could be a start in guiding possible cash/food initiatives together with a market analysis in the geographical areas where this assessment recommends that WFP focus it's efforts.

Food Security Map of Indonesia using Integrated Phase Classification (valid till December 2009)

Defining attributes of areas in phase 1 and 2

Hazards
a. Drought
b. Floods
c. Landslides
d. Civil security
e. Price instability
f. Disease outbreak

Key underlying causes
A. Poverty
B. Structural factors of poor health care services
C. Poor Education
D. Poor economic development
E. Poor transportation infrastructure
F. Conflict
G. Environmental degradation
H. Natural Disaster

 # Estimated Population in phase
inclusive of pop. at high risk

Projected trend
↑ Improving
--- No change
↓ Worsening

Confidence Level of Analysis
* Low
** Medium
*** High

Zone 2. Papua Lowland
f (HIV)
B, C
Est_Pop: 1,424,007
**

Zone 1. Papua Highland
No immediate hazard
B, D
Est_Pop: 1,042,132
**

Zone 20. North Maluku
No immediate hazard
A, B, C, D, E
Est_Pop: 1,061,188
*

Zone 4. South & South-East Sulawesi
a, b
A
Est_Pop: 6,278,262
**

Zone 6. Central & West Sulawesi
No immediate hazard
A, B, C, F (in Poso & Tentena)
Est_Pop: 3,375,026
**

Zone 3. South Eastern Island
a, b
A, B, D, E
Est_Pop: 4,515,338
**

Zone 8. East Kalimantan
a, c
B, C, D, E, G
Est_Pop: 2,821,735
**

Zone 9. Madura & Eastern part of East Java
a
A, B, C, D, E
Est_Pop: 12,166,076
**

Zone 7. West Kalimantan & part of East Kalimantan
No immediate hazard
B, C, D, E, G
Est_Pop: 8,399,778
**

Zone 19. DI Yogyakarta
a, c, e, f
H
Est_Pop: 2,171,730
**

Zone 10. Bangka Belitung
No immediate hazard
A, B
Est_Pop: 1,026,963
**

Zone 16. Lampung & Java
b, c, e, f
A, B, C
Est_Pop: 100,943,660
**

Zone 12. Central Sumatra
c
A, B
Est_Pop: 19,180,030
**

Zone 11. Bengkulu, Jambi etc.
b, c
A, B, G
Est_Pop: 11,939,523
**

Zone 14. Aceh
b, c
A, B, C
Est_Pop: 5,033,315
***

Zone 13. Nias, Simeulue etc.
c
A, B, C, D, E
Est_Pop: 171,492
**

Note: The map has 2 different periods of validity. The overall phase classification should remain valid till December 2009, since the situation in Indonesia is that of chronic food insecurity, which does not change rapidly, unless there is/are major shock(s) affecting livelihood and/or health status of a large number of people. The second validity of the map is related to Early Warning situation. Since early warning is based on likelihood of hazards, we believe that there is a need to review the early warning pattern after June 2007, which might data lead to a different phase classification in certain areas.

Legend

Phase Classification:
1. Generally Food Secure
2. Chronically Food Insecure
3. Acute Food and Livelihood Crisis
4. Humanitarian Emergency
5. Famine/Humanitarian Catastrophe

Early Warning (Dec. 2006 - June 2007):
Alert
Moderate Risk
High Risk
★ Urban Areas
Zone Boundaries
Province Boundaries

Labels: Papua, Irian Jaya Barat, North Maluku, Maluku, Central Sulawesi, North Sulawesi, Gorontalo, West Sulawesi, South Sulawesi, South East Sulawesi, Nusa Tenggara Timur, Nusa Tenggara Barat, Bali, East Java, Central Java, DI Yogyakarta, West Java, Banten, DKI Jakarta, East Kalimantan, South Kalimantan, Central Kalimantan, West Kalimantan, Kep. Riau, Kep. Bangka Belitung, South Sumatra, Jambi, Lampung, Bengkulu, Riau, West Sumatra, North Sumatra, Nanggroe Aceh Darussalam

N
E
S
W

0 250 500 Km

CHAPTER 1
INTRODUCTION

WFP re-established an office in Indonesia in 1998 after the El Nino induced drought, conflict and economic decline, which led to medium-term food insecurity and longer-term deterioration in nutritional status. Over these years, post-1998, WFP gradually shifted its focus from an Urban Rice for the Poor Programme (OPSM), which was primarily an income transfer programme for the urban poor, to Nutritional Rehabilitation of children under 5, primary school children, pregnant women and lactating mothers through the provision of micronutrient fortified biscuits and noodles. Another programme component, assistance to IDPs and returnees in West Timor, Madura, Maluku and Central Sulawesi, was also phased-out by 2004. Since the end of 2004, WFP also got heavily involved in several large to medium emergency responses in Indonesia, which reflects the vulnerability of the country to natural disasters and the necessity of having a stronger Contingency component in WFP's programme planning for Indonesia.

1.1 OBJECTIVES AND METHODOLOGY OF THE ASSESSMENT

As part of WFP preparation for the next PRRO, starting in January 2008, a Food Security Assessment took place using secondary data available from various sources. WFP took this opportunity to form a technical assessment team[1] that would also pilot the Integrated Phase Classification (IPC) in Indonesia. The IPC was developed as a means to link complex food, nutrition and livelihood security analysis to appropriate action. The classification system is designed to allow comparability of results from one place to another, increase rigour and transparency and to increase relevance to decision making. However, the IPC focuses on understanding the current or projected food security situation, and does not replace in-depth studies on the underlying causes of food insecurity. The IPC has been implemented in drought stricken Somalia with success and its application is being piloted in both Africa and Asia. Based on detailed technical guidelines, the IPC allows classification of a country into five phases: generally food secure, chronically food insecure, acute food and livelihood crisis, humanitarian emergency, and famine/humanitarian catastrophe. Key reference outcomes and a strategic response framework are outlined for each Phase. Refer to Annex 3 for the Executive Summary of the IPC Technical Manual, prepared by Food Security Analysis Unit, FAO, Nairobi.

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[1] Yvonne Forsen, Dipayan Bhattacharyya, Asif Niazi, Rene Suter and Linny Ayunahati.
Nick Haan was IPC technical back stopper in Nairobi.

Table 1.1: Integrated Food Security and Humanitarian Phase Classification Reference Table

Phase Classification	Key Reference Outcomes (current or imminent outcomes on lives and livelihoods; based on convergence of evidence)		Strategic Response Framework (mitigate immediate outcomes, support livelihoods, and address underlying/structural causes)
1 Generally Food Secure	Crude Mortality Rate	< 0.5 / 10,000 / day	Strategic assistance to pockets of food insecure groups Investment in food and economic production systems Enable development of livelihood systems based on principles of sustainability, justice, and equity Prevent emergence of structural hindrances to food security Advocacy
	Acute Malnutrition	<3 % (w/h <-2 z-scores)	
	Stunting	<20% (w/age <-2 z-scores)	
	Food Access/ Availability	usually adequate (> 2,100 kcal ppp day), stable	
	Dietary Diversity	consistent quality and quantity of diversity	
	Water Access/Avail.	usually adequate (> 15 litres ppp day), stable	
	Hazards	moderate to low probability and vulnerability	
	Civil Security	prevailing and structural peace	
	Livelihood Assets	generally sustainable utilization (of 5 capitals)	
2 Chronically Food Insecure	Crude Mortality Rate	<0.5/10,000/day; U5MR<1/10,000/day	Design & implement strategies to increase stability, resistance and resilience of livelihood systems, thus reducing risk Provision of 'safety nets' to high risk groups Interventions for optimal and sustainable use of livelihood assets Create contingency plan Redress structural hindrances to food security Close monitoring of relevant outcome and process indicators Advocacy
	Acute Malnutrition	>3% but <10 % (w/h <-2 z-score), usual range, stable	
	Stunting	>20% (w/age <-2 z-scores)	
	Food Access/ Availability	borderline adequate (2,100 kcal ppp day); unstable	
	Dietary Diversity	chronic dietary diversity deficit	
	Water Access/Avail.	borderline adequate (15 litres ppp day); unstable	
	Hazards	recurrent, with high livelihood vulnerability	
	Civil Security	Unstable; disruptive tension	
	Coping	'insurance strategies'	
	Livelihood Assets	stressed and unsustainable utilization (of 5 capitals)	
	Structural	Pronounced underlying hindrances to food security	
3 Acute Food and Livelihood Crisis	Crude Mortality Rate	0.5-1 /10,000/day; U5MR 1-2/10,000/day	Support livelihoods and protect vulnerable groups Strategic and complimentary interventions to immediately ↑ food access/availability AND support livelihoods Selected provision of complimentary sectoral support (e.g., water, shelter, sanitation, health, etc.) Strategic interventions at community to national levels to create, stabilize, rehabilitate, or protect priority livelihood assets Create or implement contingency plan Close monitoring of relevant outcome and process indicators Use 'crisis as opportunity' to redress underlying structural causes Advocacy
	Acute Malnutrition	10-15 % (w/h <-2 z-score), > than usual, increasing	
	Disease	epidemic; increasing	
	Food Access/ Availability	lack of entitlement; 2,100 kcal ppp day via asset stripping	
	Dietary Diversity	acute dietary diversity deficit	
	Water Access/Avail.	7.5-15 litres ppp day, accessed via asset stripping	
	Destitution/Displacement	emerging; diffuse	
	Civil Security	limited spread, low intensity conflict	
	Coping	'crisis strategies'; CSI > than reference; increasing	
	Livelihood Assets	accelerated and critical depletion or loss of access	
4 Humanitarian Emergency	Crude Mortality Rate	1-2 / 10,000 / day, >2x reference rate, increasing; U5MR > 2/10,000/day	Urgent protection of vulnerable groups Urgently ↑ food access through complimentary interventions Selected provision of complimentary sectoral support (e.g., water, shelter, sanitation, health, etc.) Protection against complete livelihood asset loss and/or advocacy for access Close monitoring of relevant outcome and process indicators Use 'crisis as opportunity' to redress underlying structural causes Advocacy
	Acute Malnutrition	>15 % (w/h <-2 z-score), > than usual, increasing	
	Disease	pandemic	
	Food Access/ Availability	severe entitlement gap; unable to meet 2,100 kcal ppp day	
	Dietary Diversity	Regularly 2-3 or fewer main food groups consumed	
	Water Access/Avail.	< 7.5 litres ppp day (human usage only)	
	Destitution/Displacement	concentrated; increasing	
	Civil Security	widespread, high intensity conflict	
	Coping	'distress strategies'; CSI significantly > than reference	
	Livelihood Assets	near complete & irreversible depletion or loss of access	
5 Famine / Humanitarian Catastrophe	Crude Mortality Rate	> 2/10,000 /day (example: 6,000 /1,000,000 /30 days)	Critically urgent protection of human lives and vulnerable groups Comprehensive assistance with basic needs (e.g. food, water, shelter, sanitation, health, etc.) Immediate policy/legal revisions where necessary Negotiations with varied political-economic interests Use 'crisis as opportunity' to redress underlying structural causes Advocacy
	Acute Malnutrition	> 30 % (w/h <-2 z-score)	
	Disease	pandemic	
	Food Access/ Availability	extreme entitlement gap; much below 2,100 kcal ppp day	
	Water Access/Avail.	<4 litres ppp day (human usage only)	
	Destitution/Displacement	large scale, concentrated	
	Civil Security	widespread, high intensity conflict	
	Livelihood Assets	effectively complete loss; collapse	

Early Warning

Early Warning Levels	Probability / Likelihood (of worsening Phase)	Severity (of worsening phase)	Reference Hazards and Vulnerabilities	Implications for Action
Alert	As yet unclear	Not applicable	*Hazard:* occurrence of, or predicted event stressing livelihoods; with low or uncertain vulnerability *Process Indicators:* small negative change from normal	Close monitoring and analysis
Moderate Risk	Elevated probability / likelihood	Specified by predicted Phase Class, and as indicated by color of diagonal lines on map.	*Hazard:* occurrence of, or predicted event stressing livelihoods; with moderate vulnerability *Process Indicators:* large negative change from normal	Close monitoring and analysis Contingency planning Step-up current Phase interventions
High Risk	High probability; 'more likely than not'		*Hazard:* occurrence of, or strongly predicted major event stressing livelihoods; with high vulnerability *Process Indicators:* large and compounding negative changes	Preventative interventions—with increased urgency for High Risk populations Advocacy

1.1.2   Process

A number of procedures, decisions and judgment calls had to be made during the process of the assessment and the steps are explained below in chronological order.

Step 1: Literature Review

The literature review included IPC technical guidelines (see Summary of Technical Manual version 1 in annex X), ODAN Technical Guidance Sheets, Food Security Analysis Unit - FAO reports on Somalia using IPC and documents on Indonesia including databases, reports and maps from government, UN and NGOs; and international papers on emergency food security and nutrition assessment.

By design, the IPC recognizes the limitations on data quality and quantity and allows flexibility in utilization of all existing information sources. This flexibility is most critical for areas under emergencies. The process starts will collection of all relevant data and the identification of a unit of study. This unit could be based on administrative boundaries, such as district, or agro-ecological considerations, such as watershed or landcover criteria. Each key reference outcome is analyzed separately and the appropriate phase is determined. The second stage of analysis consists of concluding a single overall phase for the area. To support the analysis, IPC Analysis Templates are prepared. The IPC Analysis Templates record details of each indicator. In addition to source, collection dates and geographic coverage, the IPC Analysis Templates also capture the confidence level assigned by the analysts to the particular data set. Also included in the templates are the secondary sources taken into account while determining the Phase. The templates provide rigour and transparency, a salient feature of the IPC. The resulting classification is illustrated in a map with distinct colour codes for each Phase. Drop boxes with text and data are included to provide relevant information on population, type of hazards and underlying causes. The IPC is a dynamic product. Each map indicates a time limit regarding the early warning forecasts. Through regular data collection, the map is periodically updated so that decision makers have constant access to predictions of potential changes in the phase assigned to a particular area or group.

Step 2: Indicator Selection

Outcome indicators and their respective thresholds stipulated in the IPC were considered for Indonesia in the light of existing government statistics derived from national, provincial and district level assessments. These included area specific assessments such as those conducted in Aceh in the aftermath of the Tsunami; national census and socio-economic assessments by the Bureau of Statistics; disaster databases by UNDP and OFDA/CRED International Disaster Database; national reports including the World Bank poverty report,

Human Development report; and mapping exercises such as Food Insecurity Map (FIA) and Nutrition Map (NutMap)3.

A set of key indicators and thresholds were selected for the Indonesia IPC with the following considerations:

- As much as possible, adopt indicators and thresholds recommended in the original IPC guidelines.

- Where not possible, select alternative indicators most representative of the three food security pillars: availability, access and utilization.

- Select indicators for which recent district level data are available.

The following five key indicators were selected from the standard IPC reference table (see above): Under 5 mortality rate (U5MR), Stunting, Livelihood assets such as female literacy, access to health facilities, road access. Water/Sanitation access and Hazards.

In addition, process indicators were used to give a more comprehensive picture of the districts and to support the phase that each area was classified under. The Supporting indicators or process indicators that were available at district levels and which play an important role in understanding the overall situation in Indonesia and it's contrasts were; Poverty, Infant Mortality Rate (IMR), Underweight, micronutrient deficiencies

Step 3. Spatial Analysis

The impact on population, location and relevance to food security of each indicator was studied and spatial analysis was used to facilitate this task. Thematic maps were produced for each indicator and ranges were determined using the following criteria:

a. Incorporate IPC thresholds.

b. Where IPC thresholds were not available, select internationally accepted standards.

c. Where the above two were not available, divide the extent range into 5 equal categories to allow even spread.

The resulting ranges were:

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[3] Complete list of sources are found in the annex.

Table 1.2:   Thematic Map Indicators

Indicator	Description	Range for Thematic Mapping
Underweight	Percentage of district population underweight	<10, 10-19, 20-29, >=30
Poverty	Percentage of population below the poverty line ($1.55/day)	<15, 15-<25, 25-<35, 35-<45, 45-55
Female Illiteracy	Percentage of female population (age >10 years) illiterate	<10, 10-<20, 20-<40, 40-<50, 50-80
IMR	Infant Mortality Rate per 1,000 live births	<35, 35-<55, 55-<75, >=75
Access to health	Percentage of district's villages not within 5 kilometres of a health centre	< 20, 20-<40, 40-<60, 60-<80, >80
Road Access	Percentage of district's villages accessible by a four wheel drive vehicle	>80, 80-<60, 60-<40, 40-<20, <20

These were later changed to fit into the phases used in IPC to further guide the phase classification based on a systematic approach. After discussions it was agreed that where no IPC thresholds were available the national average would be used in setting a "threshold" for Indonesia. This had to be done for e.g. underweight which is not included in the IPC key indicator and thus even though it was only used as a supportive indicator it was necessary to set some benchmarks.

The three livelihood assets, even though they are part of the standard IPC reference table differed greatly in what these indicators represented in Indonsia. For example access to water in the IPC classification is looking at quantity (based on the Sphere standards) whilst in Indonesia the data for this indicator is looking at access to potable water, thus quality of water.

Step 4: Zoning

Indonesia is a large archipelago consisting of 17,000 islands administratively divided into 33 provinces. Provinces are composed of districts that total 440. It was decided that the district was to be the smallest unit of analysis because:

a. Provinces were too large, consisting of a wide mix of agro-ecological factors, livelihood categories and types of hazards.

b. Sub district level data was not available throughout the country.

c. Most (not all) district boundaries fall within a single agro-ecological zone and identification of predominant livelihoods at district level was generally possible.

d. Reliable district level data on food security was available.

Even though districts were used as the preferred data unit it was practically not possible due to the time frame of the assessment to apply IPC to 440 districts. The Assessment Team therefore grouped districts into zones. This preliminary zoning and the criteria were presented to the larger Task Force consisting of the Assessment Team, government officials, FAO and NGOs. The Zones selection criteria were:

Table 1.3:   Zoning Criteria

Criteria	Indicator
Physical	Land cover Terrain (highlands, lowlands, coastal areas) Road and waterways access
Social	Livelihoods (farming, forestry, mining, fishing, urban services) Livelihood assets (physical, social, financial, natural, human, political) Population density
Economic	Poverty Industry Land use/potential
Risk	Hazards (droughts, floods, Tsunami, volcano, earthquake, conflict)

As a result of this zoning exercise, the country was classified into **21 distinct** zones and is presented in the map below.

Map 1.1   Zone map of Indonesia
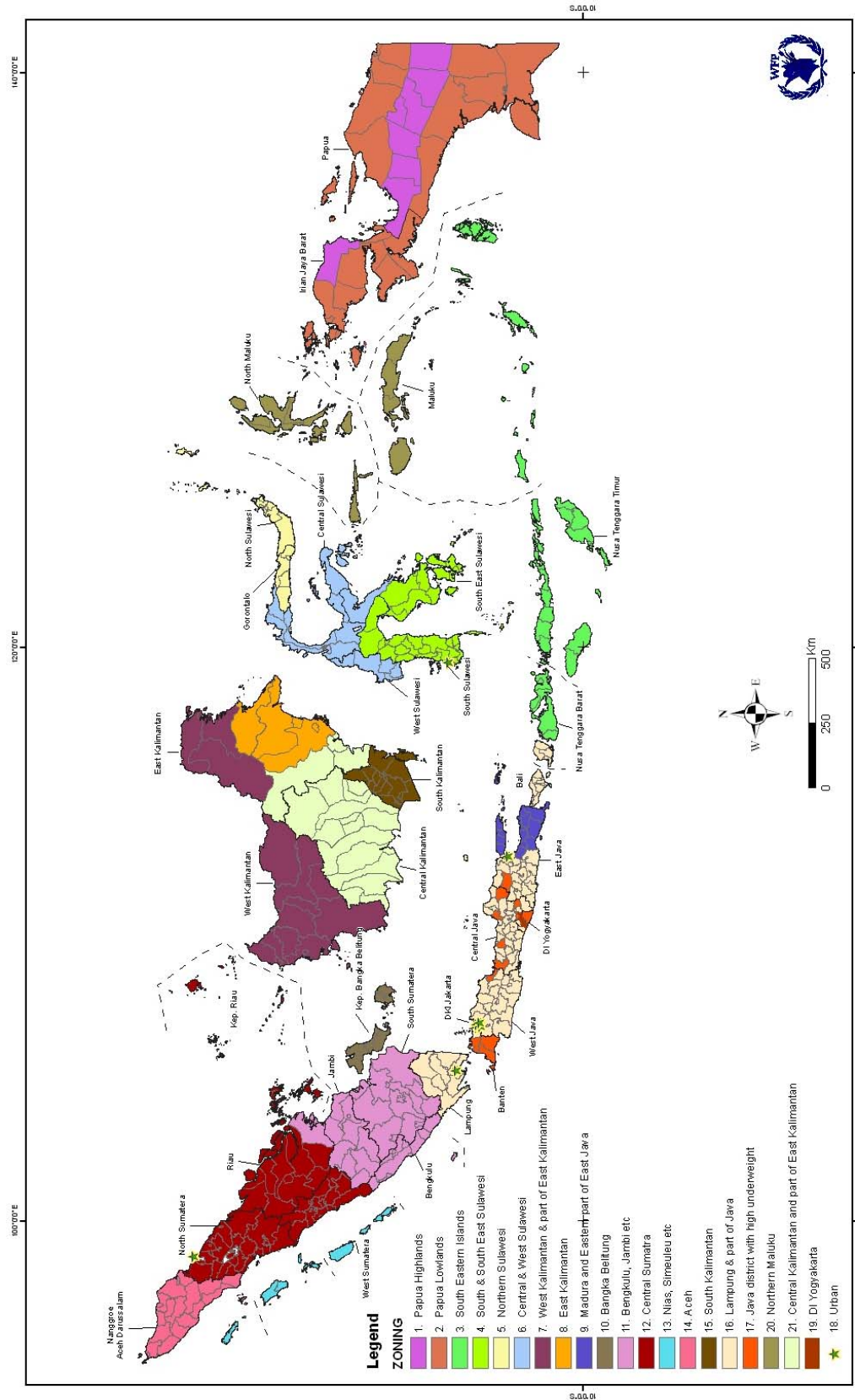
Step 5: Zone classification by Indicator

For each indicator, key and supportive (poverty, female illiteracy, access to clean water, access to health facilities, access by road, IMR, underweight) the data range was assigned phase classifications. These were applied to the zones which resulted in thematic maps for each indicator illustrating the assigned phase. This allowed visualization of zones by indicators and helped in adopting a final phase to each geographical zone.

Step 6: Composite Classification

Using an IPC template (see annex Y), all information on a zone was compiled and considered. The overall impact of the combined information (direct indicator, indirect indicators) was considered while assigning an overall phase classification to each zone. An early warning level (alert, moderate, high) was assigned based on the level of risk the zone had to potential hazards. Within a zone, smaller areas exposed to hazards unique from the rest of the zone were identified and classified independent of the zone classification. Levels of risks were determined, based on likelihood of the events and possible impact on the poor and food insecure people residing within those areas.

1.1.3   Limitations

- Secondary Data: The Assessment did not have the opportunity for primary data collection or field visits. Nevertheless, considering the size and spread of the country, those options were practically not feasible.

- Subjectivity: By design, the IPC allows subjectivity in phase determination. This flexibility is deliberately built-in to allow classification where data is limited in type, quality and quantity. The flexibility allows utilizing 'all' available data sources for a particular area. This means that different areas of the country were, at times, evaluated through different information sources and data sets. Such subjectivity exposes the classification to criticism where 'expert opinion' may in reality be ill-informed guesses.

- Chronic Food Insecurity: A major proportion of the population falls into Phase 2. The IPC guidelines do not offer further subdivisions of Phase 2 into priority areas. Consequently, the result is a macro level classification even though district level data was available and was considered by the analysts.

- Zoning: Zoning allowed simplification of areas based on common characteristics. This facilitated analysis and subsequent classification. Without zoning, each of the 440 districts would have had to be classified separately. However, inherent in zoning is averaging that may have resulted in oversimplification of complexity and diversity within zones.

- Data: Hazard data is a compilation from media reports and may not include all events.

- The timing of the assessment and the short notice given to stakeholders limited their involvement in the process and it is believed that had the assessment not taken place during the last month of the year then more participation from relevant partners would have been greater.

CHAPTER 2
GENERAL BACKGROUND AND HAZARD PATTERNS

2.1   GENERAL AND DEMOGRAPHIC BACKGROUND

Indonesia has made significant strides in reducing poverty and strengthening democracy since the economic crisis and political transformation of 1997-1998. However, a number of problems remain. Over 50% of the population (Annex 4) lives on less than US$2 per day and an estimated 37 million people live below the poverty line according to the national definition[5]. The number of the 'near poor' in Indonesia is estimated to be 115 million[6]. The country is still designated as a low-income food-deficit country, ranking 108 of 177 countries in the United Nations Development Programme (UNDP) Human Development Report, 2006. Within ASEAN region, Malaysia, Thailand and Philippines are much ahead of Indonesia in terms of Human Development Rank, whereas other economies like, Vietnam, Cambodia, Laos and Myanmar are lagging behind Indonesia. In terms of Human Poverty Index (Human Development Report 2006), Indonesia is ranked 41.

As identified in the UN Common Country Assessment (CCA), the major causes of poverty and hunger in Indonesia are insufficient budgetary allocations to key human development sectors, unemployment, poor nutrition, unfulfilled basic rights, a lack of adequate livelihood opportunities, gender and culture disparities, and the over exploitation of natural resources. The extent of these underlying causes varies across Indonesia and there are therefore significant variations in poverty levels between the country's provinces and districts.

The crisis of the late 1990s created a huge population of internally displaced people. There has been large scale migration to urban areas and despite attempts to ease congestion on Java, Bali and Madura through the trans-migration programme, more than 60% of Indonesians live on these three islands which make up only 7% of Indonesia's land surface area. As a result there has been a growth in slum areas and environmental degradation reflecting not only people's inability to afford decent housing but also a low level of resource development and education leading to a decline in community social standards.

2.2   HAZARDS IN PERSPECTIVE

Indonesia is a large archipelago of 17,000 islands straddling the equator with Malaysia to its north west and Australia in the south east. The western islands of Sumatra and Jawa lie on tectonic plate fault lines and experience frequent earthquakes and resulting wave surges, the Tsunami of 2004 being the worst in a century. Jawa and Nusa Tenggara host the 'ring of fire', a line of 120 active volcanoes including the notorious Krakatau which last erupted in 1883 blackening the earth's atmosphere with ash for over two years. The forested islands of Kalimantan and Papua are subject to intensive unsustainable logging resulting in soil erosion, landslides and flood. Low precipitation in rice growing lowlands often reduces soil moisture causing drought-like conditions for agriculture. Civil security has plagued Aceh, Maluku and parts of Central Sulawesi. The Papuanesians harbor a low

intensity movement for independence. In short, Indonesia is plagued with a plethora of hazards both natural and man-made.

Indonesia is amongst the most populous nations on earth. According to the 2000 census, the population was 200 million. Estimated projections by PODES place the 2005 figure at 216 million. Consequently, the impact of hazards on people and their assets is considerable. Statistics vary, but according to the UNDP Hazards database and the EM-DAT tabulation, about 240 thousand deaths by hazards have been recorded over the last hundred years.

