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**Preparing for the Next Crisis:  
Establishing a Vulnerability and  
Shock Monitoring and Response  
System in Indonesia**

**Poverty Team  
World Bank Office Jakarta**

**Jakarta, Indonesia  
October 2010**

This report was prepared by the Poverty Group from the Poverty Reduction and Economic Management team in the World Bank Office Jakarta. The World Bank CMRS team was led by Ririn Purnamasari and Matthew Wai-Poi, with Michael Colledge as lead analyst with support from Taufik Hidayat and project management by Luc Spyckerelle, and overseen by the Poverty Group Task Team Leader Vivi Alatas. The team worked closely with members of the National Development Planning Agency (Bappenas) and the Central Bureau of Statistics (BPS). The project was financed by the Australian Government Overseas Aid Program (AusAID).

All queries should be directed to [valatas@worldbank.org](mailto:valatas@worldbank.org).

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# Abbreviations, Acronyms and Terminology

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At risk	As applied to a district, as evidenced by an adverse movement in an indicator due to the effects of a crisis, caused by, for example, a global financial crisis or a tsunami.
Bappenas	<i>Badan Perencanaan Pembangunan Nasional</i> , National Development Planning Agency
BPS	<i>Badan Pusat Statistik</i> , the Central Bureau of Statistics of Indonesia
CB	Census Block
CMRS	Crisis Monitoring and Response System
CMRSS	Crisis Monitoring and Response System Survey
Crisis	Effect of shock or more gradually deteriorating situation. Can be caused by a natural event such as disease or earthquake, or be human-related, for example, financial or political turmoil, or conflict. It can develop suddenly, following a shock, or over a longer period as conditions gradually worsen, for example, as result of a prolonged drought.
District	The term used to refer to administrative units below provinces. It thus covers both rural districts ( <i>kabupaten</i> ) as well as municipalities ( <i>kota</i> ).
HH	Household
In-crisis	A district <i>in-crisis</i> is defined as one adversely affected by the Global Economic Crisis or other crisis, as determined by adverse changes in a number of indicators.
NSS	Nutrition and Health Surveillance System
PRS	Poverty Reduction Strategy
Puskesmas	<i>Pusat Kesehatan Masyarakat</i> , Community Health Center
Sakernas	<i>Survei Angkatan Kerja Nasional</i> , National Labor Force Survey
Shock	Sudden, unanticipated event, such as current financial crisis or tsunami, that is not considered a part of a business trend or cycle, or seasonal, trading day or random effect.
Susenas	<i>Survei Sosial Ekonomi Nasional</i> , National Socio-Economic Survey
TKPK	<i>Tim Koordinasi Penanggulangan Kemiskinan</i> , Coordination Team for Poverty Reduction
TNP2K	<i>Tim Nasional Percepatan Penanggulangan Kemiskinan</i> , National Team for Accelerating Poverty Alleviation
VSMRS	Vulnerability and Shock Monitoring and Response System

# Executive Summary

**Economic and natural crises and shocks are unfortunately recurring events, but the better a country is prepared for such eventualities, the lesser the impact may be.** Sometimes there are advance signs of a crisis, but crises can also develop rapidly, with little or no warning. Whatever the nature of the event, if it can be identified quickly, the sooner the government can respond through initiating alleviation measures targeted at affected or at-risk groups or regions. Such early response measures – together with other social safety measures – can help to shield vulnerable groups from the worst effects of a shock, and establish a basis for quicker recovery.

**In 2009, in the wake of the global economic crisis, the Government of Indonesia piloted a Crisis Monitoring and Response System (CMRS).** More than 14,000 households in 471 districts<sup>1</sup> were visited three times by National Statistics Agency (BPS) staff at three month intervals. The visited households were asked about the employment situation of the head of household, if and how the crisis affected the household and in what ways, and what coping strategies – if any – they used to meet the challenges they faced. The data was then analyzed for national, provincial and district levels to determine what the impacts of the crisis were, and to consider whether crisis response measures were required, what they should be and where they could most effectively be deployed.

**The CMRS experience provides valuable inputs for the design of a long-term Vulnerability and Shock Monitoring and Response System (VSMRS).** The CMRS covered the whole country, which meant that there was no need for a priori guesses on where crisis impacts might be worst. The CMRS survey was conducted as an add-on to the BPS' Sakernas survey, and this gave good assurance of the quality of the data and made data collection logistically easier.

**An important difference between the VSMRS and the CMRS is that the VSMRS will also need to operate under non-crisis conditions,** but this may well be done with a less intensive mode of operation. When there is no known shock or apparent crisis, the VSMRS operates in basically a stand-by mode; a minimum set of data are being collected and analyzed, but as there are no signals that warrant a government intervention to address worsening conditions, the level of effort put into this activity can be relatively small. If however there are signs that the country as a whole, or parts of it, are affected by a crisis, more efforts and resources can quickly be put into the monitoring in order to obtain better and more actionable information on what measures would be required to avert or mitigate the impact of such a crisis, especially for the regions or population groups that are most at risk.

**The Sakernas and Susenas data are proposed as the core data for the VSMRS.** The Sakernas and Susenas surveys of BPS are well established surveys, and are recognized as being among the most reliable data, if not the most reliable data on socio-economic and labor conditions of Indonesian households that are available with high periodicity. That periodicity will become even better since, starting from 2011, both surveys will be conducted quarterly

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<sup>1</sup> The term “district” is used throughout the document to refer to both *kabupaten* (which are predominantly rural) and *kota* (which are predominantly urban).

instead of six monthly. However, the usefulness of the Sakernas and Susenas data for vulnerability and shock monitoring will largely depend on how quickly the data will be made available for analysis. Ideally, this should not be later than two months after the data have been collected, and hopefully data will be available for all the indicators that are identified as being the most informative for analyzing changes in vulnerabilities of households, or to identify hardship conditions affecting households.

**Other regional and thematic data – both quantitative and qualitative – should also be considered for inclusion and use in the VSMRS.** Apart from Sakernas and Susenas data, there are also other quantitative data that can provide useful information on changing vulnerability conditions and impact of shocks, even if such data are not being collected periodically and not available for all provinces and/or districts in the country. Such data can originate from different sources: line ministries, local governments and international organizations. The VSMRS should also draw on qualitative data for information gathering.

**Data analysis results of the vulnerability and shock monitoring would be available for the national, provincial and district levels.** National and provincial level point estimates should be available every quarter whereas district indicators would fall into one of a set of classifications. This information can then be used by policy-makers and project/program managers to initiate measures aimed at reducing vulnerabilities and/or mitigating impacts of crises.

**Important decisions need to be made whether and how to establish a long-term Vulnerability and Shock Monitoring and Response System.** The CMRS pilot has now ended, and it is as yet undecided whether the Government wishes to establish a unit to monitor changes in vulnerability and for signals of worsening conditions. Some of the key questions are:

- Should a long-term VSMRS be established?
- If yes, should the VSMRS operate with a single monitoring focus? Or would it be preferable to combine vulnerability and shock monitoring with a broader focus of, for example, poverty monitoring?
- Where should the VSMRS be located, and which government agency should coordinate the day-to-day operations of the VSMRS?
- How will the VSMRS coordinating unit be staffed? To guarantee an effective operation of the unit there will probably be need for a minimum of permanent staffing, even in non-crisis conditions.
- How will VSMRS operations be financed? Even if the VSMRS can tap into existing data streams, there will still be need for additional resources to support the analysis of vulnerability and shock data, and the dissemination of the information.

**The VSMRS cannot be the responsibility of a single government agency; it requires collaboration and coordination of several agencies.** The most effective setup of the VSMRS would probably be one where there is a high-level steering committee to provide political support and determine the strategic direction, where operationalization is then delegated to a coordination unit or secretariat that will support the continuous operation of the VSMRS. The setup would further be complemented with working groups to facilitate coordination for specific sub-systems of the VSMRS.

**Secure Government funding is key to the viability of the VSMRS**, especially to support the on-going basic monitoring under non-crisis conditions. If there is such a funding commitment, donor agencies may find it easier to provide seed money to help establish the VSMRS, to develop the tools and materials that are needed to make the system function, and to support the initial training of the staff assigned to the coordinating unit. Also, if the Government has supported basic operations under non-crisis conditions, donors may be more supportive of requests for additional help if there is a crisis.

**Prevention is better than cure**, and probably cheaper as well. If the Government has good knowledge how vulnerability to socio-economic changes and labor changes varies for households over time and between regions, it will be in a better position to respond quickly with corrective or mitigating measures if conditions deteriorate. Especially for the most vulnerable households, preventing or slowing down a slide into poverty will make it easier for them to recover afterwards. A VSMRS would be a key tool to make such information available.

# 1. Introduction

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## **1.1 Background and Rationale**

The collapse of the US sub-prime mortgage market and the reversal of the housing boom in other industrialized economies caused a ripple effect around the world, resulting in a global financial crisis in the second half of 2008, which developed into a global economic one. As the crisis developed, it was unclear what the impact would be for Indonesia. It was expected that export-oriented industries would be badly affected as orders rapidly declined, but it was not clear to what extent other sectors of the economy would also be affected, and where the impacts of the crisis would be the most noticeable.

The challenge for the Government in handling the developing crisis was therefore threefold:

1. To have access to reliable, timely, and consistent data to monitor how the crisis unfolded in the country, how it affected vulnerable groups in Indonesian society, and what the impacts of the crisis were for the affected households and broader socio-economic outcomes;
2. To make such information available to government agencies tasked with formulating targeted policy responses to the crisis, and possibly more broadly to other interested parties;
3. To put rapid and effective response mechanisms in place, to address such crisis impact alleviation needs, and to monitor and evaluate the effectiveness of such measures.

During the economic crisis of 1997, several crisis monitoring mechanisms had been set up, but these had been abandoned as economic recovery occurred in subsequent years. The experience of that crisis-related monitoring was unfortunately not used to establish a sustainable crisis monitoring system, to be better prepared when the next crisis occurred.

As the 2008 financial crisis morphed into an economic crisis, the Government decided in early 2009 to establish a Crisis Monitoring and Response System (CMRS), to determine the impact of the global economic crisis on Indonesia. It was envisaged that the CMRS would provide data on the impact of the crisis and provide information to formulate adequate policy responses to alleviate crisis impacts for poor and vulnerable people.

A key component of the CMRS was a new quarterly household survey conducted by the Central Bureau of Statistics (Badan Pusat Statistik, BPS) that collected indicators which were either not presently or quickly available. Much data on crisis-related indicators are already being collected, but such data currently only gets released with a 9 to 12 months lag period, and it is therefore not timely enough for crisis monitoring. The Crisis Monitoring and Response System Survey (CMRSS) was conducted in conjunction with the existing semi-annual BPS survey on labor and employment (Sakernas), but would be processed separately to be able to provide crisis-related information to policy makers more quickly.

Funding for the CMRS was provided by AusAID, to support the survey conducted by BPS, and the analysis of the data by a team that included the World Bank, BPS and Bappenas<sup>2</sup>.

The experience gained with the three rounds of the CMRSS provides valuable inputs for the design of a long-term monitoring and response system. One question is whether the scope of the to-be-developed long-term monitoring and response system should be similar as that of the CMRS, i.e. to monitor the social impacts of crises such as the Global Economic Crisis? Or should the monitoring and response system take on a broader scope, for example to also monitor changes in vulnerabilities, and perhaps even in levels of poverty?

There are several arguments in favor of the broader scope:

- Crises are – luckily – extraordinary events, which means that there will normally be extended periods, perhaps years, between the end of one crisis and the onset of a next one. If the monitoring and response system is exclusively focused on crises, it may be hard to justify on-going funding of a permanent unit that mostly operates in standby mode.
- Because of the near-dormant character of a crisis monitoring and response system, there is a risk that anyone who is assigned to a unit which operates the system will consider it a punishment posting rather than a promotion posting. This may result in a high turnover of staff, even to the extent that when the next crisis happens, the dedicated unit may not be up to the task.
- A monitoring and response system that also has another focus in times when there is no crisis – such as a focus on vulnerability or poverty – will be a more useful and probably also a better functioning system. The monitoring and response system will be able to provide information on policy matters that are of high priority. And because the data analysts are continually engaged, they will be more skilled in detecting signals of crisis and worsening social conditions.
- A monitoring system that also focuses on vulnerability provides information to target measures to increase resilience against shocks to regions and population groups that are most at risk. Furthermore, knowledge on vulnerabilities also helps to identify regions and population groups that may be among the first to be affected if a shock occurs.

The scope of the to-be-developed system is not yet decided, but as it may well go beyond pure crisis monitoring, that system is in this document referred to as the **Vulnerability and Shock Monitoring and Response System (VSMRS)**.

## **1.2 Purpose and Structure of the Report**

This report is intended to provide inputs to a discussion within Government of Indonesia agencies, and between the Government and other interested parties (such as donors, international agencies, etc), on what a *nascent* VSMRS could look like, and how it could operate. It should be stressed that this document does not provide a blueprint for a fully-fledged VSMRS, primarily because such a system could develop in so many ways that much of what would be elaborated in detail might be of little use. The focus is therefore primarily

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<sup>2</sup> More detailed information on the CMRS survey is provided in a separate report, [Crisis Monitoring and Response System \(CMRS\): Detailed Report](#).

on discussing general aspects of a VSMRS, to build a common perception on the general direction of such an initiative between the key stakeholders, and to elaborate the concept later on together with a technical working group tasked to do this.

The next chapter of the report briefly reviews some Indonesian experience with vulnerability and shock monitoring, from the East Asian financial crisis that started in 1997, and from the current global economic crisis, with particular attention to the crisis monitoring that has been piloted through the collaboration between BPS, Bappenas and the World Bank in 2009-2010.

Chapter three explores what an effective VSMRS should look like. This is then elaborated in the next three chapters, looking at data demand and data collection, data analysis and availability of information, and the use of the information. In each of these chapters, the recent 2009-2010 experience is reviewed, and suggestions are made in these areas for a more permanent VSMRS. Chapter seven looks at the institutional setup, and chapter eight proposes a two year workplan towards the establishment of a permanent Vulnerability and Shock Monitoring and Response System.

## 2. Vulnerability and Shock Monitoring Experience in Indonesia

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### 2.1 Vulnerabilities, Shocks and Crises

When designing a Vulnerability and Shock Monitoring and Response System, it is important to be clear on how the terms vulnerability, shock and crisis are used.

There is no universally accepted definition of **vulnerability**<sup>3</sup>, but it usually refers to conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards (UN/ISDR, 2004). A **shock** is a sudden, unanticipated event that is not considered a part of a trend or cycle, and does not have a seasonal, trading day or random effect.

A **crisis** is the effect of a shock or of a more gradually deteriorating situation. A crisis can be caused by a natural event (such as disease, earthquake or tsunami), or it can be human-related (for example, financial or political turmoil, or conflict). It can develop suddenly, following a shock, or over a longer period as conditions gradually worsen, for example, as result of a prolonged drought.

The impact of shocks and crises is not the same for all households. Better-off households are usually better able to cope with shocks and hardships than poorer households (see Fig. 2.1).

