COMMUNITY BASED DISASTER RISK MANAGEMENT (CBDRM)
GUIDELINES

EDISI 2

EDITOR
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MPBI
MASYARAKAT PENANGGULANGAN BENCANA INDONESIA
2017

COMMUNITY BASED DISASTER RISK MANAGEMENT (CBDRM)
GUIDELINES

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THE IMPORTANCE OF CBDRM

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CBDRM TECHNIQUES AND TOOLS

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This book is written and published by **MPBI** with the support of
PSMB, **Lingkar**, **UNDP-SCDRR**, and translated with the support of **APADM** and **Planas**

PREFACE

This guidelines is a manifestation of the mandate of the Indonesian Society for Disaster Management (*Masyarakat Penanggulangan Bencana Indonesia*/MBPI) in supporting the work of Indonesian organisations in community based disaster risk management (CBDRM). As an organisation that does not work directly in the field, the best role that MPBI can take is to facilitate the process for extracting best practices of and tools used in CBDRM practices and disseminating them through the CBDRM National Conference that it organises on annual basis.

The last ten years of the organisations of the Conference have witnessed how sharing of CBDRM practices in the field during the conference has helped to shape the agreement on CBDRM values, results, objectives and strategies. From sporadic and sectoral works that are directed by their individual vision and missions, organisations have now shifted to more holistic approaches, including in choosing the methods and tools for CBDRM works by using participatory ones such as PRA, PAR, and RRA.

This guidelines is expected to be used to help CBDRM practitioners in building community resilience to disaster risk by coping with hazards and working around the issues of capacity and vulnerability. It means building capacity in mobilising community collective resources in managing disaster risk instead of building their dependence on external support and assistance.

We would like to thank all contributors and editors for making this guidelines possible. Our gratitude is also extended to the Centre for Disaster Management Study of UPN University (PSMB UPN) and Lingkar Association, both from of Jogjakarta, Indonesia, and SCDRR - UNDP that have contributed in editing and publishing this edition. Our thanks also go to the National Platform for Disaster Risk Reduction (*Planas*) and the Asia Pacific Alliance for Disaster Management (APADM) that have contributed in the translation of this guidelines.
Let's keep up the good work!

DR. Eko Teguh Paripurno
Indonesian Society for Disaster Management (MPBI)

Foreword from

Asia Pacific Alliance for Disaster Management (APADM)

Asia Pacific Alliance for Disaster Management (APADM) is a trans-national disaster aid alliance that works to facilitate cooperation and understanding between governments, private sectors and NGOs in the Asia Pacific region.

Transfer of knowledge, increasing capacity, sharing of information and best practices for good governance in preparedness, emergency response and disaster risk reduction will obviously strengthen the capacity and resilience of individual countries in Asia Pacific as a whole. One of the features is to strengthening the local capacity in Disaster Management.

Asia Pacific Alliance has the honor to share a best practice of one of its country member by publishing the English edition of "Community Based Disaster Risk Management Guidelines." The book is originally published in Indonesia language by MPBI – the Indonesian Society for Disaster Management, a member of PLANAS – the Indonesia Platform for Disaster Management.

Community Based Disaster Risk Management (CBDRM) is an approach to build people's capacity in coping with disaster risk and reducing their vulnerability thereby developing safer and more resilient community.

Primary, the book should serve as an orientation and reference document. However it should not stand alone. There is a need to update this information along with new sources as CBDRM practitioners always change and further develop to the diverse natural socio- economic and cultural settings and characteristics of each of respective country.

This effort of publishing the MPBI's CBDRM English edition book should mark as small step of the APADM in sharing and transferring knowledge among members towards strengthening capacity and community resilience in the Asia Pacific region.

APADM thanks PLANAS and MPBI from Indonesia for giving the opportunity to share the knowledge and hoping very much that this attempt will inspire much more efforts for better understanding and strengthening the cooperation among us all communities not only from the Asia Pacific region, but also throughout all other regions in the world.

Faisal Djalal
Chairperson
Asia Pacific Alliance for Disaster Management

ASIA PACIFIC ALLIANCE FOR DISASTER MANAGEMENT

Foreword from

The National Platform for Disaster Risk Reduction (Planas)

Network of Grassroots Movement - Community Based Disaster Risk Management

Community tradition of establishing organisation at the grassroots level to deal with crises can be traced back to the 17th century of England with religious leaders taking the main role. This tradition has strengthened after the World War I and II.

The foundation for grassroots movement started to be popular in the 1970s when the voice of the grass root community was silenced. Elements of the society enlivened the grassroots with a variety of creative activities, fostering the economy at the grassroots level by putting priorities to the mechanism of consultation for consensus.

The awareness on the importance of a movement at the grassroots level has since flourished with the aim of meeting their own rights. This has been strengthened with the increasing number of non-government organisations working with community at the grassroots level. The acceleration and dynamics of groups at the grassroots level have never been so robust. Members of community have even started to be able to map their own problems in a more systematic and measured way.

When it comes to disaster, too, grassroots community should be at the heart of any capacity strengthening efforts. Community Based Disaster Risk Management is a novel movement introduced by the Indonesian Society for Disaster Management (MPBI). As the first organisation that voices the central role of community, MPBI has successfully raised the idea to a higher level and to the attention of the world.

During the 5th Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) in 2012, different participating communities specifically discussed on how they could discuss their issues and share experience. The meeting of the communities was later bound into a declaration that becomes part of the overall Declaration of Jogjakarta, where the meeting took place.

This guidelines promote the bottom-up principle that most communities are upholding and it is hope that it will continue to become the reference for communities who are not easily accessible. The National Platform for Disaster Risk Reduction (*Planas*) – in which MPBI is a member – welcomes the publication of this guidelines. It is hoped that the guidelines will help us all in our work in community development and that it will contribute to strengthened development and growth in disaster risk reduction movement where grassroots communities are the main actors.

Trinirmalaningrum
National Secretary of the National Platform

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THE IMPORTANCE OF CBDRM

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MASYARAKAT PENANGGULANGAN BENCANA INDONESIA
(INDONESIAN SOCIETY FOR DISASTER MANAGEMENT)
2011

1 THE IMPORTANCE OF CBDRM

1.1. INTRODUCTION

Community Based Disaster Risk Management (CBDRM) is one of the important pillars in efforts in disaster risk management today. CDBRM is widely accepted by disaster experts since approaches in disaster risk management have been more into structural/physical aspects, top down, focused only on emergency, and rarely contributed to sustainable disaster risk management. CBDRM provides the answer that includes principles such as efficiency since it involves low transaction cost as a result of maximum local intakes and minimum external intakes. This book argues that measures of sustainability such as effectiveness, legitimate participation, and equity are covered in CBDRM that it ensures sustainability as long as procedures are met.

CBDRM is in fact not a new practice. It has long been practiced and later institutionalised into a more systematic knowledge and concept. Studies on the history of disaster as well as studies on disaster anthropology (Oliver-Smith & Hoffman, 1999) show a number of interesting cases on how institutionalisation of knowledge on disaster mitigation and preparedness has in fact been practiced since many hundreds years ago and are still practiced until today.

1.2. DEFINITION OF DISASTER MANAGEMENT

The United Nations International Strategy for Disaster Reduction (UNISDR) defines disaster as a serious disruption of the functioning of a community or society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources (2009).