Table 2.1:   Death by Hazards 1906-2006

Hazard	Number of Deaths
Drought	727
Earthquake	15,605
Epidemic	1,994
Volcano	23,164
Flood	24,559
Landslide	2323
Plague	84
Storm/Tornado	329
Tsunami	170,981
Total	**239,766**

Source: UNDP Disaster Database

Table 2.2:   EM-DAT Data (1906-2006)

Type	Killed	Homeless	Total Affected	$ Damage
Drought	9,117	0	4,804,220	160,200
Earthquake	28,581	979,700	4,981,566	3,937,419
Epidemic	3,447	0	653,795	NA
Flood	4,785	202,405	5,860,011	1,161,290
Slides	1,834	29,555	37,867	80,302
Volcano	17,945	17,500	982,941	344,390
Wave/Surge	167,852	532,898	570,561	4,451,600
Wildfires	63	0	3,034,408	17,235,000
Windstorm	1,992	800	19,698	NA
Total	**235,616**	**1,762,858**	**21,280,067**	**23,370,201**

Source: EM-DAT: The OFDA/CRED International Disaster Database - www.em-dat.net - Université Catholique de Louvain - Brussels – Belgium

2.2.1   Drought

Although awash in tropical rains, the lowland agricultural areas require constant and abundant water for their rice paddies which record three, and in some areas four, harvests per year. A drop in precipitation even for a few days during crucial growth periods reduces soil moisture enough to affect yields. Rice is the national staple and loss of production affects markets and people across the country. Upland rice, grown on the slopes of Kalimantan and Papua is rainfed increasing vulnerability to precipitation variability. Effects vary considerably from year to year.

The sloping hills and extensive river network offer an abundance of opportunities for water harvesting. Irrigated agriculture and small scale power generation has potential. Low technology inputs such as small dams and small electric power generators can significantly improve the food security situation in hilly areas and adjacent lowlands.

2.2.2   Floods and Landslides

Over two million hectares of forest is lost to logging every year. This substantial change of landcover exasperates flooding and landslides. In 2006, over three million people were affected by floods, higher than those affected in the previous five years. Torrential rains in Ache during December 2006 left 109 dead and over 400,000 displaced (*Source: Reliefweb*). However, data over the last thirty years shows high losses even when logging was not extensive suggesting natural causes, such as high precipitation, as major contributing factors. During 2001-2005, over 260 thousand people were affected. The recent flash flood and land slides in Sumatra, including Aceh, affected more than 600,000 people and displaced almost 200,000 people in Aceh province only.   Reforestation, sustainable logging and improved forest management, especially in areas in close proximity to populated areas vulnerable to landslides and floods, should be considered as viable mitigation measures.

Table 2.3:   Flood

Period	Years	Number of Affected
5 Years	2005-2001	272,882
	2000-1996	1,170,401
	1995-1991	1,311,409
	1990-1986	338,384
10 Years	2006-1997	956,677
	1996-1987	2,088,821
	1986-1977	1,916,393
	1976-1967	374,020

2.2.3   Tsunami

Except for Borneo, most of Indonesian islands have been raised as a consequence of the collision of the Australian and Eurasian tectonic plates. The Aceh Tsunami of 2004 killed more than 170,000 people and displaced over 700,000. Damage to property and assets is estimated to be over $4 billion. The Aceh Tsunami of 2005 is considered a one in a hundred year phenomenon. Smaller waves and surges hit coastal areas on a more frequent basis. Early warning systems have been established and the western coast of Ache island is slowly recovering from the devastation. Locals in Simeulue island, relying on traditional early warning systems, evacuated to safe high lands before the wave. Consequently, loss of life on this island was minimal in spite of being directly in the path of the Tsunami.

Map 2.1:   **Seismic Hazard Map of Indonesia**
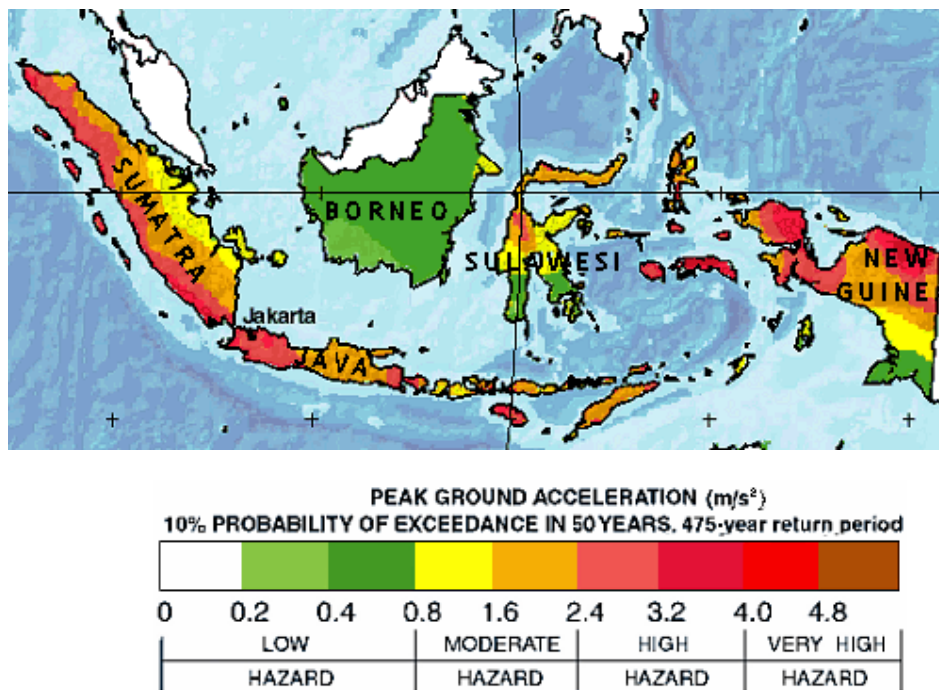
Source: Global Seismic Assessment Program

2.2.4   Civil Conflict

Parts of Indonesia have periodically been under low intensity civil war. Warring factions have blocked communication routes resulting in higher food prices in certain areas. Productive agricultural land and access to natural resources have been severed during conflict periods. The recent (2006) elections in Aceh have witnessed the election of a former rebel leader into power through peaceful means. Such examples bear hope for the multitude of armed conflicts inflicting Indonesia over the past several years.

Table 2.4:   Civil Conflict

Location	Period	Parties	People Affected
Aceh	1976 onwards	GAM: Free Ache movement and government	1300 killed in 2001 alone
Kalimantan	1996-2001	Madurese and Dayak peoples	-
Maluka	1999-2001	Christian and Muslim communities	5,000 killed and 500,000 displaced
Central Sulawesi	2001	Christian and Muslim communities	50,000 displaced
Papua	1961	Free Papua Movement and government	-
Nusa Tenggara	1999	East Timorese and malitia	500,000 displaced

Source: Humanitarian Policy and Conflict Research

CHAPTER 3
FOOD AVAILABILITY AND MARKETS

Rice is by far the most important food crop Indonesia produces, followed by corn, cassava, soybeans and peanuts. Sweet potatoes and Sago play a less important role at the national level but are main staples for some population groups, particularly in parts of eastern Indonesia.

Between 1999 and 2003 (latest available figure) the Indonesian Food Production Index increased from 100 to 114. The per capita Food Production Index increased during the same time period from 100 to 110.

Indonesia's anticipated overall food production for the year 2006 is forecast to have remained relatively stable. The observed late onset of the main rainy season in some parts of the archipelago is expected to postpone main 2007 rice harvests in certain production centers by some one to two months.

3.1   PRIMARY FOOD CROPS

3.1.1   Rice

The 2006 aggregate paddy production (wet land and dry land combined) in Indonesia is officially forecast at about 54.66 million tons, which corresponds to some 34.4 million tons of rice based on the standard conversion ratio of 63% used by the Indonesian Ministry of Agriculture. 95% of the 2006 rice production are anticipated to be from wet land paddy (Padi Sawah) while the remaining 5% are from dry land paddy (Padi Ladang).

In 2005 the country produced an estimated 54.056 million tons of paddy, which indicates an overall production increase of 1.1% during the current year. In 2004 Indonesian farmers produced 54.1 million tons of paddy.

Figure 3.1:   Development of National Paddy Production in Indonesia
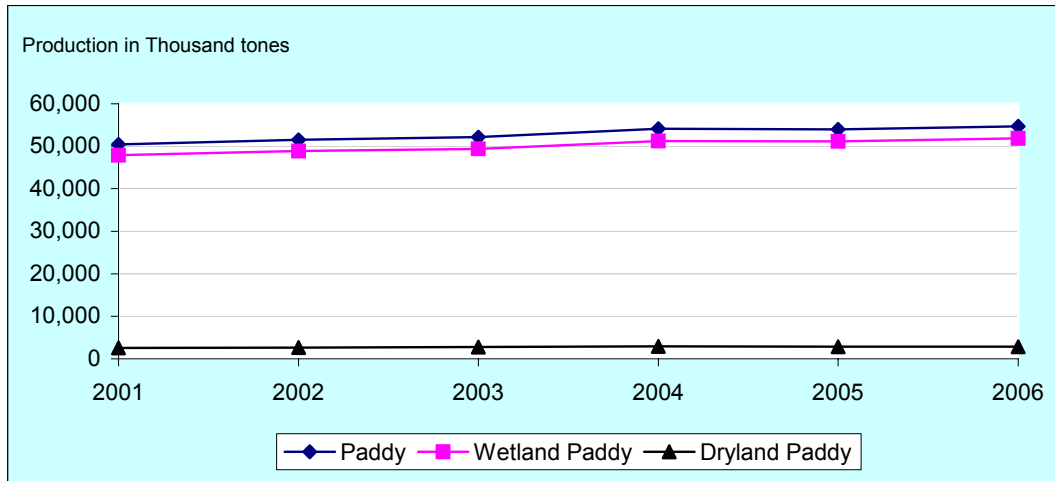
Overall production levels of Indonesian paddy remained relatively stable during the past 5 years. Natural disasters, such as the 2004 tsunami in Aceh, regularly cause dramatic losses in some production areas. On a national level their individual impact is however softened due to the vastness of the country. Following continued production increases during the past decade, Indonesia announced in 2004 that the country achieved surplus paddy production again for the first time since 1997/1998.

The total rice growing area increased during the current year only very slightly from 11.82 to 11.855 million hectares million hectares, with 10.778 million hectares being Padi Sawah and 1.077 million hectares Padi Ladang.

Figure 3.2:   Development of Paddy Growing Area in Indonesia
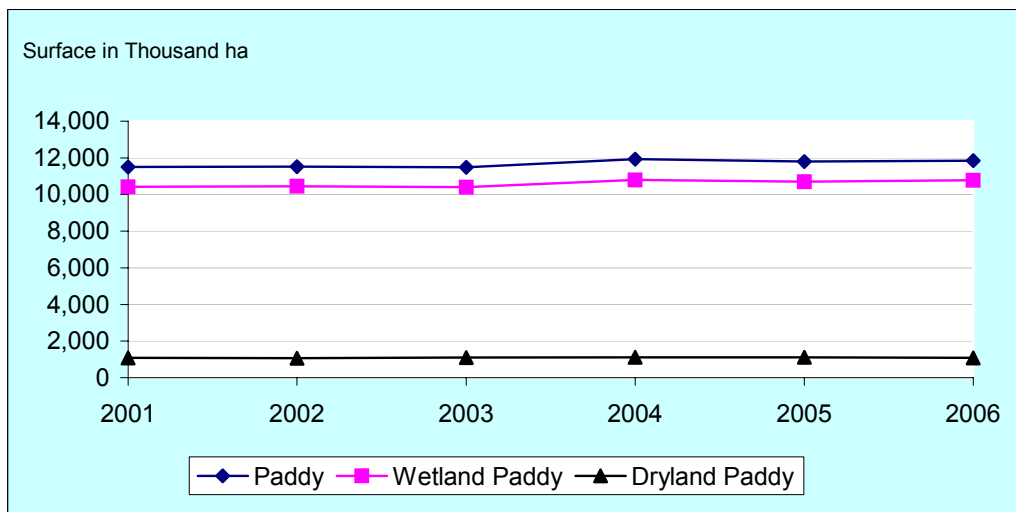
Source: BPS

Growing urbanization and an already very high population density are main factors for decreasing availability of land for paddy production in certain traditional rice production centres, particularly in some parts of Java and other main development centres. A during the

1981-1999 period almost 30% of all Javanese paddy fields have been converted to non-agricultural uses. Losses due to landslides and floods resulting from illegal logging are also of concern. Through newly developed land on other islands the country managed to stabilize decreases during most of the past five years period. Many of those areas have however a much lower production potential.

For 2006 the average productivity is officially estimated at 4.611 tons per hectare in 2006 (4.811MT/ha for Padi Sawah and 2.324MT/ha for Padi Ladang), which represents an overall increase of 0.8% during the current year. In 2005 the overall productivity increase was around 0.85%. Productivity levels vary however greatly between areas. They are lowest in Kalimantan Tengah, Nusa Tenggara Timur, Bangka Belitung and Kalimantan Barat and highest in Bali and Java.

Over half of all rice produced in Indonesia is traditionally grown on Java and harvested between January and April (Table 9 and 10). A delayed onset of the rainy season, as observed in parts of Java during October and November 2006, pushes back the planting time and postpones the principal rice harvest for this crucial production region. In view of this years rain pattern, upcoming main harvests in Central Java are only expected between late March and late April 2007. This prompted some analysts to predict a resulting production deficit of 367,000 tons during January 2007 instead of normally achieved surpluses in range of 500,000 tons during this month. Most pronounced drought conditions were reported in 18 rice growing areas of West Java and 11 areas of Central Java including Klaten, one of the areas most severely damaged by the earthquake in May 2006. The months of July, August, and September are typically dry in much of Java, but lack of rain in October and November is a cause of concern as this can result in a decrease of production. Indonesian metrological authorities announced that the country this year not only faced a higher than normal probability of delayed rains but also an increased threat of deficit rainfall.

Table 3.1:   Indonesia Rice by Region

Region Name	Season	Production
Bali & Nusa Tenggara	Jan-Apr	3%
	May-Aug	2%
	Sep-Dec	1%
Bali & Nusa Tenggara Total		5%
Java	Jan-Apr	30%
	May-Aug	19%
	Sep-Dec	8%
Java Total		56%
Kalimantan	Jan-Apr	3%
	May-Aug	1%
	Sep-Dec	1%
Kalimantan Total		6%
Maluku & Irian Jaya	Jan-Apr	0%
	May-Aug	0%
	Sep-Dec	0%
Maluku & Irian Jaya Total		0%
Sulawesi	Jan-Apr	4%
	May-Aug	4%
	Sep-Dec	3%
Sulawesi Total		10%
Sumatera	Jan-Apr	12%
	May-Aug	5%
	Sep-Dec	6%
Sumatera Total		23%
Grand Total		100%
source: BPS, 1995-1997		

Table 3.2:   Indonesia Rice by Season

Season	Region Name	Production
Jan-Apr	Bali & Nusa Tenggara	3%
	Java	30%
	Kalimantan	3%
	Maluku & Irian Jaya	0%
	Sulawesi	4%
	Sumatera	12%
Jan-Apr Total		51%
May-Aug	Bali & Nusa Tenggara	2%
	Java	19%
	Kalimantan	1%
	Maluku & Irian Jaya	0%
	Sulawesi	4%
	Sumatera	5%
May-Aug Total		31%
Sep-Dec	Bali & Nusa Tenggara	1%
	Java	8%
	Kalimantan	1%
	Maluku & Irian Jaya	0%
	Sulawesi	3%
	Sumatera	6%
Sep-Dec Total		18%
Grand Total		100%
source: BPS, 1995-1997		

The island of Sumatra, which accounts for about one-fourth of Indonesian rice production, seems less affected by this year's late arrival of wet weather. In the center of rice production, which is to the north, rains started without grave delays. Various degrees of drought were between January and June 2006 recorded in parts of Aceh, North Sumatra, West Sumatra and Lampung.

Temporary as well as permanent paddy production losses as a result of the December 2004 tsunami were very dramatic in the directly affected locations. For the whole of Aceh Province, traditionally an area with an important production surplus, these damages however only meant an overall reduction of some 7%. In December 2005 an FAO/WFP Food Supply and Demand mission estimated the provincial paddy production at 1.43 million tones and forecasted a remaining small production surplus of around 200,000 tons for the 2005/06 marketing year.

Lower than normal December rainfall quantities were forecasted for East Nusa Tenggara province (NTT) and some islands belonging to Maluku. The rice production area in NTT amounts to some 171,000 ha (1.4% of Indonesia's total rice growing area) with Padi Sawah estimated at 109,700 ha and Padi Ladang at 61,500 ha.

In West Nusa Tenggara (NTB), where farmers had hoped to increase this year's paddy surface from 299,000 to 340,000 hectares, drought reportedly already caused significantly reduced harvests on some 50,000 hectares.

In general, in Indonesia drought annually results in a loss of paddy production of approximately 50 thousand hectares, while for comparison, during El Nino years lengthy periods of drought could affect up to 180,000 ha. In 1997-1998 El Nino hit Indonesia, resulting in losses of 3 million tons in rice production. According to initial estimates by the Indonesian Meteorology and Geophysics Board (BMG) some 100,000 ha of paddy might have been affected by drought during 2006.

The analysis of rainfall records during the past 30 years indicates a trend of generally increasing drought risks in South and North Sumatra, West Kalimantan, East Java, Central Sulawesi and parts of NTT/NTB. Large scale deforestation[5] is seen as a major factor responsible for this climatic change.

Weather forecasts issued for January 2007 furthermore predict a somewhat increased risk of floods in certain paddy production centers along the north coast and in the center of Java. Some other regions that are known to be generally more susceptible to flooding include parts of Sumatra and East Kalimantan as well as pockets of South Sulawesi.

During the last two weeks of 2006 floods displaced over 100,000 people in Aceh, North Sumatra and Riau and for several days cut off large areas from all land transportation means. The latest available district level statistics on effectively incurred losses in paddy production due to natural disasters and/or pest infestation date back to the year 2003 (see Map 3). Absolute numbers in this map aren't necessarily congruent with the current situation but nevertheless provide some indications on typical damage

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[5] Forest Watch Indonesia, World Resources Institute, 2002

levels in the different production centers. A "Puso" area is defined as one suffering damage in crop production due to natural calamities and / or pest infestation.

Map 3.1: Indonesian districts classified according to percentage of paddy areas with recorded damages within overall paddy area
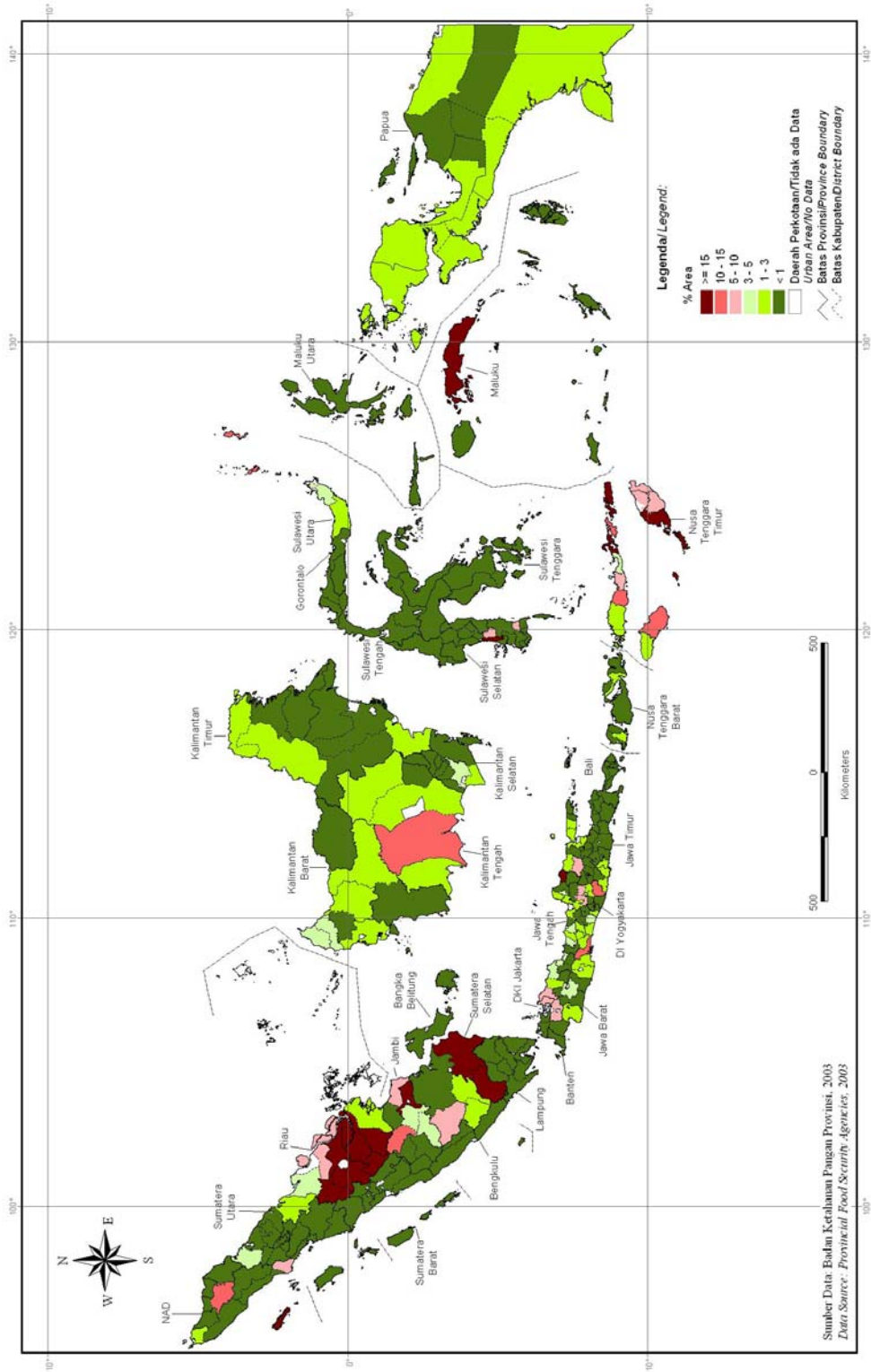
3.1.2   Maize

The 2006 maize crop is forecast at some 12 million tons, the same level as last year and slightly higher than two years ago (2004: 11 million tons). The predicted increase in productivity (0.6% from 3.45 MT/ha in 2005 to 3.47 MT/ha in 2006) is expected to compensate an anticipated slight decrease in total production surface (from 3.598 million hectares in 2005 to 3.498 million hectares in 2006).

Javanese farmers are predicted to harvest an estimated 7.06 million tons during 2006 (down from 7.456 million tons in 2005), which represents 58.2% of the country's total production.

Sumatra remains the second largest maize production area in 2006 despite relatively important decreases in production during the year (2.460 million tons in 2006 versus 2.630 million tons in 2005).

Moderate maize production increases are forecast in Nusa Tenggara Timur (from 0.55 million tons in 2005 to 0.61 million tons in 2006), Nusa Tenggara Barat (from 0.96 million tones in 2005 to 0.10 million tons in 2006), Sulawesi (from 1.38 million tons in 2005 to 1.56 million tons in 2006) and Kalimantan (from 0.18 million tons in 2005 to 0.22 million tons in 2006).

FAS/USDA (Foreign Agricultural Service of the US Department of Agriculture) field observations in Central Java indicated in early December 2006 a promising upcoming maize harvest (mostly second planting after the main rice harvest) despite the lower than normal rainfall rates in the past months.

3.1.3   Cassava

The anticipated overall production of Cassava is expected to grow by 3% (from 19.23 million tons in 2005 to 19.91 million tons in 2006). Yields, which already increased at important rates during the past five years are forecast to grow further; this time by additional 2.5 % on average.

While Java remains the largest production center for Cassava in the country (10.441 million tones which are equal to 52% of the total production in 2006), significantly higher 2006 harvests are forecast mainly in Sumatra (from 5.78 million tons in 2005 to 6.58 million tons in 2006), Kalimantan (from 0.47 million tons in 2005 to 0.51 million tons in 2006) and Sulawesi (from 0.91 million tons in 2005 to 1.01 million tons in 2006). North Maluku on the other hand is expected to harvest somewhat less Cassava in 2006 (reduction from 0.14 million tons to 0.12 million tons).

3.1.4   Soybeans

The 2006 production of soybeans is forecast at 0.78 million tones, which is slightly lower than in 2005 (0.81 million tons). Overall expected yields were also slightly lower than in 2006 (1.301 MT/ha in 2005 versus 1.296 MT/ha in 2006).

In Java, the largest soybean production centre of the country, production is expected to fall from 0.56 million tons to 0.54 million tons. Equally lower quantities are forecast for Sumatra (0.67 million tons in 2005 versus 0.58 million tons in 2006) and South Sulawesi (0.27 million tons in 2005 versus 0.24 million tons in 2006).

Second most important quantities are produced in Nusa Tenggara Barat where a slight increase is expected (0.107 million tons in 2005 versus 0,109 million tons in 2006).

3.1.5   Groundnuts

The Indonesian groundnut harvest for 2006 is forecast at 0.840 million tons, slightly above the production during the previous two years (0.835 million tons in 2005 and 0.837 in 2004).

Java's share of this amount is 69% (0.576 million tons). Other important production centers are Sumatra (0.08 million tons in 2006), followed by Sulawesi (0.69 million tons) and Nusa Tenggara Barat (0.44 million tons).

3.1.6   Sweet potatoes

Indonesia's overall 2006 production of sweet potatoes is expected to be some 2% below the previous year (1.805 million tons in 2006 versus 1.840 million tons in 2005). The largest production centres remain in Java (39%), Maluku/Papua (19%) and Sumatra (19%). Production in Papua and Maluku, where the crop plays a particularly important role, is forecast to grow from 0.345 million tons in 2005 to 0.350 million tons in 2006.

3.1.7   Mung Beans

2006 harvest forecasts for mung beans indicate an overall production growth of 6% to 0.334 million tons. Java is expected to produce some 62% of the total. Other important production centres are located in Nusa Tenggara Barat (0.039 million tons in 2006 versus 0.035 million tons in 2005) and South Sulawesi (0.029 million tons in 2006 versus 0.025 million tons in 2005).

3.1.8   Sago

Indonesian authorities do not record production forecasts for this crop, which has only localized significant importance as a main food source (in parts of Papua, Maluku and Sumatra). There were no indications of any damages occurred during the current year.

Map 3.2:   Ratio of Per Capita Normative Consumption to Net Production of Cereals
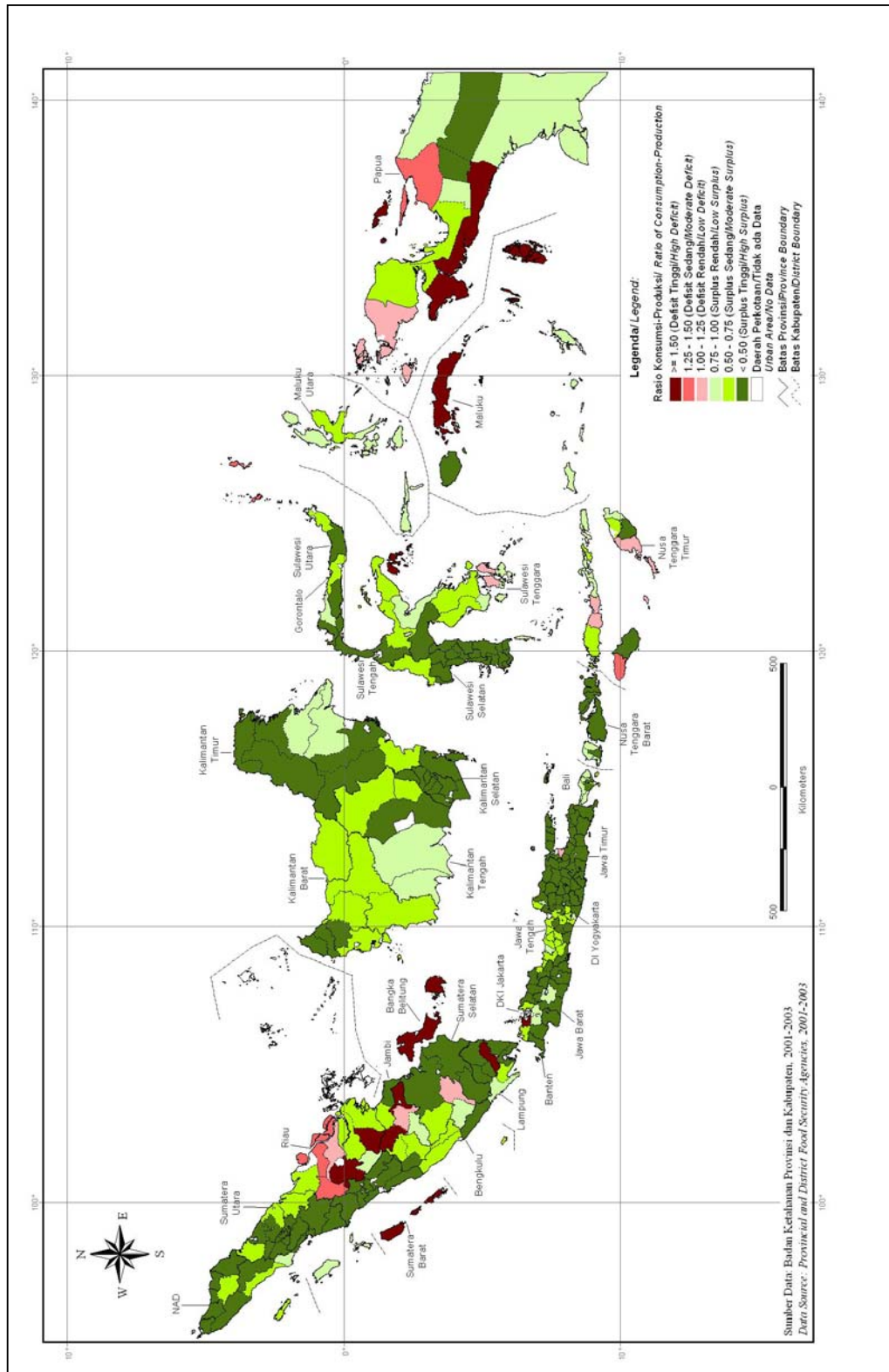
Map 4 provides an analysis of individual district's level of self-sufficiency in cereal production by comparing their average 2001-2003 harvests of paddy, maize, cassava

and sweet potato with a normative cereal consumption level of 300 g/capita/day. The data reveals that most parts of Indonesia are normally self-sufficient in cereal production (shown in shades of green). Deficient areas (shown in shades of red) are less suitable for efficient cereal production. Climatic conditions, soil suitability and recurrent natural disasters are reasons for these areas' inability to attain self-sufficiency in cereal production. The largest clusters of red districts are found in parts of Riau and Jambi.