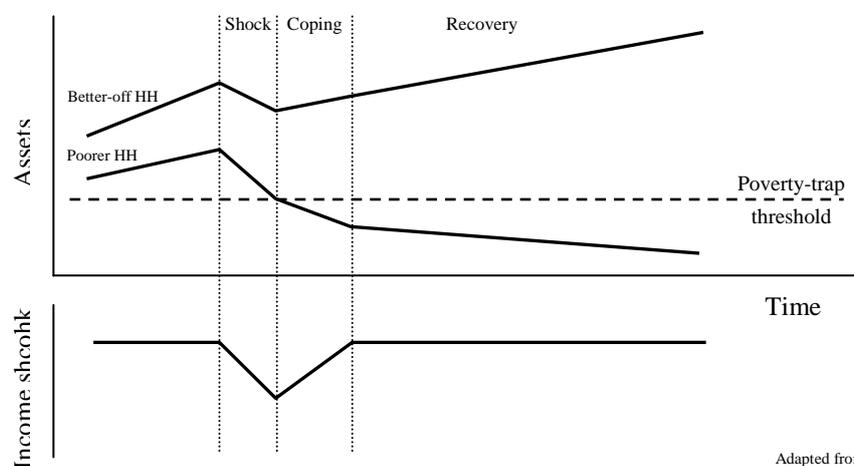


Fig. 2.1: Impact of a shock on asset trajectory and income level

Better-off households usually have more resources and assets than poorer households. These can be physical assets (e.g. agricultural land, livestock, motorbike, TV, jewelry, etc), money, but also labor assets (i.e. household members who are working, or potentially could work) and even intellectual assets (e.g. skills). With these assets, the household generates an income.

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<sup>3</sup> For a discussion of definitions, concepts and methods to systematize vulnerability, see e.g. Birkmann (2006).

When a **shock** occurs, the income of the household takes a dip and there may also be a decline of assets, e.g. by selling-off some assets to cope with the impact of the shock. For a better-off household, the decline in assets may only be a transient event, and as they cope with the impact of the shock, the decline in assets may already start to reverse. For poorer households, the impact may be more dramatic. The decline in assets may be bigger than for the better-off household (because the poorer household may have fewer coping strategies), and even in the coping phase there may be an ongoing decline in assets. In the worst case, this can push a household below a threshold which results in the household becoming trapped in a chronic poverty situation.

The different trajectories of better-off and poorer households reflect differences in vulnerabilities. **Vulnerability** is a pre-existing condition where a household's outcomes may currently be fine, but where – because the household is more likely to be affected or less able to cope with the situation than others – a shock may result in long-term hardship. Vulnerability therefore has to take these two aspects into account: the likelihood to be affected, and the ability to respond to impacts. Two households may have similar levels of consumption or income, but have different wealth levels. If both households are affected similarly by a shock, the wealthier household is more likely to be able to respond better.

Being poor does also not mean that the impact of an economic shock will necessarily be more profound for such a household than a better-off one; it may well be that, even though the family is poor or near-poor, the channels through which the impacts of a crisis are transmitted largely bypass them. A poor family which lives largely on what it produces from its own plot of land and the surplus it sells, may be little affected by an economic shock in which exports fall substantially. On the other hand, an urban household which was relatively well off before the crisis but for who the main source of income is the employment of the head of household in an export-oriented industry, may go through a difficult period, even if it is only temporary.

Vulnerability and at-risk status is not limited to households; it can also apply to regions (provinces, districts). A **vulnerable** district is one that has low levels of indicators, reflecting a structural or chronic condition. An “**in crisis**” district is one that shows negative change for selected indicators over a given observation period (e.g. a quarter, six months) due to the effects of a shock. A district that is not vulnerable may therefore nevertheless be in crisis, and conversely.

## ***2.2 Monitoring in the 1997 Asian Financial Crisis***

Over the last 15 years, Indonesia has experienced several large-scale shocks, which affected the country as a whole, or parts of it. There was the Asian Financial Crisis which started in 1997, and which took until around 2000 for recovery; the tsunami of 26 December 2004 which hit Aceh and North Sumatra had a death toll of 132,000 people dead and 37,000 people missing in Indonesia alone; in 2008, the food and fuel price increases had an impact throughout the country. On top of that, there were also various natural disasters, primarily earthquakes, that had severe impacts on specific regions (Yogyakarta, Padang, etc).

In the aftermath of these crises, or as they were unfolding, monitoring and response systems were being developed. In the sections below, a brief review is given of three monitoring systems that were deployed during the 1997 crisis, as this experience may have some

relevance for the design of a long-term Vulnerability and Shock Monitoring and Response System.

### 2.2.1 100 Village Survey<sup>4</sup>

The 100 Village Survey (Survei Seratus Desa) was a collaborative effort between BPS and UNICEF, and was first conducted in May 1994, and again in May 1997, prior to the crisis. As the impact of the 1997 financial crisis spread, additional rounds of the survey were conducted in August 1998, December 1998, May 1999 and October 1999.

The purpose of the survey was to monitor changes in health, nutrition, education and socio-economic status at the household level. The survey was conducted in 100 purposely selected villages with between 500-1000 households (HHs), spread out over 10 districts in eight provinces<sup>5</sup>. In each of the 100 villages, 120 HHs were selected<sup>6</sup>, resulting in a total sample size of 12,000 households. The number of the same HHs that were re-interviewed during different rounds declined; of the 12,000 HHs interviewed in May 1997, 8,142 were interviewed in August 1998 and 6,201 in December 1998.

The 100 Village Survey collected data on households and the children that lived in them. Information was gathered on: the demographic attributes of the interviewees, on education, health and fertility behavior, migration, labor market activity, socio-economic status and crime. The surveys of 1998 and 1999 focused to a greater extent on the living standard of the households and gathered information on coping mechanisms. One drawback of the survey was that comparability between survey rounds was reduced by changes in the questionnaires.

The 100 Village Survey was not designed to be a nationally representative; it focused disproportionately on rural and relatively poor areas. The findings could thus not be generalized for the country as a whole, but applied only to the villages studied, and perhaps indicate what might have occurred in similar villages elsewhere. The survey did also not include the major urban areas on Java (Jakarta, Surabaya), or big cities off Java (e.g. Medan, Makassar). The survey did thus not provide information on crisis impacts in areas that were expected to be among the most affected in the country.

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<sup>4</sup> The information in this section is compiled from: Suryahadi, Suharso and Sumarto (1999); Suryahadi and Sumarto (1999); Hayes (2000); Cameron (2002); Pritchett, Sumarto and Suryahadi (2002)

<sup>5</sup> The districts were: Indragiri Hilir [Riau], Lampung Selatan [Lampung], Pandeglang and Sumedang [Jawa Barat], Rembang and Banjarnegara [Jawa Tengah], Karang Asem [Bali], Kutai [Kalimantan Timur], Kendari [Sulawesi Tenggara] and Kupang [NTT].

<sup>6</sup> Until May 1997, the 120 HHs were selected from two Census Blocks (CBs), 60 HHs in each CB. In the August 1998 survey, 40 HHs were selected in each of the two previously selected CBs, and an additional 40 HHs from a third CB.

### 2.2.2 Kecamatan Crisis Impact Survey <sup>7</sup>

The Kecamatan Crisis Impact Survey was designed as a quick response survey to obtain country-wide up-to-date information on the impact of the financial crisis in 1998. In each of the then 4,025 sub-districts (kecamatan), three key informants<sup>8</sup> were asked a series of qualitative questions about the degree of different kinds of impacts (migration, access to health and education, food availability, etc.), the frequency of different types of coping strategies ((selling assets, reducing frequency and quality of meals, etc), and the most severe impacts in each area. The survey was financed by the Ford Foundation and ASEM (Asia-Europe Meeting) Trust Fund, and carried out by BPS.

The questions were designed to measure proportional changes relative to the same time a year earlier, to eliminate seasonal changes. The respondents were asked to rate their answers to the 21 qualitative questions on a five-point scale: 1) somewhat improved; 2) about the same; 3) somewhat worse; 4) much worse; and 5) very much worse. As there were 21 questions in the questionnaire, summary indices were constructed from a combination of indicators in each of five dimensions: 1) use of coping strategies in response to crisis impacts; 2) food security; 3) employment; 4) education; 5) health.

Preliminary findings of the survey became available in October 1998, and they indicated that – contrary to some initial predictions – the impact of the crisis was quite uneven, with some regions actually benefitting through higher export earnings from the weaker exchange rate. The preliminary survey findings were later found to be consistent with those from other GOI and donor surveys. An important finding of the survey was that there was little correlation between pre-crisis poverty levels and crisis impacts; some relatively poor areas were not hard hit while in some relatively well off areas the impacts of the crisis had been quite severe. It indicated that, for the 1997 crisis at least, crisis impact targeting and poverty program targeting were quite different.

The survey indicated that it was possible to quickly obtain useful policy information at relatively low cost with a quick turnaround. The survey gave a good indication of degrees of crisis impacts and of trends in overall changes

### 2.2.3 Nutrition and Health Surveillance System

The Nutrition and Health Surveillance System (NSS) was established by the international NGO Helen Keller International (HKI) in collaboration with the Ministry of Health in 1995 to evaluate a program in Central Java that promoted vitamin A-rich foods. When the economic crisis hit Indonesia in 1997, the NSS was quickly restarted and expanded to monitor the impact of the crisis on nutrition.

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<sup>7</sup> The information in this section is compiled from: Sumarto, Wetterberg and Pritchett (1998); ASEM Trust Fund (1998); Poppele, Sumarto and Pritchett (1999)

<sup>8</sup> The Agriculture Officer (Mantri Tani) in rural areas or the Community Development Officer (Kepala Seksi PMD) in urban areas; the Kecamatan School Supervisor (Penilik Sekolah); and the Community Health Center Doctor (Dokter Puskesmas).

In late 2000, the NSS was operational in seven rural provinces and in poor areas of four major cities, thus covering nearly 70% of the population (HKI, 2000).

The data was collected quarterly from more than 44,000 households (see Fig. 2.2). In the rural areas, a multi-stage cluster sampling design was used to obtain the random sample. In each province, ecological zones were identified (Central Java, e.g. had six zones) and from each zone, 30 villages are selected by PPS sampling techniques. From each village a list of households with at least one child younger than five years of age was obtained, and from that list, 40 households were selected by fixed interval systematic sampling. For the urban areas the sample households came from slum areas. In Jakarta and Surabaya, 40 kelurahan with slums were selected by simple random sampling from all kelurahan with slums. Within each of the selected kelurahan, two to three RWs with slums were selected, and within each RW a random selection of 30 households with at least one child younger than five years old. In both Semarang and Makassar, 80 RWs with people living in slums were randomly selected, and from each RW then 30 households with at least one child younger than five years old.

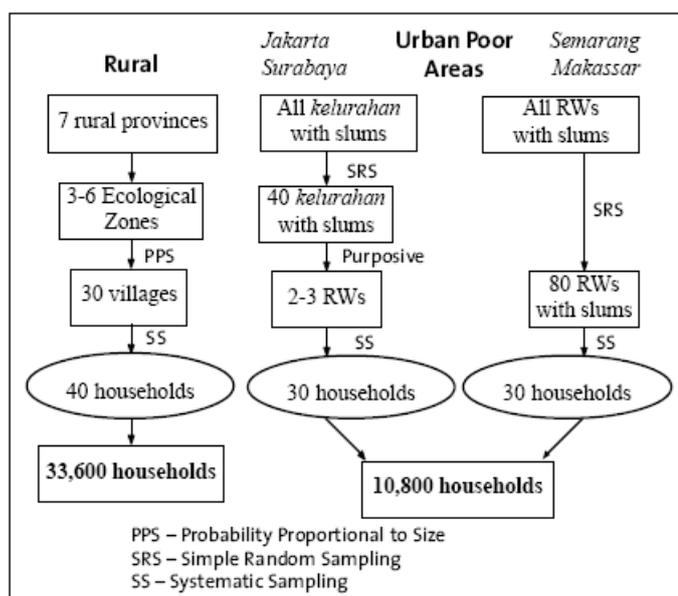


Fig. 2.2: Sampling framework of the HKI/GOI NSS

The NSS was designed to monitor malnutrition in various ways, including micro-nutrient deficiencies and protein-energy malnutrition of women and children. Because of this, the survey could identify that there was an increase in anemia and night blindness – for which no data was collected by the existing Ministry of Health surveillance systems – after the start of the crisis. If the NSS had only used traditional indicators (such as underweight among children), this might not have come to light at an early stage.

One key achievement of the NSS was that it regularly issued “Indonesia Crisis Bulletin” and press reports with key information for policy makers and program managers as soon as such information became available. Between October 1998 and September 2000, 24 issues of the bulletin were released, most regularly between September 1999 and May 2000 when a bulletin was released every month.

The NSS was operational until 2003, as a collaborative effort of HKI with the Ministry of Health’s National Institute of Health Research and Development (Puslitbangkes), provincial health offices, district health offices and local government. After the project ended in 2003, the NSS was discontinued

## 2.3 The Crisis Monitoring and Response System

Between August 2009 and February 2010, data on the impact of the global economic crisis was collected in 471 districts. The data was collected from households, through the Crisis Monitoring and Response System Survey (CMRSS), and from community health centres and district health offices in these districts through CMRS health sector questionnaires. This section provides summary information on the CMRSS. More detailed information on the CMRS is provided in a separate report<sup>9</sup>.

### 2.3.1 General

The objective of the Crisis Monitoring and Response (CMR) survey, when it was designed in the second quarter of 2009, was as follows:

*The objective is to implement a low-burden household survey collecting data on household education, health and employment to identify districts requiring a specialized policy response to alleviate impacts of the current economic crisis. Requirements are that the survey be frequent (say, quarterly), low burden (low cost to put into the field, low technical capability required in the field, low processing cost), quick to turn around from fielding the survey to having the indicators available and digestible, and having national coverage but being representative at the kabupaten level.*

It was decided to conduct the CMRSS together with the Sakernas survey in August 2009 and February 2010, and as a stand-alone survey in November 2009. As with the Sakernas, the CMRSS would be conducted in 471 districts, covering all 33 provinces. But the number of households to be visited would be much less than in the Sakernas: due to budgetary constraints, only 30 households would be selected from the Sakernas sample in each district, i.e. six households in five census blocks. These households would be visited three times over a seven month period, so that there was panel data from the same households.

The CMRSS focused on identifying and quantifying “negative” changes in the situation of households. It aimed to produce quarterly national and provincial estimates of key indicators and their changes, and to identify districts that appeared to have become “at risk” socio-economically due to the effect of the global economic crisis.

### 2.3.2 Implementation of the CMRS

The CMRSS was conducted over three rounds (see Fig. 2.3). The data collection in the first round was conducted in August 2009, together with the data collection for Sakernas. The respondents were not only asked for data on labor conditions in the first week of August and household conditions in July, but also for their recollection on the same indicators three months earlier.

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<sup>9</sup> Crisis Monitoring and Response System (CMRS): Detailed Report

Activity	2009								2010						
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
<b>CMR Survey Round 1</b>															
Survey design	■	■													
Questionnaire tryout		■													
Preparation for implementation			■	■											
Implementation and supervision				■	■										
Data sent to BPS for data entry and validation					■	■									
Data analysis						■	■	■							
Report writing and presentation of results								■	■	■					
<b>CMR Survey Round 2</b>															
Questionnaire revision and survey preparation						■	■	■							
Implementation and supervision								■	■						
Data sent to BPS for data entry and validation									■	■	■				
Data analysis										■	■				
Report writing and presentation of results											■	■			
<b>CMR Survey Round 3</b>															
Questionnaire revision and survey preparation									■	■					
Implementation and supervision										■	■				
Data sent to BPS for data entry and validation											■	■	■	■	
Data analysis													■	■	■
Report writing and presentation of results														■	■

Fig. 2.3: Implementation of the CMRSS

The completed and checked questionnaire forms were then sent from the district to the provincial BPS offices, and from there forwarded to BPS in Jakarta, for data entry and data validation. In mid-October 2009, the electronic data files were submitted to the World Bank team for the data analysis, which was done in October-November. The results of this first round were presented to Bappenas and BPS in December, and a report on this first round was prepared in January 2010.