Meanwhile disaster management is defined as the systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of natural, environmental and technological hazards and the possibility of disaster. This includes extensive activities, including structural/non-structural measures for disaster reduction as well as disaster prevention and mitigation.

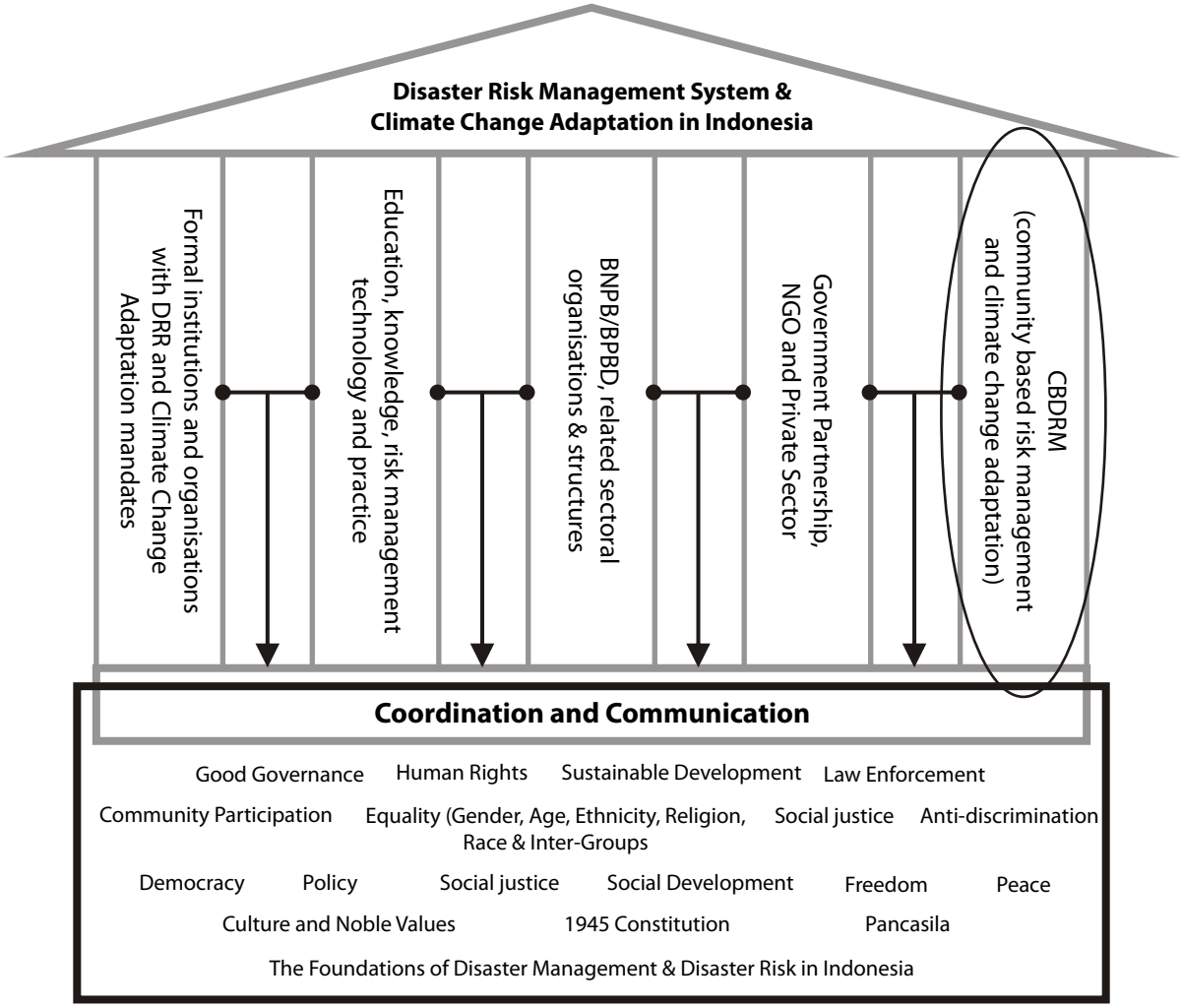

Figure 1.1. CBDRM, the pillar of DRR in Indonesia

The Indonesian Disaster Management Bill Number 24 of 2007 defines disaster management more vaguely, as: "a series of efforts efforts encompassing formulation of policies on development that may lead to disaster risk, and disaster prevention, emergency response, and rehabilitation activities." The Bill further elaborates disaster prevention activities as series of activities carried out to eliminate and/or reduce disaster threats.

The definition of disaster management has evolved over time. However, all too often disaster management – which is supposed to be understood as a holistic process – is still seen through the old paradigm lenses that regards it as a mere reactive emergency response and management.

The common people, who refer to old references on disaster issues, often confuse disaster management with disaster risk management. This is an inaccurate simplification that does not take into account the conceptual development of disaster issues. Disaster risk management (DRM) is a term already popular in the studies on disaster in the United States after the 1970s, including those conducted by the Delaware University Centre for Disaster Study. Total disaster risk is essentially the application of precaution in all stages of disaster risk management, which includes the stages of disaster planning and management before, during and after a disaster. Disaster risk reduction is a conceptual framework focusing on reduction of hazard and potential risks, not on the management or impact of disaster.

Precautionary principle starts with careful assessment of activities that may potentially turn into hazards that threaten livelihood assets and human lives. The hazards can potentially become a slow-onset or rapid-onset disaster that may cause death casualties and damage and loss of property and the environment, which exceeds the capacity of the affected community to cope using its own resources. In this regard it is necessary to understand the potential risks that may arise, i.e. the amount of loss or possible loss of lives, injuries, damage and economic loss caused by a particular hazard in an area at any given time. Risk, which is usually mathematically calculated, is a *probability* of the impact or consequence of *hazards. When an activity has greater risk than benefit, caution must be doubled. This can be done by reducing the inherent vulnerability,* which is a set of conditions that lead to physical, social, economic and behavioral consequences that adversely affect the efforts of disaster prevention and disaster risk management.

Efforts in disaster management should be done in a holistic manner. Prevention of disaster impact is the key. To prevent flood, it is necessary to promote the construction of infiltration wells and to prevent deforestation. Safety procedures and control over compliant behaviour shall be developed to prevent waste spill. Although prevention measures may be in place, the chance of disaster events may still exist. Therefore, mitigation measures should be in place to minimise impacts of disaster.

Such efforts should be supported with preparedness activities to anticipate disaster. Preparedness can be done through the right, effective and well-prepared measures, including preparing communication facilities, command posts and evacuation points. Strengthening early warning system is also part of preparedness measures by providing signs of imminent disaster, for instance by constructing the tools needed to inform community of the increasing level of unwanted elements in the river or wells around the sources of hazards. Provision of early warning must be (1) accessible to community, (2) immediate, (3) coherent and not confusing, (4) official.

Finally, when disaster does occur, emergency response, or the first and immediate effort after a disaster occur, must be carried out to cope with the impact of disaster – especially to save lives and property, and to prevent further impact. Relief assistance also needs to be provided synergically by providing the basic needs such as food, temporary shelter, clothes, health services, and water and sanitation.