3.1.2   Animal husbandry

Animal husbandry records were at this point of time only available up to the year 2005. Poultry traditionally contributes between 60 and 61% to the overall domestic meat production. Between 22 and 24% are from Buffalo and beef cattle. Meat production in Indonesia increased constantly between 2001 and 2005. Although avian influenza continued to be of concern, there were no indications of dramatic changes to this trend that could have had a significant negative impact on the overall domestic food production during 2006. In 2005 livestock populations increased by 11% for broilers, 5% for layers and duck, 4% for native chicken, 3 for milk cows, 1% for cattle and buffaloes, 0.03% for goats and 2% for horses[6]. Livestock density and composition varies between regions. In parts of Papua pigs are of particular importance.

Drought conditions experienced during the second half of the year reduced the availability and quality of grass for feed and subsequently the domestic production of milk by 7% in the short term. Production is expected to recover after December 2006.

3.1.3   Fisheries

Latest available statistics are again only until 2005. The analysis of 2000 to 2005 data shows yearly increases in total Indonesian fish production of between 2.7% (2002) and 6.7% (2003). The estimated total production for 2005 is 6.072 million tons with 4.653 million tons of this being from marine fisheries and 1.419 million tons from inland fisheries.

Due to the tsunami the fishery sector suffered a particularly hard blow in Aceh Province. Direct damage was estimated at about US$94 million, with almost half of it being in the brackish water pond sub-sector. The value of losses in future fish production was assessed at some US$381 million. 2005 fish output in Aceh was estimated at 73,687 tons from marine fishing and 18,205 tons from brackish water culture, 45% and 26% below normal. Based on this output and the projected population, per capita fish output was reduced from some 38 kg in a normal year to some 22.6 kg in 2005. In a normal year, per capita fish consumption in Aceh was estimated at some 27 kg with a surplus of some 45,000 tons for selling in Medan. In 2005, per capita consumption suffered a reduction to some 24.8 kg including WFP food aid. The net fish import into Aceh, mainly through WFP food aid, was estimated at 9MT.

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[5] Livestock population records for 2005 estimate 864 million broiler, 287 million native chickens, 34.3 million ducks, 13.2 million goats, 11.1 million cattle, 6.3 million pigs, 8.3 million sheep, 2.4 million buffalo and 0.4 million horses

3.2   FOOD IMPORTS

Total Indonesian imports of primary food and beverages destined for direct household consumption amounted to 2.5 million tons in 2005, with 880,000 tons of this being in primary and 1.6 million tones in processed form. The overall volume of 2005 imports under SITC group "Food and live Animals" was 11.8 million tons, slightly above the 2003 and 2004 levels[7].

The most important individual food commodity imported into Indonesia is wheat, followed in terms of volume by fresh and processed soybeans, maize, livestock products, vegetables, fruits, rice, sago and peanuts. Indonesian exports of food crop commodities represented during recent years between 7 and 12% of imports for (2004 exports: 1.2 million tons; 2003 exports: 0.7 million tons), with wheat and cassava products being the two by far most important individual commodities. Imported food crops out-weighed exports in 2004 by a value difference of 2.15 billion US dollars. The respective amount for livestock was 607 million US dollars.

3.2.1   Rice

Due to the current rice import ban there were, apart from the quantities imported by BULOG (National Logistics Agency) to replenish Government stockpiles, no significant registered quantities of rice imported during 2006 (see chapters on food stocks and relevant policies). 110,000 tons of rice stock replenishments were in January 2006 procured from Vietnam. Another 210,000 tons of Vietnamese rice were ordered in September for delivery from mid December 2006.

On 21 December 2006 Indonesian authorities announced plans to further strengthen national BULOG rice buffer stocks through the import of additional 520,000 tons between January and March 2007.

In 2005, 2004, 2003, 2002 and 2001 rice imports to Indonesia amounted to 0.190, 0.237, 1.429, 1.805 and 0.645 million tons respectively. Main countries of origin were Vietnam, Thailand, USA, China and Myanmar.

3.2.2   Wheat

Imports of wheat, which is not produced in the country, are forecast to remain stable at around 4.8 million tons in 2006/07 (April/March). Statistics for 2004 indicated 4.96 million tons of imports versus 0.58 million tons of exports (mostly in manufactured form).

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[7] Statistik Indonesia, BPS, 2006

3.2.3   Maize

2006 maize imports are estimated at between 0.5 million (FAO) and about 1 million tons (FAS/Jakarta). In 2004 the country imported 1.09 million tons of maize in fresh and 0.026 million tons in manufactured form. 2003 imports were at 1.37 million tons.

3.2.4   Soybeans

2004 trade statistics recorded total soybean (fresh and manufactured) imports of 2.88 million tons with 1.77 million tons of this being in manufactured form. 18,000 tons were exported during the same year.

3.2.5   Sago and Cassava

Sago imports amounted to 185,000 tons in 2004 and 118,000 tons in 2003 (versus yearly exports of about 2,400 tons). Indonesian cassava exports exceed imports (449,000 tons exported versus 58,000 tons of imports during 2004), with about half of the exported volume being in manufactured form.

3.2.6   Livestock and livestock commodities

2004 records show 0.87 million tons of livestock imports (0.084 million tons with the large majority of this being cattle) and livestock product imports (0.79 million tons with milk and butter playing important roles) into Indonesia. Exports reached during the same period 0.22 million tons.

3.3   FOOD STOCKS

The Government of Indonesia (GoI) through BULOG (National Logistics Planning Agency) maintains stockpiles of rice throughout the country which it uses to distribute emergency relief to disaster-hit areas and to conduct "market operations," whereby rice is released onto local markets to curb excessive increases in prices. Up to 250,000 tons are released per month from national stocks to secure supplies and stabilize prices, with expected requirements for the period between mid December 2006 and March 2007 alone amounting to some 600,000 tons. IDR1.5 trillion (around $162 million) in subsidies have been allocated from the Indonesian 2007 state budget to maintain Indonesian national rice stocks. BULOG's budget in 2005 was IDR 4.7 trillion.

In September 2006 BULOG reported its stocks at 532,000 tons, which is half of the national stocks safe level of 1 million tons (safe level estimate according to a study by BULOG; other analysts suggest required safe levels to be considerably lower). Prior to being replenished through imports and local purchases rice stocks reportedly fell below 350,000 tons and reached the lowest stock in BULOG's history. During part of the year the agency experienced difficulties purchasing rice locally as farmers were reluctant to sell their paddy rice to BULOG at the offered price of IDR 1,730/kg.

Imports contributed some 320,000 tons to the replenishment of Indonesian rice buffer stocks during 2006. 210,000 tons of imported rice were in mid December delivered to Banten, East Nusa Tenggara, North Sulawesi, North Sumatra, Nanggroe Aceh Darussalam, Riau, East Kalimantan, West Sumatra, Maluku, West Papua and Papua. On 21 December Indonesian authorities decided to import additional 520,000 tons of rice stock replenishments. Deliveries are scheduled to take place from January to March 2007.

3.4 ADMINISTRATIVE REGULATIONS AFFECTING FOOD AVAILABILITY

3.4.1 Rice import ban

Through the Minister of Trade Decree No.: 649/MDAG/7/2006, dated 21 July 2006, the Indonesian government extended a ban on imports of rice until the end of 2006. The rice import ban was initially imposed by the central government in early 2004 (except for a brief period immediately following the tsunami disaster and to replenish BULOG stocks) to protect farmers' prices and income for paddy production. Initially seen as a temporary measure the ban has since been extended repeatedly.

The regulation is intended to protect local farmers from receiving low prices due to unfair competition with cheaper price of imported rice. Apart from the import ban extension, the Indonesian Government also decided to provide some compensation to farmers that suffer from drought.

Indonesia's rice import ban was in the past repeatedly a cause for controversy and arguments among politicians, farmers, consumer groups and economists. In its latest report on Indonesia, the Worldbank suggested lifting the ban as it had contributed to a 33% rise in rice prices and, as a result, swollen the ranks of the poor. Domestic rice producer organizations, including the Indonesian Farmers Association (HKTI), strongly oppose imports and objected the Government's most recent decision to procure 520,000 tons of rice stock replenishments abroad.

Presidential Instruction INPRES 9/2001 requires that rice import policies seek a balance between the needs of rice producers and rice consumers. Despite this Presidential Instruction rice prices in Indonesia are currently near historic high levels (for further details see chapter on food prices).

3.4.2 New policy on the commodity of rice

On 6 November Indonesian authorities announced plans to issue in the near future a new non-price related policy on the commodity of rice. With the new measures the Government intends to increase next years domestic rice output by 2%-5%. The policy was said to come in the form of a Presidential Instruction, in which detailed quantitative targets will be set for several areas, including the mandatory percentage of certified rice seeds to be used in planting, the level of fertilizer to be used to ensure a balance between too little fertilizer and the degradation of paddy fields, as well as irrigation management.

How this new policy might affect future price developments for fertilizers remains yet to be clarified. The Ministry of Agriculture earlier announced an increase in fertilizer prices during the coming year, only to have the President publicly deny the increase. The 2007 budget includes fertilizer subsidies amounting to IDR 5.8 trillion.

Indonesian authorities, including the President, regularly underline the importance of well performing agriculture and rural economy sectors as well as required improvements with regard to food resilience. Revitalizing agriculture, fisheries, forestry, and the rural sectors (RPPK) is one of nine work program priorities outlined in the 2007 Government of Indonesia Work Plan. Improvements in the integrated agricultural subsidy system are part of the program. However, the impact of this integration might, due to it's complexity, only be felt in the following years.

The development of isolated areas, poverty alleviation and the increasing of employment opportunities, investments, and exports are three other priorities in the 2007 Government Work Plan.

Rice, maize, cassava, soybeans, sugar and beef are considered strategic food commodities in Indonesia.

3.4.3   VAT on agricultural products

During September 2006, the House of Representatives, the Ministry of Trade and Ministry of Finance agreed to eliminate the 10 percent VAT on several agricultural products including milk. This policy has been long awaited by the Indonesian agricultural sector and is expected to lower the cost of producing agricultural finished products within the country. However, official regulations are yet to be released.

3.5   OVERALL LEVEL OF CALORIE AND PROTEIN SUPPLY

Both, FAO and Indonesian authorities describe the current overall food supply situation in Indonesia as satisfactory. Data on the food availability per capita was computed from Ministry of Agriculture and BPS statistics using the Input-Output table approach and FAO standard methods to compile food balance sheets. The per capita food availability is the total food availability divided by the estimated number of people in the middle of the year.

A WFP/FAO Food Supply and Demand Assessment was carried out in December 2005 for Aceh Province and Nias island. For other provinces or districts no individual food supply statistics were available. Local differences in importance of certain food crops suggest relatively important variations between regions. However, they have not been properly documented. The last FAO/WFP Crop and Food Supply assessment for the whole of Indonesia dates back to 1999. The latest FAO GIEWS update for Indonesia was issued at the end of September 2006.

3.5.1   Availability of per capita daily calories

Indonesian authorities estimated the availability of per capita daily calories to be 3,080 kcal in 2005 and 3,030 in 2004. Based on estimated developments of the domestic production, imports and population growth no significantly different numbers are expected for 2006.

Cereals were with 60 to 61% (1,853 kcal in 2005 and 1,838 kcal in 2004) clearly the largest contributor to the overall amount of available calories. 282 kcal (2005) and 280 kcal (2004) came from starchy food. Contributions by other commodity groups were as followed:

- oil and fats: 348 kcal in 2005 / 329 kcal in 2004
- sugar: 130 kcal in 2005 / 128 kcal in 2004
- nuts / oil seeds: 206 kcal in 2005 / 205 kcal in 2004
- fruits: 90 kcal in 2005 / 87 kcal in 2004
- vegetables: 42 kcal in 2005 / 40 kcal in 2004
- meat: 44 kcal in 2005 / 42 kcal in 2004
- eggs: 21 kcal in 2005 / 19 kcal in 2004
- milk: 17 kcal in 2005 / 16 kcal in 2004

3.5.2   Availability of proteins

Total per capita daily availability of proteins was 77.46 grams in 2005, slightly above the 2004 level of 76.30 grams. The by far largest share of this was, as with calories, from cereals (60.1 to 60.2%). Contributions by individual commodity groups were as followed:

- cereals: 46.60 g in 2005 / 45.90 g in 2004
- nuts / oil seed: 12.57 g in 2005 / 12.12 g in 2004
- fish: 7.99 g in 2005 / 8.25 g in 2004
- meat: 3.07 g in 2005 / 2.98 g in 2004
- vegetables: 2.13 g in 2005 / 2.01 g in 2004
- starchy food: 1.73 g in 2005 / 1.72 g in 2004
- eggs: 1.58 g in 2005 / 1.45 g in 2004
- fruits: 0.97 g in 2005 / 0.94 g in 2004
- milk: 0.71 g in 2005 / 0.83 g in 2004
- oil and fats: 0.08 g in 2005 / 0.07 g in 2004
- sugar: 0.03 g in 2005 and 2004

3.5.3 Availability of fats

Daily per capita availability of fats was 71.29 g in 2005 versus 68.70 g in 2004. Contributions by commodity group were as followed:

- oil and fats: 38.72 g in 2005 / 36.75 g in 2004
- nuts / oil seed: 14.46 g in 2005 / 14.43 g in 2004
- cereals: 9.36 g in 2005 / 9.31 g in 2004
- meat: 3.44 g in 2005 / 3.30 g in 2004
- eggs: 1.52 g in 2005 / 1.41 g in 2004
- fish: 1.04 g in 2005 / 1.01 g in 2004
- milk: 0.97 g in 2005 / 0.91 g in 2004
- vegetables: 0.63 g in 2005 / 0.56 g in 2004
- starchy food: 0.55 g in 2005 / 0.53 g in 2004
- fruits: 0.49 g in 2005 / 0.46 g in 2004
- sugar: 0.11 g in 2005 and 2004

3.6 MARKET CAPACITY TO MEET THE DEMAND IN FOOD COMMODITIES

Approximately 70 percent of rice produced in Indonesia is traded. For many other food commodities this percentage is at a similar level or even higher. Functioning markets are therefore essential for food security in both rural and urban areas. Private traders, millers, wholesalers and retailers operating in an open local market situation largely determine local consumer prices of rice and other food commodities.

3.6.1 Regional variations

Food price variations among the various regions are considerable and are principally attributed to a declining role of BULOG and the increased importance of cost factors in handling and transporting goods to more remote locations.

2005 Consumer Food Price Indices for 45 main Indonesian cities show variations ranging from 108 to 139. During the same time the cities' General Consumer Price Index ranged between 117 and 139 indicating slightly higher regional variations for the food sector.

2005 statistics of retail prices of rice in 30 traditional markets across the country ranged from IDR 2,955 to IDR 4.432, meaning that highest recorded regional price was 50% above the lowest one. 2004 figures indicate an even higher regional variation of 62%.

**Figure 3.3:   Price Fluctuation for Cheaper Variety of Rice in Major Urban Areas
(Dec 2004-Jun 2006)**
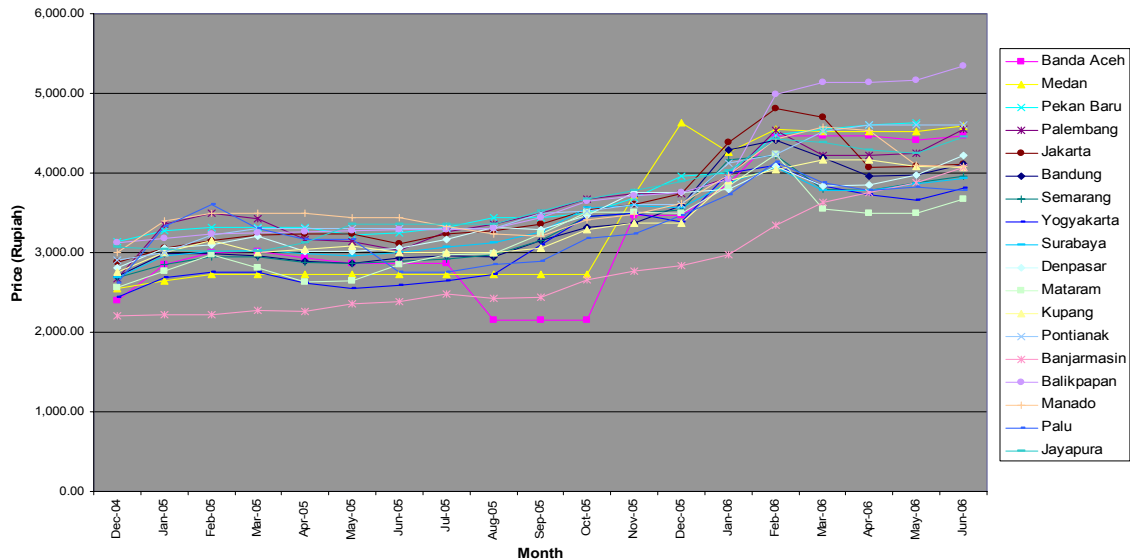
Above figure illustrates the important prices differences among some major markets across the archipelago. Consumer food price levels in other markets located in more remote areas tend to be even higher.

Historically the National Logistics Agency (BULOG) had overall responsibility for regulating food markets and for being the sole importer of certain commodities such as rice. Reforms and liberalization of trade and imports, however, have meant that BULOG now exercises less control over imports and is now only responsible for rice, with trade in sugar, wheat and maize being privatized. In the past, observers have credited BULOG with achieving two main objectives, namely in keeping rice prices relatively stable compared to international prices and ensuring adequate supplies to consumers throughout the country irrespective of distance and location. The agency was able to achieve this through its extensive network of stores located even in the remotest of islands. The second of these has been of considerable importance in food security especially in areas that would otherwise have been neglected due to inadequate infrastructure and poorly developed markets.

3.6.2 Physical access

Physical access to markets, by both consumers and suppliers, is usually not a serious concern for the large majority of Indonesia's population. Difficulties are however much more pronounced in the more remote parts of the archipelago, particularly where there are no proper road networks and inter-island sea transport is scarce. Transportation costs in such locations can easily reach multiple amounts of those experienced in better connected areas, which as a result drives up local consumer prices and limits the flow of supplies. Seasonal differences in the availability of individual food commodities are also more important in those remote parts of the country.

Elsewhere, food supply to local markets remains usually sufficient throughout the year, but access is restricted by limited purchasing power due to chronic poverty, a lack of adequate livelihood opportunities and high unemployment.

3.6.3 Seasonal variations

Food consumption tends to increase during holiday seasons (particularly Eid-ul-Fitri and year end), which usually leads to generally higher market prices for various food commodities during that time. The price of rice also tends to increase during droughts and after the end of harvest periods. Although richer farmers store paddy and sell to the mills when prices are promising, cash strapped smaller producers usually sell quickly to pay for harvesting, threshing and household expenditures. Hoarding by traders and the keeping of larger than usual farm stocks can lead to an artificial temporary shortage of rice on the market and thus lead to high market prices in some regions.

Speculation is believed to have played some role in the most recent increase of rice prices, which occurred in November and December 2006 following predictions of a late start of main rice harvests on the island of Java. Once it became obvious that the harvest will be coming in late, prices increased by between 5 and up to over 15% within a week. The Central Statistics Agency (BPS) noted that the surge in the price of rice was particularly pronounced in West Java and North Sumatra. In West Java's capital, Bandung, the price of rice increased over the course of one week to between IDR 4,900 (53 U.S. cents) and IDR 5,000 from between IDR 4,100 and IDR 4,300 previously.

In order to stabilize rice prices the Indonesian government meanwhile tasked the State Logistics Agency (BULOG) to release additional supplies from the national rice stock according to each region's needs. Seven provinces so far asked for additional rice supplies of 50,000 tons (Papua, West Irian Jaya, Bengkulu, East Kalimantan, the Riau Islands, West Sumatra and North Maluku). The release of rice stocks is to continue until at least in February, when main harvests in much of Java are expected to pick up speed and the country's domestic production of the staple food commodity starts reaching satisfactory levels.

Figure 3.4: **Weekly Price Fluctuation for Cheaper Variety of Rice in Major Urban Areas (Sep 2006 – Dec 2006)**
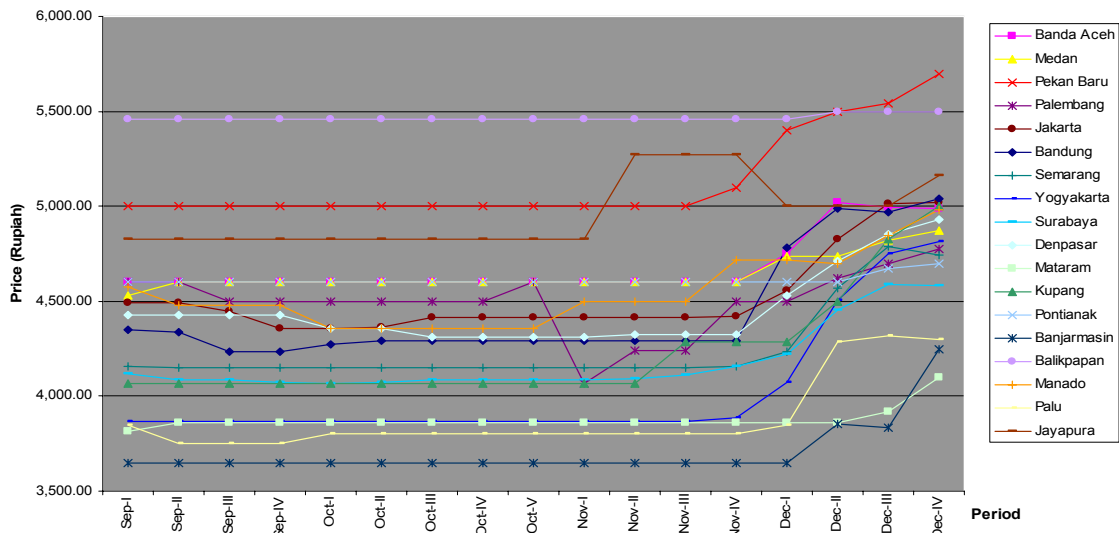
3.6.4 Importance of disasters and instability

Natural disasters frequently cut off areas from normal supply routes for key food commodities. However, in most cases supply routes and markets tend to re-open again relatively soon afterwards, although sometimes through temporary alternatives with reduced capacity and/or with negative cost implications for consumers. Situations like in some tsunami-affected parts of Aceh, where all road and port connections were interrupted for extended periods of time (2216 km of destroyed roads and 400 damaged bridges resulted in a surge of transport costs by 24 percent during the first 8 months of 2005), are exceptional. Even in Yogyakarta, where a recent earthquake destroyed or damaged several hundred thousand buildings, market activities started to resume within a few days only. BULOG emergency rice stocks located across the archipelago provide additional stability in disaster prone regions, as they can be rapidly accessed in case of need. In both, tsunami-hit Aceh and the Yogyakarta earthquake area the overall food supply situation returned to satisfactory levels.

Political uncertainty, security problems and civil unrest had in the past a more important negative effect on the functioning of local markets (particularly in Aceh, Maluku, West Timor and parts of Kalimantan and Central Sulawesi) as traders were reluctant to hold stocks or transport large consignments over long distances. The situation normalized during the past years, with Poso district in Central Sulawesi remaining the only area where occasional tensions were still of concern during the recent past. In Aceh, where a 28-year conflict displaced 35,000 people and killed some 10,000 others, a peace deal was signed on 15 August 2005. In past years, bus burning and widespread extortion on Aceh's roads seriously impeded transport and transactions.

3.6.5 Cash crops and livestock

The importance of various kinds of cash crops and livestock varies greatly from location to location. Market price levels show both seasonal and geographic variations and are to various degrees influenced by local, domestic and international demand. Livestock demand and prices usually surge during certain Islamic holidays (Eid-ul-Adha). On the other hand, many poorer families tend to sell their livestock during times when extraordinary expenses are required, for example at the start of a new school year. Obviously, prices tend to decrease during such occasions.

3.7 FOOD PRICES

Food insecurity in Indonesia is currently not primarily a problem of aggregate production and supply but much more one of reduced incomes and erosion of purchasing power. In other words food is available, but at a cost that increasing numbers of poor people find difficult to afford.

3.7.1 Inflation trends

In October 2005, the Indonesian Government increased fuel prices by an average of 126 percent, which in return triggered immediate important price increases also for most other goods and services. The increased prices affected both the industry and consumers. The overall yearly inflation jumped from 6.4% in 2004 to 17% in 2005 (in Aceh the inflation rate accelerated even faster to about 40% due to the tsunami impact). Food product inflation increased during the same period from 6.4% to 14%, while the inflation for prepared food jumped from 5% to 14%. The Government currently targets an end-2006 inflation level of around 6%. In view of recently increased surges in food prices it is unclear if this target can be met. Indonesia's on-year inflation eased to 5.3% in November from 6.3% in October 2006. A recently published World Bank report[8] on poverty in Indonesia showed that domestic rice prices surged by some 33% during the twelve months following last year's fuel price hikes (February 2005 to March 2006). This increase was well beyond the overall domestic food inflation rate. Since December 2005 there has also been a marked increase in the difference between domestic rice prices and international market prices. Indonesian rice prices are currently considerably above world market levels.

3.8 FOOD AVAILABILITY AND IPC

As discussed during the course of this chapter, Indonesia is self-sufficient in food production and hence food availability does not influence food security at national or regional levels. However, intensive agriculture practiced in many parts of Java and farming on forest-cleared lands in Kalimantan and Sumatra pose threat on future food security. Environmental degradation through exploitative agriculture, deforestation, lack of soil conservation etc. could push the country into a food deficit one in near future. Hence, while producing IPC map for Indonesia, environmental degradation as an underlying cause was taken into consideration.