The second and third rounds of the CMRS were implemented along similar lines, except that the round two survey was conducted independently as there was no Sakernas data collection at that time. In February 2010, for some households the CMRSS was conducted together with the Sakernas, whilst for others there was only the CMRSS, due to Sakernas' rotating panel design. Data analysis in rounds two and three was done with the assistance of BPS and Bappenas staff.

### 2.3.3 Strengths, Weaknesses and Challenges of the CMRS

A full assessment of the CMRS as a tool for crisis monitoring will be conducted in late 2010 and early 2011, but some strengths and weaknesses are already identifiable.

The CMRS has several strengths:

1. The CMRSS **covers all districts** in the whole country. There is thus no need to guess where the impacts of a crisis might be the most felt. Some monitoring efforts in previous crises used ex-ante estimates of likely crisis-affected locations, but with hindsight these proved only partly accurate. A country-wide vulnerability and shock monitoring system offers better prospects.
2. The CMRSS is **attached to a well established survey** (Sakernas), with some additional data collection. The BPS enumerators and staff are therefore already familiar with the data collection and data entry procedures, which results in good quality survey data.

3. The survey tracked a **relatively small number of indicators**. The workload for data entry was therefore manageable by a small team, as was the analysis.

The CMRS as it was implemented has however also several weaknesses and challenges it has to face:

1. The **small sample size** of 30 households per district requires the use of non-conventional statistical analysis methods. Because such methods (like those used in Lot Quality Assurance Sampling) are less well known, analysts require extensive training, and the interpretation of results requires great care. The small sample size also increases the likelihood that random changes (“noise”) can give a wrong signal on “at risk” status of a district.
2. It is **difficult to distinguish between crisis impacts and deterioration of pre-existing vulnerabilities** due to other, non-crisis related factors, in part due to the lack of baseline (pre-crisis) data for most indicators.
3. In the CMRSS – in contrast to the Sakernas – **detailed labor-related data was only available for the head of household**. It was therefore difficult to generalise head of household results to the broader labor force, as well as difficult to interpret the level of hardship in certain households since data on employment and earnings of other members of the household was hardly or not at all available.
4. The **quality of the collected health data was poor**. The data from the Puskesmas and from the District Health Office – which was intended to be the main source of information to assess health outcomes – were often not consistent and thus highly unreliable. It may be that poor data quality is primarily due to weak data transmission and communication mechanisms between units of the Ministry of Health, rather than weak data collection mechanisms at the point of origin of such data.

The challenge in designing a long-term Vulnerability and Shock Monitoring and Response System is to retain and expand on the strengths of the CMRS, while trying to address its weaknesses and challenges.

# 3. Expectations and Overall Design of a Vulnerability and Shock Monitoring and Response System

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## **3.1 *Intended Scope of a Vulnerability and Shock Monitoring and Response System***

Crises can be times of intense difficulty or danger. They can be caused by natural events (e.g. drought, disease, earthquakes, etc) or be human-related (e.g. economic crisis, political turmoil, conflict). They can develop suddenly as the result of a shock (a sudden, unanticipated event that is not considered part of a trend or cycle), but they can also develop over a longer period as conditions gradually worsen for part or the whole of a population. The severity of a crisis in terms of who is affected, and how they are affected, are also factors that need to be considered. Effects of shocks can also vary in scale; it may only affect an individual or a household (e.g. illness of the main income earner), be localized (e.g. flooding, landslide, earthquake), or being felt country-wide (e.g. food or fuel price increases, regional or global crisis).

Establishing a Vulnerability and Shock Monitoring and Response System (VSMRS) is an ambitious undertaking. There is a risk that, in an effort to achieve comprehensiveness from the start, too much complexity is built in at an early stage, and that institutionalization becomes more difficult. It may be better to develop a system with a somewhat limited scope at first, but to ensure that it meets specific information demands from policy makers, so that it can prove its value. As the system gains recognition and acceptance, it can then be expanded to increase its usability.

The suggestion to not be overly ambitious at the startup of the VSMRS should however not be interpreted as a plea to limit the scope to crisis monitoring only, without a focus on vulnerability. As indicated in section 1.1, there are advantages in establishing a system that can continuously monitor vulnerability, but that can be ramped up to monitor the impact of a crisis resulting from a shock, when one occurs.

The scope of the VSMRS described in this document is not a finance and economic monitoring system (i.e. focused on monetary and financial surveillance), but rather a system to monitor the economic and social impacts of worsening vulnerabilities and shocks on individual people and households (e.g. labor, health and education impacts).

The CMRS was not so much a crisis identification tool but rather a crisis confirmation tool. A **crisis identification tool** should be able to signal the existence of a shock or crisis where none was expected before; a **crisis confirmation tool** provides information that there are indeed signs of worsening vulnerabilities, and it provides information on the spread and intensity of such worsening conditions between districts and to understand the type of the shock. It is hoped that the VSMRS will be able to function more as a shock identification tool, but that will require that data on key indicators will be available within weeks after data

collection, and that initial analysis can happen quickly (among others by having a team of data analysts assigned to the task, and by automation of part of the analysis). If the time between data collection and the availability of the analysis results is still in the order of three to four months, the window of opportunity for quick response may already be closed. Without quick access to data and availability of initial analysis results, the signals of worsening vulnerabilities and a shock, or of recovery from such conditions, will more likely come from macroeconomic data (such as trade and price indicators), or from media reports (with stories on news items on fall or increase in orders from abroad, factory closures, etc.).

There is also the question whether the VSMRS should be developed as a stand-alone vulnerability and shock monitoring system, or whether it will be more effective if the system is part of a more ambitious monitoring system that focuses on general poverty monitoring, MDGs achievement and labor market fluctuations. The advantage of the more integrated scope is that it expands the usefulness of the system, but the desirability of such an approach also depends on what is already planned, or being developed, for such more integrated monitoring.

## **3.2 Characteristics of an Effective Vulnerability and Shock Monitoring and Response System**

### **3.2.1 Phases of a Crisis**

An effective VSMRS must be able to function in relation to how a shock evolves into a crisis, being largely low-key and dormant when there is no crisis, but ready to be quickly activated when a shock occurs. This section explores what characteristics an effective VSMRS ideally should have, and issues that will have to be considered and questions to be answered in relation to its development and establishment. The issues are indicated with grey background shading.

In designing of the VSMRS it is useful to model the development of, and recovery from a crisis in five phases (see Fig. 3.1):

1. **Pre-crisis.** A normal state where some individuals and households face difficulties, but these are primarily due to individual or local circumstances (e.g. illness, accidents, landslide, etc).
2. **Onset of crisis.** Natural or human-induced shocks trigger changes that result in deteriorating living conditions and/or increased hardship for a growing number of people, thereby resulting in the onset of a crisis.
3. **Peak of crisis.** Worsening conditions and/or increases in hardship start to level off and some early signs of recovery for some people or regions previously affected are noticeable.
4. **Recovery.** Decreases in hardship and steady improvements for increasing numbers of individuals and households affected by the crisis.
5. **Post-crisis.** Return to a normal state where difficult situations are primarily due to individual or local circumstances.

➤ There must be clear operational definitions to determine whether the country as a whole, or a specific region, is in an “onset of crisis”, “recovery from crisis” or “non-crisis” condition.

➤ How will the VSMRS interact with, and relate to other monitoring systems (e.g. disaster monitoring, food and nutrition security monitoring, MDGs achievement monitoring, region specific monitoring by other agencies/donors)?

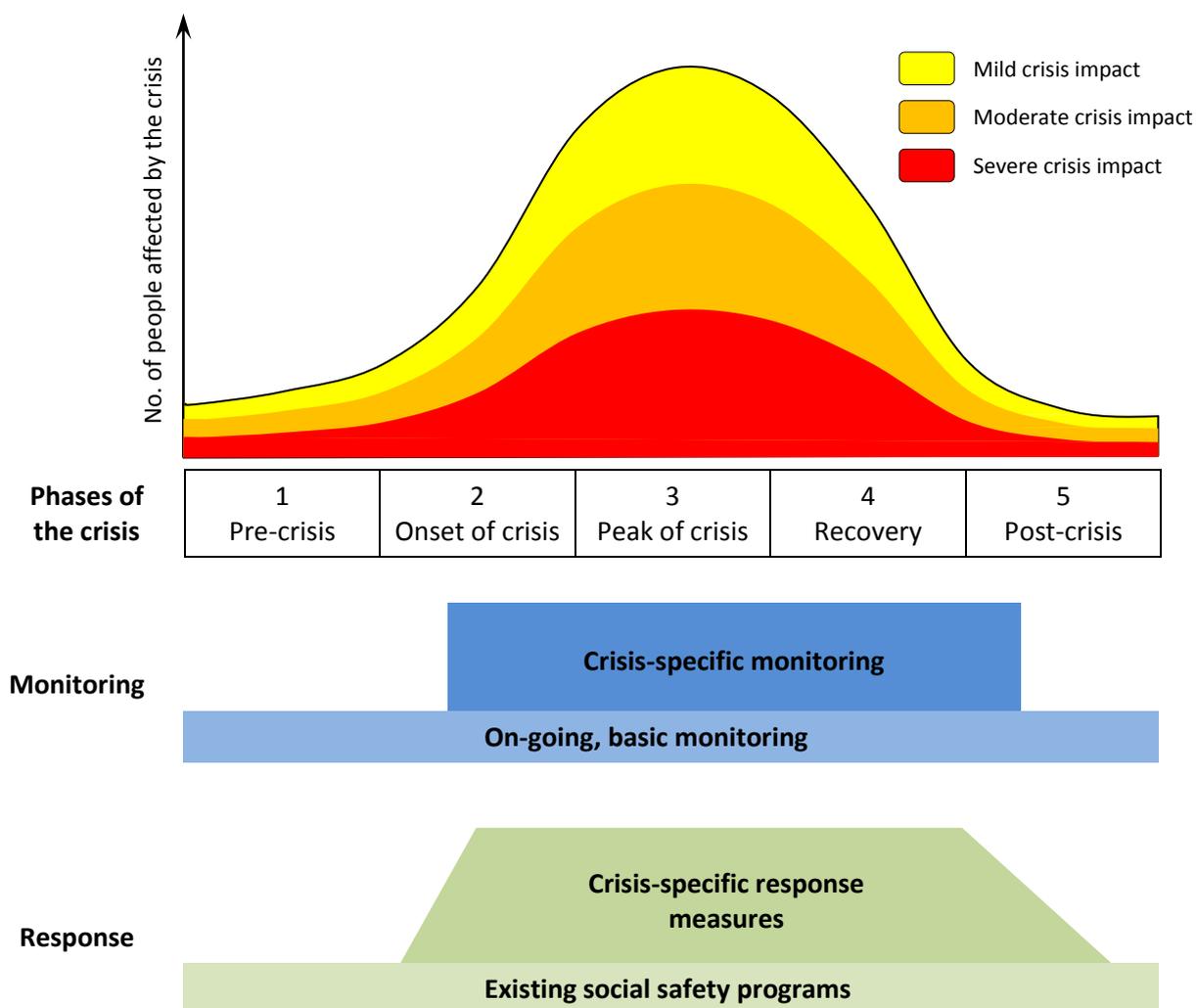


Fig. 3.1: Phases of a crisis, and stages in vulnerability and shock monitoring and response

### 3.2.2 Monitoring

In pre- and post-crisis modes, the VSMRS operates at a minimal level of effort, and the system engages in basic on-going monitoring, looking for early signals of shocks and monitoring levels and changes in vulnerabilities.

- Basic on-going vulnerability and shock monitoring should as much as possible make use of readily available and reliable data that is periodically collected.
- What is the minimum level of effort required in data collection and data analysis for basic on-going vulnerability and shock monitoring when there is no apparent crisis?
- Because any part of the country can be impacted by a shock, basic on-going shock monitoring should be nationwide.
- Information on vulnerability and shock conditions should be available with a sufficient level of detail: country-wide at least down to the district level, and preferably down to the sub-district level for region-specific monitoring.
- Should qualitative monitoring also be part of on-going, basic monitoring? Or should it only be considered during crisis situations, to provide better understanding on crisis situations?

If and when signals of a developing crisis are detected, more intensive monitoring procedures should be activated. Such procedures should cover, among others:

- **The trigger for more intensive monitoring.** How many people and/or regions should be affected by crisis impacts, or what change in levels of selected indicators should occur before starting more intensive monitoring?
- **Other types of analysis, if any, to be performed on the periodically collected basic monitoring data.** It may be that the basic vulnerability and shock monitoring in first instance only analyses data of a few indicators, even though more data is routinely collected. If there are signs of an emerging crisis, additional and more in-depth analysis could be done on other data collected in the surveys that are the backbone of the VSMRS.
- **Speeding up data processing and analysis.** When there is no crisis, it does not matter much to receive confirmation of conditions three months after the data has been collected. If there is however a crisis, and especially if it is widespread and has a severe impact, information on crisis conditions should ideally be available at shorter notice.
- **Additional data to be collected to obtain crisis impact information.** Such additional data collection can be targeted at regions and/or economic sectors that are thought to be the most affected by the developing crisis. It can also mean that, apart from quantitative monitoring, more qualitative data is collected.

- **Involvement of local governments and other agencies in vulnerability and shock monitoring.** As information becomes available that certain regions, provinces or districts are more affected than others by a developing crisis, local government agencies in the affected areas should be more involved in monitoring local vulnerability and shock indicators, and in initiating measures for crisis alleviation.

➤ There must be secure government financing for the basic on-going vulnerability and shock monitoring, and the possibility to obtain quick access to additional funding for more intensive vulnerability and shock monitoring if and when the need for it is certified.

➤ A manual for vulnerability and shock data analysis must be developed, which specifies the on-going analysis that is to be done when there is no crisis, and the recommended additional data analysis when there is a crisis.

➤ There needs to be guidance to local governments (provinces and districts) on how they can actively participate in vulnerability and shock monitoring in an integrated manner with the national level monitoring. Local government involvement in vulnerability and shock monitoring should be commensurate with the financial and human resource capacity of the concerned region to engage in such activities.

There is considerable experience with crisis monitoring in Indonesia from earlier crises. Some of the approaches that have shown to be informative and effective in the past might be considered again for use in a next crisis. It is important therefore to establish an easily accessible information system which adequately documents such earlier crisis monitoring approaches.

This also applies to learning the lessons of any new crisis as it goes through the recovery and post-crisis phases. There should be reflection and evaluation on how the Government and individual agencies gained information about the crisis, and responded to it, what worked reasonably well and what needs improvement, and how to use this information to be better prepared for a next crisis.

➤ The vulnerability and shock monitoring unit should build up a reference library with systematic documentation of vulnerability and shock monitoring approaches that have been used in past crises. The documentation should explain the essence of the assessment approach, what instruments were used, and what the strengths and weaknesses were. Such information will make it easier to use similar monitoring approaches again if and when there is a need for them.

### 3.2.3 Response

In pre- and post-crisis conditions, the social safety programs are expected to provide an adequate response to crisis situations that occur during that period.

- The information systems of the social safety net programs should also be considered as a source for vulnerability and shock information.

When the existence of a crisis is confirmed, adequate response measures should be activated. Some measures will be better suited to specific crisis conditions than others, and there will also be differences in how long it takes for the measures to be approved, and when they start to have effect for crisis alleviation. Increasing the allocation of ongoing programs is likely to give quicker results than the initiating of a completely new crisis impact alleviation mechanism.