To prevent prolonged impact from disaster, recovery of the affected environment and community is required by making facilities and infrastructures to function back to normal. This will include not only recovery of basic infrastructure and services such as road, clean water, market, community health centre, but also rehabilitation of ecological functions. In the short term this will normally include rehabilitation or the efforts to help affected community to repair their houses, rehabilitation of public facilities and important social functions, and revitalisation of the economy and ecological functions after the disaster. Environmental related rehabilitation, however, so far has only involved physical activities and has not so much as covered rehabilitation of ecological functions. Meanwhile, reconstruction is a medium and long term effort for the recovering of physical, social and economic growth to bring back livelihood to normal condition before the disaster or to a better condition.

1.3. DISASTER RISK REDUCTION

After the launching of the international decade for disaster risk (IDNDR) followed by International Strategy for Disaster Reduction (UNISDR), the term disaster risk reduction (DRR) was coined at the global level. The term gives the message of strengthening the anticipative, preventive and mitigative aspects of disaster management. At the same time, terminologies such as disaster management are no longer popular and become part of the status quo.[1]

UNISDR definition becomes the authoritative reference on the definition of disaster risk reduction (DRR). In UNISDR glossary of terms published in 2009, DRR is defined as the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

The main components of DRR include: 1) Awareness and appraisal of risk, including analysis of hazards, capacity, and vulnerability, 2) knowledge development, including education, training, research, and information, 3) commitment to institutional framework, including organisations, policy, legislations, and community actions (which is here translated into community based disaster risk management/CBDRM), 4) application of DRR measures such as environment management, land use, urban planning, protection of critical facilities, application of science and technology, partnership and networking, financial instruments, and 5) early warning system, including forecast, distribution of warning, preparedness measurement, and response capacity (UNISDR, 2004).

1.4. DEFINITION OF COMMUNITY BASED DISASTER RISK MANAGEMENT

Community Based Disaster Risk Management (CBDRM) is an approach of promoting the involvement of grassroots community disaster risk management at the local level. For this, a series of efforts are required that include community self-interpretation of hazards and disaster risk, reduction and monitoring and evaluation of their own performance in disaster risk reduction. However, the key to both are optimal mobilisation of resources that community has and has control over and become the integral part of community daily lives (Paripurno, 2006a). Understanding is important because grassroots community living with hazards are not helpless people as the technocrats would refer them. Failure in such understanding will lead to unsustainable disaster risk reduction at the grassroots level. If disaster risk reduction agendas do not come from the awareness of local community capacity and community priority, the effort will not be sustainable.

[1] Encyclopedia of International Development, 1st Edition, 2006.

Box 1

THE HISTORY OF CBDRM IN INDONESIA

There is not yet any social research on the history of Community Based Disaster Risk Management (CBDRM). The first adoption of CDBRM was in the context of Merapi volcano of Yogyakarta back as early as 1994. It started with the assessment of the behaviour of community living around Merapi who survived the volcano eruption in 1994. Activists of Kappala – a local Nature Lovers and Environment Activists NGO – of Indonesia developed a self-learning and conceptualisation of their works with Merapi community.

The concept of Community Based Disaster Management (CBDRM) begun to be used in 1996-1998. From the involvement with international DRR actors such as Oxfam – which was back then based in Yogyakarta – a number of Kappala leaders such as Dr. Eko Teguh Paripurno and researchers from UPN Veteran University of Yogyakarta published a book on Participatory Rural Appraisal (PRA) for disaster management.

In East Nusa Tenggara (NTT) province, CBDRM was first coined at the start of a movement to respond to El Niño in 1998, when the Centre for Food Insecurity Information (PIRP) started to collect information and conduct social researches on the massive response to food insecurity by international community and the government that had instead damaged local coping mechanisms and security. At the same time there was a massive flow of refugees from Timor Leste to West Timor of Indonesia, and a number of disaster events also hit West Timor since 1999. PIRP - later changed its name into the Forum for Disaster Preparedness and Management (FKPB) – began to work on community based disaster management. The term CBDRM was back than since 1998 known as Community Based Disaster Management (CBDM) in NTT, when for the first time three staff members of FKPB cadres attended a CBDM training in Bangkok, Thailand and in the Philippines organised by Asian Disaster Preparedness Center (ADPC).

It was the training by ADPC Bangkok that started to become the knowledge hub that transferred the knowledge and modules that would later be used in trainings for NGOs in NTT. The first CBDM – or CBDRM now - training in NTT was held by Oxfam GB in 2000, which was attended by participants from Eastern Indonesia, including Maluku. Facilitators brought the experience in working with communities in Merapi. Among the facilitators is Eko Teguh Paripurno, who 10 years afterward was the laureate for the Sasakawa Award for Disaster Reduction from the United Nations International Strategy for Disaster Reduction in Geneva in 2009.

This brief history not only indicates how CBDRM experience in Merapi volcano area brought leaders such as the late Mbah Maridjan and the Merapi Preparedness Association (PASAG) of the Merapi community, whose wisdom have inspired the conceptualisation of CBDRM, but also gives a description of the spreading of knowledge from Merapi, NTT, to Maluku and North Maluku, to Aceh and Papua, and North Sulawesi. It is just not true that CBDRM is something that we adopt from outside of Indonesia. CBDRM knowledge is in fact the synthesis of field works and science in general (Jonatan Lassa)

There are many other definitions of CBDRM that CBDRM practitioners propose based on their experience. However, in general there is an agreed definition, including that proposed by Pribadi (2008), who defines CBDRM as a process of disaster risk management that involves active participation of community at risk in the identification, analysis, management, monitoring, and evaluating disaster risk in order to reduce their vulnerability and increase capacities. Other defines CBDRM as the framework of inclusive and sustainable disaster management where community is involved or facilitated to be actively involved in disaster management (planning, implementation, monitoring, evaluation) using the most optimal local resources possible and the least external resources possible. CBDRM is also defined as the efforts in empowering community to be able to manage disaster risk with some levels of involvement of stakeholders or community groups in the planning and use of local resources for the implementation by the community themselves (Abarquez & Murshed, 2004).

1.5. HYOGO FRAMEWORK FOR ACTION AND DISASTER RISK REDUCTION

During the World Conference on Disaster Reduction in Kobe, Japan, in 2005, 168 UN Member States, including Indonesia and the international community, adopted a 10-year UN strategy called the Hyogo Framework for Action 2005–2015 *(HFA): Building* the Resilience of Nations and Communities to Disasters.

The Hyogo Framework for Action calls for the pursuit of three strategic goals and defines five priorities for actions in main areas of disaster risk reduction. The Framework also offers guiding principles on the main sectors for interventions in each area (see Annex 2).

Based on the HFA categories, two UN agencies have developed the indicators on disaster risk reduction, especially at the national level. These indicators have been used as the guidance in measuring the progress of implementation of the Hyogo Framework for Action in one given country.

2 COMMUNITY BASED APPROACHES

2.1. DEFINITION OF COMMUNITY

There area different visions about community and therefore there is not any single definition of community.[2] The question on what a community has been long been raised in social studies. Philip Alperson (2002), for instance, rewrote about the initial understanding of "organic community" as natural hierarchy associated with the ancient and feudal worlds that is based on social stratification such as gender, caste, and depicted as part of the natural order or "divinely ordained".[3]

A community can constitute of a group and order that is called "association" that holds the values of "kinship" such as solidarity, commitment, mutuality, and trust (Koentjaraningrat, 1987); community can also be approached as a descriptive category or set of variables: place, interest, and attachment or communion (Frazer, 1999). These variables construct community symbolically, making it a resource and repository of the meaning and reference to their identities (Cohen, 1985).