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[8] 'Making the New Indonesia Work for the Poor - Overview', The World Bank, 2006

CHAPTER 4
LIVELIHOODS AND HOUSEHOLDS' ACCESS TO FOOD

About 41 percent of Indonesia's total workforce is either classified as "own account workers" or "self-employed and assisted by a family member or a temporary employee". Such micro enterprises, often engaged in rural non-farm economic activities, have become increasingly important sources of livelihoods for villagers.

Twenty percent of the workforce is listed as "unpaid workers", while agricultural and non-agricultural casual laborers combined amount to about 10 percent. Only about 27 percent of Indonesia's active workforce has fix employments.

4.1   POVERTY TRENDS IN INDONESIA

Ever since a steep increase in poverty during 1998 multiple crises, the percentage of poor people in Indonesia started to fall once again steadily (Figure 5). But a significant increase in price of rice over 2005-2006 resulted in an increase in percentage of poor people in 2006, compared to that in 2005.

Figure 4.1:   Percentage of Poor People in Indonesia
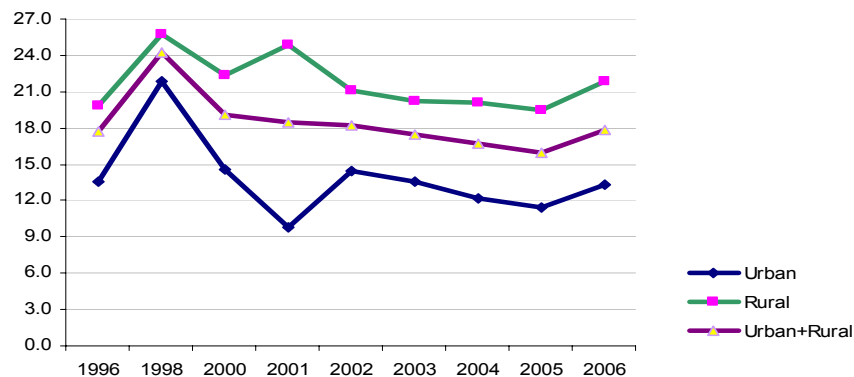
Some 80 percent of Indonesians and 65 percent of Indonesian farmers are, according to the World Bank, net rice consumers; the rice price increase has been identified as a main contributing factor to growing poverty levels. Three-fourths of these additional 4 million became poor because of the rise in rice price. Buying rice accounts for as much as a quarter of total spending among the country's poor. A recently published report by the World Bank[1] showed 33 percent of the increase in the price of rice as the major reason for the increase in the number of poor people. Reasons apart, in absolute numbers, this means Indonesia has more than 39 million poor people in 2006, compared to about 35 million in 2005.

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[1] 'Making the New Indonesia Work for the Poor - Overview', The World Bank, 2006

The year of 2005 also witnessed a sharp increase in the fuel price due to withdrawal of a significant portion of the fuel subsidy. The government saved almost 10 billion dollar as a result of this measurement. The analysis made by the World Bank, however, indicates that the fuel price increase does not have any significant negative impact, like rise in the price of rice, on the poor people. This was primarily due to an Unconditional Cash Transfer (UCT) programme, in which a family was eligible to receive a cash assistance of Rp. 100,000 per month. This scheme so far benefited more than 19 million poor people in the country.

There is another important aspect on Indonesia's poverty. The National Poverty line is around USD 1.55 per capita per day (Purchasing Power Parity). According to this poverty line, there are 17.75 percent people below poverty line in 2006. Whereas, according the World Bank's USD 2 per capita per day yardstick, the percentage goes up to around 50 percent. This clearly shows that there is a sizeable population in the country who are precariously hanging just above the poverty line and any shock/disturbances can pull them below the poverty line. With consistent increase in the price of rice and certain other essential commodities, it is some of those borderline people who would have fallen below poverty line in recent times. Even a comparison of 2003 and 2004 poverty data shows that about 38 percent of the poor in 2004 were non-poor in 2003. In this context, it must be mentioned here that the current trend of extended dryness and lack of rainfall, mostly in central and eastern Indonesia, could pull more people below the poverty line, if proper safety-net programmes are not put in place.

If we look beyond 'income poverty', many people who might not be categorized as poor in terms of income, do not have access to essential infrastructures and basic services, and as a result have poor human development and health outcomes. In other words, Indonesia has a high 'human poverty' – "*When one acknowledges all dimensions of human well-being adequate consumption, reduced vulnerability, education, health and access to basic infrastructure then almost half of all Indonesians would be considered to have experienced at least one type of poverty*"[2].

4.1.1   Regional Disparities in Poverty

In whatever way poverty is look at, stark contrasts across regions are found. When analyzing poverty in Indonesia, it has to be seen from two different angles. One is the severity or the depth of poverty and the other is the spread of poverty, i.e., the number of poor people. According to the depth of poverty (Figure 6), the hotspots are clustered around Papua-Maluku, NTB-NTT and Aceh. Other areas of concern are Central and East Java, Sumatra Selatan and Bengkulu in Sumatra. The poverty rate is 15.7 percent in Java/Bali and 38.7 percent in Papua. Services are also unequally distributed across regions, with an undersupply of facilities in remote areas. When looking at the spread of poor people (Figure 7), instead of depth of poverty, it is mainly the Java Island that emerges as the real hotspot – 75 percent of Indonesia's poor live in Java Islands. This indicates that when poverty alleviation strategies are formulated, both severity and the spread of poverty should be taken into consideration.

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[2] 'Making the New Indonesia Work for the Poor - Overview', The World Bank, 2006

The poverty at district level (Map 5) depicts a very scattered picture. Though largely one can say that the Eastern Indonesia and Aceh have the higher percentages of poor people, there are pockets in South Sumatra and Central and East Java, where the percentages are in the higher brackets as well.

Figure 4.2:   Province wise Poverty Rate (%) in Indonesia 2004
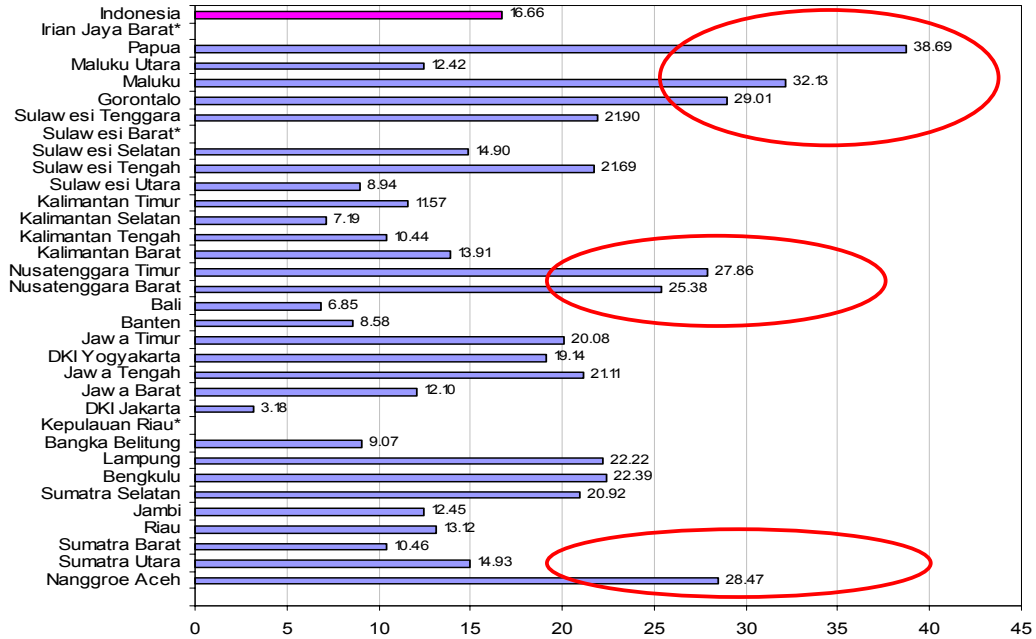
Figure 4.3:   Province wise Number of Poor People in Indonesia

Map 4.1:   Percentage of People Below Poverty Line

Legend

Poverty (%)

No Data
< 15
15-25
25-35
35-45
45.00 - 54.94

Source: BPS, 2004
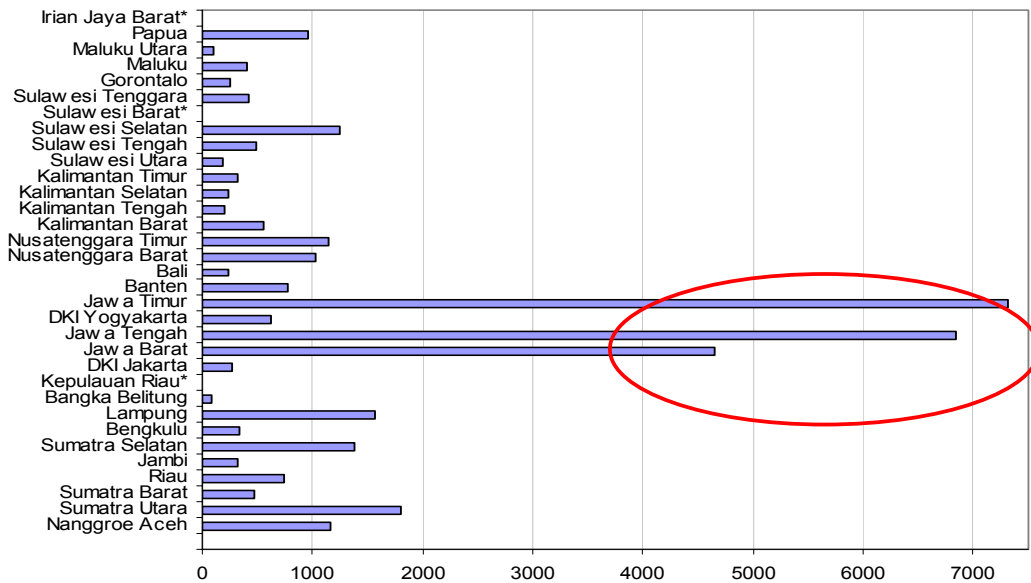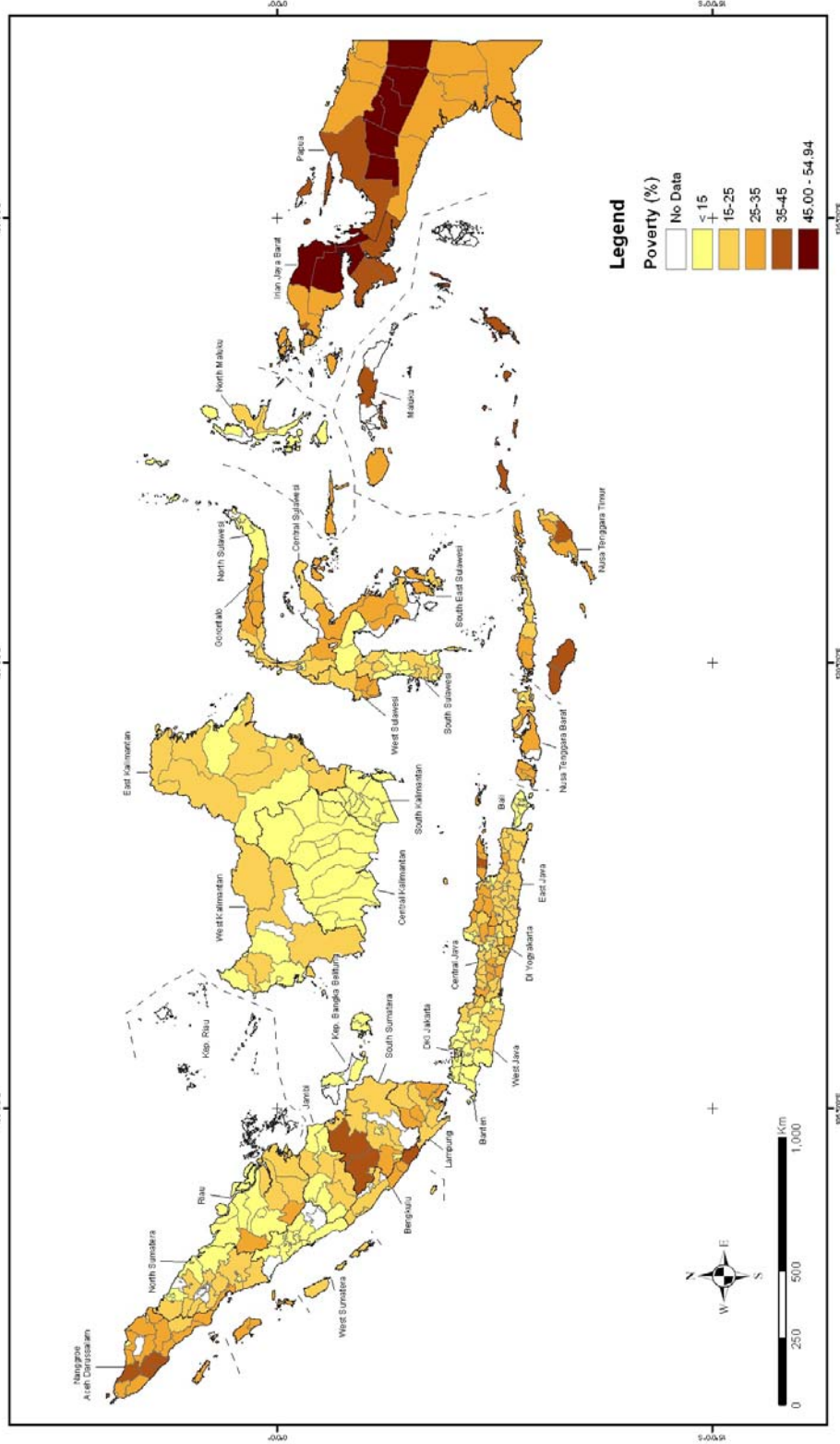
For a better understanding of the causes of income-poverty, it is very essential to look at the sources of income of the people in the country. BPS Statistik collected information on major sources of income according to the sectorial and sub-sectorial classification through a complete enumeration of villages, called PODES 2005 (Village Potential Survey). Though the accuracy of this data is not known, at aggregated level, it still provides us fairly reasonable understanding of the major economic activities at province level (Figure 8).

Figure 4.4:   Major Sources of Income According to the Sectorial and Sub-sectorial Classification
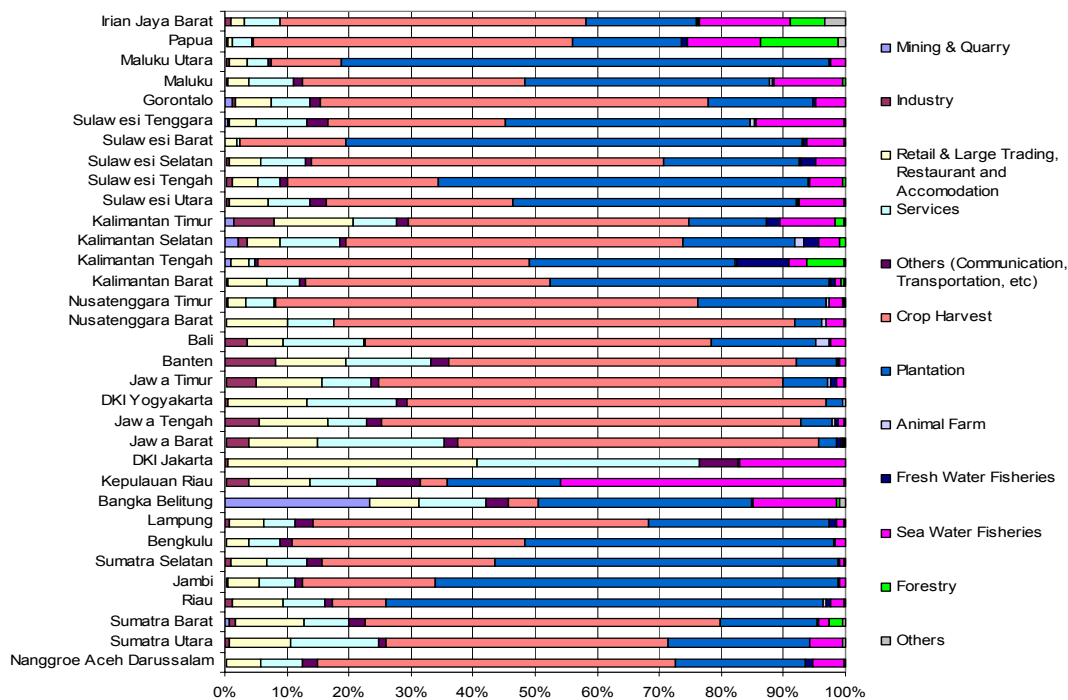
The figure above clearly shows the dominance of agricultural sector as people's source of income. Apart from the income derived from crop harvest, plantation emerges as another significant source of income in many parts of the country, followed by sea-water fisheries. With agricultural productivity remaining stagnant in recent years, high land fragmentation in densely populated regions and erratic rainfall in eastern part of the country, the people dependant on crop production (on own land or share cropping basis) as the major source of income are adversely affected, rendering many of them either falling below or hovering around the poverty line.

4.2   ACCESS TO ROADS (AND THE MARKETS)

The World Bank document highlighted the need for improvements in roads network in the country in order to reduce poverty. Remoteness is one of the major causes of poverty and food insecurity in Indonesia. Better access or lack of it significantly influences the access to food and markets and from this angle, even if people are not

income-poor, they could be categorized as poor as a result of their lack of access to various livelihood activities.

Figure 4.5:   Mode of Access in Provinces
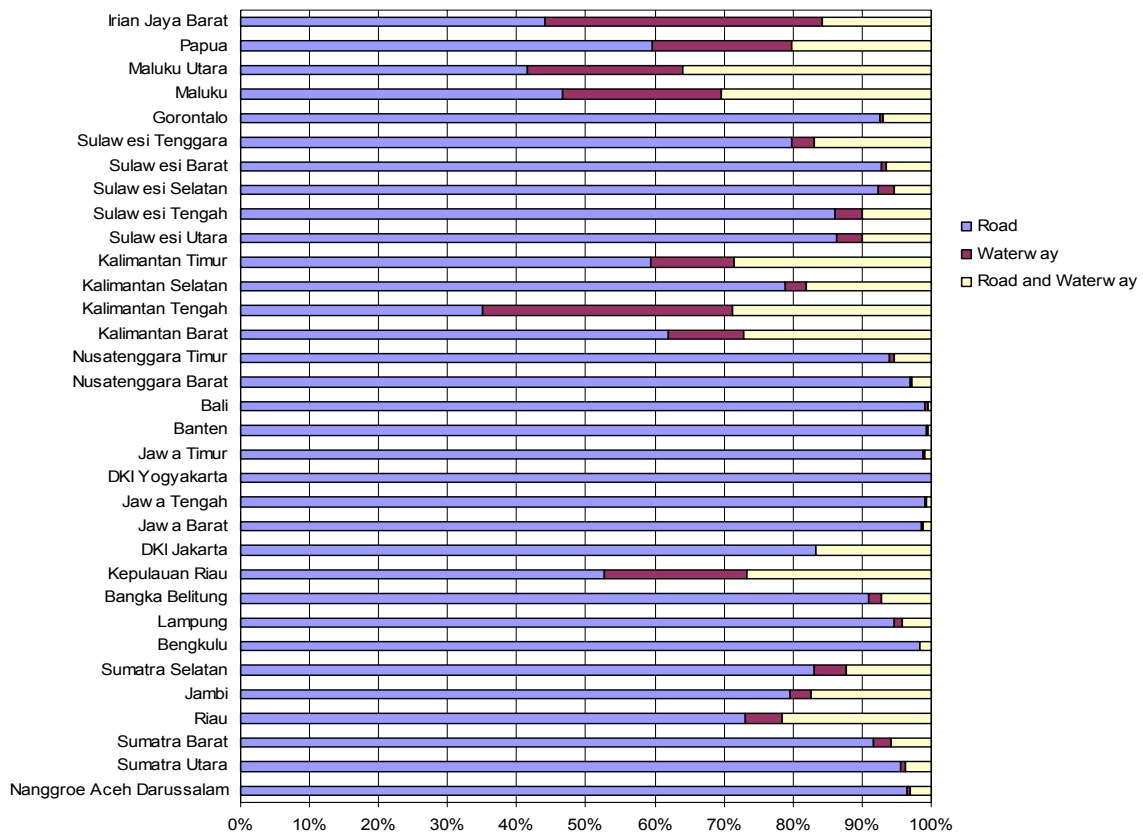
The figure above shows the mode of access in the provinces. This, however, when looking at the types of roads, it shows that mostly in outer islands, there is a significant proportion of roads that are not all-weather, i.e., roads that are non-asphalt.

The district level data on road access by 4-wheel vehicle shows fairly good access in Java, Sumatra and most of Sulawesi islands. Poor road access is mainly in Papua, Maluku, NTT, Kalimantan and south/eastern parts of Sumatra. In many parts of Kalimantan and in smaller islands of Maluku, the major mode of transportation is only by boats. For food security, access to market is essential, both for the buyers and for the sellers throughout the year. From this aspect, only Java and Bali have relatively better roads network and all other islands have cluster of districts with very low access. Better access to road also facilitates growth in non-farm activities, thereby provides alternate employment opportunities to the poor.

"…….In a firm-level survey, road access, the cost of transportation and the quality of roads all feature strongly in the top concerns of rural enterprises surveyed. Analysis shows that improving the quality of roads would be associated with a rise in the average proportion of income in a village coming from non-farm enterprise income and non-farm salaries and wages by 33 percentage points. Yet, only 61 percent of poor households have access to all-year passable roads (while 76 percent of non-poor household access these roads)." Excerpts from World Bank report – *Making the New Indonesia Work for the Poor – Overview, 2006.*

Map 4.2:   **Percentage of Village with Access by 4 Wheel Vehicle**
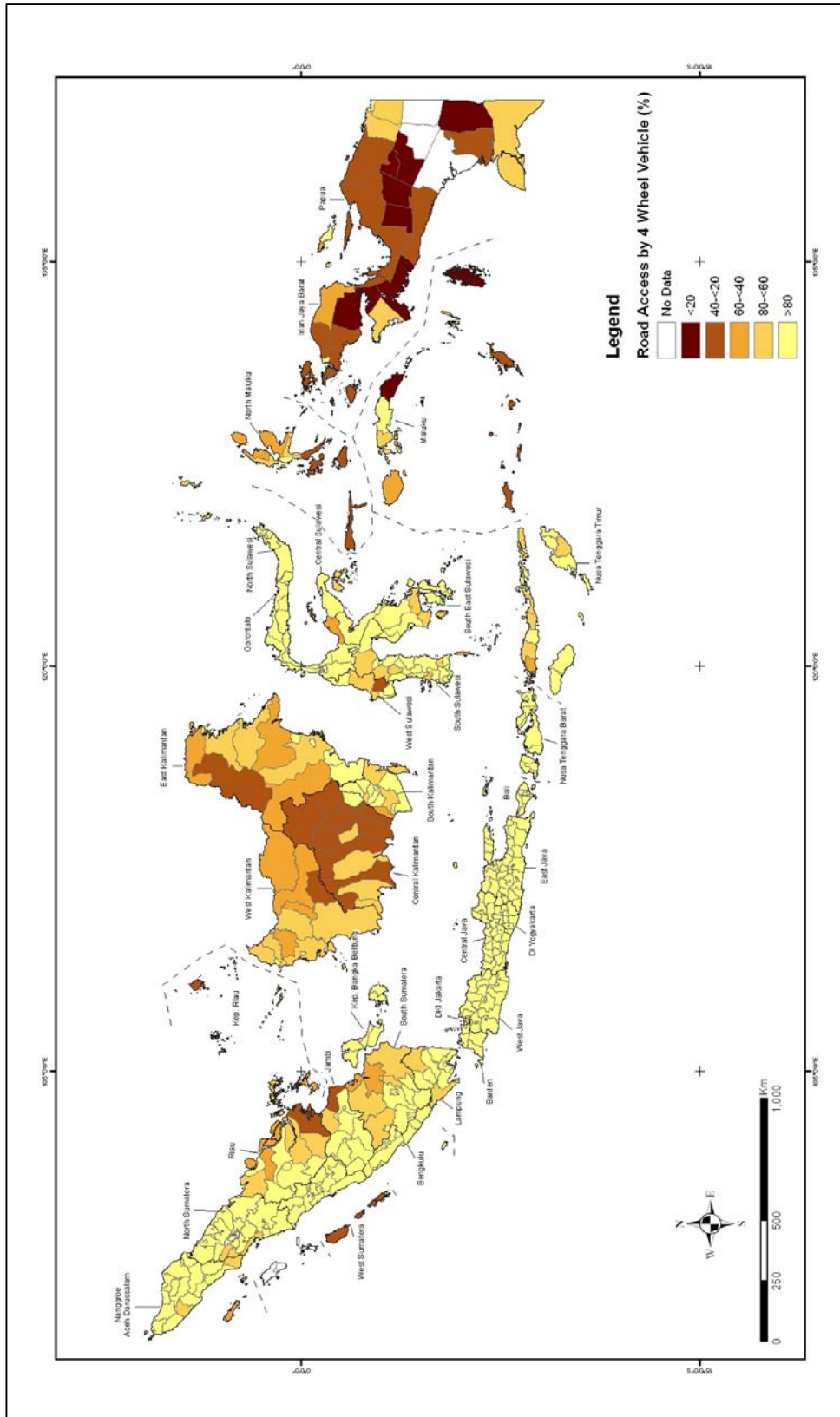
4.3   FOOD ASSISTANCE PROGRAMMES

4.3.1   RASKIN

Food assistance programmes are supposed to ease the food expenditure burden of the poor families, mostly though income-transfer mechanism. In Indonesia, the major food assistance programme, RASKIN (Beras untuk Rakyat Miskin), is implemented by the National Logistics Agency (BULOG - Badan Urusan Logistik), a state-owned enterprise. This programme was introduced in 1998, immediately after the crisis and delivers subsidized rice to poor households. Under this programme, all poor households are eligible to purchase rice at Rp. 1000 per kg every month.

Figure 4.6:   RASKIN Beneficiary Households to Total Poor Household
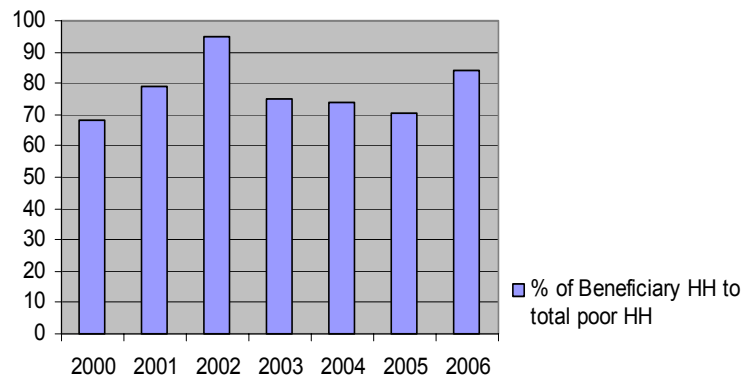
According to the data from BULOG, on an average 70 percent of the poor households receive the subsidized rice. In terms of number of poor people, 57 percent of the poor benefit from the programme. But a deeper look at the various assessments show that sometimes poor households receive only 5-6 kg per month, partly because of the faulty distribution mechanism/criteria adopted at the local level and partly because of lack of cash in hand, especially among 'ultra' poor households. This, of course, dilutes the objective/benefit of the programme.

4.3.2 WFP's Food Assistance

After the 1998 multiple crises, WFP focused primarily on urban poverty and assistance to Internally Displaced Persons. Under the urban programme (called OPSM) WFP provided subsidized rice to those poor families, who were not part of government's safety-nets. In 2004, WFP reached more than 1.7 million urban poor under OPSM. As overall economy improved significantly, WFP completely phased-out of OPSM by the end of 2005 and since the beginning of 2005 primarily concentrated on Nutritional Rehabilitation of primary school children, children under 5, pregnant women and lactating mothers in selected districts spreading across various provinces with higher prevalence of under-nutrition. In 2005, WFP also undertook a massive emergency relief operation in response to the Tsunami of 26 December 2004 and Nias Earthquake of 28 March 2005. In all, more than 3 million people received WFP food through

General Food Distribution (later renamed as Targeted Food For Recovery - TFFR), NRP and special incentive to TB patients. As situations in Aceh and Nias improved, WFP has been phasing out of TFFR and currently covering about 70,000 people in Aceh with reduced ration size (about 1200 kcal/capita/day), who are living in Temporary Living Centres and are yet to recover their livelihoods to a level that would sustain themselves.