Similarly with the activation of more intensive crisis monitoring, there should also be clear guidance on crisis response procedures.

- **The trigger for crisis response.** How many people and/or regions should be affected by crisis impacts, or what change in levels of crisis indicators should occur to initiate or increase crisis response?
- **Agreed response activation plans that are known to all key stakeholders.** Most of the response measures will require the channeling of extra funds into specific programs. Because public expenditures arrangement are subject to various sets of rules, it is recommended that the key stakeholders who are likely to be involved in the activation of response measures (the Vice-President's Secretariat, Bappenas, Ministry of Finance, Ministry of Home Affairs, etc) discuss response activation plans when there is no crisis yet, so that little valuable time will be lost when such measures are needed. This can take the form of a "Shock Preparedness Plan". Apart from general response activation plans, there can also be sector specific plans, to alleviate crisis impacts that affect particular sectors.
- **Involvement of local governments in crisis response.** The implementation of crisis alleviation measures will nearly always require active participation and support of local governments. It should be clear how such local government involvement can be facilitated.

- There should be a catalogue of crisis response scenarios, with information on how they are expected to soften crisis impacts, and how these measures can be activated for use on either a national or a regional scale.

- For the more routinely applied crisis response measures, models should be developed to assess how much impact on crisis alleviation they can expect to have on the basis of the size of the measure.

Over the period 2008 to mid-2010, the effects of the crisis in Indonesia were quite mild, and the need for a rapid and widespread response was therefore muted. The social safety net measures that had been put into place since the previous crisis of 1997 were able to soften

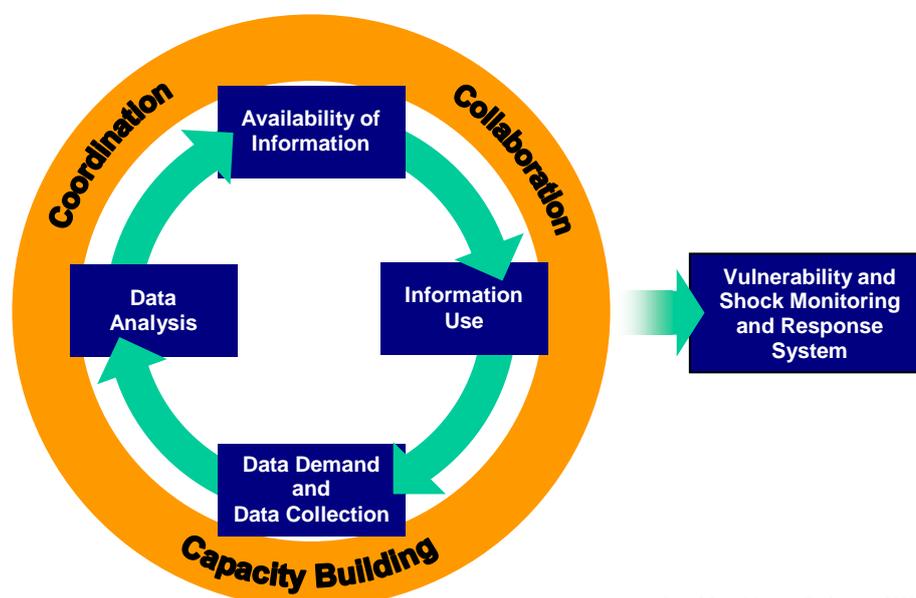
crisis impacts to a considerable extent. Had the impact of the crisis been more severe, it is doubtful whether the existing budgeting, planning and disbursement mechanisms would have allowed the delivery of the selected crisis response measures on the required scale and within the required time. The slowness in the delivery of the infrastructure stimulus package which was initiated as a specific response to the global economic crisis makes it rather doubtful that the delivery of additional crisis relief measures would have been quicker and more effective.

- There should be a review of the portfolio of available shock and vulnerability deterioration responses, and of the ability of GOI agencies to deploy the responses on the appropriate scale and with the needed urgency.

### 3.3 A Conceptual Framework <sup>10</sup>

An effective VSMRS is an evidence-based decision-making system where (see Fig. 3.2):

- **demand** for reliable and timely data on how a shock affects vulnerable groups and individuals is met through a well organized **data collection** process ...
- where the data subsequently is properly **analyzed** so that ...
- relevant **information becomes available** and gets **disseminated** to decision-makers in formats that are easy to comprehend in order to support ...
- the **use of information** to provide adequate and timely responses for impact alleviation where it is most needed.



Adapted from *Measure Evaluation* (2008)

Fig. 3.2: Conceptual framework for establishing a VSMRS

<sup>10</sup> This section draws extensively on the conceptual framework for improving health systems from Measure Evaluation ([www.cpc.unc.edu/measure](http://www.cpc.unc.edu/measure)) and WHO (2006).

The figure illustrates that there are interlinkages between data demand and data collection, data analysis, dissemination of information, and utilization of information. Demand for data and information on vulnerability and shocks results in requests for such data to be collected and analyzed. That information has to be made available in ways that match the capabilities and absorption capacity of those who have to act on it, and it must be clear to them how they can use that information to initiate and support corrective or alleviating measures. The lack of actionable information may in turn generate demand for additional data on vulnerability and shocks.

There is no single or “correct” entry point into this cycle to build a VSMRS. There does not have to be agreement of all parties on a list of indicators needed for an informative VSMRS in order to make a start with exploring how best to collect the data, what types of analysis is most suited, or what the most effective shock alleviation measures are. Building the VSMRS can be done in a gradual manner where advances are made in each of the areas, and where these in turn create new opportunities for further advances that contribute to increase overall system effectiveness.

This cycle of demand and collection, analysis, dissemination and utilization of data and information related to vulnerabilities and shock is supported by collaboration, coordination and capacity building for each of the cycle components.

### 3.3.1 Data Demand and Data Collection

When the impact of the global economic crisis started to be felt in Indonesia in 2008, there were many questions, such as:

- How many people would lose employment, and in what sectors?
- Would only export-oriented industries be affected, or would the impact of the crisis also spread to informal industries?
- How many workers would move from full employment to part-time employment?
- What impact would the crisis have on levels of poverty?
- How would people try to cope with increased hardship?

The data needed to answer such questions and many more is diverse. There is a risk of “paralysis by analysis” if one tries to accommodate all possible angles and to satisfy such diverse data demands simultaneously. The list of indicators to be tracked becomes inevitably very long, and it often results in a risk of data overload and information shortage.

Which data provide the best information about vulnerability, shocks and crisis? There is no single or simple answer to this question as shocks can have impacts in many areas, and data may be needed for all of these. As indicated in section 3.2, the demand for data must be commensurate with the risk of worsening conditions; if there is no obvious crisis, a minimum amount of indicators should be monitored without abandoning vulnerability and shock monitoring altogether.

As mentioned in section 3.2.1, it is important to distinguish between data collection to monitor vulnerability fluctuations in pre- and post-crisis conditions, and data collection during the three other crisis phases (i.e. onset of crisis, peak of crisis, and recovery). For pre- and post-crisis conditions, which can stretch over several years, the effort of data collection should be kept to a minimum but still offer good prospects that signals of worsening

situations will be detected. The data collection systems that are most suitable for this are the **on-going, routine data collections**. As such data collection systems are already institutionalized, in non-crisis periods they continue to operate as usual, and there is in principle no extra cost involved in collecting the data.

Because of such reliance on on-going, routine data collections for the basic on-going monitoring, it may be most effective to consider the data demand together with the data collection. If the data demand is considered independently from the data collection, it may help to identify the most informative crisis indicators, but it may well be that such data is not routinely available. It may therefore be more effective to operate on the basis of a “*if you can't get what you want, use what you can get*” philosophy, and to settle for perhaps less than optimal crisis indicators, but which have the benefit of already being collected. So, e.g. when assessing the impact of a crisis on industry, it may be easier to check what data is periodically (monthly or quarterly) available from the Ministry of Trade, employers' associations or sector trade associations.

When there is a crisis, additional and targeted data may be needed to obtain good information on crisis conditions. Such collection of crisis-specific data can aim to get the most reliable and informative crisis impact data, even if they are not normally collected.

Vulnerability and shock monitoring should not only be done on the basis of quantitative data; qualitative data can provide much useful information as well. If qualitative assessments are conducted to complement quantitative data analysis, such data can provide information on the accuracy of shock and crisis signals and confirm the need for action, help to understand the underlying causes of the events, and help to identify appropriate policy responses.

At the time the CMRS was designed in May 2009, the intention was that, via regularly conducted rapid assessments, the qualitative crisis monitoring would provide a deeper understanding of the phenomena causing the changes. In particular, the assessments would confirm (or not) the CMRS results in specific areas, assist in explaining the possible causes and trends for observed changes in the quantitative data, and help in determining the potential effectiveness of various policy responses.

The advantage of combining quantitative and qualitative monitoring is that it increases the trustworthiness of the results from both types of assessments<sup>11</sup>. This may occur in one or more of four possible ways.

- **Internal validity or credibility.** This is linked to the “truth” of the results. The results of the qualitative assessments may confirm the quantitative survey results, or vice versa. Quantitative and qualitative assessments that largely correspond with each other give greater confidence that both sets of the results are credible.
- **External validity of transferability.** This refers to the situation in which the results are also valid for other locations or other groups of people. For the current crisis monitoring, this could mean that, based on similarities in impact patterns of the global economic crisis as identified by the quantitative surveys, the understanding of crisis impact and recovery pathways gained through the qualitative assessments in specific locations would help in understanding the crisis impact elsewhere.

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<sup>11</sup> This section on trustworthiness is taken from Marsland *et al* (2000).

- **Reliability or dependability.** This relates to obtaining the same or similar results when the assessment is repeated with the same or similar respondents in the same or a similar context. For example, the results from the two types of assessments for groups or locations that share similar characteristics (e.g. small fishing communities, or rice-growing agricultural communities) could be checked for similar behaviour over time. However, because the number of qualitative studies was relatively small and the locations where they were conducted were selected for their unique characteristics, such confirmation of reliability between the qualitative and quantitative assessments does not actually occur.
- **Objectivity or confirmability.** This relates to increasing the certainty that the results are not influenced, or only marginally influenced, by the biases due to inadequacies and/or individual motivations or perspectives of the quantitative data collectors/qualitative study investigators. Given that the data collectors and study investigators were quite different, coincidence or near coincidence of results is an indication of lack of bias.

In summary, given a (near) coincidence of results, the qualitative assessments strengthen the credibility and objectivity of the quantitative assessments, and the quantitative assessments increase the confidence that the findings of the qualitative assessments can be generalized.

### 3.3.2 Data Analysis

Analysis of the collected vulnerability and shock data should be a continuous activity, even when there is no expectation of a crisis. The information obtained from this analysis increases the understanding of what are normal conditions, and thereby provide a benchmark to identify abnormal conditions. Data analysis under non-crisis conditions can be fairly minimal (at least for the purpose of detecting signals of crisis) but it should not be abandoned altogether.

For data analysis, in non-crisis situations it may be most effective if analysis routines can be developed to largely automate the analysis. This will make it possible to do most of the routine analysis with minimal staffing. A management information system may be a key tool for such automated analysis.

When there is a crisis, more resources will need to be mobilized for data analysis. There will probably be more data collected that needs to be analyzed, and there may also be a desire to use more and/or more complex data analysis methods to extract additional information on evolving crisis conditions from the available data.

### 3.3.3 Availability of Information

It is vital that the people who are best placed to use the information are aware of its availability and that the information is available in a form and format which is well matched to their demands for decision-making. The information must be made available in a manner and through channels that fit well with the requirements of the people targeted for its use; if the information cannot be easily grasped it will not be used.

As there are different audiences for vulnerability and shock data, and because different people may have different preferences on how information is presented to them, it may be desirable to have the information available in both electronic and hard copy format.

The analysis of the on-going vulnerability and shock monitoring is expected to happen on a quarterly basis. The information availability will probably follow a similar periodicity. One output could be a quarterly Vulnerability and Shock Monitoring Report, which is made available in hard copy, but could also be downloaded in PDF format.

Another key channel for information sharing will be an online information management application. It will give users flexibility to customize the analysis and the reporting to meet specific needs.

### 3.3.4 Information Use <sup>12</sup>

The weakest component of many information systems is often the utilization of the information. The interaction between data availability and information use in an agency can be positioned in one of the four quadrants in the matrix below (Table 3.1).

		Data Supply	
		Weak ←	→ Improving
Data Demand / Information Use	Weak	Statistics and other sources of evidence are weak, and policymakers and program managers make little use of them. Evidence-based program- and policymaking are not practiced.	The quantity and quality of statistics and other sources of evidence are improving, but they are not used for decision making because policymakers and program managers lack the incentives and/or the capacity to utilize them.
	Improving	Statistics and other sources of evidence are weak but are increasingly used by policymakers and program managers for a variety of purposes. Data deficiencies reduce the quality of decision making.	Statistics and other sources of evidence are improving and are being increasingly used for decision making. This results in better policy and program design and implementation

Source: Measure Evaluation (2006)

Table 3.1: Joint classification of data supply and data demand / information use

For the VSMRS, the expected use is that the information will assist policy-makers to effectively target responses to regions or groups of people who are the worst affected. But the decision to produce information does not by itself guarantee that effective responses will result. Constraints on response may be described in terms of the following categories:

- **Technical constraints.** Users may not fully understand what information the analysis results actually or should convey. There may also be problems at the data collection stage, or a lack of capacity to process and analyze the data.

<sup>12</sup> This sections draws on Measure Evaluation (2006)

- **Organizational constraints.** The operating procedures for data collection, transmission and release may prevent data becoming available for the intended users in a timely manner. There may be a lack of budget provisions to support the intended VSMR activities, or access to data and information may be restricted in such a way that many potential users are not given access to the level of detail of the data they need to make effective use of the information.
- **Behavioral/individual constraints.** The people assigned to collect and analyze the data may lack the time and skills to do so effectively. There may be little or no incentives – or worse, there may be disincentives – to encourage the sharing and use of data and information in the decision-making process. Collaboration with external parties, if not sanctioned and officially authorised, may be considered a violation of organizational ethics.

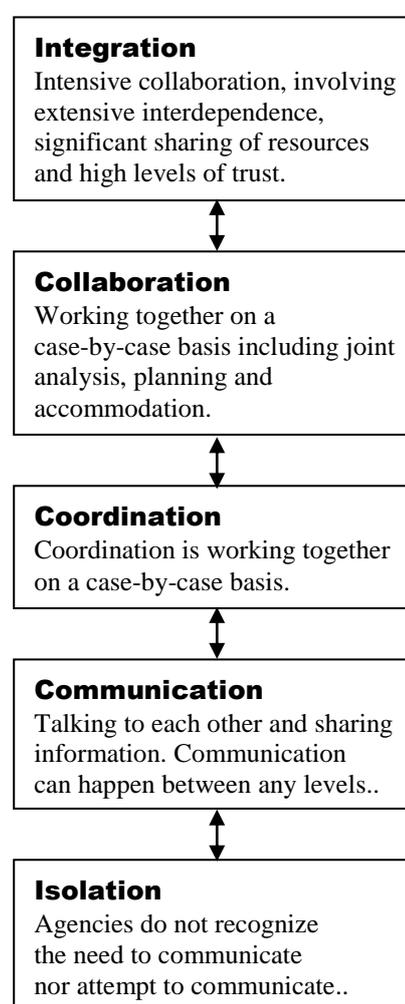
### 3.3.5 Coordination and Collaboration<sup>13</sup>

Responsibility for the establishment and the operationalization of a vulnerability and shock monitoring and response system will not fall to a single agency. It will require coordination and collaboration between the agencies that are already involved in some of the tasks such a system will need to perform.