This leads to the discussion on how one community is marked off from another. Members of a community have something in common such as administrative boundaries, law, physical features, or language. These may mark them off from other community members. There is a virtual line that marks one community off from another community.

The next discussion concerns what sort of norms or habits are involved in a particular community. There are three basic norms involved: tolerance (openness to other members of the community); respect and the willingness to listen and learn from each other; reciprocity (the self altruism in the willingness to help each other without expecting anything in return and the long run self-interest if there is any expectation); and trust (confident expectation that people and institutions within a community will act in a consistent, honest and decent way.

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[2] See compilation of definitions by Jerry Hampton at http://www.community4me.com/comm_definitions.html [accessed 1 May 2009).

[3] See page 3 and also other definitions in Philip Alperson, 2002,"Diversity and community: an interdisciplinary reader."

And there is the notion that community is tied by "social capitals" (Putnam, 2000), which are described as social network, reciprocity and trust that tie individuals. For instance, a community of a village who lives in the same geographic boundaries and exposed to the same hazards and risk of recurrent disasters have the same crisis experience. The common risk that community members share can increase the feeling of being in the same boat (Lassa, 2007).

Of course, the definition of social capital is not as simple as the above definition. The design and implementation of CDBRM can only be sustainable when external agents (such as CBDRM facilitator, NGO, government) understand the formation and dynamic of the social capitals at the community level. In addition, social capitals may not always move to the positive direction for risk reduction.

Community is not a homogenous unit. Instead, it shares common experience on its relationship with the nature and natural phenomenon, and has produced "local knowledge" in facing extreme events. This is what is called CDBRM. Therefore, there is not any single concept of CBDRM and it is just not possible to apply a single CBDRM concept into the diverse context of Indonesia.

The meaning of community itself is plural in dimension. Geographically speaking, it can refer to a group of households, a small village, or a big town. From the sectoral and sub-sectoral point of view, it can mean farmers (cultivating rubber, rice), business groups, cattle farmer, or fisher folks. Actual experience show that common ties can refer to ethnicity, professional occupation, language, and age. It can also mean a gorup of people who live with the same hazards (both within or beyond the geographic boundaries).

2.2. THE DEFINITION OF "COMMUNITY BASED"

The term "community based" means that disaster risk management work is carried out by and together with community in which they play key role since the program planning stage to the program design, implementation, monitoring, and evaluation stages. It is agreed that in this concept, community is the main actor who makes and implements important decisions concerning the conduct of disaster risk management.

There are many empirical cases, stories, histories, or events where human tries to solve the crisis they are facing. Some of the world communities have long been living with disaster risks. CBDRM becomes the indicator of what a given community has done, is doing, and will do in managing cyclic, periodic as well as predictive disaster risks. Some communities such as those in Bangladesh, Africa, Timor, Yogyakarta, Aceh, and Nias have long been living with recurrent flood, drought, volcanic eruption, tsunami, and/or earthquake hazards. Knowledge on disaster risk management can derive from bio-indicators or bio-detectors (such as the sound of certain birds, the phenomenon when snakes go down the mountain), geo-indicators or geo-detectors (such as the low tide indicating tsunami, the roaring sea wave, birds that indicate earthquake). These are called the indigenous knowledge that is handed down from generation to generation and are important parts in the practice of CBDRM. Some of the indicators prove to be effective in risk management and natural resource or environmental management works that they are widely known as the local wisdom.

Box 2.

EXAMPLES OF INDIGENEOUS KNOWLEDGE

Community members of Renggarasi of Sikka, East Nusa Tenggara, Indonesia are living with whirlwind hazard that recurs every year. However, they have indigenous skills that have been handed from generation to generation in predicting the arrival of whirlwind and in preparing themselves to reduce the impact of the whirlwind.

Community can predict the arrival of whirlwind from natural signs two to three days before it strike. Red clouds moving fast and rainbow that stretches along the sky in the mountainous area and ends above the sea during January and March mean that whirlwind will strike the village.

They also have the local knowledge on how to reduce the impact of whirlwind. As soon as they see the natural signs, they tie the roofs of their houses with the stem of a tree or rattan tied with weights, a habit that they call as nailing the house. To prevent the tree/rattan from being wiped out by the whirlwind, they tie the trees. In this way, none of the houses or the trees can be wiped out by the whirlwind.

Such skills and knowledge in disaster risk reduction has been handed down from generation to generation and has become an indigenous knowledge. Therefore it is important to communicate risk from the old generation to the younger generation to preserve the existing indigenous knowledge (Jonathan Lassa).

CBDRM is a reflection of the trust that community has the full right to determine the types and ways of disaster management works in their context as they have the inherent right to be given the opportunity to determine the direction of their life. Following this thought and to the extent permitted by the laws and regulation, community has the full right to make the decision on what and how they will manage disaster risk in their own areas.

The meaning of "community based" in CBDRM can be extended as following:[4] full participation that involves also the participation of the vulnerable, men and women, the elderly, people with special needs, the marginalised, and so on. It also means a bottom up – instead of top-down – approach, full participation, access and control, inclusive approach and a sense of ownership of the past, existing and future systems of disaster management. Top-down approach may be possible initially but over time community can be empowered to be self-reliant to ensure more bottom-up approach.

Twigg defines the approach as "from, by and for" the community in the entire processes, where they can take control of the system and not being controlled by the system. In CBDRM, the system includes also early warning (Twigg, 2006).

[4] Module 2.3, Indosasters, 2007.

2.3. JUSTIFICATION OF COMMUNITY BASED APPROACH

Community is a distinctive factor of disaster. Nature driven as well as non-nature and socially driven disasters can only be called disasters when the events lead to the disruption of the functioning of community involving physical, social, economic and environmental losses and impacts which exceeds the ability of the affected community to cope using its own resources (UNISDR, 2004).

Community is the actual unit of disaster risk analysis. Whether or not a given community is empowered is the determining factor of the occurrence of disaster or at least the level of its impact. Following this logic, community is also the basic unit for which investment for disaster management should be made. Meanwhile, district and national unit is the aggregate of the risks at the community level so that actual disaster risk management practices should be implemented at the community level.

Social and cultural resources, elements, structures, and internal and external interaction processes of a given community are its capitals in the conduct of disaster management. The opportunity to dig out and use the best potentials as possible has made CBDRM more sufficient in comparison to other approaches.

CBDRM aims at reducing vulnerability and enhancing the capacity of households in managing disaster risk and cope with the adverse impact of disaster. Community and the most vulnerably groups are the main/key actors in CBDRM while outsiders (local and international NGOs, UN agencies, and other organisations) play the role in providing support and facilitation in the development of situation analysis, measurement of level of planning and implementation of CBDRM agenda and consensus. Dominant approach with engineering or science or legal solutions only tend to be top down and rigid in decision making. Lack of public participation of the affected community – who instead are treated as passive victims of disaster - are the main causes of failures of many disaster mitigation projects.