4.4   LIVELIHOOD ACCESS AND GENDER

Female literacy is considered as an asset for economic prosperity. Areas with more literate females imply greater active participation of women in development. Based on the 2005 PODES data, the female illiteracy is particularly high in the districts of Papua, NTT, NTB, East Java, West Kalimantan and South Sulawesi (Map 7).

In terms of literacy, there is not much gender disparity in Indonesia. For every 10 literate men, there are 9 literate women. Even in terms of girl's access to education, Indonesia has fared well. At the primary and junior secondary levels, the girls to boys Net Enrolment Ratio is close to 100 percent. It falls to 97.1 percent at senior secondary level.

According to SUSENAS 2002, the share of women in non-farm employment was 28 percent, a reduction from 38 percent in 1998 (before crisis). This clearly shows that while there is no significant gender difference in education in Indonesia, there is a marked disparity between male and female in non-farm employment.

4.5   EDUCATION

A study found that 20 percent of the students listed as enrolled in the rural primary and junior secondary schools were not present in class at the time of a visit Indonesia has one of the lowest student/teacher ratios in the world, even when compared with rich economies like the United States. Yet despite this abundance of teachers, remote areas often lack teachers[3].

Particularly in rural areas, many children enrolled in school do not attend regularly.

High enrolment rates fail to capture non-attendance. Teacher absenteeism as mentioned above in rural schools and the unavailability of paramedics in rural health outposts (*Pustus*) were sometimes tied to the lack of basic infrastructure facilities such as water supply and sanitation facilities in rural schools and health posts. When there is no secondary school in the village, such as seen in Madura, girls were married off and got pregnant immediately after primary schooling. When there is a chance of attending junior high, such young marriages do not occur as frequently. This emphasizes the need to improve girls' access to junior high school for reasons beyond educational attainment.

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[3] World Bank 2005b.

Map 4.3:   **Percentage of Female Illiteracy**

Legend

Road Access by 4 Wheel Vehicle (%)

No Data
<20
40-<20
60-<40
80-<60
>80
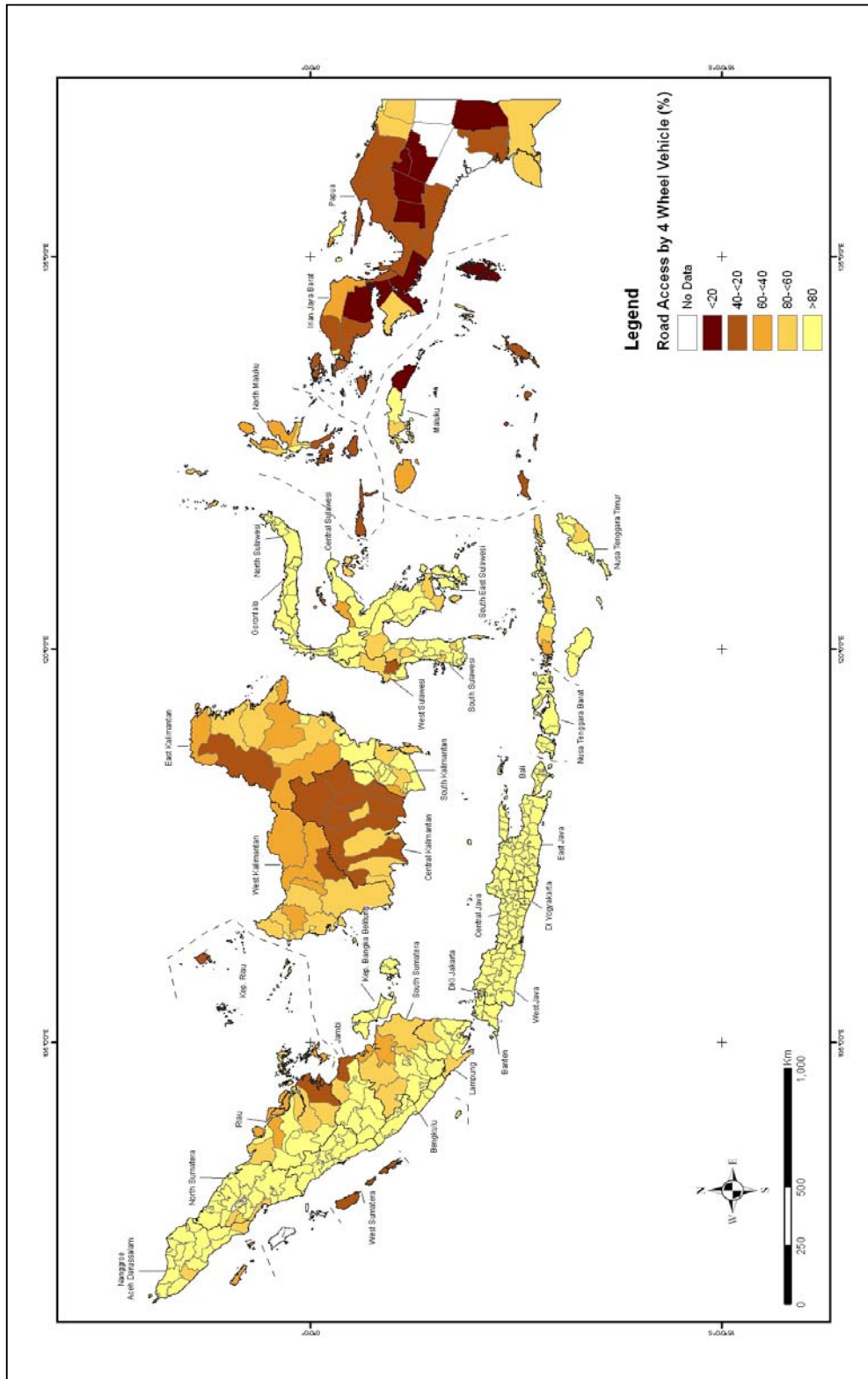
According to survey data, 44% of households in the poorest quintile with children enrolled in school reported difficulties in financing junior secondary education. The poor pay 7 percent of their total expenditure for each enrolled student at junior secondary level. Non-fee primary school expenses (such as uniforms, books, etc.) are a substantial burden for the poor. The recent policy to abolish tuition fees for the poor does not address these significant non-fee expenses. In a study the causes of low secondary school enrolment in Indonesia was investigated despite near universal primary school attendance. Attrition during the transition between primary and junior secondary education levels is the main cause. Firstly, household welfare level is a significant determinant of the low enrolment. Secondly, children from Muslim families have a significantly lower probability of continuing to the secondary level. Thirdly, children in areas with relatively abundant employment opportunities have a higher probability of giving up schooling. Fourthly, girls have a significantly lower chance of continuing[4].

4.6 DISASTERS AND ITS IMPACT ON LIVELIHOODS

Disasters, be it natural or man made, in Indonesia have led to livelihood crisis of different degrees. Short term food crisis, loss of productive assets, loss of productive workers and damages to communication, educational and health infrastructures all lead to serious livelihood crisis. Depending on the scale of the disaster, the impact also varies, both in terms of its geographic spread and severity of the loss. Recovery depends on resilience of the people and effective implementation of the livelihood recovery programmes. December 2004 tsunami and May 2006 earthquake largely affected the livelihoods of the people. The recovery, however, has been slower than what was expected. In Eastern Indonesia, perennial drought (or drought like situation) affects thousands of people almost every year. Lack of disaster preparedness and response capacity at the local level make many people chronically food insecure, rather than transient food insecure.

4.7 LIVELIHOODS AND HOUSEHOLDS' ACCESS TO FOOD AND IPC

Two access indicators were used as key underlying causes (key indicators) for the preparation of IPC map as per key reference table; 1)Assets i.e. road access, access to healthcare and female literacy levels. 2)Hazards and/or susceptibility to natural disasters. In the Indonesian IPC exercise a very important supporting indicator was poverty, which played a significant role in supporting the phase classifications. However it is not part of standard IPC key reference table.

Poverty is a predominant factor that influences food security in Indonesia. While income poverty leads to lack of access to sufficient food as a result of lower purchasing power, the lack of infrastructure (roads and markets) also hinders in physical access to food. Lack of roads and markets also stop people from livelihood diversification and

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[4] SMERU working paper, August 2006

hinder the growth of non-farm sector that could bring more income opportunities. Recent increase in rice price across the country pulled 3.1 million people below the poverty line. This will have compounding effect on the food security at the household level. There is a moderate to high likelihood of an emerging livelihood crisis, mainly in eastern Indonesia, as a combined effect of price increase and prospect of lower paddy harvest due to extended dry season in some parts and floods in other parts of the country.

Greater livelihood opportunities, especially among women, are mostly associated with literacy and education of women. Women from poor families lag behind and are unable to avail the non-farm economic opportunities due to illiteracy and non-attainment of education much beyond primary level. Early marriage is a consequence of chronic poverty and this is causing indelible damages to girls and women.

Susceptibility to natural disasters, disaster preparedness of the local governments and the communities, response capacity at the local levels etc. were also considered as the key underlying causes for food insecurity and hence influenced the phase classification.

CHAPTER 5
FOOD CONSUMPTION, UTILIZATION, NUTRITIONAL
AND HEALTH STATUS

Huge challenges remain within the utilization pillar of food security and the decentralization process introduced in 2003 has resulted in some setbacks in the health provision due to lack of capacity and guidance at provincial and district level. Indonesia has seen some progress over the past 10 years but health and nutrition indicators remain poor. It is not only localized problems but rather a nationwide complexity, contributing to inadequate indicator results.

- <u>Malnutrition rates are high</u> (stunting and underweight) and have even risen in recent years in some regions: a third of children below the age of five are malnourished (underweight) in Indonesia, with malnutrition rates stagnating in recent years despite reductions in poverty until 2005.

- <u>Maternal health</u> is much worse than comparable countries in the region: Indonesia's maternal mortality rate (307 deaths in 100,000 births) is three times that of Vietnam and six times that of China and Malaysia;

- <u>Access to safe water</u> is grossly inadequate, especially among the poor. Access to safe water in rural areas is only 48 percent, against 78 percent in urban areas.

- <u>Access to sanitation</u> is a crucial problem. Eighty percent of the rural poor and 59 percent of the urban poor do not have access to septic tanks, while less than 1 percent of all Indonesians have access to piped sewerage services.

- <u>Exclusive breastfeeding</u> is on average practiced only a couple of months (0.6 – 4 months). Weaning practices are not well documented in this vast country but is believed to be poor and family food is generally introduced immediately after breastfeeding stops.

- In Indonesia, <u>tobacco</u> use accounted for a large proportion of total burden of disease. One of two smokers dies of their habit, and half of these deaths occur during economically productive years. At the social level, tobacco not only affects the cost of health treatment, but also reduces the productivity of the smokers. In 2001, the poorest households spent 9.1 percent of their monthly expenditure on tobacco.

- Indonesia has the third largest TB caseload in the world and the numbers are increasing. HIV/AIDS prevalence on the other hand is reportedly low but as seen in other places in the world, these two diseases are often related and thus the HIV prevalence might be higher.

5.1   HEALTH CARE

Health care is decentralized since 2003 and provincial governments are responsible for the services. Evidence show that routine health services have deteriorated since then. Poor households suffer disproportionally from many health problems and the most

frequent diseases in Indonesia are; TB, maternal and perinatal conditions, malaria and micronutrient deficiencies. Utilisation of health facilities is very much influenced by fees. User fees are collected within health facilities, but later the revenue is returned to the treasury where the fees are not used to expand health sector resources. Upfront fees also burden people when they have fallen ill and may have taken time of work and thus face a direct income loss[8]. The map above shows the percentage of the population in the districts who have more than 5km to the nearest heath care facility, indicating that across the country large regions exist where more than 70% of households have more than 5km to the nearest health facility which negatively impacts on the usage of facilities. This is particularly the case for routine health services for children. Mothers are more reluctant to go for e.g. growth monitoring visits if the distances are great.

A recent study made surprise visits to more than 100 primary schools and health centres in Indonesia (Chaudhury et al 2005). It found absentee rates of 19 percent among teachers and 40 percent among health workers. Indonesia had the highest absentee rate among health workers among the countries included in the global study. Isolated, rural areas are worse hit by absenteeism where it is difficult to get qualified staff to move. Transportation of medical supplies is difficult and expensive and thus traditional healers are often used in those regions. Urban areas do not phase the same problem but costs are also there an important issue and the choice of using private clinics is a battle where the costs are higher but some people feel that the care and treatment is better.

5.1.1   Maternal and Child Mortality

Indonesia has the highest maternal mortality in Southeast Asia with estimated 1 in 65 women dying for reasons related to pregnancy and childbirth. While as fertility levels are low. As mentioned above, fees are burden to poor households and prevent them many times from getting appropriate care. About 72 percent of births are accompanied by skilled birth attendants compared with 97 percent in Malaysia and China and 99 percent in Thailand.

 The risk of maternal mortality is greater due to anemia, chronic energy deficiency, and infectious diseases, such as malaria, tuberculosis, hepatitis, and HIV/AIDS. The prevalence of anemia among pregnant women reached 51 percent, and 45 percent among post-partum mothers in 1995. In 2002, 18 percent of women of reproductive age were suffering from chronic energy deficiency. The levels of socio-economy and education, cultural factors, and access to health facilities, poor transportation, and uneven distribution of trained medical personnel, especially midwives, also indirectly contributed to maternal mortality[9].

Fee per birth assisted: SOKLAT/West Java
Paraji (TBA): Rp. 50,000 – 100,000 or Rp. 50,000 + 5 kg rice
Midwife: Rp. 300,000 – 400,000

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[8] WHO
[9] MDG progress report 2005

Map 5.1.   Access to Health Facility > 5 Kms
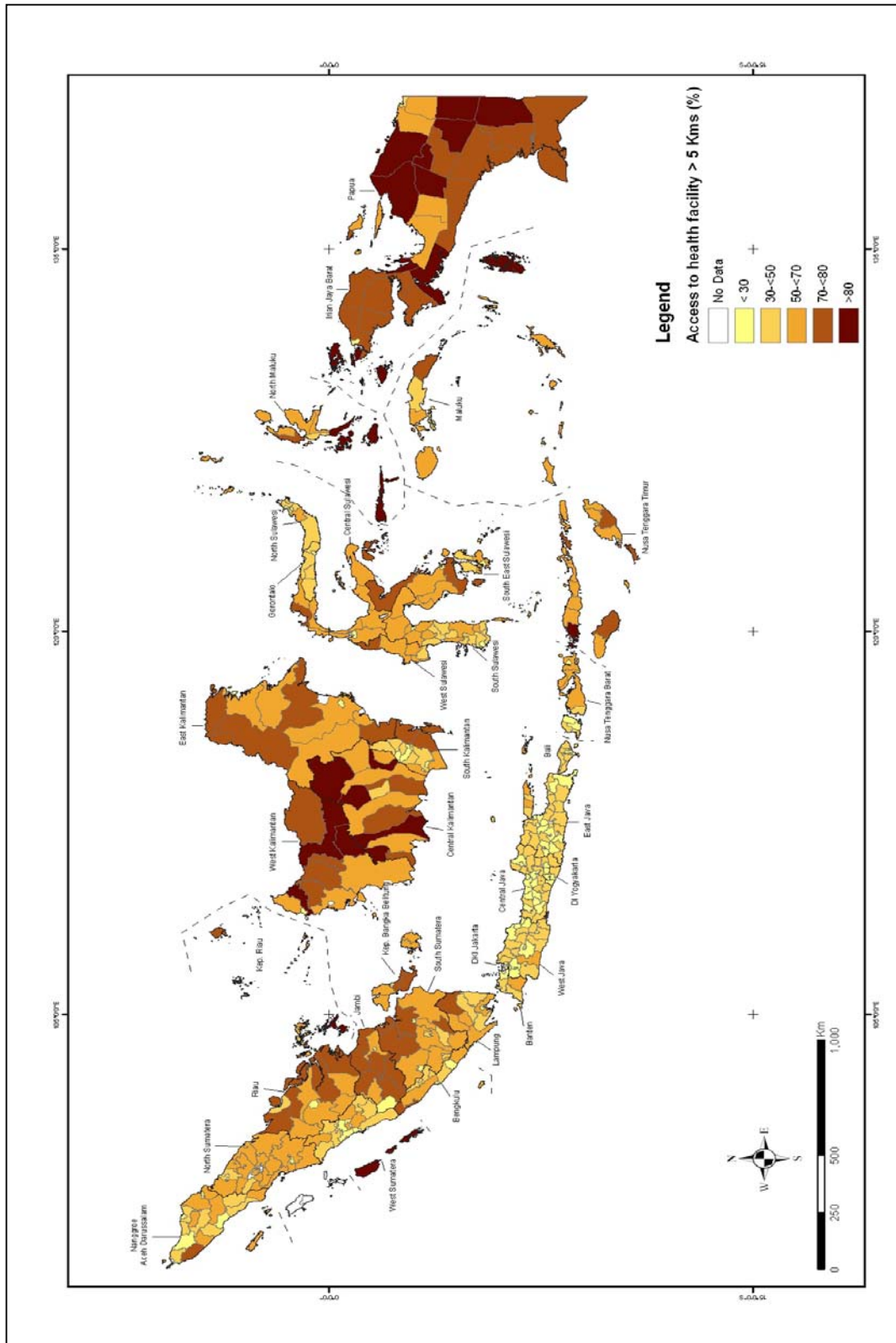
As long as the birth is expected to be normal, the TBA is the most popular and obvious choice everywhere. Barring the big city slum site of Simokerto, at every site the TBA was the first choice among women (76 percent). The main reason seems to be the differences in costs, there are several other factors favouring the TBA. The midwife's services for childbirth cost more than an average poor household's monthly income, and have to be paid for in cash. In contrast, the TBA can be paid flexibly in cash plus in-kind, at a rate about one tenth to one fifth of the Midwife's rate. The TBA is also willing to accept deferred and installment payments – as and when the family can pay.

Figure 5.1:   Infant Mortality Rate, Indonesia 1971-2004

Source: (a) 1971 Census, (b) 1980 Census, (c) 1987 NICPS, (d) 1990 Census, (e) 1991 IDHS, (f) 1994 IDHS, (g) 1997 IDHS, (h) 2000 Census, (i) 2002-2003 IDHS , 2004 WHO
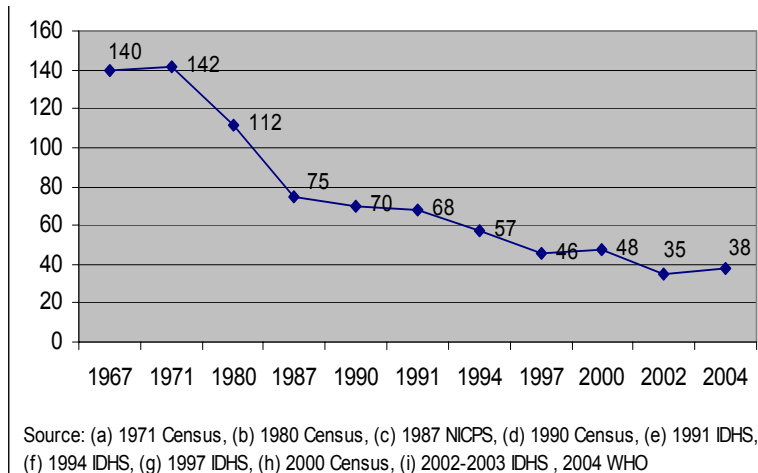
In 2004, 38 out of every 1000 children under 5 in Indonesia died10. Infant mortality (IMR) is largely attributed to the quality of healthcare during prenatal, delivery and postnatal periods. The major causes of infant mortality are infections, perinatal conditions and diarrhoea, all amenable to quality of health care.

Under five mortality (U5MR) is the result of a greater complexity of issues including poor sanitation, poor water quality, poor nutrition and infectious diseases. The worst provinces are West Nusa Tengara, South Sulawesi and Gorontalo with an U5MR of 92-103/1000/year. Annex 5 shows the distribution of U5MR across provinces of Indonesia as per IPC classifications.

IMR has not reduced much the past few years and data from 2004 shows that IMR is yet again close to 40 deaths per 1000 live births. The map below shows the geographical differences in infant mortality rate, which is lightly different from the U5MR geographical distribution. When using this indicator NTB and NTT are however still the worst areas together with some parts of Papua and North West Kalimantan.

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10 WHO

Map 5.2:   **Infant Mortality Rate**
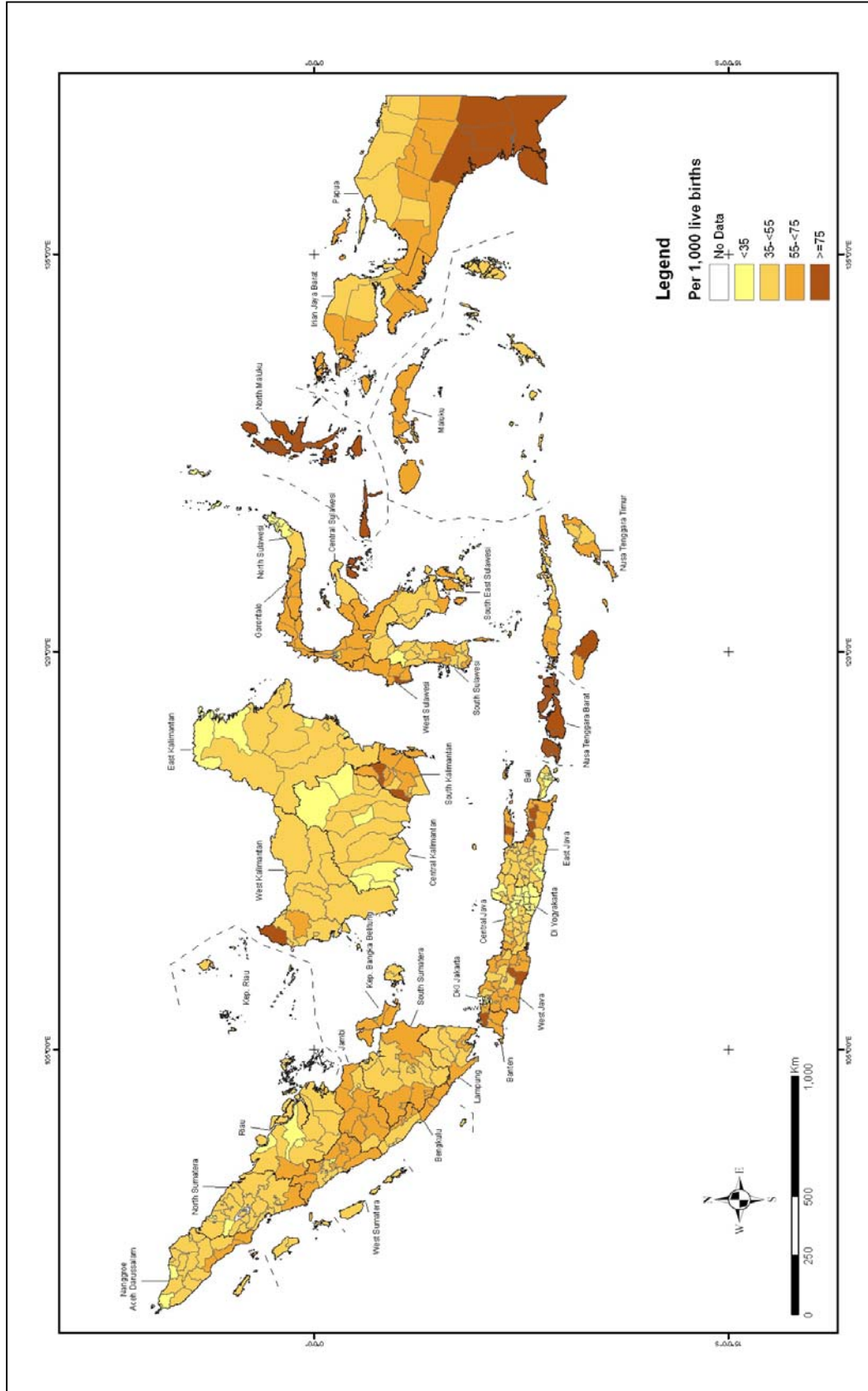
Table 5.1 below presents early childhood mortality rates for the ten-year period preceding the survey (approximately 1993 to 2002) by socioeconomic characteristics of the mother. In general, children born to mothers living in urban areas have lower mortality rates than those born to women in rural areas. For example, **the post-neonatal mortality rate in urban areas is half that in rural areas** (13 per 1,000 live births compared with 26 per 1,000 live births). The same pattern was found in the past IDHS surveys for all ages at death and in all areas of the country. The lower mortality rates in urban areas may be related to the greater availability of health facilities and better health-seeking practices of urban dwellers.

Table 5.1:   Early Childhood Mortality Rates by Socioeconomic Characteristics

Neonatal, post neonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by background characteristic, Indonesia 2002-2003

Background characteristic	Neonatal mortality (NN)	Post neonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Residence					
Urban	19	13	32	11	42
Rural	**26**	**26**	**52**	**13**	**65**
Mother's education					
No education	**34**	**33**	**67**	**25**	**90**
Some primary	30	35	65	16	80
Completed primary	22	21	43	11	54
some secondary	22	14	36	11	47
Secondary +	16	8	23	5	28
Wealth index quintile					
Lowest	28	33	61	17	77
Second	30	20	50	15	64
Middle	21	23	44	12	56
Fourth	20	16	36	9	45
Highest	13	4	17	5	22

[1] *Computed as the difference between the infant and neonatal mortality rates*

Table 5.2:   Trends in Infant Mortality by Province

Infant mortality rates (per 1,000) for the 10-year period preceding the survey, by province, 1994-2003

Province	1994 IDHS	1997 IDHS	2002-2003 IDHS	observation
Sumatra				
North Sumatra	61	45	42	
West Sumatra	68	66	48	
Riau	72	60	43	
Jambi	60	68	41	
South Sumatera	60	53	30	
Bengkulu	74	72	53	
Lampung	38	48	55	worse situation than 10 years ago
Bangka Belitung[1]	na	na	43	
Java				
DKI Jakarta	30	26	35	worse situation than 10 years ago
West Java	89	61	44	
Central Java	51	45	36	
DI Yogyakarta	30	23	20	
East Java	62	36	43	worse situation than 5 years ago
Banten[1]	na	na	38	
Bali and Nusa Tenggara				
Bali	58	40	14	
West Nusa Tenggara	110	111	74	Second highest rate is the country
East Nusa Tenggara	71	60	59	no improvement over the past 5 years
Kalimantan				
West Kalimantan	97	70	47	
Central Kalimantan	16	55	40	worse situation than 10 years ago
South Kalimantan	83	17	45	
East Kalimantan	61	51	42	
Sulawesi				
North Sulawesi	66	48	25	
Central Sulawesi	87	95	52	
South Sulawesi	64	63	47	
Southeast Sulawesi	79	78	67	Very little improvement
Gorontalo[11]	na	na	77	The highest in the country

Note: The 2002-2003 IDHS did not include Nanggroe Aceh Darussalam, Maluku, North Maluku, and Papua province. Previous surveys included East Timor. na = not applicable

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[11] Provinces that were split off from South Sumatra, West Java, and North Sulawesi provinces, respectively

5.1.2   Immunization

Measles is one of the most contagious viruses known and can be associated with high mortality rates. Routine ongoing vaccination of 9-month-old children is established to ensure the maintenance of the minimum 95 percent coverage. In the 2002-2003 DHS survey the measles vaccination coverage in Indonesia was 72 percent. In Banten it was as low as 44 percent coverage. Aceh is another region with poor vaccination coverage even after intensive campaigns after the Tsunami.

Only 52 percent of children 12-23 months had received all vaccinations and as many as 10% had not had any at all. In West and Central Kalimantan over 20 percent had not received any immunization.