Coordination and collaboration can be represented as two stages in a continuum of cooperation arrangements between agencies, ranging from isolation to integration (see Fig. 3.3).

Coordination and collaboration require that there is communication and information sharing between the involved agencies. **Coordination** is a less demanding form of cooperation, and can be rather ad-hoc, incidental and only involve a few persons or units in the agencies. It usually does not require any changes to how the agencies operate; it is rather a (non-formal) agreement to increase efficiencies by avoiding duplication and/or making better use of the products, services and/or resources from one or all involved agencies.

**Collaboration** requires a stronger commitment of the leadership of the concerned agencies. The leadership support of the involved agencies is necessary because it may call for changes and adjustments to standard operating procedures (e.g. on the release of data), as the other agencies become more dependent on such inputs for the



Adapted from Burr & Spellman (2007), as quoted in CDC (2008)

Fig. 3.3: Five stage scale of cooperation between stakeholders

<sup>13</sup> This section draws on the discussion of coordination and collaboration arrangements in CDC (2008).

provision of the intended services.

For the establishment of a VSMRS, while collaboration between key stakeholder agencies may yield the biggest benefit, it may perhaps be too ambitious to pursue this in the early development of the system. Improved coordination can help lay the groundwork for future collaboration.

Apart from coordination and collaboration between government agencies, there should also be coordination and collaboration between these agencies and international aid agencies that conduct activities to monitor and mitigate crisis impacts (e.g. FAO, IFAD and WFP for food security; ILO for labor and employment; UNDP for vulnerability).

A concrete focus for coordination and collaboration between the agencies involved in vulnerability and shock monitoring and response could be the preparation of a “Shock Preparedness Plan”. One of the most effective ways to prevent a shock or a developing crisis of spiraling out of control, is to have anticipated that a shock or crisis may happen at some time. If there is a shock preparedness plan that provides clear guidance on how to proceed with obtaining additional information on the crisis, and to start the procedures to activate suitable response mechanisms, then this may bring substantial benefits. Early warning allows for early action, and this may help to avoid to some extent a more widespread impact of the crisis.

A shock preparedness plan should be a dynamic product, and it should be focused on the key standard operational procedures that need to be taken, with a clear indication of what agency needs to do what.

### 3.3.6 Capacity Building for System Implementation

To build the capacity for the implementation of the VSMRS a focus on three levels is required:

- **System level.** There needs to be – perhaps not immediately, but over time – an overarching legal framework that recognizes and supports the initiative. This needs to be complemented with enabling national and regional policies and regulations that support the operationalization of the system;
- **Organizational or entity level.** The structure and working mechanisms of the involved organizations must be such that they can accommodate and support the intended activities. There must also be adequate human and financial resources allocated to the initiative, and the organization’s operation systems must also support this;
- **Individual level.** The people assigned to handle the designated tasks must have the competences, knowledge and skills and – in a broader context – the work ethics to do the work.

Table 3.2 below lists examples of actions required to establish a vulnerability and shock monitoring and response system.

	<b>System level</b>	<b>Organizational level</b>	<b>Individual level</b>
<b>Data demand and collection</b>	<ul style="list-style-type: none"> <li>• Mandated procedures that support accurate data collection and timely processing of the data.</li> <li>• Data quality assurance systems, to result in availability of reliable data, to support better use of information.</li> </ul>	<ul style="list-style-type: none"> <li>• Organizational support and incentives for data collection and timely processing.</li> </ul>	<ul style="list-style-type: none"> <li>• Field staff must have the capacity to collect the data correctly, and are capable to handle the workload in the designated time.</li> </ul>
<b>Data analysis</b>	<ul style="list-style-type: none"> <li>• Overall framework for cooperation and collaboration between agencies in support of continued vulnerability and shock monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment of staff responsible for the continued analysis of vulnerability data.</li> <li>• Organizational support for vulnerability data analysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity to analyze data and interpret the results in support of policies and programs.</li> </ul>
<b>Availability of information</b>	<ul style="list-style-type: none"> <li>• Organizational policies allowing for early release of the information</li> <li>• Development of systems for easier access to data (summary reports and full data sets)</li> </ul>	<ul style="list-style-type: none"> <li>• Organizational support for more widespread sharing of information between agencies, and broader general access to information.</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity to produce high quality information products that are easily accessible.</li> </ul>
<b>Information use</b>	<ul style="list-style-type: none"> <li>• Strengthening of evidence based decision-making processes.</li> </ul>	<ul style="list-style-type: none"> <li>• Organizational support for performance based systems and incentives for better information use.</li> </ul>	<ul style="list-style-type: none"> <li>• Development of information use skills</li> </ul>

Table 3.2: Capacity building for the VSMRS

# 4. Data Demand and Data Collection

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## 4.1 Data Demand and Data Collection in the CMRSS

### 4.1.1 Choice of Crisis Impact Indicators and Data Collection Approach

When the impact of the global economic crisis of 2008 started to be felt in Indonesia, there were several indicators of a developing crisis in the last quarter of the year; a slowdown of economic growth, a fall in commodity prices and a fall in export values, increased layoffs in export oriented industries, reduction in remittances from overseas workers, etc. All of these could be tracked to monitor the impact of the global economic crisis in Indonesia, but the likelihood of obtaining reliable and comprehensive data near instantly (“real-time data”) was rather small, especially for data that could provide information on regional differences of crisis impacts.

While it may be relatively easy to obtain incidental information on deteriorating economic and social conditions (e.g. data on layoffs and reduced working hours at specific factories; data on reduced demand for electricity by factories that produce export goods; number of returning overseas workers in a particular village over the course of a month), it is much more difficult to obtain comprehensive data for such developments.

- For the long-term VSMRS, it will be important to develop procedures to enable the use of periodically-available good-quality monitoring data beside that obtained from BPS surveys, even if it is only available for specific regions, industries or sectors.

The challenge for a Vulnerability and Shock Monitoring and Response System is to identify indicators that are sensitive and likely to change with worsening and improving conditions, are relatively easy to collect, and with a relatively short collection-to-analysis time lag. Routine data collection systems are more likely to be able to meet such demands than as-yet untried collection procedures for potentially more informative indicators. But this of course only applies if the routine data collection system is capable of providing reliable aggregate data. If good quality data are only available for a few specific facilities or regions, with rather poor data, or no data at all for most of the other facilities or regions, such data will be of little or no use. This is currently unfortunately the case for much of the regional health and education data.

Because of the above considerations, because of the desire to have national coverage of the monitoring (thus eliminating the need for “best guesses” on where crisis impacts may be the most severe), and because involvement of BPS offered better prospects of obtaining reliable data, it was decided that the CMRSS would be conducted by BPS.

As it was urgent to obtain crisis impact data as soon as possible, it made most sense to conduct the CMRSS as a complement to an existing BPS survey, rather than conducting it as an independent survey which would have been more expensive and logistically much more difficult to organize. Cost considerations also resulted in the choice of the sample size of only 30 households per district.

The two most suitable surveys were the national socio-economic survey (Susenas), which is conducted in March and July, and the national labor force survey (Sakernas), which is conducted in February and August. Even though the CMRSS is subject-wise closer to the Susenas, it was decided to link the CMRSS to the Sakernas. The main reason for this was that the preparations for the July 2009 Susenas were already at a too advanced stage to accommodate the CMRSS as an extension. It was therefore decided to conduct the CMRSS as an extension to the Sakernas survey.

#### **4.1.2 Household Data**

The household data was selected from 30 households in each district (with six households taken from five Census Blocks). The Census Blocks were selected in such a way that it would be possible to visit the same households over the three survey rounds, thus obtaining panel data.

One of the prerequisites of the CMRSS was that it should be an easily administered survey: short in length, relatively easy to answer by respondents, and quick to process. Several questions were therefore opinion and perception questions, on how the respondents perceived changes over a certain period (month, quarter, year). Most of the finance-related questions were also subjective rather than the result of a detailed income or consumption survey. As different individuals may use different definitions and assumptions when answering these questions, the results are intrinsically more difficult to interpret (although the assumptions are presumably consistent within each household across time, if the household information was obtained from the same respondent).

A four page questionnaire was developed with 34 questions that related to either the head of household, other household members, or the household as a whole. Some of the questions were exact copies of questions in the Sakernas survey, and – on the two occasions that the CMRSS was conducted together with the Sakernas survey – these questions were therefore not asked from the respondents but the answer given to the Sakernas survey was copied.

#### **4.1.3 Health Data**

Together with the collection of the household data, data were also collected from five Puskesmas in each district (i.e. one in each of the five Census Blocks) and from the Dinas Kesehatan.

One of the difficulties with the health data collected as part of the CMRSS is that there is no single point of contact for the data in the Puskesmas or in the Dinas Kesehatan; different units or sections provide part of the data. There were also serious issues with the quality of the provided health data: the questionnaires often lacked data for several data elements, or the fluctuations in the reported data between months – and even more so between quarters – for many indicators was of such a degree that it made the data unreliable and unusable. The problem may in part be due to the data being collected at a time when the Puskesmas or the Dinas Kesehatan had not yet received the data from all units, and it was therefore not yet fully collated.

Health data are important to monitor fluctuations in vulnerabilities and shocks, but it may not be possible to improve the quality of such data as part of a VSMRS, without improving the

quality of such data in the broader Ministry of Health information systems. The use of alternative data collection systems (e.g. through direct SMS reporting by frontline service providers) can perhaps make such data more quickly available, but there are no guarantees that this will be a more robust and sustainable data collection channel. However, if such alternative data collection systems can contribute to cutting down on multiple reporting of the same data by frontline health providers, it will substantially reduce the reporting burden of health field staff, and it may even result in better quality of the provided data.

## 4.2 Sakernas Data

Starting in 2011, BPS intends to conduct the Sakernas survey on a quarterly basis, with 75,000 households to be interviewed each quarter<sup>14</sup>. As the Sakernas data would thus be available every quarter, the data from all sampled households would be used to obtain information on vulnerability and shock impact, instead of only using data from a sub-set of 30 households per district. It is also hoped that data on selected key indicators of the Sakernas will already be available for analysis in a matter of weeks, rather than months, after it has been collected, so that the VSMRS can function as a shock identification tool. One advantage for BPS from the quick sharing of Sakernas data is that it may help to signal to BPS possible inconsistencies and mistakes in the raw data, if these are encountered in the data analysis.

Table 4.1 lists the Sakernas questions that may be the most suitable for use in a long-term VSMRS. The questions marked with grey are recommended for continuous monitoring, also in non-crisis conditions; monitoring for the other questions could be activated when there are signals that the country, or parts of it, are affected by a shock. However, during the startup of the VSMRS, all suggested indicators should be analyzed to develop and document the analysis methods, and to assess the suitability of the indicators for vulnerability and shock monitoring.

One difference between the Sakernas data and the data that was collected with the CMRSS questionnaire is that the Sakernas questionnaire asks for conditions as they are at the time of the interview, or a period immediately preceding it. The CMRSS also asked about **perceptions of change**: were conditions better/worse than before (looking back over three months or a year). Such perception of change questions are used by BPS in the surveys for business tendencies and consumer tendencies, but they are not (yet) part of the Sakernas survey.

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<sup>14</sup> Between 1986-1993 and between 1999-2003, the Sakernas survey was also conducted on a quarterly basis, with a sample of 18,000 households per quarter. This approach was ended in 2004, in part because there was too much of a time-lag (BPS, 2009).

Sakernas question	To be asked from	Information to be obtained
List of HH members / Sex, Age, School participation	All HH members age 10 years and over	<ul style="list-style-type: none"> <li>Whether, and how many, boys and girls younger than 15 years have never attended school, or have dropped out of school;</li> <li>[Q-Q] Whether there were any changes.</li> </ul>
Worked during the previous week?	All HH members age 10 years and over who reported to work in the previous week	<ul style="list-style-type: none"> <li># of hours worked on top of main job, by sector;</li> <li>[Q-Q] Changes in hours worked for main job and all jobs, by sector and according to employment status.</li> </ul>
Total # of working days in previous week		
Total # of working hours in previous week (all jobs)		
Total # of working hours in previous week (main job)		
Main employment sector during the previous week		
Employment status		
Additional job	All HH members age 10 years and over who reported to work in the previous week	<ul style="list-style-type: none"> <li># of workers seeking additional employment, by sector;</li> <li>[Q-Q] Changes in # or workers seeking additional employment, by sector.</li> </ul>
Employment sector for the additional job		
Main reason for looking for work or establishing a business	All HH members age 10 years and over who reported to be looking for work or established a business in the previous week	<ul style="list-style-type: none"> <li># of people looking for work to increase income, because having been laid-off, or because the business folded;</li> <li>[Q-Q] Changes in # or people looking for work.</li> </ul>
# of people who stopped working or moved jobs	All HH members age 10 years and over	<ul style="list-style-type: none"> <li># of people who stopped working or moved jobs because of having been laid-off, lack of orders or bankruptcy, or because the business folded;</li> <li>Status of employment of people who stopped working or moved jobs;</li> <li>[Q-Q] Changes in # or people looking who stopped working or moved jobs.</li> </ul>
Reason for stopping work or to move jobs		
Status of employment after stopping work or moving jobs		

Table 4.1: Sakernas questions suggested for the VSMRS

The national and provincial level data can each quarter be analyzed to calculate point estimates with a reasonable to high level of precision, using conventional methods of data analysis. For the district level data, the methods of analysis to be used will depend on how much data is available. For districts for which much data is available, conventional methods may still be applicable if the results can be provided with acceptable levels of confidence. For districts with less data, the methods used for analysis of small samples may be used, but these do not provide reliable point estimates; instead they provide information on categorization of districts as falling below or being above certain thresholds. On an annual basis, district level data will also be available as point estimates.

### 4.3 *Susenas Data*

The national socio-economic survey (Susenas) is presently conducted twice a year:

- a full survey in July, with a sample size of about 275,000 households that is sufficiently large to provide information up to the district level; and
- a smaller panel survey in March, collected from about 65,000 households, that provides information for the national and provincial levels.

During the full survey, there is a standard set of core data that is collected from all sampled households, and more specific subject data that is collected from a sub-set of about 65,000 households. The subject data is collected with a three-yearly rotation for specific modules: socio-culture and education; housing and health; and household income and consumption/expenditures. During the smaller panel survey in March, the core data is collected, as well as household consumption data.

From 2011 onwards BPS intends to conduct the Susenas survey on a quarterly basis, with 75,000 households to be interviewed each quarter, as for the Sakernas survey. Since the Susenas data will be available every quarter, no separate questionnaire will be needed to obtain vulnerability and shock impact data from a sub-set of households; instead, data from all households sampled in the Susenas will be used. What is not clear yet is if the three-yearly rotation of the modules will be maintained, or if there will also be some changes for this. If the three-yearly rotation will be retained for the modules, it is doubtful whether this information will be of much use for the VSMRS; the main value may then be as complementary information that is only incidentally available (and which will hopefully be more quickly available than at present).

Table 4.2 lists the Susenas questions that may be the most suitable for use in a long-term VSMRS. The questions marked with grey are recommended for continuous monitoring, also in non-crisis conditions; monitoring for the other questions could be activated when there are signals that the country, or parts of it, are affected by a shock. Here again it is suggested that, in the development phase of the VSMRS, all indicators are tried out, to develop and document the analysis methods, and to ascertain the suitability of the indicators for vulnerability and shock monitoring. For the questions related to the modules, the third column in the table mentions possible quarter-to-quarter analyses that can be made. This of course depends on whether the information will be available with such periodicity.