The concentration of power and knowledge at one point (central/regional government) and marginalisation of community in decision making have made many flood, drought, earthquake, volcanic eruption mitigation projects become mere representation of the vested interests of those in power or the funding agency rather than the interest or the need of the community. Lack of participation can undermine program sustainability, and increase vulnerability to disaster. Lack of access to and control of mitigation and DRM system can lead to sustainability at the community level.

No one has more interest in understanding disaster issues at the community level other than the community itself, who is often surviving and at stake in times of disaster. Local community has the opportunity to know better about the challenges, constraints and strength at the local level in coping with disaster. Local resources in disaster management (and development) should be developed in a sustainable manner. Experience of CBDRM at a given community can be modified, revised, and adopted somewhere else.

The results of the first to the seventh CBDRM Symposiums in Indonesia give a strong impression about the characteristics of CBDRM. The most prominent argument is that local community has distinctive capacity in coping with disaster risks, is more sensitive and resourceful in disseminating information about their own environment, and is even capable of predicting adverse events. They are rich in experience in coping with disaster risks, which has evolved and adapted with the existing social-economic, cultural and political environment. However, empirical studies show that it is not always possible to have a bottom up DRM approach. Risk analysis, for instance, especially has to follow existing sectoral policies and data gathering for DRM still has to rely on existing data at the central agency for statistic (BPS). In such cases, community ideas or rationality are often considered less important and less logical than that of the external experts, government and funding agency.

Ideally, CBDRM become a community-empowering approach that reduces internal vulnerability of community and dependency on external stakeholders, especially during disaster emergency, and that increase the capacity and resilience of the target community. Once community vulnerability is reduced and capacity is strengthened, external vulnerability should be reduced using internal resources. In addition, CBDRM holds the principle of "leave no one behind" or anti-discrimination against gender, age, religious group, race, ethnicity and minority group.

Gender inequality is one source of vulnerability. Attention to this aspect of vulnerability will help CBDRM approach to deal with social issues and gender equality. The strikingly unequal distribution of the risk of death between men and women in Indian Ocean Tsunami in Aceh in 2004 clearly indicates the social and non-natural components of disaster risk. Feltenbiermann (2006) quotes a result of a research which indicates that the ratio of death between men and woman are 1:3. Meanwhile, a research funded by Oxfam (2005) in a number of selected villages indicated the ration of 1:5 for men and women. Rofi & Doocy (2006) and Doocy et. al. (2007) showed the experience in Aceh, while Nishikiori et. al. (2006) represented the pattern of death casualties in Srilanka based on gender, where it is clearly indicated how gender was one important contributing factor in the distribution of tsunami risk. Integrating gender as one important contributing factor in the distribution of risk is no longer seen as an option but rather a vital and imperative requirement.

Age is another significant contributing factor that is worth taken into account, which has been overlooked in disaster risk assessment tools such as the National Plan on Disaster Risk Reduction. Peek (2008) noted a number of big scale disasters, including the earthquake and tsunami in Indian Ocean in 2004, the earthquake in Pakistan in 2005, and Katrina hurricane in 2005, which show a shocking fact how disasters can take the lives of so many children and young people. Mitchell et.al. (2008) reveals again the Tsunami Evaluation Coalition (TEC) report that is focused on the most affected groups, who turn out to be children under 15 years old and women (page 255). Peek also notes 17 types of risk that children often face during disaster (Peek 2008: 5).

The aspect of empowerment in CBDRM approach has the capacity to eliminate a number of factors contributing to vulnerability and therefore reduce the impact of disaster events in the future. It is realised that disaster risk management is not a linear approach whose success can be measured by the achievement of a fixed goal during a fixed period.

It is commonly understood that it always takes more time to use participatory processes in program implementation rather than if the programs are implemented directly by the government or organisations, who often work with third party to implement the programs, often shortening the cycle of the program required to ensure community participation. In fact, the bigger concessions that disaster management organisations or practitioners give to community, the bigger the chance that the community will influence the goals and the way they are achieved.

Table 1 shows that sustainability can be ensured by CBDRM because some aspects are met such as time efficiency and cost effectiveness, effectiveness, legitimacy, equality, and more balanced data and information on risk, as well as evenly distributed knowledge on risk as a result of the involvement of adequate local stakeholders.

Table 1. Comparison of CBDRM Approach and Conventional DM

Aspect	CBDRM	Conventional
1. Communication on disaster risk	Data and information are more symmetrical and richer; more rapid information sharing among stakeholders	Asymmetrical and only based on experts' view and the knowledge of the elite. Risk communication is top-down
2. Transaction of knowledge and practice	Transaction of knowledge is done "peer-to-peer" between the community and experts/ facilitators. Cross-fertilisation of knowledge among stakeholders take place	Community indigenous knowledge is overridden by experts' opinion that is not sensitive to the context of local risk
3. Time effectiveness	More time investment is necessary at the beginning but in the long term it is considered more sustainable	Profitable at the shorter term but not sustainable in the longer term
4. Cost effectiveness	Local resources (knowledge, labour, skills, capital) are made available to the maximum extent possible	More cost for longer work
5.Effectiveness	Involvement of many stakeholders result in many more local cadres with the skills in local risk reduction	Less skilled local actors, dependency to external parties (experts, the government, NGO)
6.Legitimacy	Community perceives program in a more friendly way. The root causes of vulnerability and risk such as gender inequality, age, and class can be reduced with participation because it opens up the space for the marginalised	Low participation, resulting in low legitimacy due to marginalisation of the highly vulnerable of the marginalised
7.Equality	Equality is a not negotiable. The level of risk distribution and the most vulnerable is the target	Lack of vision on reduction of vulnerable groups and not capable of reducing root causes of vulnerability

8.Sustainability	Ideally, when elemen no 1-7 are met, sustainability is assumed to be able to be achieved because of self-mobilisation by community. Greater dignity encourages community to increase their own capacity to reduce risk	Sustainability is hard to achieve due to dependency to other parties; not capable of mobilising local capacity to reduce own vulnerability

2.4. THE ROLE OF COMMUNITY: THE EMPHASIS OF CBDRM

Disaster is often defined as the occurrence of hazard events that exceed the capacity of the affected community to cope. Such definition can lead to a mere simplification because every loss of material and non-material can be categorised into disaster. Nevertheless, although there are not any agreed standard indicators on how to measure if community has the capacity to cope with the impact of disaster or not, surviving community such as in the extreme disasters in Aceh and Nias, can describe well any local capacity that community has to cope with disaster.