UNICEF reports that routine immunization coverage has deteriorated in the last few years, mainly due to the decentralization leading to unnecessary deaths in young children.

The DHS reported that in 2002-2003 only 46 percent of all 12-23 months old had received all 3 polio vaccinations. There was a polio outbreak in 2005 with over 350 reported cases in Aceh, which lead to a massive polio campaign. In 2006, only two cases have been reported this year with the most recent wild polio case onset in February 2006[12].

5.1.3   Malaria

Malaria control activities have had a minimal effect on the incidence of malaria, with the number of estimated cases increasing through the years. Among the difficulties faced against this disease are drug resistance, transport difficulties and limited funds. More than 90 million people (almost 50% of the population) in Indonesia are living in malaria endemic areas. It is estimated that there are 30 million cases of malaria each year, but only 10 percent treated at health facilities[13]. The highest burden of malaria diseases is found in the eastern provinces, where malaria is endemic. Most rural areas outside Java and Bali are also endemic areas. Among children under five years who experienced clinical symptoms of malaria, an estimated 4 percent received anti-malarial drugs, while the vast majority was given other drugs to reduce fever (70 percent). About half of cases reported are diagnosed only by clinical symptoms with no laboratory confirmation, which lead to inaccurate and inappropriate treatment. Among the constraints identified include the country's vast land area and difficult terrain, socio-cultural differences, and financial limitations. The rainy season from October to March usually sees an increase in reported malaria cases. Dengue fever is also seasonal and follows the same pattern as malaria as that too is mosquito born. There are no prevalence data available for dengue but incidences are believed to be increasing. Prevention efforts are focused on minimizing the number of contact between human and mosquitoes by using bed nets and residual house spraying. Insecticide-treated mosquito bed nets are an effective way to prevent malaria, particularly for the most vulnerable groups, i.e. pregnant women and children under

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[12] WHO
[13] MDG progress report 2005, MoPH

five years old. But, nationally, about one in three children under the age of five years sleep under a bed net (32 percent). In 2007, Global Funds will start training sessions for the health staff in every Puskesmas on malaria screening, prevention and treatment.

5.1.4   Tuberculosis (TB)

Indonesia is ranked the 3rd highest in the global burden of TB with nearly 600,000 new estimated (National prevalence of 110/100.000/year).Tuberculosis is the number one leading cause of morbidity in Indonesia while acute respiratory infection is number three. The prevalence appears to be increasing due to limited coverage of the intervention program, high treatment dropout rates, and multi-drug resistance. On average patients loose 3-4 months of work due to the disease which affected poor households immensely due to income losses. Urban areas seem to be worse hit such as Medan, Jakarta, Jabar, Banten, Sulawesi Utara and Sulawesi Tangara who all have a CDR (Case Detection Rate) above 50%.

5.1.5   HIV/AIDS

HIV, a disease often co-infected with TB (mainly in Africa though) is on the increase in Indonesia. HIV/AIDS in Indonesia affects directly the most productive members of the society and infection rates are rapidly increasing. The number of children orphaned by the disease has increased 10 times between 1999- 2001. UNAIDS estimate that 170,000 people are living with HIV in Indonesia today. The national prevalence level is still low at 0.1% but it is estimated that e.g. in **the province of Papua the prevalence has reached epidemic levels** (1-5%) and is generalized amongst the total population. A lot of efforts are needed to keep the prevalence low in the rest of the country by intensified prevention measures as well as improved testing, counselling and treatment facilities. (Malaysia and Vietnam have both a prevalence of 0,5%, Thailand 1,4% and Cambodia 1,6%). The group with highest HIV prevalence remains amongst the drug users but the group of heterosexuals is increasing.

Map 5.3:   Cumulative Cases of People Living with AIDS[14]

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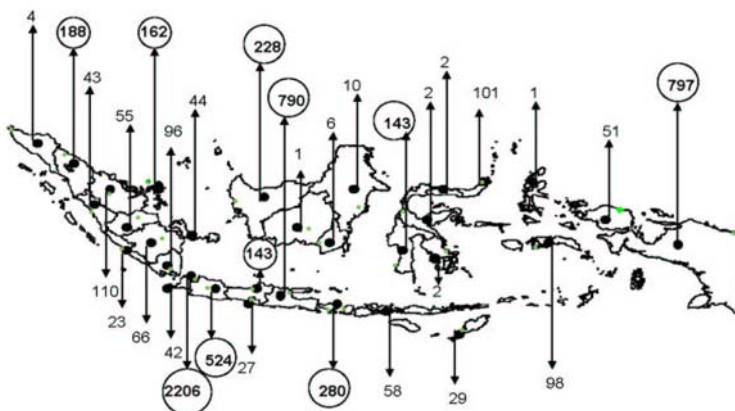
[14] UNAIDS

The map above shows the reported cases of people living with AIDS. The numbers are thought to be under-reported but give a picture of where the prevalence is higher.

5.2   NUTRITION

In Indonesia many children have an inadequate nutritional status as shown by the high prevalence of micronutrient deficiencies, underweight and stunting[15] nutritional problems are very common and not only amongst children but also in adults reducing their ability to lead healthy active lives. It is not estimated what the impact of poor nutritional status is on the overall GMP in Indonesia but it is believed to be significant.

Figure 5.2:   Level of Underweight in Children Under 5 Years, Indonesia 1989-2005
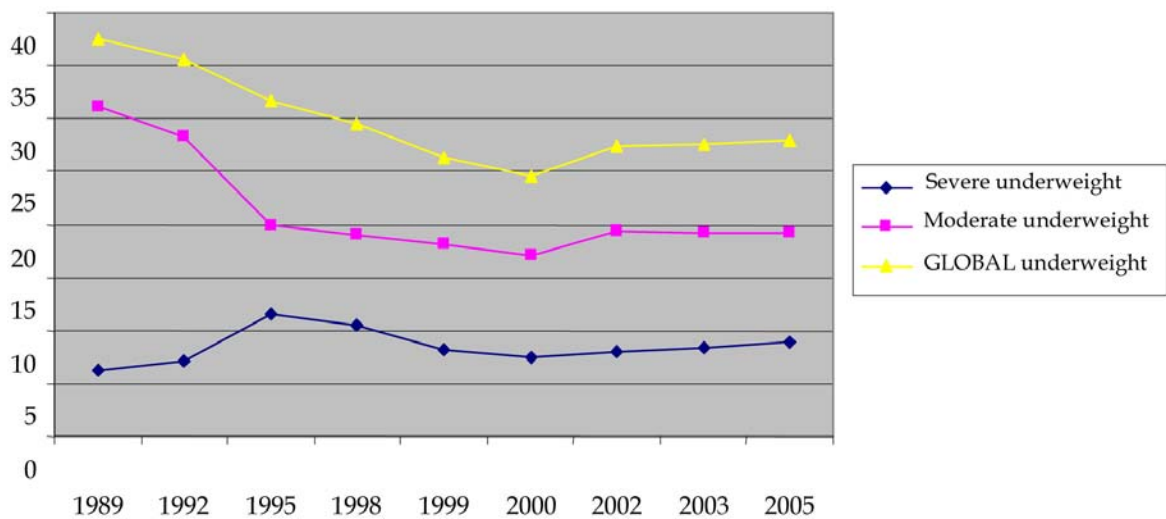
The nutritional situation (underweight) seemed to be steadily improving until 2000 when it worsened again and has been stable since then. The economic crisis in 1998 is most likely the trigger to the increased underweight which led to millions of people falling below the poverty line. The underlying causes to the high malnutrition rates are many and inter-related. Feeding practices are known to be poor, basic health care as mentioned earlier   are in large parts of the country also poor and child caring practices are not well documented.

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[15] (Administrative Committee on Coordination/Sub-Committee on Nutrition, 2000)

5.2.1   Underweight

There are big differences between provinces and 13 provinces have a severe underweight rate of more than 10% (Sumut, Sumbar, Kepulau Riau, NTT, Kalabar, Kalteng, Kalsel, Sulteng, Sultra, Gorontolo, Maluku, Maluku Utara and Papua). Two provinces have more than 15% severe underweight (Gorontolo, Maluku) .

Two provinces have a global underweight of more than 40%, NTT and Gorontolo leaving them with the worst underweight status in the country.

According to the MDG 2005 report the high prevalence of malnourished children is caused by the low consumption of nutritious food and infections. Indirect factors include low-purchasing power and unavailability of nutritious food, especially for mother and children under five. Low vaccination coverage, high prevalence of diarrhoeal diseases and poor breastfeeding and weaning practices are also causes to high malnutrition rates.

Figure 5.3:   Global Underweight by Province 2005 (SUSENAS Data)
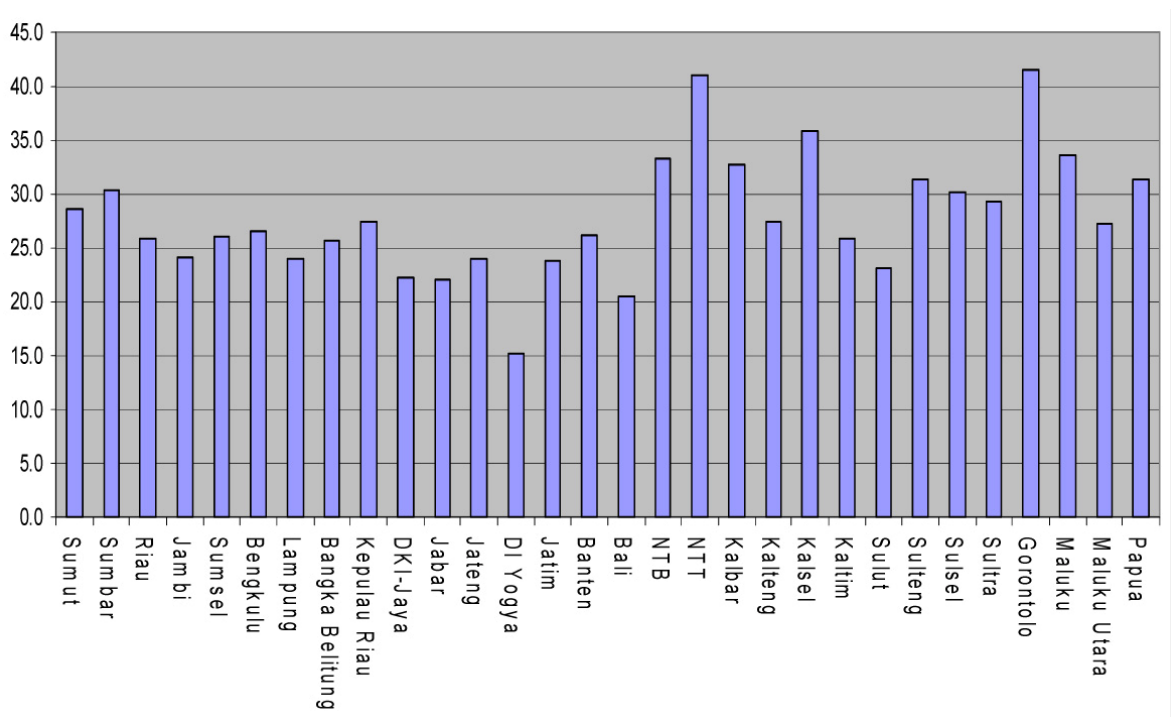
Map 5.4:   Underweight Children Under Five Years of Age
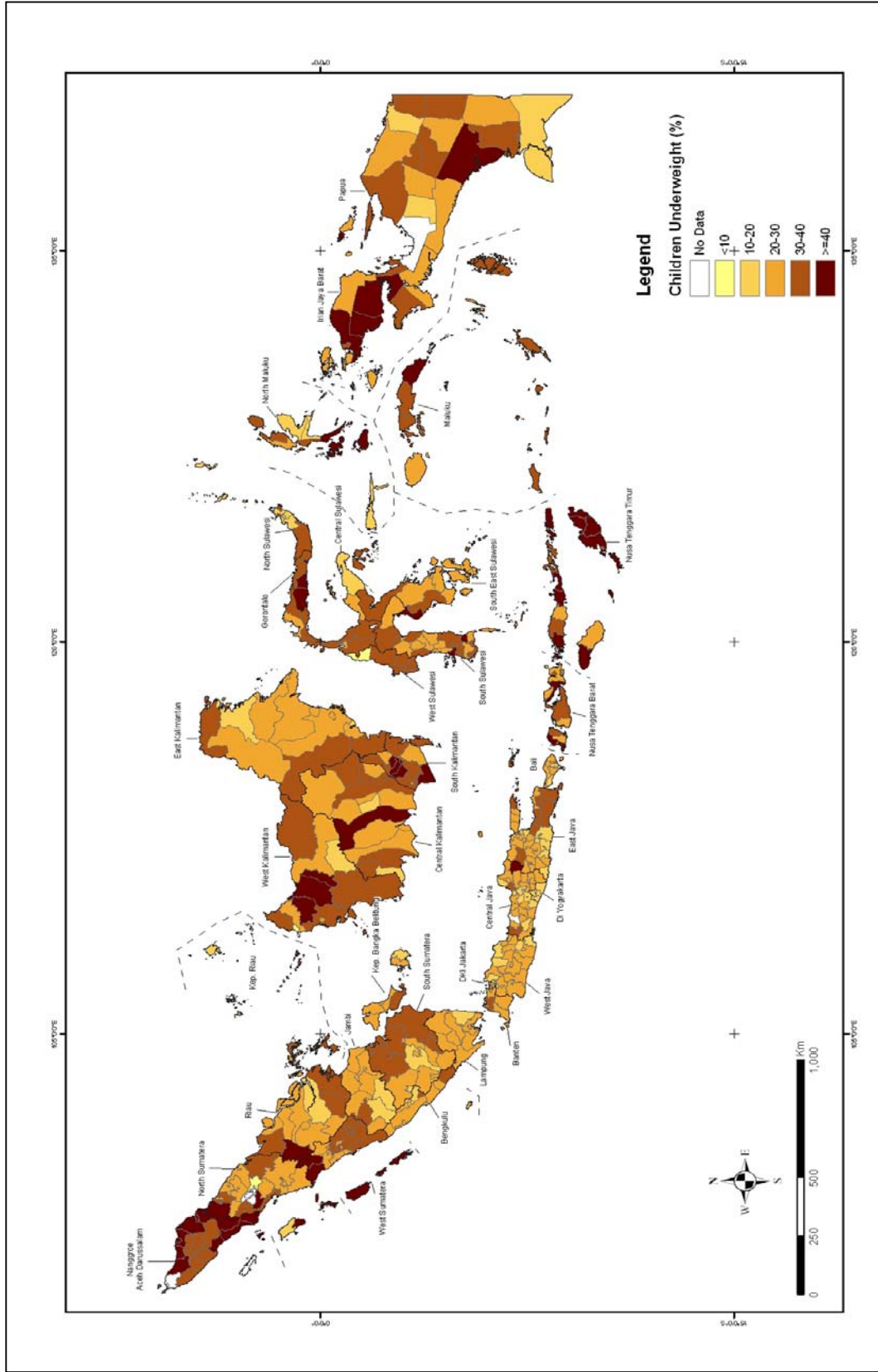
5.2.2 Stunting

The national stunting levels in Indonesia are classified as severe based on WHO thresholds. There are differences between urban and rural with urban being slightly better with a national average of 37%. Rural areas have an average rate of 48% (Annex 6).

Provinces where over 50% of the children under five are stunted in growth are: Sumatra Utara, Sumatra Barat, Benkulu, Banten, NTT, NTB and Kalimantan Selatan.

Two provinces have over 60% of children under five stunted as per SUSENAS assessment done in 2005, these being Gorontalo and Maluku Utara.

5.2.3 Wasting

Weight for height is not systematically collected in Indonesia and national data is not available. A crisis of some sort would happen in an area before wasting is measured like what was done in Aceh after the Tsunami and Nias after the earthquake. Special reports of poor nutritional status has initiated wasting measurements also in NTT and NTB and thus for these areas acute malnutrition levels are available from 2005.

Table 5.3: Nutritional Status of Children (Wasting) in NTB and NTT, 2005

District/Municipality	n	Wasting (WHZ <-2 SD)	
		n	**%**
Lombok Barat	155	5	3.2
Lombok Tengah	149	7	4.7
Lombok Timur	241	20	8.3
Sumbawa	45	5	11.1
Bima	73	2	2.7
Sumba Timur	91	14	15.4
Timor Timur Selatan	282	26	9.2
Kota Kupang	131	16	12.2
Ende	130	11	8.5
Flores Timur	92	13	14.1
West Nusatenggara	662	39	5.9
East Nusatenggara	727	80	11.0
TOTAL	**1389**	**119**	**8.6**

Table 5.4:   Prevalence of Severe Wasting in NTB and NTT, 2005

District/Municipality	n	Severe Wasting (WHZ <-3 SD)	
		n	%
Lombok Barat	155	0	0.0
Lombok Tengah	149	1	0.7
Lombok Timur	241	1	0.4
Sumbawa	45	0	0.0
Bima	73	0	0.0
Sumba Timur	91	2	2.2
Timor Timur Selatan	282	5	1.8
Kota Kupang	131	2	1.5
Ende	130	1	0.8
Flores Timur	92	0	0.0
West Nusatenggara	662	2	0.3
East Nusatenggara	727	10	1.4
TOTAL	**1389**	**12**	**0.9**

5.2.4   Overweight

Indonesia has limited information for overweight of all age groups. The first national survey was in 1996/1997 colleted data on BMI of adult male and female in urban areas (27 cities). It was found that the rate of overweight (BMI >251) among adult male was 15 percent while adult female was 24 percent. The problem of overweight was also found higher among the older age group.

5.2.5   Food intake

Only scattered information of cooking and feeding practices is available and available information is too generalized. Practices are known to be different, not only between geographical areas of this vast country but maybe more importantly depends on the income level of the household. Poor households consume less rice than richer families due to the cost implication. Cheaper staples such as maize, cassava, sago and sweet potato are consumed to a larger degree by the poor. The diet is in general believed to be unbalanced with relatively low protein intake and limited intake of vegetables and fruits. Households in the urban slums are known to live of mainly food prepared by street vendors and mothers do not generally cook.

5.2.6   Child feeding in NTT

Mothers' understanding of infant feeding practices in e.g. NTT is strongly anchored in traditions and beliefs transmitted from generation to generation. Practices in infant feeding immediately after birth vary and some mothers immediately begin exclusive breastfeeding whereas others prefer to throw away the colostrums and find a lactating woman to feed the infant during the first few days. Traditional beliefs consider colostrums as dirty, because of its colour and is suspected to transmit infant diseases. Exclusive breastfeeding is usually practised for a short period. Baby's' cries are often misinterpreted as a need of food. The baby is given water or tea with sugar with no nutritional value. Weaning foods are introduced from the first weeks to the third month depending on the mother's occupation and depending on the agricultural calendar. Women can be asked to participate in agricultural work a few days after delivery. As fields are often far from settlement, she will have to leave the new-born at home with a family member such as grandmother or sibling who becomes responsible for the care and child feeding. Breast milk is thus given twice a day (morning and evening).

The first food introduced is prepared with local product like maize or rice, sometimes banana crushed and mixed with water to get a softer texture. There is no link between the composition of the meals and the age of the child and of nutritional requirement; weaning is more linked to the food and money available within the household than to nutritional needs. Additional milk or processed porridge are not given or only exceptionally by families due to economical constraints. Others food items are added occasionally when available like vegetables (sweet potatoes, cabbage, green pumpkins, fruits (banana, papaya, coconut). Throughout NTT, protein sources such as egg, fish are not regularly consumed but used as a source of income. Animal milk is traditionally not given to the children. Meat is expansive and saved for celebration within the community like wedding and/or funeral. The above situation and practices are common in other rural areas as well.

As mentioned in previous section; feeding practices are not well documented and national generalizations should be avoided.

5.3   MICRONUTRIENT DEFICIENCY

5.3.1   Iron deficiency anaemia

The available information for Iron Deficiency Anaemia (IDA) is based on the National Health and Household Survey (NHHS) 1995 and 2001. The haemoglobin level is used as indicator which reflects any form of anaemia. The prevalence of IDA reduced for pregnant women from 51 percent (1995) to 40% in 2001 as well as women aged 15-44 years from 40 percent (1995) to 28 percent (2001). A more recent assessment in Aceh after the Tsunami showed that anaemia in pregnant women was 43 percent and 29 percent amongst non pregnant women which very much reflects the national level in 2001.

However, for children under-fives the IDA rate increased from 40 percent (1995) to 48 percent (2001), particularly it is very high (>55%) in the younger children (<24 months). This trend seems to correlate with a declining quality of household food

consumption, including low quality of complementary food for young children. WFP has experienced great difficulties in providing blended fortified food to toddlers in Indonesia where the staple food varies from rice, maize or sweet potato and the fact that urban poor cook less and less.

5.3.2   Iodine deficiency

The level of iodized salt has not improved since 1998 and nearly 30 percent of the population have either no access to iodized salt at all or it inadequate[16].

Figure 5.4:   Iodized salt coverage
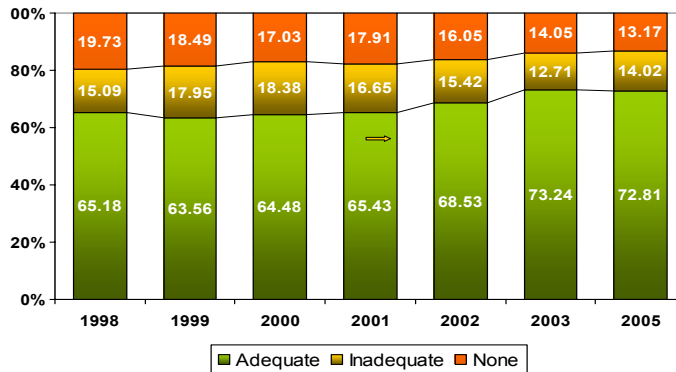
Also with regards to consumption of iodized salt large differences exist between the regions. The worst areas are NTT, NTB and Maluku where less than 40 percent had a sufficient consumption of iodized salt and some 50-60 percent had no consumption at all.

Many provinces have seen a reduction in the level of adequate consumption e.g. Banten who in 2003 had some 60% with adequate iodine consumption whilst in 2005 it reduced to 50 percent.

Map 5.5:   Consumption of Iodized Salt

>90% household coverage
40-90% household coverage
<40% household coverage

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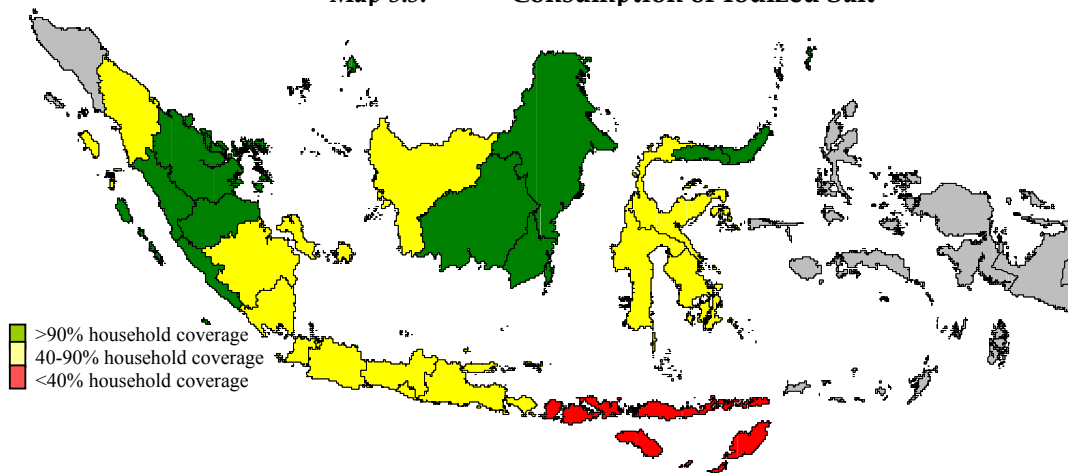
[16] UNICEF

5.3.3   Vitamin A

A nutrition survey conducted in Indonesia in early 1970s revealed that the prevalence of VAD was very high. Indonesia was one of the first developing countries to identify that high levels of severe VAD constituted a serious public health problem and began to implement programs to eliminate the problem. Between 1970s and 1990s, Indonesia embarked on a nation-wide vitamin A intervention program by providing high-dose vitamin A capsule twice a year to almost all under-five children. Within two decades, the program successfully reduced the clinical prevalence of VAD (Xeropthalmia) to 0.33 percent in 1992, a level in which VAD was no longer considered as a public health problem. However, at the sub-clinical level, 50% of the children under fives still had low serum retinol (<20 µg/dl)[17]. Unfortunately, there is no national data available beyond 1992 on VAD prevalence in Indonesia. In the DHS survey 2002-2003 however, only 42 percent of pregnant women received vitamin-A postpartum. In 2005, the national postpartum coverage had increased to 57% with large provincial differences where Jambi (8%), Papua (13%), Sulawesi (13-60%) and Maluku (40%) had very low coverage.

A post tsunami assessment from late 2005 found similarly that less than 70 percent of children in some Aceh districts were covered. National average for infant and children under 5 was 74 percent in 2005. Papua and Maluku had coverage of less than 50 percent (annex 7 with provincial data from 2005).

5.4 NATIONAL NUTRITION PROGRAMME

A governmental programme (Posyandu) that has been implemented since 1980. ensures growth monitoring of children under five on a monthly basis. The quality of this programme has unfortunately seen some setbacks in the past years and the decentralisation may be one reason. A volunteer, trained by the Puskesmas (nurse), runs nutrition activities in each sub-village. At Posyandu level, mothers benefit from health and nutrition sensitisation and from distributions of food ration for children suffering from underweight. In practice, food allocation and supplies seem to be uncertain: budget allocation for food items (including green beans, eggs, and powder milk) is slowed down by a vertical organisation (District, Sub District, village, and sub-village). The quantity of food sent to each Posyandu from the Puskesmas depends on the number of underweight children detected and reported.

In mountainous areas the number of operating Posyandu is limited due to remoteness. It highly relies on the motivation and availability of volunteers who are seasonally busy with agricultural activities. Posyandu activities are in remote areas often operational every 3 months although food supply is delivered on irregular basis (one or twice a year). This would adversely impact on mothers' attendance which at the end of the vaccination schedule usually decreases.

Mothers are not fully aware and/or convinced by the importance to monitor the nutritional status of their child and prefer to attend to Posyandu when food has been delivered.

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[17] MoPH

The World Bank's Nutrition Review promotes continued food fortification and supplementation; it carries a campaign on breast feeding and dietary modification, and calls for less expensive complementary foods to be provided at subsidized prices for low-income households. This is in line with the Government's ambitious nutrition targets for 2010.

As for most of the health and nutrition indicators they are part of the government plan to reach the MDG goals and thus should improve in the coming years. The fact that the decentralization has had three years to adjust to the new role should also start to have a positive effect and hopefully will be able to catch up and continue where they left of in 2003.

The challenge however will be to bring communities with very poor conditions to the same level as the national average.

5.5 WATER AND SANITATION

An estimated 50 million rural poor are not connected to piped water.[18] The existing community management supply model that currently covers 25-30 percent of the rural population could be expanded. In urban areas, levels of access to utility supply are lower in the poorest quintile. In practice, the urban poor obtain their water from many sources, primarily non-network water and self-supply. The coverage of sanitation services in Indonesia is the worst in South-East Asia, with less than 1 percent of all Indonesians accessing piped sewerage systems. Survey data show that 80 percent of the rural poor and 59 percent of the urban poor have no access to adequate sanitation. It is estimated that the cost of poor sanitation is about 2.6 percent of GDP, while public spending on water and sanitation together is less than 0.2 percent of GDP.

Public perceptions about the poor being unable to afford quality water and sanitation services are not correct. The poor in urban areas were buying water from private vendors at 15 to 30 times the tariff s of the district drinking water companies (Perusahaan Daerah Air Minum, PDAM). While they could afford to buy water from PDAMs at the PDAM tariff rates, they fail to obtain connections due to lack of tenure of lease or land ownership and the high one-time cash costs of connections. Most of the urban poor could afford to build low-cost latrines, but lack of land ownership or tenure of residence prohibits them from constructing one. Many people are also not aware of low-cost latrine options, both in rural and urban areas. On islands, the poor have little access to clean water, often because of the monopolistic manipulation of the system by water vendors. This was also true in an urban slum.