It is also worth to point out that both Susenas and Sakernas have employment questions, and for the similarly phrased questions such data may thus be available for 150,000 households per quarter instead of 75,000 households. This also means that for that data, quarterly district level results may thus be available with a higher level of confidence than for other indicators.

Susenas question	To be asked from	Information to be obtained
<b>Core</b>		
Incidence of illness during the last month	All HHs and all HH members	<ul style="list-style-type: none"> <li>Whether poor HHs (as judged from the housing condition) qualified for, and obtained free health service at a time of illness;</li> <li>[Q-Q] Whether there were any changes.</li> </ul>
Self-medication during the last month		
Medication from health service provider during the last month		
Hospitalization during the last year		
Health insurance/coverage for medication or hospitalization		
Obtaining free health service during the last six months		
Housing condition		
List of HH members / Sex, Age	All HH members age 5 years and over	<ul style="list-style-type: none"> <li>Whether, and how many, boys and girls younger than 15 years have never attended school, or have dropped out of school;</li> <li>Number and percentage of children of schooling age who do not attend school, by reason for not attending school;</li> <li>[Q-Q] Whether there were any changes.</li> </ul>
School participation		
Reason for not attending school for children in school age bracket <sup>b</sup>		
Worked during the previous week?	All HH members age 10 years and over who reported to work in the previous week	<ul style="list-style-type: none"> <li># of hours worked in the previous week, by sector;</li> <li>[Q-Q] Changes in hours worked, by sector and according to employment status.</li> </ul>
Main employment sector during the previous week		
Employment status		
Total # of working days in previous week <sup>c</sup>		
Total # of working hours in previous week (all jobs) <sup>c</sup>		
Housing condition	All HHs	<ul style="list-style-type: none"> <li>Whether poor HHs (as judged from the housing condition) did buy subsidized rice;</li> <li>[Q-Q] Whether there were any changes.</li> </ul>
Purchase of Raskin or subsidized rice in the last three months		
<b>Household income and consumption/expenditure module</b>		
Value of total food consumption during the last week, by food category	All HHs	<ul style="list-style-type: none"> <li>How food expenditure, by category, compare to overall expenditures, by HH economic status, with housing rent as proxy;</li> <li>[Q-Q] Whether there were any significant changes, in total value of expenditures, or in percentage shifts between food categories, by HH economic status.</li> </ul>
Average monthly expenditures (food and non-food)		
Monthly rent of house (real or imputed)		

<sup>b</sup> This question was included in the core for the panel survey of March 2009 and in July 2009, but not in the core for the July 2008 survey.

<sup>c</sup> This question was included in the core of July 2009, but not in the previous core questionnaires.

Susenas question	To be asked from	Information to be obtained
Household consumption expenditures per year	All HHs	<ul style="list-style-type: none"> <li>How total HH consumption expenditure compares to overall HH income and expenditure, by HH economic status, with housing rent as proxy;</li> <li>[Q-Q] Whether there were any significant changes, in total HH consumption expenditure, or in percentage shifts compared to HH income, by HH economic status.</li> </ul>
Total household income per year		
Total per capita household consumption per year		
Monthly rent of house (real or imputed)		
<b>Socio-culture and education module</b>		
Assessments on welfare and social capital developments over the last three years	All HHs	<ul style="list-style-type: none"> <li>Differences in perceptions on difficulties to deal with matters that are vulnerability and shock related, by HH socio-economic status;</li> <li>[Q-Q] Whether there were any significant changes in perceptions of difficulties for such matters by HH socio-economic status.</li> </ul>
HH socio-economic condition, as assessed from the food consumption pattern		
Comparison between incomes and expenditures to meet daily food consumption needs over the last year	All HHs	<ul style="list-style-type: none"> <li>The # and % of HHs that experienced difficulties to meet daily food needs, and the coping strategies employed;</li> <li>[Q-Q] Whether there were any changes in the # or % of HHs that coped with difficulties to meet daily food needs.</li> </ul>
Coping strategy employed when facing difficulty		
<b>Housing and health module <sup>d</sup></b>		
Cost for medication over the last month	All HHs	<ul style="list-style-type: none"> <li>The # and % of HHs that had to resort to selling assets, pawning assets or borrowing money, or assistance from others, to cover medical expenses;</li> <li>[Q-Q] Whether there were any changes in the # or % of HHs that had to resort to assistance to pay for medical expenses.</li> </ul>
Cost for hospitalization over the last year		
Source of funding used to pay for health expenses over the last year		
Physical condition of the house	All HHs	<ul style="list-style-type: none"> <li>Differentiation between chronically poor and transient poor HHs;</li> <li>[Q-Q] Whether there were any changes in vulnerability of the HHs.</li> </ul>
Facilities of the house		
Access to public facilities		

Table 4.2: Susenas questions suggested for the VSMRS

For the Susenas data, a similar approach will be used to calculate estimates at national, provincial and district levels as described in the section for the Sakernas data.

The module on housing and health also includes questions that are not particularly sensitive to change as a result of a recent shock, and which are therefore somewhat less suited for vulnerability and shock monitoring. However, such indicators on housing conditions can be indicative of the longer-term economic status of the household, and can therefore be useful to compare short-term vulnerability changes to longer-term poverty conditions.

<sup>d</sup> The health questions were included in the module used in 2004, but were not included in the questionnaire of 2007.

#### **4.4 Other Data**

Even though it is anticipated that the Sakernas and Susenas data may become the backbone of the VSMRS, the VSMRS should also be able to accommodate other data. This could be data which are currently already being collected by other agencies or organizations, and which the VSMRS could draw upon, or – if necessary – data specifically collected to obtain additional information that is not available from other sources.

Having such other data will also enable to check whether the signals obtained from the Sakernas and Susenas data were consistent with those from other data.

Examples of such data are:

- The Indonesia Child Labor Survey, which was conducted by BPS and ILO in August 2009 and piggy-backed onto the Sakernas survey;
- The Food Security and Vulnerability Atlas, developed by WFP;
- Data on regional MDG achievements;
- Industry mapping, which can provide information on the location and possible concentration of industries by sector.

Additional data collection for indicators not included in other surveys may perhaps only occur during crisis situations, and therefore not necessarily be part of basic monitoring when there is no crisis. This will however also depend on how regularly and readily such other data is available. If it is regularly available, can be easily accessed or obtained, and with a small time lag between the collection and its availability for analysis, then such data may even be used for the basic monitoring.

# 5. Data Analysis and Availability of Information

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## 5.1 Data Analysis in the CMRS

### 5.1.1 Analytical Framework

The CMRS focuses on identifying and quantifying “negative” changes in the situation of households. It aims to produce quarterly national and provincial estimates of key indicators and their changes, and to identify districts that appear to have become “at risk” socio-economically due to the effect of a shock, in this case the global economic crisis.

The analytical framework used for the quantitative crisis monitoring is represented in figure 5.1 below.

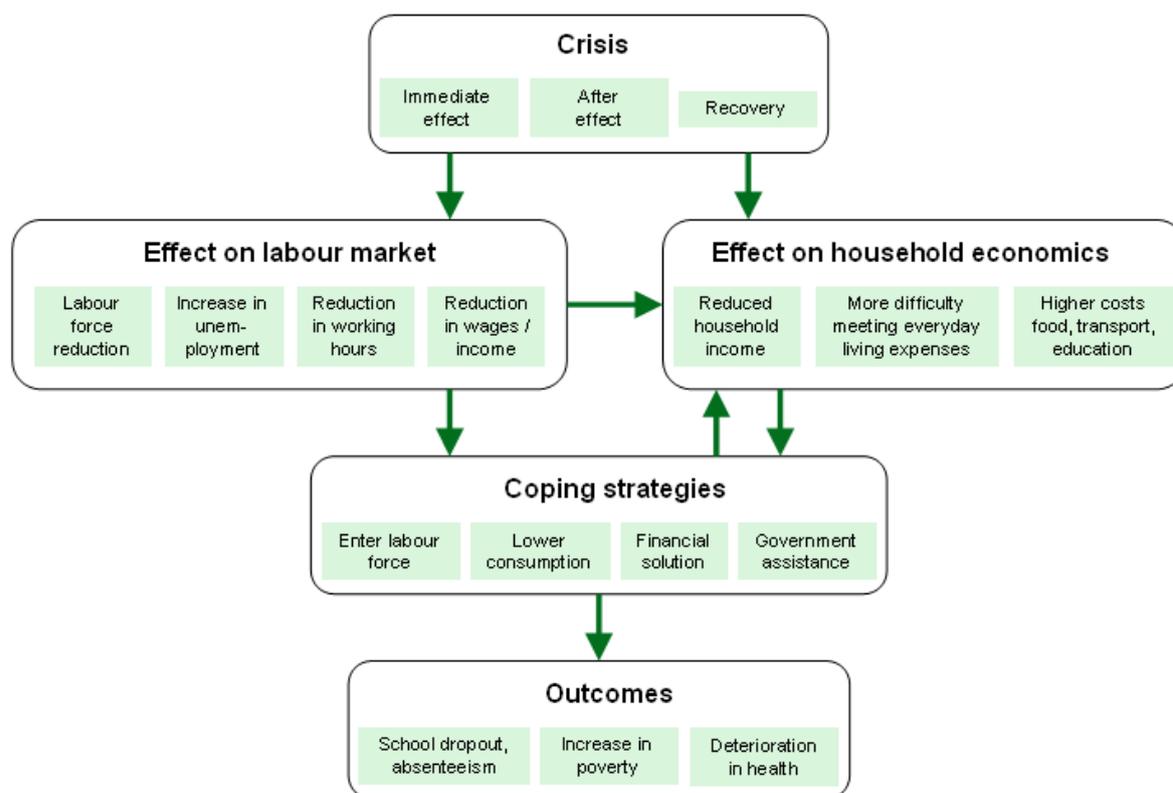


Fig. 5.1: Analytical framework for the quantitative crisis monitoring

The indicators of the household survey were analysed in four groups: labor market; household economics; coping mechanisms, and outcomes.

### 5.1.2 Levels of Analysis

The household data was analyzed for three levels: the national level, provincial level and district level.

#### a. National Level

The purpose of the national level data analysis is:

- To identify indicators that show significant adverse movements, i.e. put households “at risk”, quantify these movements and suggest possible causes and consequences
  - between current and previous quarters;
  - between previous quarters;
  - relative to earlier benchmark data.
- To determine variations in quarterly movements according to:
  - rural/urban breakdown;
  - poor/non-poor breakdown<sup>15</sup>;
  - sex of head of household breakdown.
- To summarize levels and movements in indicators for which data were not recently available from other sources , e.g. dropout from school, absenteeism from school

#### b. Provincial Level

The objective of the analysis of provincial level data is to group provinces into clusters according to general commonality of characteristics in order to summarize provincial similarities and differences.

The methodology for the provincial level analysis is:

- To calculate composite group indicators from those showing indicators that showed significant changes at national level:
  - Labor market index based on working hours and head-of-household formal sector participation;
  - Composite household economics / coping strategies index based on difficulty meeting consumption needs, and substitution of lauk-pauk.
- To classify districts according to “better than”, “same as” or “worse than” national averages for these composite indicators.

The results of the provincial variation was presented in a 3 x 3 matrix as the one given in Fig. 5.2, with the provinces being listed in the cell that corresponded to their condition for labor market, and household economics and coping strategy.

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<sup>15</sup> Based on whether a household received an unconditional cash transfer (BLT) or was eligible for community health insurance (Jamkesmas) as a proxy.

		Labor market		
		Better than national average	Same as national average	Worse than national average
Household economics and coping strategy	Better than national average			
	Same as national average			
	Worse than national average			

Fig. 5.2: Matrix used for the categorization of the provinces by crisis impacts

### c. District Level

The objective of the district level analysis is to identify districts “at risk” and “potentially at risk” based on data for a given period (three months, six months). The risk assessment is done for individual indicators, and for four composite indicators (labor market, household economics, coping strategies and outcomes).

The indicators that were analyzed at district level were those:

- that gave rise to interesting quarter-to-quarter results at national and provincial levels;
- that were believed to be reliable; and
- that referred to all or most households in each district.

## 5.2 Data Analysis in the VSMRS

Data entry, and the cleaning, editing and processing of the data could happen in the same way as for the CMRSS, or there could be more regional involvement. The advantage of a decentralized data entry is that it may substantially cut down on the time needed to do this, but – as many more people will be involved, and supervision may be minimal – there is a greater risk of errors in data entry.

Centralized data entry may make it easier to prevent data entry mistakes, as there can be greater reliance on automated routines that check whether the recorded figures are plausible for certain indicators. It will also be a smaller group of people that enters the data, and they may be more highly trained and/or more experienced in data entry than the people who would handle this in the regions, so that data entry is handled more efficiently. Supervision of data entry may also be easier since all activities will probably be done at the same office.

The data analysis approach in the VSMRS may be somewhat different from the analysis which was done for the CMRS, because:

- The indicators for which data which will be collected will not be exactly the same, as some questions that were included in the CMRSS are not included in either the Sakernas or the Susenas questionnaires;
- As the sample sizes per district will be larger, and as there is a much wider range of indicators in Sakernas and Susenas than in the CMRSS, applying more and different analysis methods will be possible;
- The analysis framework may have to be revised to make it more suitable to capture changes in vulnerability as well; and
- The data will no longer be collected as panel data, and it will therefore not be possible to compare data between rounds of data collection on a household-by-household basis.

On the other hand, the number of respondents per district may be substantially increased, thus allowing more conventional data analysis methods than those used for district level analysis in the crisis monitoring and response pilot.

To rationalize resources, it may well be that the number of indicators that are monitored during non-crisis conditions will be less than those that are tracked during a crisis, when more detailed information is requested on how a crisis unfolds and how recovery proceeds. Data analysis in non-crisis situations will therefore be less demanding than what is needed during a crisis situation, unless of course the focus of attention for analysis during non-crisis periods is somewhat different, e.g. on analyzing changes in vulnerabilities and in chronic poverty conditions.

Data analysis in the VSMRS should also not be restricted to identifying negative changes only; it will also be important to be able to identify regions (provinces and districts) that are making absolute or relative improvements. Such information is useful not only for a possible scale back of support to regions that no longer are in urgent need for this, but even more to gain a better understanding on what factors influenced quicker recovery in these regions than in others.

During the startup of the VSMRS, using the data from the quarterly Sakernas and Susenas surveys as it becomes available, several methods of data analysis may be tried out, to determine which methods are most suited for the different indicators. This will then be documented, to have a record and guidance for later application of such analysis, even if it is not used in non-crisis conditions.

### **5.3 Availability of Information**

To facilitate the use of the information, it needs to be made available in a form and format that matches the needs of the intended data users.

Traditionally, the results of analysis are made available in the form of a report, which covers the types of analysis considered the most relevant for the data at hand. In non-crisis conditions, it may be sufficient to have a quarterly or six-monthly report that shows how key indicators related to vulnerability have evolved. If there is a shock which results in the

emergence of crisis conditions for the country as a whole, or part of it, quarterly reports may be needed, perhaps complemented with brief monthly bulletins, if there is enough access to up-to-date data to provide such updates.

Apart from reports, it will also be desirable to have web-based access to the data (with different levels of access authorization for different groups of users). Such a web-based application will:

- enable dynamic access to baseline profiles comprising various types of socio-economic data for vulnerability analysis;
- possibly enable automation of some of the national, provincial and perhaps even district level analysis, thereby reducing the time needed to produce first analysis results;
- facilitate the use of information for policy-making in response to vulnerability through a spatial/ national vulnerability index (dashboard);
- provide access to multiple vulnerability and crisis studies/reports.