The role or participation of community is part of the principle of democracy. One of the main requirements in making participation possible is openness and transparency. The principle of transparency has at least five main elements that can make participation of community possible, as follows:

- *Right to know, meeweten*. CBDRM is a public product and fulfilment of the rights to be safe from disaster is part of human rights. This right is the basic right in democracy, meaning that the public has the right to know fully, accurately and in the right manner anything that is related to the interest to the public ?
- *Right to think, meedenken*. When community has the access to information on what is rightful for them to know, they also have the right to be involved in the thinking, assessment, and research on what works best for everyone. The participation of community in assessment and research means that community takes the responsibility to deal with their own problems. On the other hand, it also means that the government is relieved from the burden of finding the solutions faced by the community. ?
- *Right to speech, meespreken*. The right to speech to express opinion is the logical consequence of the right to think. It means that community has the right to express its views and opinion to the public concerning the results of sound and well-prepared assessment and research. The views and opinions can concern the interest of the public or groups, including community issues and any input and criticism to the government on certain issues ?
- *Right to participate in decision making process, meebeslissen*. Community has the right to take part and involve themselves within certain boundaries and in proportionate manner to influence decision making by the authorities. In other words, the decision by the authorities takes into account the input from community. All input should be taken into account carefully and their benefit and disadvantages to the interest and common good of the public should be assessed. If inputs are not taken into account, explanation must

be provided to ensure community feels that their thought and views are respected. The right to influence often falls into the category of apriori monitoring, that is the monitoring or control before a decision is made by the authority. In this way, the element of prevention in the control or monitoring aims at preventing any oversight in decision making. **?**

- *Right to monitor in the implementation of decision, meetoezien*. Community has the right to monitor the implementation of any decision taken, either directly or indirectly. Community monitoring is part of the right to democracy within the framework of public control. Oversight or control of the implementation of the decision can be called "aposteriori control", which serves as corrective action to restore any mistake in decision making.

3 CBDRM LEGAL FRAMEWORK

3.1. THE ROLE OF COMMUNITY IN LEGAL FRAMEWORK

There are currently two thinking evolving on CBDRM legal framework. Firstly, CBDRM is the informal side of disaster management practices. Empirical evidence that almost all CBDRM practices in Indonesia and the rest of the world are unregulated and have emerged from unwritten local protocols that are voluntary and informal in nature. Secondly, CBDRM is an approach that can be used in formal setting with village/sub-village as the formal unit. This is true that there are efforts to regulate or formalise specific CBDRM knowledge or practice, for instance in flood management in the Netherlands, which was originally an informal initiative starting since 1100 and did not involve external intervention. Regulation means the government also facilitates community in implementing CBDRM.

Disaster risk management will be very effective only when specific local needs can be met. When implemented separately on their own, separate CBDRM interventions by the government and organisations often prove to be inefficient, ineffective and unsustainable since the interventions are more sporadic and only respond to crisis. For instance, emergency interventions to reduce the escalation of the impact of disaster tend to overlook the perception and need at the local level and the potential value of local resources and capacity in the process. As a result, it is not surprising that emergency assistance far exceeds the resources invested to develop capacity in disaster risk management at the local level.[5]

The role of the community is central in the strategy for modern and democratic development. Their participation is in all aspects of development, from the decision making process and the implementation, monitoring, oversight, evaluation of the decision up to the stage of receiving benefit. It is assumed therefore that the development goals will be achieved with such participation.

[5] UNISDR. 2004. *Living with risk: A global review of disaster reduction initiatives.* Geneva: United Nations Publications

In the context of the rights of the community in the management of the environment, the United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters was adopted on 25 June 1998 in the Danish city of Aarhus (Århus) by 39 countries and the European Community. The so called Aarhus Convention contains 3 pillars that establish a number of the rights of the public within the framework of environmentally sustainable development. The pillars are:

- *First pillar*: access to environmental information. It means everyone has the right to full, accurate and updated information for different purposes. Access to information is divided into two types: a) passive right to access information, where the public has the right to access information in the possession of the public authorities and the obligation of the public authorities to respond and disseminate information in line with the public request; b) active right to access information, where public has the right to receive information and the obligation of public authorities to collect and disseminate information within their possessions without any request. **?**
- *Second pillar*: participation in decision making. This is the democratic pillar that puts the emphasis on the guarantee of the right of the public to participate in the development of information and the guarantee that participation is really exercised and not only on paper, through access to enforcement of justice. The participation of the public in such decision making process can be categorised into three. First, it is the right of the public to participate in influencing certain decision making that works in their interest. Secondly, it is the right of the public to participate in decision making on development and enactment of development policies, plans, and programs. Thirdly, it is the right the people to participate in the process of legislations. **?**
- *Third pillar*: access to enforcement of justice. It means the right to strengthen the right to access to information and the right to participation, to be incorporated into national and local legislations/law and the right to strengthen appropriate enforcement of national and local legislation/law on environment. The important part of this pillar is availability of mechanism for the people to be able to enforce environmental law directly.

From the above description, briefly it can be concluded that community participation can be made possible through the following:

1. participating in the thinking and struggle for their own life by making the best use of available potential among community to channel aspiration;
2. demonstrating sound awareness to be part of the community and civic awareness by not letting decisions on their lives made by other people, such as community leaders, both formal and informal;
3. constantly responding critically to problems that arise from public policies;
4. the success of community role and participation is greatly influenced by the quality and quantity of information gathered, how the information is used as the basis for strengthening bargaining position and the guidelines and guidance in setting strategic roles in the development processes;
5. For the government, community participation is their source and basis of motivation and inspiration and strength in carrying out their duties and responsibilities

Box 3

EXAMPLE OF CBDRM INITIATIVE IN LOCAL LEGAL FRAMEWORK

Data of 2008 on Haekto village indicates that Haekto village has 239 households consisting of 443 men and 454 women. The income of 90% of the population is traditional farming while >2% of the population are civil servants working as teachers and sub-district administrative office staff, while the rest are traders and motor taxi drivers. Result of participatory rural appraisal on Disaster by PMBP of Kupang has indicated that since 2000 flood has become an annually recurring hazard event. Accumulation of the impact of annual flooding has indirectly lead to average low income of only between IDR (Indonesian Rupiah) 100,000-IDR 250,000 per household per month with very poor bathing-washing-toilet facilities and clean water source. The ability to access education has increasingly declined over time due to the weak economic capacity of the population. In 2008, an effort to incorporate CBDRM into local policy and legal framework started in the form of decision making by local government administration at the head of village level together with the Village Representative Council (BPD) as the lowest structure in governance as governed by the Law on Regional Autonomy.

This effort was promulgated in the Village Regulation of Haekto Village (Perdes) of East Noemuti Sub-District of North Central Timor of East Nusa Tenggara Province No. 2 year 2008 on the Conduct of Public Health and Environment. The Perdes contains an overview of the identification of the importance of the conduct of public health as part of human rights, the importance of dealing with hazards that threaten public health, and the importance of preserving the environment that contribute to the level of the health of the villagers. It is important to note that the Village Regulation also refers to the Law on Disaster Management, Law on the Environment, and the Law on Communicable Disease Epidemic in its considerations, in addition to other bills.

Currently, Haekto Village is deliberating a draft of Village Regulation on the Watershed Management as part of disaster risk reduction.

Source: PMPB of Kupang & Ivan

4 CHARACTERISTICS AND FEATURES OF CBDRM

4.1. PARTICIPATION OF COMMUNITY IN DISASTER RISK MANAGEMENT

Participation of community is a process of the provision or division of more authority to community to be able to contribute to the efforts in finding solutions to many problems including disaster. Allocation of authority is carried out based on the level of participation of community in the activity.

Community participation aims at finding the solutions to problems in an appropriate manner by assigning community with roles to contribute to effective, efficient, and sustainable implementation of activities. Community participation begins from the stage of activity planning up to the construction, operation, maintenance, and evaluation and monitoring stages.