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[18] World bank report

Map 5.6:   Percentage of Households having Access to Safe Drinking Water

Legend

% having access to save safety drinking water (%)

No Data

<40

40-<70

>=70
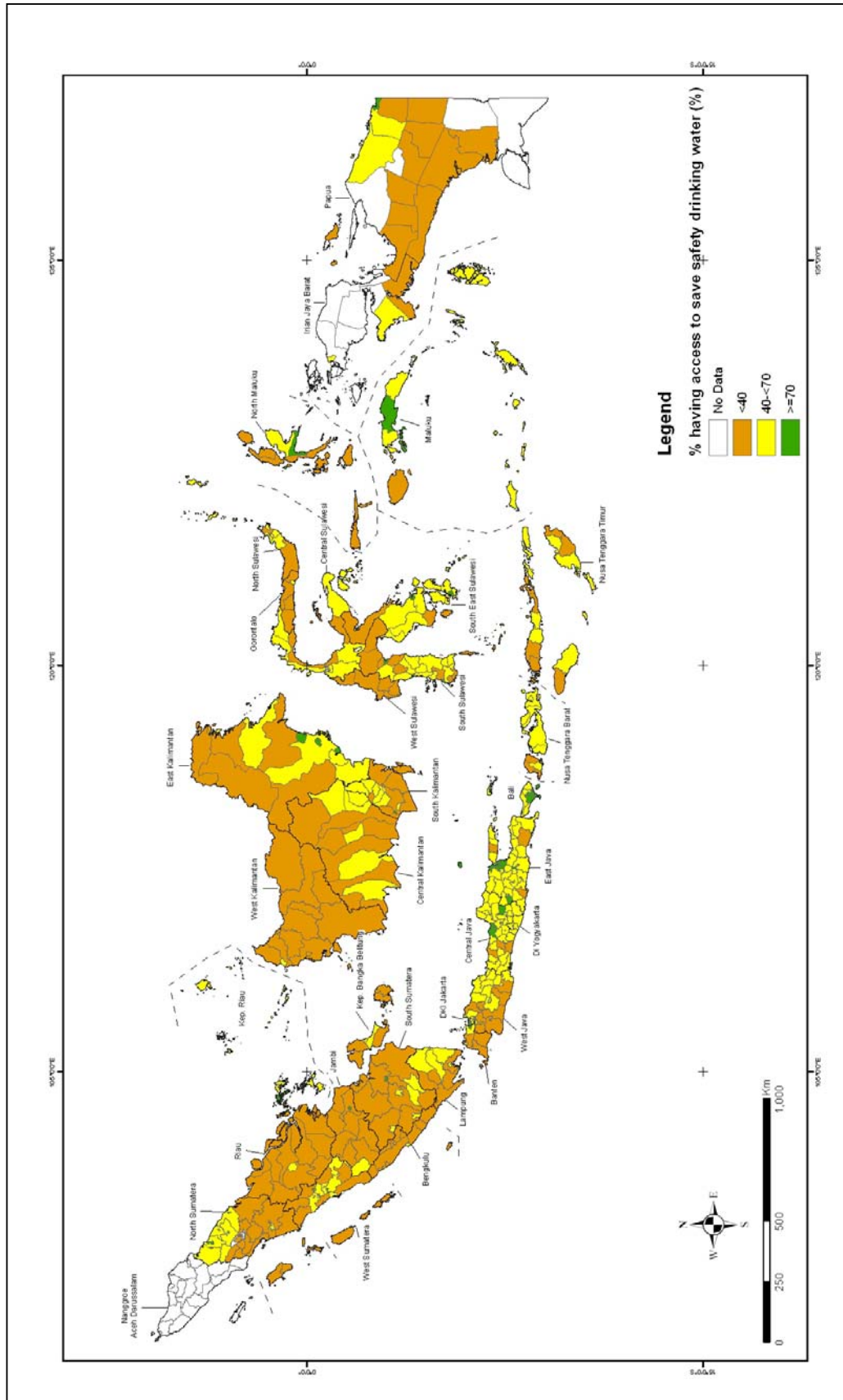
The Millenium Development Goal (MDG) Report indicates though that household's access to basic sanitation facilities increased from 63.5 percent in 2002 to 67.1 percent in 2004. Access to basic sanitation has shown major improvement, but most of the facilities do not meet appropriate sanitation standards. The high proportion of households in rural areas without appropriate sanitation facilities is caused by lack of awareness of the community, low priority of the government and legislatives, and low participation of the private sectors in wastewater management. Based on the definition that safe water is the water taken from its protected sources located more than 10 meter from the excreta disposal sites, the access to drinking water in Indonesia in 2002 was only 50 percent, where 18 percent was through the piping system. In 2004, it increased to 53.4 percent. However, there is a big amount of fund needed to achieve the MDGs targets by 2015.

The relatively low access to safe water is the result of the low commitment of the government (both central and local) to build water facilities, low technical-financial managerial capabilities of Regional Drinking Water Enterprise (PDAM), vague water sector investment regulations which lead to low community and private sector participation in water sector development. Moreover, most of the built facilities are not well-maintained and some are no longer operational. The condition worsened by the unavailability of accurate data.

Diarrhoea is the number fifth leading cause of mortality. Lack of clean water supply and adequate sanitation facilities are the major reasons for the continued rise in the incidence of diarrhoea, hepatitis, cholera and typhoid.

5.6   UTILISATION INDICATORS AND THE IPC APPROACH

The key indicators that were used from this section in IPC exercise where two; Under 5 mortality rate (U5MR) and stunting. These indicators were however only available at province rather than district level. Similar indicators that were available at district level but not included in the IPC reference table of key indicators were underweight and infant mortality rate (IMR). As discussed in the methodology chapter, zoning was adopted and thus provincial data in combination with district level data could be used successfully.

Supporting indicators where micronutrient deficiency data in particular anaemia in women and children but also iodine and vitamin-A deficiencies. Disease patterns for TB, HIV and malaria were used as part of the hazards. The issue of water access was used but not in terms of quantity as per IPC key reference table as this is not collected in Indonesia but instead access to clean water was used and hence it became a supporting indicator. Due to the very poor health indicators in Indonesia the utilization part did not match with the level of the other indicators. For example, the average national stunting rate is some 40%. This is much higher than the threshold of phase classification 2 (Chronically Food Insecure) and there are no thresholds for stunting in the other phases. Even though 40% stunting arguably could fall in phase 3 (acute food and livelihood crisis) it was judged that a national average were better put in phase 2 as stunting is not an effective measure for crises situations. The same had to be done for U5MR where the national average is much worse than the overall characteristics for the phase.

CHAPTER 6
FOOD SECURITY: PROBLEMS, RISKS
AND RESPONSE OPTIONS

Indonesia was again struck by a natural disaster on the last day of this mission when flash floods hit Aceh and northern Sumatra with over 100 people dead and 200,000 displaced. Natural catastrophes have hit Indonesia badly in past couple of years where tsunamis, earthquakes and volcano irruptions have followed one after the other. Even though these disasters had little impact of the overall food availability in the country and did not affect the national economy much, the effects on households have been devastating. Drought has a larger impact than the localised catastrophes and is currently a real threat to communities on the Eastern islands where rain fed paddy fields are experiencing much delayed rains this season.

Alternative temporary livelihoods and coping mechanisms are needed in order to prevent these communities from falling into the next IPC phase of acute food insecurity and livelihood crisis (see Map 14).

6.1   CURRENT AND FUTURE PROBLEMS AND RISKS FOR FOOD SECURITY AND LIVEHOODS; ASSISTANCE REQUIRED

6.1.1   Food Insecurity Hotspots

Based on 7 Indicators of Food Security, viz., percentage of people below poverty line, female illiteracy rate, percentage of villages having access by 4-wheel vehicles, percentage of underweight children under 5, Infant Mortality Rate, Percentage of villages with health centres more than 5 km away, percentage of villages having access to clean drinking water, a Food Insecurity Hotspot map has been prepared, showing districts featuring within worst 50 list for individual indicators.

Since data on some indicators were not available for Aceh, the districts ranking for Aceh province remained incomplete.

A look at the Map 14 reveals that food insecurity 'hotspots' are scattered all over Indonesia. However, the major clusters are in Papua, Madura-NTB-NTT-Maluku, West and Central Kalimantan, Western outer islands (Nias, Mentawi etc.) and some districts in southern and south-eastern parts of Sumatra.

Food supply and availability is not really an issue in Indonesia as mentioned previously. However, sustainability of production could be questioned. Over-exploitation of land and water resources, intensive agriculture in some areas, slash and burn agriculture, deforestation etc. are rendering the top-soil prone to erosion. Soil conservation, water harvesting and cropping pattern according to land suitability are the essential measures required to ensure sustainable food crop production. Agro-forestry and horticulture have very good potentials in Indonesia. Through extension services, these practices should be promoted.

Access and, in particular, purchasing power is a major issue in Indonesia. Since 2005, as previously mentioned, 4 million more people have fallen into the poor category. In order to stabilize the rice price, the Government has decided to import rice by March 2007. There is an urgent need to promote non-farm employment though improvements in road connectivity, markets and vocational training to the poor. Alternate livelihood opportunities could lead to less migration and congestion in large urban centres. Lean season employment guarantee schemes, both in farm and non-farm sectors, could be an effective way to ease pressure on large urban centres.

Huge efforts are needed to bring Indonesia back on the track to pre-2003 status in terms of health and nutrition indicators. Basic services such as immunisation and maternal care are desperately needed as well as affordable fortified weaning foods. Water and sanitation situation for the poor need to be greatly improved in order to ensure an active and healthy life. Multi-sectoral efforts are needed in order to improve the nutritional status, especially for children under 5, primary school children, pregnant women and lactating mothers. Micronutrient deficiencies, known as 'Hidden Hunger', are a major concern. Nutritional deficiencies need to be tackled though a multi-pronged strategy – addressing both immediate and longer term needs. Nutritional situation needs to be very closely monitored in the country through a surveillance system.

Natural disasters are major impediments to any developmental efforts. Indonesia experiences various large, medium and localized scale disasters that completely destroy the livelihood and environmental fabric of the affected areas. Building communities' capacities in disaster preparedness, risk-reduction measures, improved and well-designed surveillance systems etc. are essential strategies needed to be adopted in the entire country.

The table below shows the number of children under-5 years, pregnant women, lactating mothers, primary school age children in West Timor, Lombok and Madura islands, from whom WFP should identify its beneficiaries for the nutrition interventions by prioritizing sub-districts based on poverty, undernutrition and any other relevant information that could be collected from the *kecamatans*. The table also shows the number of people who are considered to be marginalized (highly poor) and need support though activities like Food For Work.

Map 6.1:   Districts with Food Security Concerns (based on 7 food security indicators)

Legend

Worst in term of 2 indicators
Worst in term of 3 indicators
Worst in term of 4 indicators
Worst in term of 5 indicators
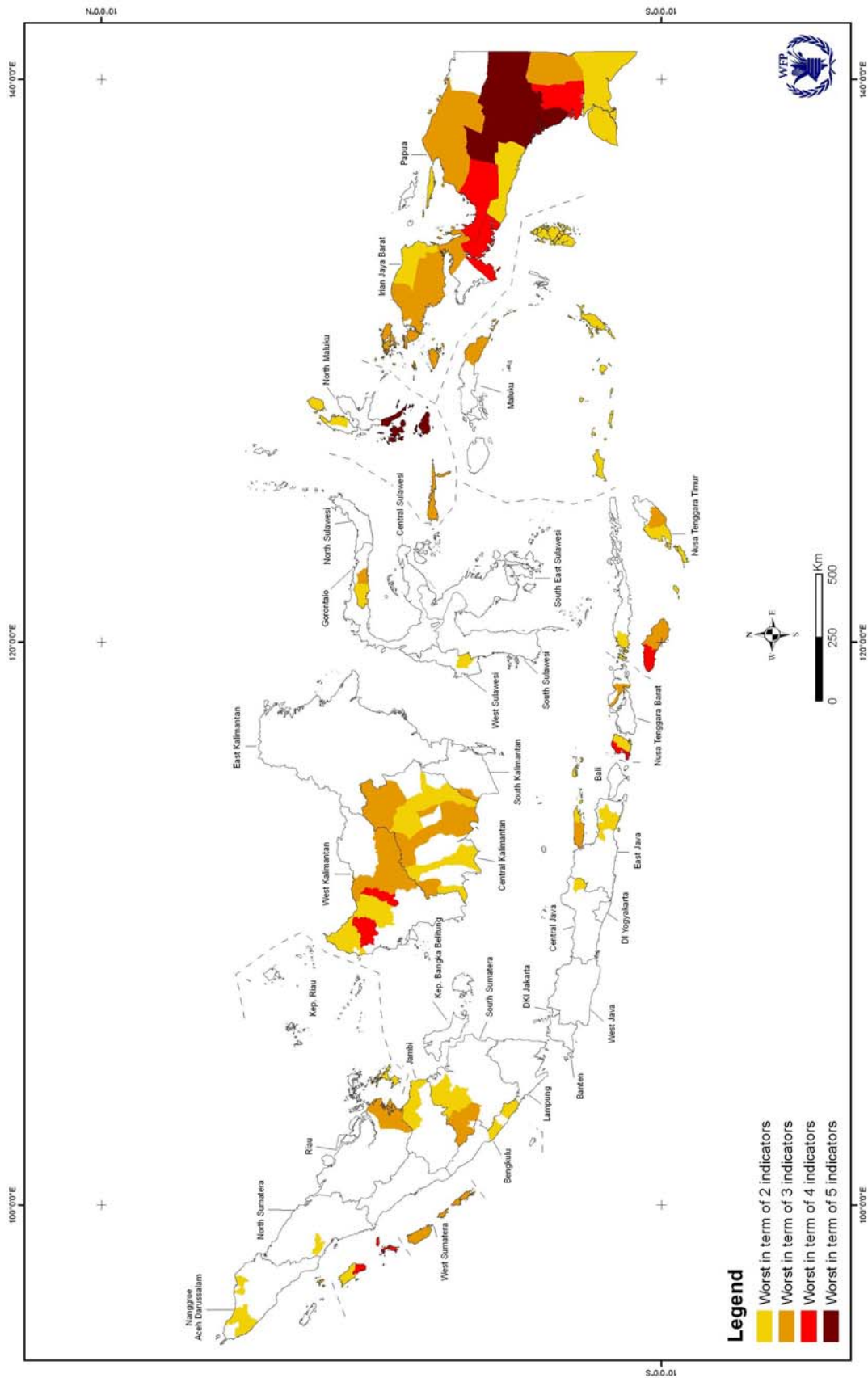
Table 6.1:   **Vulnerable Population in West Timor, Lombok and Madura Islands**

Area	Children Under 5 (CU5)	Pregnant & Lactating Women (PLWs)	CU5+PLW	SF	Ultra poor (FFW)
West Timor	170,000	56,100	226,100	374,000	85,000
Lombok	300,000	99,000	399,000	660,000	150,000
Madura	330,000	108,900	438,900	726,000	165,000
Total	**800,000**	**264,000**	**1,064,000**	**1,760,000**	**400,000**

6.1.2   IPC Map

As described in Chapter-1, through indicator-based analysis and a consultative process with various stakeholders, we arrived at an Integrated Phase Classification Map for Indonesia, depicting both regional dispersion of food security classes, being defined within the scope of IPC and possible early warning scenarios, based on perceptions of immediate shocks and their possible implications on IPC classification.

The Map 15 has 2 layers. The first layer shows the phase classification, primarily based on the key underlying causes like poverty, structural factors of health care services, education, economic development, transportation infrastructure, environment and natural disasters. As can be seen from the map, the majority of the country is either falling under 'generally food secure' phase or under 'chronic food insecure' phase. Only the western coast of Aceh, Simeulue and Nias islands that were affected by the tsunami and subsequent earthquake (Dec 2004 and March 2005), and parts of Yogyakarta and Central Java provinces that were affected by the earthquake (May 2006) have been classified as 'acute food and livelihood crisis' areas, though situations in these areas are on a recovery mode. It must be mentioned that these regions have some degree of livelihood crisis and not food crisis.

The reasons for chronic food insecurity are, however, different across zones. The call-out boxes in the map show the major underlying causes for the chronic food insecurity. Since the country has chronic food insecurity as a major concern, the classification map (only the first layer) is expected to be valid for at least 3 years, unless a large scale disaster or any other shock affects a large part of the country or a large section of the population, thereby affecting the food security situation.

The second layer of the map depicts the early warning levels, based on hazard perceptions (over the next 6 months). The hazards range from natural, conflicts and disease outbreaks. The potential risks vary from one region to another and so are their potential impacts over the near future. NTB, NTT and southern part of Maliku province are believed to have the highest risk of falling into the next worst classification from its present 'chronically food insecure' phase. This is because of a persistent delay in monsoon and ensuing drought like condition, affecting a large proportion of small and marginal farmers and landless labourers. East and Central Java has medium risk, primarily owing to a combination of less rainfall and continued increase in rice price, thereby pulling more and more people below the

poverty line. Similarly the provinces of Riau, Jambi, South Sumatra, Benkulu, eastern Aceh and northern Lampung have moderate risk of falling into the next classification phase, due to risks of flood, landslides, rice price instability etc. Early warning in Papua (lowlands) is because of high prevalence of HIV+ cases, compared to other areas of Indonesia. As the prevalence is believed to have reached the general population, continuation of the current trend could lead to some kind of livelihood crisis in these areas.

Map 6.2:   Integrated Phase Classification of Indonesia (valid till December 2009)

Defining attributes of areas in phase 1 and 2

Hazards
a. Drought
b. Floods
c. Landslides
d. Civil security
e. Price instability
f. Disease outbreak

Key underlying causes
A. Poverty
B. Structural factors of poor health care services
C. Poor Education
D. Poor economic development
E. Poor transportation infrastructure
F. Conflict
G. Environmental degradation
H. Natural Disaster

Estimated Population in phase
inclusive of pop. at high risk

Projected trend
↑ Improving
→ No change
↓ Worsening

Confidence Level of Analysis
* Low
** Medium
*** High

Zone 1. Papua Lowland — 1 (H,V) — Est_Pop: 1,424,007
Zone 2. Papua Highland — No immediate hazard — B, D — Est_Pop: 1,042,132
Zone 20. North Maluku — No immediate hazard — A, B, C, D, E — Est_Pop: 1,061,166
Zone 4. South & South East Sulawesi — A — Est_Pop: 6,279,362
Zone 6. Central & West Sulawesi — No immediate hazard — A, B, C, F (in Poso & Tentena) — Est_Pop: 3,375,025
Zone 8. East Kalimantan — a, c — B, C, D, E, G — Est_Pop: 2,601,735
Zone 3. South Eastern Island — A, B, D, E — Est_Pop: 6,516,338
Zone 7. West Kalimantan & part of East Kalimantan — No immediate hazard — B, C, D, E, G — Est_Pop: 8,296,776
Zone 10. Bangka Belitung — No immediate hazard — A, B — Est_Pop: 1,026,883
Zone 9. Madura & Eastern part of East Java — A, B, C, D, E — Est_Pop: 12,166,016
Zone 12. Central Sumatra — C — A, B — Est_Pop: 19,590,030
Zone 19. DI Yogyakarta — b, c, e, f — H — Est_Pop: 3,171,730
Zone 16. Lampung & Java — b, c, e, f — A, B, C — Est_Pop: 100,943,690
Zone 14. Aceh — b, c — A, B, F — Est_Pop: 3,903,315
Zone 11. Bengkulu, Jambi etc — b, c — A, B, G — Est_Pop: 11,939,523
Zone 13. Nias, Simeulue etc — A, B, C, D, E — Est_Pop: 1,171,492

Legend

Phase Classification:
1. Generally Food Secure
2. Chronically Food Insecure
3. Acute Food and Livelihood Crisis
4. Humanitarian Emergency
5. Famine/Humanitarian Catastrophe

Early Warning (Dec. 2006 - June 2007):
Alert
Moderate Risk
High Risk

Urban Areas
Zone Boundaries
Province Boundaries

Map labels: Papua, Irian Jaya Barat, North Maluku, Maluku, Central Sulawesi, North Sulawesi, Gorontalo, West Sulawesi, South Sulawesi, South East Sulawesi, Nusa Tenggara Timur, Nusa Tenggara Barat, Bali, East Java, Central Java, DI Yogyakarta, West Java, DKI Jakarta, Banten, Lampung, East Kalimantan, West Kalimantan, Central Kalimantan, South Kalimantan, Kep. Riau, South Sumatera, Kep. Bangka Belitung, Jambi, Riau, Bengkulu, West Sumatera, North Sumatera, Nanggroe Aceh Darussalam

Km 0 250 500

6.2   RESPONSE AND TARGETING OPTIONS

As mentioned previously this assessment did not find a problem in food supply and availability but rather access, malnutrition and chronic poverty. As emphasized in the utilisation section, multi sectorial efforts are needed to improve the health and nutritional indicators where non-food responses are essential.

Health education should continue to play a central role in WFP's Mother and Child Nutrition (MCN) programmes where clear messages concerning hygiene and weaning practices are fundamental. A closer collaboration with UNICEF and Ministry of Health (MoH) should be sought in order to develop standard messages using various communication tools, which ideally should be used by all stakeholders involved in health and nutrition programmes.

Non-food items that could support the MCN programme would be soap distribution and de-worming. Food For Work initiatives could include latrine constructions at health centres, schools and individual homes in conjunction with hygiene education.

In light of the great remoteness of some of the most food insecure areas which affects the provision of health care and other essential services, Food For Work could address this through road constructions.

WFP has since 2005 tried to find a more suitable **complementary fortified weaning food** for 6-24months old children to replace the less suitable commodity that is used today i.e. biscuits. The vastness and large differences between regions as well as between urban and rural areas have made it a difficult task, which to date is unsolved and the fact that weaning practices are poorly documented does complicate the issue. Rather than finding one product that should suit all traditions and cultures, WFP could, together with UNICEF and MoH, map out different weaning practices in order to develop culturally accepted fortified weaning foods and better tailored messages.

The current Government programme is to build weaning foods based on locally available foods and this should be encouraged, however, it is known that in the first year of life requirements and intake do not match and adding micronutrients is usually necessary. In Indonesia today two opinions exist amongst the humanitarian community; those who believe that it is best to add fortification directly to the food, assuring that it is consumed and those who believe that adding the fortification at household level in the form of a sprinkle is the best. A small, intensive and controlled pilot of sprinkles has been undertaken in Aceh by HKI but it is unsure what the outcome has been and whether it is possible to expand at national level.

In the meantime, WFP should pursue what WFP has expertise in i.e. producing fortified blended food which could be used as an alternative to sprinkles in regions where this is not feasible such as remote rural areas. With the relatively low education level in regions with high food insecurity the use of sprinkles would require extremely intense sensitisation and follow up and thus an alternative in form of an already fortified food will still be needed.

An important role that WFP is playing in Indonesia is the provision of food rations to TB patients. This should continue and expand if possible to other areas outside Jakarta and Surabaya. Corperate Guidelines on micronutrient requirements for this

group is very much needed, in the meantime rations are more based on economic transfer due to loss of income than a nutritional assistance.

As highlighted, rice prices have greatly increased this past year and the price of rice in Indonesia is higher than in other countries in the region, possibly as a result of the import ban. This has had a negative impact on poor households whose purchasing power has reduced even further. In order to improve access for the poor households, WFP could consider advocating against the ban on rice import. Such a market intervention would significantly reduce the price on the market and thus improve access for poor. The negative impact could be on rice farmers who would be paid less for their rice if the market became open to international traders.

A cash or cash/food intervention outside of the governments cash transfer to poor households could be looked into in the areas that are highlighted as being most food insecure through this IPC exercise. It should not be seen as a substitute to the government's initiative and thus would need a more in depth assessment to determine if and where it could be an option. Market conditions would have to be favorable as well as monitoring and implementation capacity. This however was outside the scope of this assessment

Food For Work/Training, in order to diversify poor households income sources, could improve their chances to break the cycle of chronic food insecurity and become less vulnerable to shock in the future.

It has been identified that school children in Indonesia suffer from micronutrient deficiencies, especially aneamia and thus a **Food for Education** programme would aim at providing micronutrients through a mid-morning snack consisting of biscuits. It is however acknowledged that the current level of iron in the biscuits is too low to have an impact on anaemia levels. WFP should hence revise the micronutrient levels in the premix to better meet the requirements of school children.

Any implementation of programmes in Indonesia is facing logistical constraints as most deliveries are expensive due to extreme remoteness of some areas and the population being spread out across 5000 km on several thousand islands. This is undoubtedly an important factor which does affect targeting of communities.

Targeting

It is recommended that a geographical targeting is done based on the IPC map and thus the results from this assessment, highlighting areas of most concern.

MCN programmes (WFPs support to the Posyandu programme) is recommended to be blanket based due to the high malnutrition levels. The focus is on prevention rather than cure through the distribution of fortified food but also by including nutritional education. WFP is currently distributing non food items to support this activity like flipcharts, weigh and height measurement, growth chart etc.

Food for education should as suggested in the evaluation only be carried out in rural poor areas and not in urban areas where children are used to purchasing candy etc outside school.

Food for Work should follow corporate guidelines, be self targeted and not interfere with local labour markets. Food For Work could be an important complement to the governments programme mentioned below, in particular the cash transfer to poor households. It is noted that the government's cash transfer programme does not include all households that might be in need of livelihood support.

Government programmes

RASKIN (Rice for the Poor) and BLT (Unconditional Cash Transfer) programs played during 2006 significant roles with regard to helping vulnerable groups increase their purchasing power and level of food access (see chapter on household access to food for further details). During the current year RASKIN was to provide a total of 10.83 million households with 1.625 million tons of subsidized rice. Both programs are expected to continue playing important roles also in 2007. The 2007 state budget foresees expenditures of IDR 4 trillion for a modified conditional BLT program and IDR 6.5 trillion for RASKIN.

As mentioned earlier the Government also has a nutrition programme that will continue and WFP should support together with UNICEF and other stakeholders.

6.3　RECOMMENDATIONS

- It is recommended that the IPC map is updated in 6 months to fully investigate the potential of such a map in order to capture seasonal differences in food insecurity that would call for specific interventions or as a post shock assessment statement. The subsequent IPC exercises should maintain technical neutrality and ensure a "broad based" stakeholder participation.

- It is recommended that WFP's Food for Education revises it's objectives to also improve attendance rate amongst children in rural schools, as this is shown to be a problem that is masked by high enrolment rates.

- The Food for Education should further support and initiate the FRESH initiative as water/sanitation conditions in schools are particularly poor.

- Food For Work (FFW) in rural areas could include soil and water conservation, water harvesting works on farm land, latrine constructions at primary and secondary schools. Rural road construction is another activity that could have a huge impact on households living in very remote areas. All these, of course, will depend on ability of the proposing NGOs in providing non-food items necessary for construction works. Efforts should also be made to use food under proposed Community Development Projects in Madura, Lombok and West Timor.

- WFP should investigate the possibility to increase the micronutrient fortification in the biscuits to improve the impact on micronutrient deficiencies in children under 5 and school children.

- It is recommended that traditional weaning practices are investigated and documented in order to find the best suitable fortified weaning foods. As

Indonesia is a vast country it might not be possible to find one product that suits all locations but maybe develop one that is maize based and one rice based.

- WFP should continue the support to TB patients and increase this programme to other locations than currently covered by the PRRO.

- WFP, with partners to provide technical support to the GoI in the development of surveillance system that will collect food Security and Nutrition data on a regular basis that would allow for quicker and thus more appropriate interventions.

- Due to the high proness to natural disasters a contingency plan is recommended with a matching contingency stock that would enable WFP to continue to respond to emergencies in a timely manner.