The existence of such an application will enable other analysts to conduct additional customized analysis other than that which has been done by the VSMRS analysts.

# 6. Information Use

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## 6.1 Use of the CMRS Survey Results

During the CMR survey pilot, the results of the analyses were shared with Bappenas and BPS in a report (for the first survey round, and at the end of the third round), and as presentations of the key findings (at the end of each of the three rounds). Due to the lack of benchmarks, the findings were rather tentative. As there were no signs of profound impacts of the economic crisis, and because of the small samples at district level, there was the risk that the district results could be more influenced by random events than being a true reflection of hardship conditions. Thus, there was some cautionary reluctance to share the analysis results, especially those for the district level, more broadly.

The key information user for the results of the CMRSS was the Directorate for Poverty Alleviation in Bappenas. The information was of potential use in identifying the districts that were most in need of support due to impacts of the crisis. After the second round of the survey USAID and Bappenas used a combination of the CMRSS results and information on chronic poverty status of districts to identify possible target provinces and districts for top-up funding in the PNPM program.

## 6.2 Information Use in the VSMRS

A common characteristic of many information systems is that the data supply side usually gets more attention than the use of the generated information. Even when strengthening information systems, the initial efforts to improve data supply and data demand (as illustrated in Table 3.1) are usually more focused on getting more and better data collected than on strengthening the use of the information. It is therefore crucial to identify where the available information can be the most useful, and to cultivate and strengthen such linkages for the system.

The study of the institutionalization of poverty reduction strategy monitoring systems (Bedi *et. al.* 2006) found that having a small central analytical unit, focused purely on analysis, and located in a lead agency that is close to the center of government or the budget process is likely to work best, and to give authority to the monitoring system. The study also recommended the conduct of joint analytical exercises between donors and government, and to establish partnerships and seek collaboration with other actors such as universities, research institutions, non-governmental organizations, and donors for longer-term capacity strengthening.

For the VSMRS, it is expected that Bappenas will remain a main user of the information, to monitor the need for responses if and when a shock happens. Broad categories of possible policy responses to districts in crisis are:

- application of elements of the program for support of households and individuals – examples are scholarships, free health care, cash transfers;
- application of the program for community improvements;
- application of the program for support of micro-businesses;

- initiation or intensification of public works schemes, to generate employment and improve local infrastructure.

More widespread and open access to the information generated by the VSMRS is likely to result in broader use of that information. Other potential data users are:

- Other ministries that may have funds available designated for crisis response, and that seek information on locations where such support would be most effective;
- Provincial and district governments, to plan crisis response activities funded by APBD;
- Donor agencies and NGOs, searching for information in support of their activities.

Apart from such increased information use as result of better information availability, it is also important that the VSMRS developers have a better understanding of what the information needs are of the various programs that are most likely to be the channels for additional support to the regions when there is a crisis (e.g. PNPM, health and education sector programs). If the data analysis results can be provided in formats that closely match those used by the programs and the involved ministries, it will be easier for these to make use of the information made available through the VSMRS.

In relation to intensifying coordination and collaboration with technical line ministries – and perhaps even with provincial and district level agencies - it will be advantageous if the data analysts from the VSMRS unit can conduct working sessions with the planning staff of these ministries, to familiarize them with the information that the VSMRS can provide, and to become better acquainted with what key information sectoral and regional planners use for their program planning.

# 7. Institutionalization of Vulnerability and Shock Monitoring and Response

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## **7.1 *The Process towards Institutionalization***

In 2009-2010, the CMRSS was conducted over three rounds. In essence, it was a pilot for collecting and analyzing data at household level and generating information on crisis impacts at national, provincial and district levels.

Even though some of the initial expectations (e.g. in terms of quick availability of the analysis results, or on clear identification of at-risk status of districts) were not fully met or required due to the limited impact of the crisis during that period in Indonesia, the consensus is that the approach shows promise. If it is decided that such efforts should continue, the conditions for institutionalization of system, and how this should proceed, should be studied. Institutionalization will help to ensure that vulnerability and shock monitoring becomes an on-going activity, and that the Indonesian government will be better prepared to assess the impacts of unfolding crises, and take measures to alleviate its impacts.

The challenge now is how best to guide and facilitate such institutionalization, so that a monitoring and response entity is established that can increasingly meet the demand for information on shocks and worsening vulnerabilities, and becomes recognized as a key source for such information.

Institutionalization is a process. It is not a condition that is created by simply issuing a regulation or decree that formally establishes an entity and gives it a mandate to engage in, or to coordinate certain activities. Establishing a legal basis for the implementation of activities by a government agency or unit is a necessary condition for long-term sustainability, but it is only one of many measures that have to be taken.

## **7.2 *Housing the VSMRS***

Data and information on shocks and changes in vulnerabilities is of interest to many agencies, and several agencies already have information systems that collect data – though perhaps not consistently and comprehensively – on a range of indicators. The overall situation is however one of fragmentation where, for lack of access to, and exchange of data between agencies, the totality of the available data is not used intensively to generate information on shocks and vulnerability conditions.

### **7.2.1 *Three Basic Approaches to Address Fragmentation***

To improve on such a fragmented situation, and to become more effective in the generation and management of information on shocks and vulnerabilities, there are three basic approaches (see Fig. 7.1):

1. **Relocating and consolidating.** The roles and responsibilities that were located in different agencies are withdrawn from these agencies, and a new entity is established that takes on these roles and responsibilities and expands on it. The agencies that were previously involved retain only a minor role in the implementation of these activities.
2. **Concentrating.** One of the agencies that previously already had a role and responsibility for part of the activities takes over the roles and responsibilities of the other agencies, thereby concentrating all roles and responsibilities into one unit. The previously involved agencies only retain a minor role.
3. **Strengthening communication and sharing.** The previously involved agencies remain engaged, but their roles and responsibilities may expand. The key change is the strengthening of communication and more intensive sharing of data and information between the agencies.

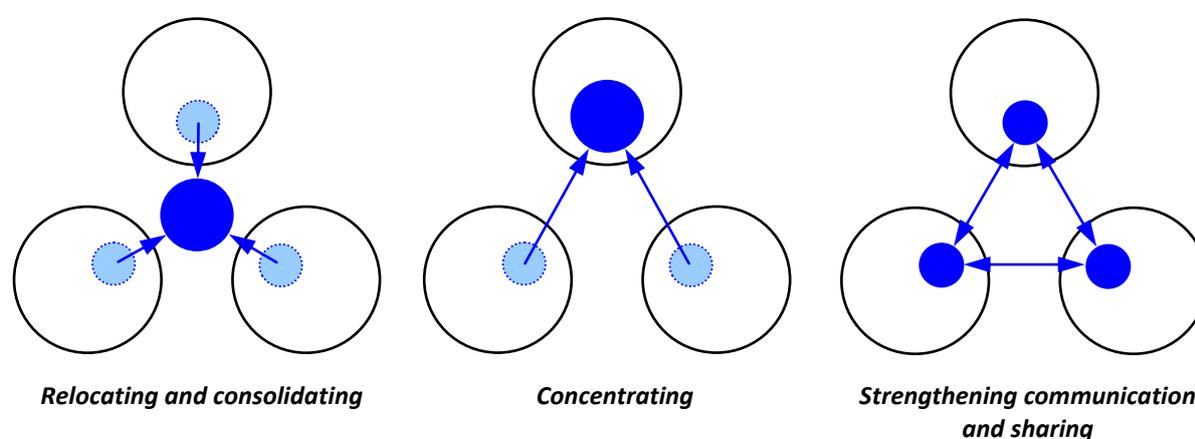


Fig. 7.1: Approaches to address fragmentation and improve effectiveness

Each of the approaches has advantages and disadvantages.

Approach	Advantages	Disadvantages
Relocating and consolidating	<ul style="list-style-type: none"> <li>• The people directly involved in the implementation of the activities are physically located together.</li> <li>• Coordination and management of activities within the unit will normally be easier.</li> <li>• The new unit may be more energetic than the previous agencies, especially if it has an expanded mandate, and if it enjoys high level political support.</li> </ul>	<ul style="list-style-type: none"> <li>• The new unit needs to develop its systems and procedures, and hire and train staff.</li> <li>• The new unit needs to build up a rapport with the other stakeholders/agencies.</li> <li>• If crisis monitoring is the sole or the most prominent “raison d’être” of the new unit, it may be difficult to retain support if there is a long period without crisis.</li> <li>• Previously involved agencies may “switch off”, and consider they no longer have a role or responsibility for the success of the activities.</li> </ul>

Approach	Advantages	Disadvantages
Concentrating	<ul style="list-style-type: none"> <li>• The people directly involved in the implementation of the activities are physically located together.</li> <li>• Coordination and management of activities within the unit will normally be easier.</li> <li>• The expanded role and responsibilities of the new key agency may make it more energetic than before.</li> <li>• The unit has already developed systems and procedures, and has personnel, though it may need to expand.</li> </ul>	<ul style="list-style-type: none"> <li>• The weaknesses and problems that existed in the old organization may continue to hamper the unit activities.</li> <li>• Staff moving over from the other agencies may need time to adjust to the new unit.</li> <li>• Previously involved agencies may “switch off”, and consider they no longer have a role or responsibility for the success of the activities.</li> </ul>
Strengthening communication and sharing	<ul style="list-style-type: none"> <li>• The previously involved agencies remain engaged. As they do already have operating budgets, the financing of vulnerability and shock monitoring may be less of an issue</li> <li>• All agencies already have systems, procedures and staffing in place. The focus shifts more towards overcoming inefficiencies and bottlenecks.</li> <li>• No or less need for office space as there is no new unit. Some additional space may be needed if new staff are assigned.</li> </ul>	<ul style="list-style-type: none"> <li>• The weaknesses and problems that existed in the different organizations may continue to hamper the activities.</li> <li>• A “same as before” attitude could develop, with staff making little effort for improving collaboration and sharing of data and information.</li> <li>• The staff tasked with vulnerability and shock monitoring may feel sidelined in the agency since it may not be considered a main focus of the agency.</li> <li>• There may be a lack of leadership for the activities if no agency is overall in charge.</li> <li>• Coordination and management of activities requires extra effort.</li> </ul>

Table 7.1: Advantages and disadvantages of the three basic approaches to address fragmentation

### 7.2.2 A Possible Setup for the VSMRS

A 2006 World Bank report on the experience of 12 countries on institutional arrangements for poverty reduction strategy (PRS) monitoring found that most of the existing systems shared some common elements:

- “A high-level steering committee to provide political support, oversight, and a link to the center of government;
- A coordination unit or secretariat to coordinate among agencies, compile data, and draft reports;

- Interagency committees or working groups to facilitate coordination, often with civil society and donor representation;
- A national statistics institute to set data standards and provide technical support for data producers; and
- Line ministries and other agencies that appoint PRS monitoring system liaisons that are responsible for collating sectoral data.”

(Bedi *et. al.* 2006:xvii-xviii)

A possible setup that would come close to this would correspond to a combination of two of the basic approaches (see Fig. 7.2):

- A high level steering committee. This could be located at the Vice-President’s offices or at the office of the Coordinating Minister for Social Welfare;
- A coordinating unit or secretariat, which could for example be attached to the National Team for Accelerating Poverty Alleviation (TNP2K) or be located in Bappenas;
- Inter-agency working groups, which could for example be established for one or more of the framework components (i.e. data demand and data collection; data analysis; availability of information; information use), and headed by the government agency that is mostly involved in this.

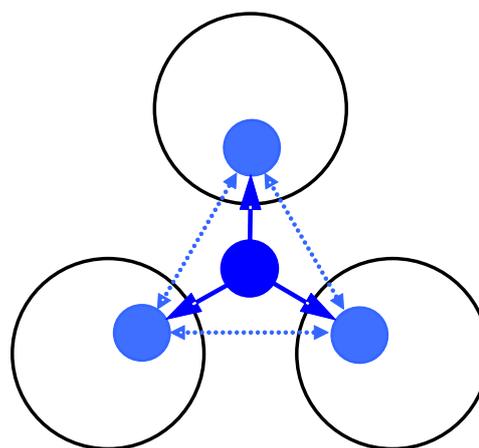


Fig. 7.2: Setup with a coordinating unit or secretariat

The coordinating unit or secretariat would facilitate the interaction with and between the other agencies. The originally involved agencies largely keep their roles and responsibilities, especially if they have a well developed system for the tasks they would perform (such as BPS for the data collection).

Also, in line with what was mentioned in section 3.2, there may be a distinction between non-crisis and crisis situations. The coordinating unit may be operating with minimal staffing, or dealing with another primary task when there is no shock or crisis, but take on its coordinating role when there is a demand for it.

Strengthening communication and sharing of data and information is also made easier through the possibilities for collaboration created by web-based applications. However, the lack of inter-operability between information applications based in different agencies may hamper the exchange of data and information.

If the vulnerability and shock monitoring and response unit is embedded into an existing agency, or if the responsibility for crisis monitoring and response is shared between agencies, it is recommended that there be a close affinity between the main task of the agency and the vulnerability and shock monitoring (e.g. disaster monitoring, poverty monitoring, etc). This is particularly important for the monitoring of crisis events, since crises are relatively rare, and the benefit of the on-going crisis monitoring in years without crisis may be put into question.

### **7.3 Key Institutionalization Issues**

With the completion of the data analysis of the third round of the CMRSS, the initiative is now at a point where important decisions have to be made on whether and how crisis and vulnerability monitoring should take place in the future. Some of the implementation issues that need to be addressed are briefly discussed below.

#### **7.3.1 Institutional Design of the VSMRS**

During the CMRS pilot, the initiative rested largely with the World Bank team, with Bappenas as the client, overseeing the development and monitoring progress, and BPS as co-implementer of the activities, particularly for data collection and data processing. In rounds two and three, there was also BPS and Bappenas involvement in the data analysis.

For the establishment and the operation of the VSMRS, the initiative should more firmly rest with the Government, with the World Bank team in a support role. Section 7.2 above discusses the housing of the VSMRS, but there are also other decisions that will need to be taken related to the management and operationalization of the system, and the scope of the system (i.e. specifically focused on vulnerability and shock monitoring, or also addressing broader issues).

#### **7.3.2 Determining Personnel Needs and Assignment of Staff**

Once there is initial agreement on the housing of the VSMRS – or agreement on the initial housing of the system – decisions will need to be made on the scope of the activities in the startup, and on the assignment of staff to guide and implement these activities.

Based on the experience from the CMRSS pilot, there will be need for:

- A person to manage the activity on a day-to-day basis, and to supervise and support the data collection, data analysis, information dissemination and information use;
- Staff to clean the raw data, prepare and tabulate the data for analysis, conduct the analysis, and interpret the results;
- Staff to draft the reports and support other modes of information dissemination.

Data entry is not mentioned in the above list, because – if, as expected, quarterly Sakernas and Susenas will be the backbone of the system – this will be handled by BPS staff.

The number of people needed for these tasks depends on the intended scope of the VSMRS, and whether their assignment would be full-time, or whether they will have to combine it with other agency tasks.

#### **7.3.3 Securing Funding for Continued Development and Support**

Apart from the assignment of personnel, the funding of the VSMRS is another crucial aspect of the institutionalization. The CMRS pilot was supported by AusAID, with technical assistance from the World Bank, and other donors also supported related activities (such as UNDP with the development of the dashboard application).