Levels of participation of the community in disaster management activities can be described as ladder metaphor borrowed from Arnstein (1969) and Hart (1999). The description understands that participation often begins from a manipulative stage. An example of this is when the government and NGOs are using community voices for their own interests and without community's knowledge. In the context of child participation, the lowest level of the metaphor or the bottom rung of the ladder describes how the voices of children are used for the interest of adults without their knowledge. The symbol of men and women are additional description that without gender equality, the ladder of participation will only belong to one particular gender (in this case adult male). In many cases, participation is manipulative and only involves men.

To climb every level of the ladder, a “window of opportunity” is required (Hart, 1999), that is the change of paradigm among disaster risk management project holders (government, NGO, and private sector through CSR programs). At the bottom rungs of the ladder of participation are manipulation and top-down therapy. Those two rungs are described as levels of “non-participation” (Arnstein, 1969) that overlook the dignity of the community.

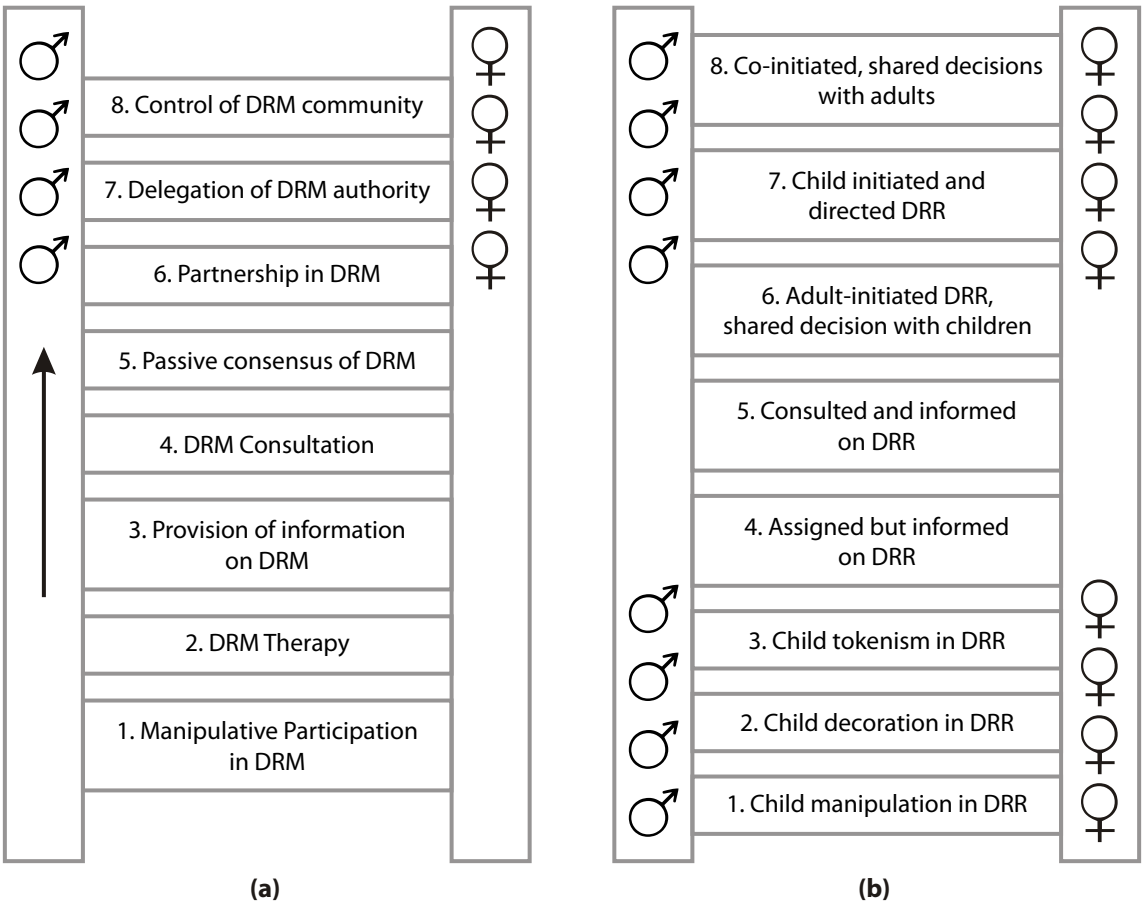

Figure 2.1. Level of citizen participation (Modification from Arnstein (1969) and Hart (1999))

The right side of the figure is intentionally developed as a metaphor describing the stages of mainstreaming children in disaster management. The left side of the figure describes specifically the third-fifth rungs of the ladder, indicating that one way and top-down socialisation and consultation, and passive consensus of community in DRM is a mere tokenism that only involves the rudimentary participation of the community.

Even the most basic level CBDRM is much recommended not only to allow community to go beyond the rudimentary participation as a partner in DRM activities but also for them to have authorities in decision making and control of risk management without undermining the responsibilities of the stakeholders in DRM.

Disaster risk management practitioners commonly agree to give emphasis on community disaster risk management programs that are community based. Vulnerable community themselves are encouraged to be involved in the planning and implementation of disaster risk management activities and work together with all entities at the local, provincial, and national level entities.

Community based disaster risk management and reduction are aimed at reducing the vulnerability and strengthening the capacity of community in dealing with hazards and disasters. It is imperative that community is directly involved in the implementation of disaster risk actions at the local level.

There are cases of the failure of top-down disaster management and disaster risk reduction programs that are against the involvement of community in meeting local needs, especially the needs of the vulnerable. These programs are often overlooking potential resources and capacity available at the local level, and in some cases even increase community dependence and vulnerability. Many settlements constructed in post-disaster rehabilitation and reconstruction of Aceh and Nias that are left abandoned, for instance, may create new vulnerability to community if they continue to be left unmanaged.

At the higher level, participation is strictly emphasised in the Indonesian Disaster Management Law No. 22 year 2007 to be an imperative in post disaster reconstruction.[6] However, the participation of civil society in analysis and assessment of disaster risk is also strongly governed in Article 87 on the participation and roles of civil society organisations/institutions, private sector, and community in the Government Regulation No. 21 year 2008 on the Conduct of Disaster Management. The article says that first, participation of those stakeholders aims at enhancing participation to improve the spatial planning of disaster prone areas and better awareness to disaster prone areas, which can be achieved through campaign on disaster awareness, promotion of awareness and solidarity among civil society organisations and the private sector, and promotion of participation in disaster preparedness funding and activities.

The practices of CBDRM have the following fundamental characteristics: **?**

- The highest authority in risk management and disaster preparedness lies in the hands of mandated community based organisations **?**
- Appropriate diagnosis of the root causes of disaster and full participation for the real interests of the community to ensure proper mitigation and recovery strategies
- Existence of organisations at the community level with the mandate in disaster management that can provide rapid/appropriate response to emergency situations
- Intervention: multi-sector, inter-sector, and inter-hazard (flood and drought; emergency response and recovery)
- Encompassing all elements of planning/disaster management cycle. Community is the main resource, supported by local knowledge and expertise
- Low external input, maximum results of disaster management
- Community has sovereignty over disaster, with an indicator of dependence to external parties reduced to 0 (on paper).