- An inventory of cash activities carried out by organizations other than the Government of Indonesia could be a start in guiding possible cash/food initiatives together with a market analysis in the geographical areas where this assessment recommends that WFP should focus its efforts.

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Percentage of Safety Drinking Water: SUSENAS, BPS 2005

Access to Health Facility > 5 Kms: PODES, BPS 2005

Percentage of Female Illiteracy (> 10 Years old): SUSENAS, BPS 2005

Energy Intake 1,700 KCal/person/day: SUSENAS, BPS 2002

IMR: SUSENAS, BPS 2002

Poverty: Data and Information of Poverty, BPS 2004

Road Access by 4 Wheel Vehicle: PODES, BPS 2005

Population Density: PODES, BPS 2005 and Landscan 2005 (http://www.ornl.gov/sci/landscan/)

Global Ecological Zones: FAO 2000 (http://www.fao.org/geonetwork/srv/en/metadata.show?id=1255&currTab=simple)

Farming System: FAO 2001

Vegetation map derived from MODIS Satellite 2003 and Processed by CIFOR, Bogor

ANNEX 1
TASK FORCE

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ANNEX 2
**Terms of Reference for a Food security assessment and classification pilot in
Indonesia
December 2006**

1. Background
WFP in Indonesia is currently implementing a PRRO, which expires in December 2007. A new PRRO document will be developed in early 2007, with implementation starting in 2008. As per corporate regulations, the new PRRO should be based on a solid needs assessment. Due to the complexity of Indonesia, the method chosen is to review secondary data. The approach proposed is an adapted version of the Integrated Phase Classification (IPC) system developed for Somalia.[1] WFP and FAO are developing a common strategy to evolve this approach into an industry standard, based on experience gained from a number of pilots. This is the first time that IPC is piloted in Asia and thus some advance work is needed to conceptualise the pilot.

2. Objectives:
a. Review the food security and nutritional situation in Indonesia, including who is affected, where they reside and trends (past and future).
b. Review the underlying causes of food insecurity and malnutrition.
- Review the need for eventual continuation of food aid and nutritional rehabilitation programmes.
- Prioritize any related food aid needs to serve as the basis for planning WFP's new PRRO

3. Strategy:
In the context of the above objectives, the assessment will look at:
- Food availability and markets;
- Household access to food, livelihood activities, coping strategies; and
- Use of food by households, nutrition and health status
- Hazards and risks (vulnerabilities, capacities).

The first step will be to develop an analysis plan, and analysis template. A minimum set of updated indicators will be determined in order to be able to use a phase classification as per IPC. The aim will be to develop a lighter version of the IPC approach which can continue to be piloted in other countries in Asia.

Technical backstopping is required for approximately 5 days before, during and after the assessment mission
   This would include:
- 2 days at the planning stage when the set of indicators are determined as well as possibly new key reference characteristics and the work plan.
- 1 day during the process to assure coherence with the methodology should problems accur.
- 2 days for preparation of guidelines for future IPC pilots

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[1] A clearer label may be "Food Security Measurement and Classification".

The IPC summarizes **Situation Analysis**, a distinct, yet often overlooked (or assumed) stage of the food security analysis-response continuum. Situation Analysis is a foundational stage whereby fundamental aspects (severity, causes, magnitude, etc) of a situation are identified—aspects for which there is optimally broad-based consensus by key stakeholders including governments, UN and NGO agencies, donors, the media, and target communities. The analytical logic of the IPC is that varying phases of food security and humanitarian situations are classified based on outcomes on lives and livelihoods. Outcomes are a function of both immediate hazard events along with underlying causes, and the specific vulnerabilities of livelihood systems (including both livelihood assets and livelihood strategies). The outcomes are referenced against internationally accepted standards, and their convergence substantiates a phase classification for any given area. Each phase is associated with a unique strategic response framework, while the outcome configuration for any given situation guides the development of the most appropriate responses within that framework. While the phase classification describes the current or imminent situation for a given area, early warning levels are a predictive tool to communicate the risk of a worsening phase. Risk is a function of the probability of a hazard event, exposure, and the specific vulnerabilities of livelihood systems.

4. Methodology:

1. Review of available (updated) secondary data in the country, compiling from official statistics publications, research institutes (non WFP studies), UN agencies and NGO reports, WFP studies (baseline studies, mid evaluation studies, etc) and Indonesia Food Insecurity Atlas. Identify updated population tables disaggregated to the lowest administrative unit possible. A set of minimum indicators will be determined in order to pilot the IPC approach.

2. Start-up meeting with key partners on food security and nutrition issues, e.g: government key offices (Bakornas, MoAg, MoHealth), UN (FAO, UNICEF), NGOs (OXFAM, CARE, SCF, others), research institutes, to introduce the IPC approach and ascertain interest to participate to a small task force. Task force members may also assign technical staff to assist with the exercise.

3. Meetings with key partners on specific issues, such as BPS office to obtain their view and more information on the impact of fuel increase and the increase of poverty rate as the data has not been released yet, meeting with Education sector on education issues as well as other key partners.

The focus of the mission will be to consolidate and analyse available secondary and updated information, including recent agricultural, food security, nutrition and health information from FAO, UNICEF, WHO, OXFAM, MSF and the GoI (and any other relevant reliable source) in order to achieve the objectives. A lighter version of The

Integrated Food Security and humanitarian Phase Classification (IPC) approach will be piloted and used as a guide for analysis and presentation of findings.

5. Outputs:

Executive Brief for decision makers (3 pp, within 2 weeks of the end of the mission)

Assessment Report (max. 50 pp, within three weeks of the end of the mission due to tight PRRO schedule).   Include a detailed annex which presents,   step-by-step, the methodology and tools.

Lessons learnt from piloting the IPC approach as well as a concrete list of next steps that needs to be taken in future IPC implementations in Asia.   (This would include as annexes the methodology, analysis plan and template, and any other tools).

6. Team Composition:

The proposed team is:
    Team Leader: Dipayan/Yvonne
    Nutritionist: Yvonne Forsen (WFP-ODB)
    FS expert: Dipayan Bhattacharyya, Linny Ayunahati (WFP-CO)
    Analyst: Asif Niazi (consultant)
    Agronomist/market: Rene Suter (consultant

7. Time Frame

A tentative schedule is as follows:

Activity	Lead	Timeframe
Finalize TORs and team members for assessment	ODB in consultation with CO	By 28 November 2006
Consultation with partners in Jakarta	CO	By 28 November 2006
Finalize details of Analysis Plan	ODB in consultation with ODAN	By 30 November 2006
Update secondary data analysis	CO in consultation with ODB/ODAN	By 30 November
List of partners who will participate	CO	By 30 November
Assessment Mission	CO	6-22 December
JNA team: inventory of secondary information, meetings in Jakarta	Team members and CO	6-9 December
Analysis and Interpretation work	Team members	11- 19 December
Discussion of draft findings with partners	Team members	21 December
Deadline for draft Report	team	10 January 2007

ANNEX 3.1

FSAU Technical Series Report No IV.11 Issued ¡ May 11, 2006
EXECUTIVE SUMMARY

Within the cross-cutting fields of food security and humanitarian analysis there are increasingly strong calls for improved analysis, including: greater **comparability** of results from one place to another, increased **rigour**, greater **transparency** of evidence to support findings, increased relevance to strategic **decision making**, and stronger linkages between information and **action**. Improving analysis along these lines would enable food security and humanitarian interventions to be more **needs-based**, **strategic**, and **timely**.

Central to meeting these challenges is the development of a classification system that is **generic** enough to be utilized in a vast array of food security situations, disaster types, and livelihood systems; **simple** enough to be practical in the field and understandable by multiple stakeholders; and **rigorous** enough to meet internationally accepted standards.

Since February 2004 the Food Security Analysis Unit for Somalia (FSAU1) has been using and progressively developing a tool to meet these challenges called the **Integrated Food Security and Humanitarian Phase Classification** (IPC2). Drawing from extensive literature on international humanitarian guidelines, aspects of existing classification systems, and *in situ* analysis of food security in Somalia, the IPC has consistently proven to improve analysis and enable more effective response.

The IPC summarizes **Situation Analysis**, a distinct, yet often overlooked (or assumed) stage of the food security analysis-response continuum. Situation Analysis is a foundational stage whereby fundamental aspects (severity, causes, magnitude, etc) of a situation are identified—aspects for which there is optimally broad-based consensus by key stakeholders including governments, UN and NGO agencies, donors, the media, and target communities.

The analytical logic of the IPC is that varying phases of food security and humanitarian situations are classified based on outcomes on lives and livelihoods. Outcomes are a function of both immediate hazard events along with underlying causes, and the specific vulnerabilities of livelihood systems (including both livelihood assets and livelihood strategies).

The outcomes are referenced against internationally accepted standards, and their convergence substantiates a phase classification for any given area. Each phase is associated with a unique strategic response framework, while the outcome configuration for any given situation guides the development of the most appropriate responses within that framework. While the phase classification describes the current or imminent situation for a given area, early warning levels are a predictive tool to communicate the

risk of a worsening phase. Risk is a function of the probability of a hazard event, exposure, and the specific vulnerabilities of livelihood systems.

The IPC consists of four components including the core **Reference Table**, along with supporting components of **Analysis Templates**, **Cartographic Protocols**, and **Population Tables**.

The IPC **Reference Table** guides analysis for both the **Phase Classification** and **Early Warning Levels**. The Phase Classification is divided into five **Phases**—*Generally Food Secure*, *Chronically Food Insecure*, *Acute Food and Livelihood Crisis*, *Humanitarian Emergency*, and *Famine/Humanitarian Catastrophe*. The five phases are general enough to accommodate a wide range of causes, livelihood systems, and political/economic contexts—yet their distinction captures essential differences in implications for action (including strategic design, urgency, and ethical imperative). A comprehensive set of **Key Reference Outcomes** on human welfare and livelihoods are associated with each Phase to guide the classification, including: *crude mortality rate, acute malnutrition, disease, food access/availability, dietary diversity, water access/availability, destitution and displacement, civil security, coping,* and *livelihood assets*. The breadth of outcomes enables triangulation and ensures adaptability of the IPC to a wide variety of situations. Referencing the outcomes to international standards ensures comparability and consistency of the phase classification in different countries and contexts. The **Strategic Response Framework** unique to each Phase provides strategic, yet generic guidance to achieve three objectives: (1) mitigate immediate negative outcomes, (2) support livelihoods, and (3) address underlying/structural causes.

The Reference Table also includes three **Early Warning Levels**: (1) *Alert*, (2) *Moderate Risk*, (3) *High Risk*. Each of these is associated with key information required for effective early warning: **Probability**, **Severity**, **Reference Hazards and Vulnerabilities**, **Implications for Action,** and **Timeline**.

The **Analysis Templates** are tables which organize key pieces of information in a transparent manner and facilitate analysis to substantiate a Phase Classification and guide response analysis. The **Cartographic Protocols** are a set of standardized mapping and visual communication conventions which are designed to effectively convey key information concerning situation analysis on a single map. The **Population Tables** are a means to consistently and effectively communicate population estimates by administrative boundaries, livelihood systems, and livelihood types.

The IPC is not an assessment method, *per se*, but a classification system for Situation Analysis that integrates multiple data sources, methods, and analyses (example options for specific assessment methodologies include those endorsed by WFP, ICRC, Save the Children UK, and many others). Effective use of the IPC encourages a mixed-method approach which is obligatory given the complexity of the analysis and the need for triangulation. In this manner, the IPC provides a consistent and meaningful structure to the final statement. To substantiate an IPC statement, whatever the specific

methodologies, the legitimacy of data sources and analytical methods is rigorously evaluated and reflected in the overall confidence level.

The IPC does not replace existing food security information systems or methodologies. It is a complimentary 'addon' that draws from and provides focus to existing analytical systems, enables comparability, and explicitly links analysis to action. The IPC is adaptable by a broad range of information systems with regards to data availability, methodological approach, and human capacity.

The IPC emphasizes food security analysis through a livelihoods approach, but recognizes that it is impossible to separate food insecurity from associated sectoral crises in the fields of health, water, protection, sanitation, shelter, and others. There is highly dynamic interplay between these sectors, especially as situations deteriorate they often times co-exist and stress on one likely leads to stresses on others. Thus the IPC emphasizes food security analysis while integrating related humanitarian concerns. The IPC is not meant, however, to substitute for more refined analysis of any particular sector.

The IPC draws together multiple aspects of food security and humanitarian analysis, thus the word 'integrated' in its title. It is *integrated* in a number of dimensions, including:
• aspects of existing classification systems
• the breadth of food security phases, not just emergency situations
• food security and nutrition
• *lives* and *livelihoods*
• process indicators and outcomes
• *information* and *action*
• relief, rehabilitation, recovery, and development
• short and long term perspectives
• concepts and practice
• academic standards and field practicalities
• accountability of analysis and response

Perhaps most importantly, the IPC provides a much needed common currency for food security and humanitarian analysis.

In the context of FSAU, the IPC fits within the overall conceptual, operational, and analytic framework of the Food Security Analysis System (FSAS), a means of conducting multi-faceted aspects of food security analysis through a livelihoods and evidence-based approach (Appendix 7.3).3 The IPC has proven effective as a means to communicate complex analysis to UN, NGO and government agencies, donors and media -- and has increased response effectiveness and ensured greater analytical transparency and accountability.

The highly dynamic and complex nature of food security analysis in the context of Somalia has provided a vibrant "developing-ground" for the IPC—with multiple livelihood systems ranging from cropping to fishing to pastoralism, and a variety of hazards ranging from floods to drought to civil insecurity to the Tsunami (FSAU 2005). Most importantly, the IPC has been developed *in-situ*—drawing from academic literature and international guidelines, but driven first and foremost by the realities of conducting food security analysis on a day-to-day basis and linking information to action.

The manual is targeted at: (1) FSAU analysts and technical partners to guide the consistent usage of the IPC, (2) other food security and humanitarian analysts in governments and UN/NGO agencies who might be interested in applying the IPC in different country contexts, (3) the academic community who can provide further technical guidance towards its development, (4) the global food security and humanitarian community who may draw from the IPC in their efforts to standardize analysis, and (5) the donor community who may be interested in what the IPC can offer for increasing accountability and rationalizing resource allocation.

The manual begins with a discussion of why a common classification system is needed as well as a brief review of existing classification systems. The paper next provides technical details of the concepts and practice of using the IPC. The paper ends with a discussion on the potential for broader applicability of the IPC to other country, regional, and global contexts and future challenges.

At FSAU the IPC has been revised and improved in many versions4 based on an iterative development process which has been supported by dozens of presentations and feedback from hundreds of food security professionals. Although the IPC has proven useful in the present form, it is certain that there will be more iteration, and it is hoped that this paper will solicit feedback for further development.

Footnotes

1 FSAU is implemented by the UN Food and Agriculture Organization (FAO), and funded by the European Commission (EC) and the United States Agency for International Development (USAID)

2 IPC is a short-hand acronym including the terms *integrated phase classification*.

3 FSAU's Food Security Analysis System (FSAS) is an overarching framework to integrate conceptual, analytical, and operational components of food security analysis through a livelihoods approach. Core analytical components of the FSAS include: Baseline Livelihoods Analysis, Seasonal Food Security Projections, Emergency Food Security and Nutrition Assessments, Key Indicator Monitoring, Nutrition Analysis, and Applied Research. Other core components include: Information Management System, Communication Strategy, Management, and Partner Networking. Core analytical sectors include: climate, agriculture, livestock, markets, nutrition, and civil security (FSAU 2004b). For more details visit www.fsausomali.org

4 For previous versions of the IPC tool see FSAU Technical Series IV.2/3/4/7/8 and for previous citations see Devereux and Howe (2004), Young et al. (2005) and Heimrich (2005).

ANNEX 3.2

IPC Analysis Template
Part 1: Analysis of Key Reference Outcomes and Evidence

Part 1: Area Affected, Phase Classification, and Evidence in Support of Phase Classification and Early Warning Levels					
Affected Area (Region, District, and/or Livelihood Zone)	**Applicable Reference Outcomes** (As defined by IPC Reference Table)	**Direct Evidence** • Direct Outcome Evidence in support of phase classification • Source of Evidence • Evidence Reliability Score (1=very reliable, 2=somewhat reliable 3=unconfirmed) • Write 'Not Applicable' if the outcome does not apply to situation • Write 'Not Available" if there is no reliable direct evidence • Identify the Phase Classification for each piece of evidence (GFS, CFI, AFLC, HE, F/HC)	**Indirect Evidence (e.g., process or proxy indicators)** • Indirect Evidence in support of phase classification • Source of Evidence • Evidence Reliability Score (1=very reliable, 2=somewhat reliable 3=unconfirmed)	**Phase Classification** (Tick Appropriate Box)	**Early Warning** (Tick Appropriate Boxes)
	Crude mortality rate	•	•	🟨 Generally Food Secure 🟨 Chronically Food Insecure 🟨 Acute Food and Livelihood Crisis 🟨 Humanitarian Emergency 🟨 Famine	🟨 No Early Warning 🟨 Alert 🟨 Moderate Risk 　o ACFL 　o HE 　o Famine/HC 🟨 High Risk 　o ACFL 　o HE 　o Famine/HC
	Acute malnutrition	•	• •	
	Disease	•	•	
	Food Access/Availability	•	• Income sources: • Purchasing power: • Food sources: • Expenditures: • Supply lines: • Social Access: • Others:	
	Dietary diversity	• •	• •	
	Water access/availability	•	• •	
	Destitution/ Displacement	•	• •	
	Civil Security	•	• •	
	Coping	•	•	
	Structural Issues	•	•	
	Hazards	•	•	
	Livelihood Assets (5 capitals)	• •	•	

IPC Analysis Template
Part 2: Analysis of Immediate Hazard, Effects on Livelihood Strategies, and Implications for Immediate Response

Part 2: Immediate Hazards, Direct Food Security Problem, Effects on Livelihood Strategies, Risks to Monitor and Opportunities for Response								
ANALYSIS							ACTION	
Affected Area **(Region, District, and Livelihood Zone)**	**Phase Classification** **(Tick Appropriate Box)**	**Immediate Hazards** **(Driving Forces)**	**Direct Food Security Problem** **(Access, Availability, and/or Utilization)**	**Effect on Livelihood Strategies** **(Summary Statements)**	**Population Affected** **(Characteristics & Percent of Population)**	**Projected Trend** **(Improving, No change, Uncertain, Worsening)**	**Risk Factors to Monitor**	**Opportunities for Response** **(Immediate Response to Improve Access to Food and Assist with Other Immediate Needs, i.e. Health, Shelter, etc.)**
	☐ Generally Food Secure ☐ Chronically Food Insecure ☐ Acute Food and Livelihood Crisis ☐ Humanitarian Emergency ☐ Famine							

IPC Analysis Template
Part 3: Analysis of Underlying Structures, Effects on Livelihood Assets, and
Opportunities for Mitigation in the Medium and Long Term

Part 3: Undermining Structures and Processes, Effects on Livelihood Assets, and Mitigation in the Medium and Long Term					
	ANALYSIS				ACTION
Affected Area (Region, District and Livelihood Zone)	Phase Classification (Tick Appropriate Box)	Underlying Causes (Environmental Degradation, Social, Poor Governance, Marginalization, etc.)	Effect on Livelihood Assets (Summary Statements)	Projected Trend (Improving, No Change, Uncertain, Worsening)	Opportunities to support livelihoods and address underlying causes (Policy, Programmes and/or Advocacy)
	⬜ Generally Food Secure ⬜ Chronically Food Insecure ⬜ Acute Food and Livelihood Crisis ⬜ Humanitarian Emergency ⬜ Famine		Physical Capital:		
			Social Capital:		
			Financial Capital:		
			Natural Capital:		
			Human Capital:		
			Local Political Capital:		

Note on Estimation of Affected Population Numbers

1. Define geographic area that spatially delineates the affected population (Chronically Food Insecure, Acute Food and Livelihood Crisis, Humanitarian Emergency, or Famine).

2. Identify the most current population estimates for this geographic area (i.e. WHO 2004 population estimates by district).

3. Adjust total population estimates to account for any known recent migration in or out of the affected area.

4. Estimate the percent of the population affected (for each Phase of Famine/Humanitarian Catastrophe, Humanitarian Emergency and Acute Food and Livelihood Crisis) within the affected geographic area. The most appropriate method could be by livelihood zone, wealth group, but in come instances may be more accurate to estimate by clan, gender, etc.

ANNEX 4

POPULATION

District level population data are available in the database and have been used for the Assessment. Below is a provincial breakdown of population and poverty levels.

Province	Population		
	Male	Female	Total
BALI	1,633,360	1,638,223	3,271,583
BANTEN	4,457,964	4,387,992	8,845,956
BENGKULU	817,027	803,028	1,620,055
DAERAH ISTIMEWA YOGYAKARTA	1,684,043	1,723,387	3,407,430
DKI JAKARTA	3,865,581	3,618,992	7,484,573
GORONTALO	454,219	456,879	911,098
IRIAN JAYA BARAT	299,292	280,050	579,342
JAMBI	1,367,068	1,348,530	2,715,598
JAWA BARAT	18,843,006	18,655,680	37,498,686
JAWA TENGAH	16,277,532	16,525,742	32,803,274
JAWA TIMUR	17,636,941	18,284,414	35,921,355
KALIMANTAN BARAT	2,057,121	2,005,433	4,062,554
KALIMANTAN SELATAN	1,621,916	1,614,087	3,236,003
KALIMANTAN TENGAH	986,260	940,509	1,926,769
KALIMANTAN TIMUR	1,541,867	1,390,323	2,932,190
KEPULAUAN BANGKA BELITUNG	521,314	505,649	1,026,963
KEPULAUAN RIAU	623,376	632,924	1,256,300
LAMPUNG	3,669,314	3,558,038	7,227,352
MALUKU	669,330	680,806	1,350,136
MALUKU UTARA	455,027	439,519	894,546
NANGGROE ACEH DARUSSALAM	2,027,041	2,112,935	4,139,976
NUSA TENGGARA BARAT	2,067,958	2,163,322	4,231,280
NUSA TENGGARA TIMUR	2,119,625	2,177,857	4,297,482
PAPUA	984,462	902,335	1,886,797
RIAU	2,382,015	2,288,886	4,670,901
SULAWESI BARAT	501,812	500,984	1,002,796
SULAWESI SELATAN	3,635,847	3,828,977	7,464,824
SULAWESI TENGAH	1,253,744	1,217,941	2,471,685
SULAWESI TENGGARA	945,993	948,105	1,894,098
SULAWESI UTARA	1,104,111	1,079,960	2,184,071
SUMATERA BARAT	2,251,014	2,356,735	4,607,749
SUMATERA SELATAN	3,469,906	3,473,091	6,942,997
SUMATERA UTARA	5,997,314	6,126,374	12,123,688
Source: PODES 2005, BPS			

ANNEX 5

UNDER 5 MORTALITY RATES

U5MR	Deaths/10.000/day
NANGGROE ACEH DARUSSALAM	N/A
SUMATERA UTARA	1.6
SUMATERA BARAT	1.6
RIAU	1.6
JAMBI	1.4
SUMATERA SELATAN	1.3
BENGKULU	1.8
LAMPUNG	1.7
BANGKA BELITUNG	1.3
DKI JAKARTA	1.1
JAWA BARAT	1.4
JAWA TENGAH	1.2
YOGYAKARTA	0.6
JAWA TIMUR	1.4
BANTEN	1.5
BALI	0.5
SULAWESI UTARA	0.9
SULAWESI TENGAH	1.9
SULAWESI SELATAN	**2**
SULAWESI TENGGARA	2.5
GORONTALO	2.6
NUSA TENGGARA BARAT	2.8
NUSA TENGGARA TIMUR	**2**
M A L U K U	N/A
MALUKU UTARA	N/A
PAPUA	1.8
KALIMANTAN BARAT	1.7
KALIMANTAN TENGAH	1.3
KALIMANTAN SELATAN	1.6
KALIMANTAN TIMUR	1.4

Legends

IPC classification based on WHO thresholds

(green)	
(yellow)	<1/10.000/day
(orange)	1- 2/10.000/day
(red)	>2/10.000/day

ANNEX 6

STUNTING PREVALENCE FOR 2-5 YEARS
(SUSENAS 2005)

PROVINCE	Urban	Rural
12. SUMATERA UTARA	36.2%	54.0%
13. SUMATERA BARAT	38.6%	52.5%
14. RIAU	44.8%	46.6%
15. JAMBI	26.0%	40.7%
16. SUMATERA SELATAN	21.9%	44.9%
17. BENGKULU	27.7%	54.6%
18. LAMPUNG	23.0%	41.1%
19. BANGKA BELITUNG	25.0%	48.6%
21. KEPULAUAN RIAU	31.7%	46.6%
31. DKI JAKARTA	31.4%	-
32. JAWA BARAT	40.7%	40.6%
33. JAWA TENGAH	35.4%	40.9%
34. D I YOGYAKARTA	25.6%	34.6%
35. JAWA TIMUR	36.2%	41.5%
36. BANTEN	53.4%	54.1%
51. B A L I	31.2%	40.8%
52. NUSA TENGGARA BARAT	46.3%	56.2%
53. NUSA TENGGARA TIMUR	50.6%	57.3%
61. KALIMANTAN BARAT	39.8%	48.6%
62. KALIMANTAN TENGAH	50.0%	51.7%
63. KALIMANTAN SELATAN	48.3%	57.0%
64. KALIMANTAN TIMUR	35.4%	42.2%
71. SULAWESI UTARA	48.7%	44.6%
72. SULAWESI TENGAH	41.1%	48.1%
73. SULAWESI SELATAN	38.1%	49.2%
74. SULAWESI TENGGARA	49.2%	44.4%
75. GORONTALO	43.4%	64.4%
81. M A L U K U	33.3%	43.7%
82. MALUKU UTARA	60.9%	64.5%
94. PAPUA	42.4%	49.7%
TOTAL	**37.3%**	**47.5%**

ANNEX 7

VITAMIN A SUPPLEMENTATION

No	PROVINCE	Vitamin A Distribution		
		% Infant	% U5	%Postpartum
1	N A D (ACEH)	79.58	86.65	-
2	SUMATERA UTARA	73.00	78.36	-
3	SUMATERA BARAT	93.73	90.26	65.10
4	RIAU	74.95	83.57	67.80
5	KEPULAUAN RIAU	48.73	52.35	-
6	JAMBI	76.37	71.39	7.98
7	SUMATERA SELATAN	85.55	83.57	73.30
8	BANGKA BELITUNG	85.10	85.21	53.73
9	BENGKULU	64.75	76.07	40.54
10	LAMPUNG	64.29	58.46	49.86
11	DKI JAKARTA	49.42	53.09	-
12	JAWA BARAT	93.88	81.14	-
13	BANTEN	94.66	84.33	48.39
14	JAWA TENGAH	95.93	97.94	84.01
15	DI YOGYAKARTA	103.28	92.81	-
16	JAWA TIMUR	41.18	58.45	-
17	BALI	68.95	89.82	80.01
18	NUSA TENGGARA BARAT	95.17	97.32	-
19	NUSA TENGGARA TIMUR	77.90	82.50	65.47
20	KALIMANTAN BARAT	64.86	71.18	0.00
21	KALIMANTAN TENGAH	86.34	76.18	77.46
22	KALIMANTAN SELATAN	83.97	85.45	-
23	KALIMANTAN TIMUR	100.45	73.95	66.91
24	SULAWESI SELATAN	73.61	87.75	12.88
25	SULAWESI BARAT	66.79	79.69	41.78
26	SULAWESI TENGAH	69.64	83.33	-
27	SULAWESI TENGGARA	62.57	60.56	59.72
28	GORONTALO	80.18	47.55	69.87
29	SULAWESI UTARA	84.77	94.22	34.45
30	MALUKU	40.34	33.71	39.88
31	MALUKU UTARA	59.11	62.25	64.71
32	IRIAN JAYA BARAT	50.87	57.41	47.38
33	PAPUA	45.17	27.25	13.32
	INDONESIA	73.79	74.05	57.82