The development of the VSMRS will require additional resources. There will first and foremost have to be Government resources, at least to support the on-going basic monitoring through APBN.

If there is a credible commitment of APBN support for the on-going costs of the VSMRS, then one or more donor agencies may be interested to help support the establishment of the VSMRS through the provision of seed money to design and develop the system. This may perhaps also extend to the provision of technical assistance to develop tools and materials, and to conduct training of the staff assigned to the coordinating unit.

# 8. Proposed Workplan

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## 8.1 General

To assist with the institutionalization of a Vulnerability and Shock Monitoring and Response System, a draft workplan is presented in this chapter. The activities have been grouped by the same categories as used in the previous chapters, i.e.:

- Data demand and data collection
- Data analysis
- Dissemination of vulnerability and shock information
- Information use

There is also an additional category of “institutional setup” for other support activities additional to those covered in the above sections.

The proposed workplan is developed up until the end of 2012. For the remainder of 2010 and 2011, which should be considered a **preparation phase**, the primary focus is to develop the different components of the system based on the revised approaches of Sakernas and Susenas data collection, to develop and refine the analytical methods and report formats, and to solve early application problems as they surface. For this reason, it is proposed that, until the end of 2011, the VSMRS operates as an internal system with restricted access. 2012 would then mark the start of the **implementation and consolidation phase**, where the VSMRS – or at least part of it – would be accessible to the general public. If, however, in 2011, there is a resurgence of the crisis or a new shock occurs, the VSMRS can already go “live” and provide the policy information to help address the unfolding crisis.



Proposed Workplan

**Establishment of a Vulnerability and Shock Monitoring and Response System**

Activity	2010												2011																											
	Oct				Nov				Dec				Jan				Feb				Mar				Apr				May				Jun							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
<b>4 Information use</b>																																								
4.1 Assessment of the information needs of other Deputies and Directorates in Bappenas for the delivery of crisis response measures																																								
4.2 Consultation on the information needs of other programs and ministries that are likely to be key in the delivery of crisis response measures																																								
4.3 Development of measures in support of better information use																																								
<b>5 Institutional setup</b>																																								
5.1 Discussions on VSMRS implementation																																								
5.2 Development of VSMR support structure and elaboration of tasks																																								
5.3 Development of a Shock Preparedness Plan																																								



## **8.2 Description of Proposed Activities and Outputs**

The proposed activities for the development of the Vulnerability and Shock Monitoring and Response System have been grouped by the four components of the framework described in section 3.3, with an additional component for institutional issues. The list also includes activities that are not exclusively vulnerability and shock monitoring related, such as the data collection and data processing activities implemented by BPS. Such activities are included in the list because they are key to the functioning of the Vulnerability and Shock Monitoring and Response System.

### **8.2.1 Data Demand and Data Collection**

The activities in this component are focused on identifying and responding to the demand for data to monitor developments related to vulnerability and shock, and on the collection of such data.

The planned activities for this component are:

#### **1.1 Assessment of Sakernas and Susenas data for vulnerability and shock monitoring**

The Sakernas and the Susenas in their current format collect data for a broad range of indicators. For the purpose of monitoring vulnerability and shock, the informative value of all these indicators is not the same. This activity will assess what vulnerability and shock information each of the Sakernas and Susenas data items can yield, if any, and categorise the data items as “highly informative”, “somewhat informative” and “non informative” for this purpose. This assessment should also consider recommending possible indicators for inclusion in future Sakernas and Susenas surveys.

One of the key tasks for this activity will be to study the sampling design of the revised quarterly Sakernas and Susenas surveys. There are several issues that need to be clarified, such as: from how many census blocks (CBs) per district will data be collected each quarter? Will the CBs be randomly selected each quarter, or will there be a rotation schedule to ensure that in the course of a year all CBs are sampled? Will the survey results be representative for districts for each quarter? Or only on an annual basis?

The output of this activity will be a Sakernas and Susenas data assessment report.

#### **1.2 Discussion with BPS of survey data processing arrangements**

Under current arrangements, the release of results and data from the Sakernas and Susenas survey is in the order of:

- Release of first national and provincial results: four months after the survey;
- Release of the main report: seven months after the survey;
- Release of the raw data: eight months after the survey.

Such a long waiting period to gain access to the raw data would make the Sakernas and Susenas near useless for the immediate evaluation of recent changes. However the data would have a historical value and could serve as a baseline to benchmark how to understand recent changes from the different data sources.

The switch to quarterly data collection for Sakernas and Susenas will require quick data processing by BPS, with the target for completion of this task set at about a month after the end of the survey. Otherwise, data processing of one round will interfere with the data processing for the next round.

Release of the data by BPS for use of vulnerability and shock monitoring should occur as soon as possible after the processing is completed, and should not be subject to the release of the report that relates to the survey. Approval for quick access to the raw data – or at least for those data elements that are the most informative from vulnerability and shock monitoring – should be discussed with and agreed to by BPS.

### ***1.3 Supplementing Sakernas data collection***

The CMRSS questionnaire included several labor-related questions that are not asked in the Sakernas. If such questions yield useful information for vulnerability and shock monitoring, the need and potential for adding such questions to the Sakernas survey should be explored in discussions with BPS.

### ***1.4 Processing of Sakernas data***

Data entry of Sakernas data will continue to be done by BPS. After the raw data have been received, there may some additional data processing be required (for example for recoding and discarding outliers) to prepare for analysis of the data.

### ***1.5 Supplementing Susenas data collection***

Similarly as for the Sakernas survey, the need and potential to explore the adding of questions to the Susenas to yield additional indicators for VSMRS should be discussed with BPS.

### ***1.6 Processing of Susenas data***

Data entry of Susenas data will continue to be done by BPS. After the raw data have been received, there may some additional data processing be required (for example for recoding and discarding outliers) to prepare for analysis of the data.

### ***1.7 Identification of other suitable sources of vulnerability and shock monitoring data***

Investigate other potential data sources. There are numerous other datasets that can supplement information on crisis conditions obtained from Sakernas and Susenas. Some of these may also be available for every district in the country, others may only apply to specific regions or specific sectors.

These other data sources need to be identified, and checked on how easily and with what frequency the data will be available for analysis.

## 8.2.2 Data Analysis

The activities in this component are focused on obtaining information on changes in vulnerabilities, identifying which regions are the most affected by a crisis or recovering the best from a crisis, and assessing how a crisis affects households.

The planned activities for this component are:

### ***2.1 Review of the data analysis procedures of the CMRSS pilot***

In the last quarter of 2010, a thorough review and assessment will be made of the CMRSS pilot. The purpose of this review and assessment is two-fold:

- Assessing to what extent the information obtained from the small sample CMR survey gave the same signals on the existence of a crisis or of poverty trends as the broader Sakernas and Susenas surveys of 2009 and 2010. If there are inconsistencies between the signals, the reason for such differences should be understood;
- Reviewing the analysis methods that were used, to assess if other analyses could/should have been undertaken. E.g. provincial variation in data was only explored for those indicators that showed a significant change between periods for the country as a whole. It could well be that there was also significant provincial variation for some indicators, but that this did not show up at the national level, because the change in one province was offset by a reverse change in another one.

This review of the data analysis procedures will feed into the next activity.

### ***2.2 Development of data analysis procedures***

During the CMRSS, the data analysis procedures were developed as the work progressed. As more data became available between quarters, additional data analysis procedures were tried out.

One of the key tasks for this activity will be to ensure the analysis methods take into account the sample designs of the revised quarterly Sakernas and Susenas surveys. The data analysis procedures that were piloted in 2009-2010 will have to be totally redesigned in line with the increases in sample sizes and indicators as all Sakernas and Susenas data will be available and additional or more in-depth data analysis will be possible.

In 2011, the focus will primarily be on developing the data analysis procedures,

As the pattern for data analysis becomes more settled (and this may only be towards the end of 2011 and in 2012), a data analysis manual will be developed to guide future data analysis. At that time attention will also be given to automate some of the procedures, thereby making data analysis easier for the occasional information system application user.

### **2.3 Training for data analysis, using 2009-2010 Sakernas and Susenas data**

For the VSMRS, data analysis should primarily be conducted by public servants, preferably those who are in staffing positions where analysis of social conditions is part of their job description.

To help prepare for an increased GoI leadership in the data analysis, an intensive training program will be organized for the designated data analysts. It may be structured either as a single event (e.g. for a two week period) or as a series of 2-3 days training, focusing on specific data analysis modules.

A precondition for conducting such data analysis training is however that the institutional setup for the VSMRS has been clarified, so that any investment made in the training for data analysis is likely to be used for at least several years by the people who have been trained. If the institutional setup is decided in early 2011, there may already be initial data analysis training in 2011, once there is more information on the availability of the Sakernas and Susenas data.

### **2.4 Analysis of Sakernas data**

The first quarterly Sakernas survey data of 2011 will probably be available for analysis by around April. It is important that there is an agreement with BPS that the raw data will be available for vulnerability and shock analysis as soon as it has been entered and cleaned, without having to wait for the publication of the analysis report of that data. Otherwise, if release of the raw data can only occur after the data analysis report has been prepared, there will be too long a time lag between the data collection and the data analysis, and the analysis results will have more of a historic value than be useful for policy monitoring. The objective should be to have the Sakernas data analysed for signals of crisis and changes in vulnerabilities within a one month period.

Sakernas data for the subsequent quarters will probably become available with two month intervals.

### **2.5 Analysis of Susenas data**

The analysis of the Susenas data follows the same pattern as for the Sakernas, with a delay of one month.

### **2.6 Preparation of Quarterly Vulnerability and Shock Monitoring Report**

The results of vulnerability and shock analysis using Sakernas and Susenas data plus any additional data from other sources, will be used to prepare a quarterly situation report.

In 2011, such reports may perhaps only be prepared for internal use, to decide on an appropriate scope and format, and to build up the skills of the staff who will be responsible for the drafting of the report in future. Actual quarterly reports that are released in general may perhaps only be produced starting from 2012.

The reports could have some sections that are the same for all quarters and some that look at specific issues for one quarter only. It may also be – especially under non-crisis

conditions – that the reports of the quarters one, two and three only look at national level analysis, and that the fourth quarter report also includes provincial and district analysis.

The report should preferably be downloadable in soft copy from a public access website, to make information more broadly available.

### ***2.7 Review and refinement of data analysis procedures***

The assessment of the analysis results may indicate the need to make some changes to the data analysis procedures that have been followed, or point to additional data analysis approaches that should be developed.

A systematic review and refinement activity could be scheduled every quarter in the first instance, and subsequently once per year.

### **8.2.3 Dissemination of vulnerability and shock information**

The activities in this component relate to making the information on vulnerability and shock accessible to different groups of stakeholders or interested persons in user-friendly ways that meet their demands.

The planned activities for this component are:

#### ***3.1 Development of a dashboard application***

In collaboration with UNDP, a vulnerability and shock information system is being developed. This application uses the DesInventar program, which is also being used for the Indonesian disaster database and for the integrated management information system of PNPM. It is expected that a first prototype of the dashboard application may be available by the end of November 2010.

This prototype would be a starting point for designing, developing and implementing the VSMRS dissemination system

#### ***3.2 Drafting of a user manual***

In parallel with the development of the application, a user manual will be prepared. The manual will provide information on the purpose and structure of the application, provide information to the public access user on what data and outputs are available, as well as more detailed information to users who have a higher level of access to the application.

#### ***3.3 First training in the use of the dashboard application***

Once the prototype has been developed, one or more training sessions with intended users should be organized, to familiarize them with the application, and to obtain feedback for further development and improvement. Such training will be targeted to staff from the agencies involved in the VSMRS, but it may also extend to other users, such as researchers or staff from other donor agencies or projects.

### ***3.4 Revision/elaboration of the dashboard application based on training feedback and to prepare for Sakernas/Susenas data***

Based on the feedback obtained from the first training, and taking into account what has been agreed with BPS on access to Sakernas and Susenas data for vulnerability and shock monitoring, a revised version of the dashboard application may be developed.

### ***3.5 Revision/elaboration of user manual***

Based on the changes and additions to the application, a revised version of the user manual may be prepared.

### ***3.6 Training on the revised dashboard application***

When the revised dissemination application is ready, a second training on its use may be organized. This training may be combined with the data analysis training mentioned in activity 2.3.

### ***3.7 Use of the dashboard application***

In the second half of 2011, there should also be a thorough assessment with stakeholders and information users if the dashboard application is an appropriate choice for the long-term system. If it appears that the system has some serious drawbacks that cannot be addressed through revisions or further developments of the application, alternative user interfaces should be considered.

## **8.2.4 Information Use**

The activities in this component are focused on supporting and expanding the use of the information on changes in vulnerabilities for policy making.

The activities currently envisaged for this component are:

### ***4.1 Assessment of the information needs of other Deputies and Directorates in Bappenas for the delivery of crisis response measures***

It is expected that, if there is a crisis, several Deputies and Directorates in Bappenas will become involved in providing support for crisis alleviation and response measures. In order for the VSMRS to become an effective instrument in supporting these other units at the time of crisis, it is important that the system can meet the information demands of these units in such a way that the use of crisis and vulnerability information goes relatively smooth and is straightforward, without requiring much additional analysis on their part.

In order to support this, the information needs of the other Deputies and Directorates need to be well understood, and they have to be aware that the VSMRS will likely be in a position to provide the information they need at a time of crisis.

#### ***4.2 Consultation on the information needs of other programs and ministries that are likely to be key in the delivery of crisis response measures***

Programs such as PNPM, and others supported by ministries such as the Ministry of Health and the Ministry of Education may be called upon to act as channels for the delivery of crisis alleviation support. Even though these programs do have their own information systems, primarily in support of monitoring and evaluation, they may welcome additional information that is more specifically vulnerability and shock related.

To increase the likelihood that the information generated by the VSMRS will be used by these programs at times of crisis, it is important that the information needs of such programs are taken into consideration, and if possible accommodated during the VSMRS development phase.

#### ***4.3 Development of measures in support of better information use***

Based on the information obtained from the consultations with other Deputies and Directorates in Bappenas, and with the program managers of programs that are likely to be selected as vehicles for the delivery of crisis alleviation support to the regions, there may be need to develop certain measures that will support better information use by such other units and programs.

Once the VSMRSs starts to function, there will actually be a continuous need for additional measures in support of better information use.

### **8.2.5 Institutional Setup**

The activities in this component are focused on supporting the establishment and institutionalization of the VSMRS.

The activities currently envisaged for this component are:

#### ***5.1 Discussions on VSMRS implementation***

Some key discussions that need to take place between October-December 2010 are about the institutional setup of the VSMRS, and the government support for this. Based on the preferred option, it will be possible to develop more concrete plans for the further development of the VSMRS and its institutionalization.

#### ***5.2 Development of VSMR support structure and elaboration of tasks***

Once a decision has been made on where the VSMRS will be based, at least for the initial phase, there will need to be follow-up discussions with the involved agencies on the support each of these will be able to provide to the VSMRS activities, and how these tasks will be implemented.

#### ***5.3 Development of a Shock Preparedness Plan***

One of the most effective ways to prevent a shock or a developing crisis of spiraling out of control, is to have anticipated that a shock or crisis may happen at some time, and to have a shock preparedness plan that provides clear guidance on how to proceed with

obtaining additional information on the crisis, and to start the procedures to activate suitable response mechanisms. Early warning allows for early action, and this may help to avoid to some extent a more widespread impact of the crisis.

A shock preparedness plan should be a dynamic product, and it should be focused on the key standard operational procedures that need to be taken, with a clear indication of what agency needs to do what.

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