It is true, however, that when in contact with modern knowledge, CBDRM goes through modification and enrichment. Enrichment can be in the form of home-grown disaster risk reduction initiatives that have CDBRM fundamental characteristics with some extents of external inputs or support.

[6] The terminology "participation" in the Disaster Management Law is found in Chapter 4, 26, 59, 60, and 69. Chapter 59, 60 and 69 covers reconstruction policies.

In another dimension, CBDRM has also metamorphosed into an area of knowledge with a setting of knowledge, research, empirical truth, science development, a branch of studies that might stem from the study of anthropology/sociology of disaster. The implication of this is professionals with skills and special expertise in CBDRM.

CBDRM practitioners may further be constructed as the "outsider" who may be part of the community at risk, who facilitate community at risk in the implementation of disaster management at a given space and time. In the dimension of a project, this will lead to the requirement for practitioners to formulate an entry strategy and an exit strategy.

Further, as an area of work that demands professionalism, CBDRM has conceptually evolved into a body of knowledge that is constructed in a systematic manner that shows that CBDRM is not a series of serendipity that is based on instinct, charity, nor worship. Instead, CBDRM is an organised and planned process that follows standards of procedures. In this sense, CBDRM is a process that can be overseen by other stakeholders and by the community itself and implemented in a rigid and accountable manner.

The elements of community resources used in the best way possible can be used to distinguish if a CBDRM practice is carried out systematically or not. The elements are:

- Discipline: CBDRM practitioners follow the way of thinking, steps, and actions that are in accordance with the framework they agreed upon as "the body of knowledge" (the characteristics, processes and stages, basic skills, and knowledge). Discipline concerns the way a problem or issue, work sequence, the patterns of relationship with community, government and the system of resources are identified. In the absence of discipline, CBDRM practitioners will carry out their duties as they please and therefore they cannot guarantee the effectiveness of their works.
- Consciousness: All steps taken and activities performed by CBDRM practitioners are based on a process of planned consciousness. In other words, CBDRM activities should not be a coincidence or a mere impulsive reaction. All activities in CBDRM, big and small, are part of a well-planned bigger framework.
- Accountability: The integral part of a systematic practice is the awareness that each and every step and activity of CBDRM practitioners has to be transparent, especially to the respective community, and to other CBDRM practitioners. Transparency will help to measure the appropriateness of a practice against the principles of CBDRM practices by looking at the original goal and achievement of activities. Without having to be held accountable for their works, CBDRM practitioners can again work as they please and there is not any guarantee that their works are really giving benefits.
- Auditability. It means that the performance of CBDRM works can be audited in a participatory manner by community using flexible basic criteria that have been developed by initiatives such as the Hyogo Framework for Action to measure the level of community capacity and resilience.

Experience in the implementation of the conduct disaster management that is oriented towards community empowerment and self-reliance are as follows: (1) conducting disaster risk reduction together with community in disaster prone areas so communities can manage their own risk using their own resources; (2) avoiding the emergence of new vulnerabilities and community dependence in disaster prone areas on external parties; (3) disaster risk management is an integral part of development processes and natural resource management for the sustainability of the lives of communities in disaster prone areas; (4) multi-sector, multi-disciplinary and multi-culture approach is used (Paripurno, 2006b).

4.2. GENERAL CHARACTERISTICS OF CBDRM

CBDRM has the following general characteristics:

- The vision for life saving and sustainability of livelihood: Disaster Risk Management (DRM) as "public goods" and human rights.
- Mission for reduction of vulnerability, multi-hazards management, improvement of community capacity in monitoring, adaptation, response, mitigation, preparedness, early warning, and all aspects of disaster planning.
- Participation is a non-negotiable imperative with spiritual but factual dimensions. Community is the prime mover and at the centre. It is not an instantaneous participation that depends on external aid and funding.
- Gender sensitive: full involvement of men and women.
- Vulnerability sensitive: priority is based on level of distribution of sectoral vulnerability and the most vulnerability groups/stakeholders.
- Identifying local capacity and resources (local adaptation mechanism and coping strategies).
- Hardware or institutional mandate at the community level to monitor, communicate disaster risk on regular basis and implement activities before, during, and after the humanitarian emergency [plan-do-check-re-act] or [POAC: plan-organizing-action-coordination] or [assessment-plan-implement-monitor-evaluate]
- Software (rules/habits/ protocols/mechanism).
- External parties are positioned as facilitator and supporter.
- Transformation of "collective memory" of disaster towards collective action for disaster reduction
- Disaster risk communication in a sustainable manner (through combined media: local culture and language, symbols, meunasah/surau (community gathering and worship space), mukim (community institution) structure, small coffee shops, books/comics, poem, folk song, verses, school, community radio, VCD, mailing list, internet, Friday prayer sermon, Muslim Youth).
- Consistently inclusive approach
- Development of CBDRM cadres/facilitators/coachers/organisers from local community; from organising to mobilisation.

- Consistently inclusive approach
- Development of CBDRM cadres/facilitators/coachers/organisers from local community; from organising to mobilisation.
- Institutionalisation of CBDRM for sustainability. The scenario for sustainable CBDRM must be clearly formulated.
- An "adaptive" and resilient community is established, which means that community has the capacity at each level to detect, prevent, mitigate, and when necessary manage and recover from extreme events (Medd and Marvin, 2005: 45).
- Contingency planning at community level that is regularly simulated: to create a community who are aware of the hazards they live with; to create community who have the capacity to protect themselves, their family and their livelihood assets from the threat of natural hazards; to create a community who have the capacity to manage emergencies resulting form hazard events to prevent escalation to more complex level of disaster.
- Integration of CBDRM to the Development Planning Deliberation (Musrenbang) at village/sub-district/district level (see figure below) to meet the requirement promulgated in Law No 25 year 2004 on National Development Planning System. The Law is the basis that can link the synergy between CBDRM and disaster sensitive village/district/national development planning. As an approach, however, it may not be correct to say the village is the only domain in CBDRM. In fact, CBDRM is applicable at micro as well as macro level.

5 SYSTEMATICS OF CBDRM

5.1. SYSTEMATICS

CBDRM consists of three parallel main stages: input, throughput, and output. These stages are further divided into six stages that are accommodated as the standard procedures of sustainable CBDRM activities in the context of project/program, which is ended by exit strategy and community based CBDRM audit.

The overall stages are discussed in this book. Many other publications have also discussed these stages but they do not clearly discuss the procedures for entry and exit, which are greatly influenced by the history, experience and characters of the respective organisations. For voluntary based or community based organizations such as farmers organisations, an exit strategy may not be able to be used clearly because exit strategy will be more relevant with project based organisations or NGOs/funding agencies. Voluntary based organisations such as Kappala in Yogyakarta, faith based organisations in Timor, or indigenous people organisations in Aceh such as JKMA have been working for tens of years without being bound by the concept of entry and exit.

5.2. STAGES OF WORK

Based on various experience, these are the stages to be followed in CBDRM[7]:

- Selection of Target Communities. This is the process of selecting the most vulnerability community to be able to get the support in disaster risk reduction management programs using a series of predefined criteria This stage is essentially about building rapport and the trust of local community and is key in “making us to be part of them”. This stage is the initial image building of CBDRM planning.

[7] Referring to the result of the 4th National Conference on CBDRM in 2008 and the 5th National Conference on CBDRM in 2009

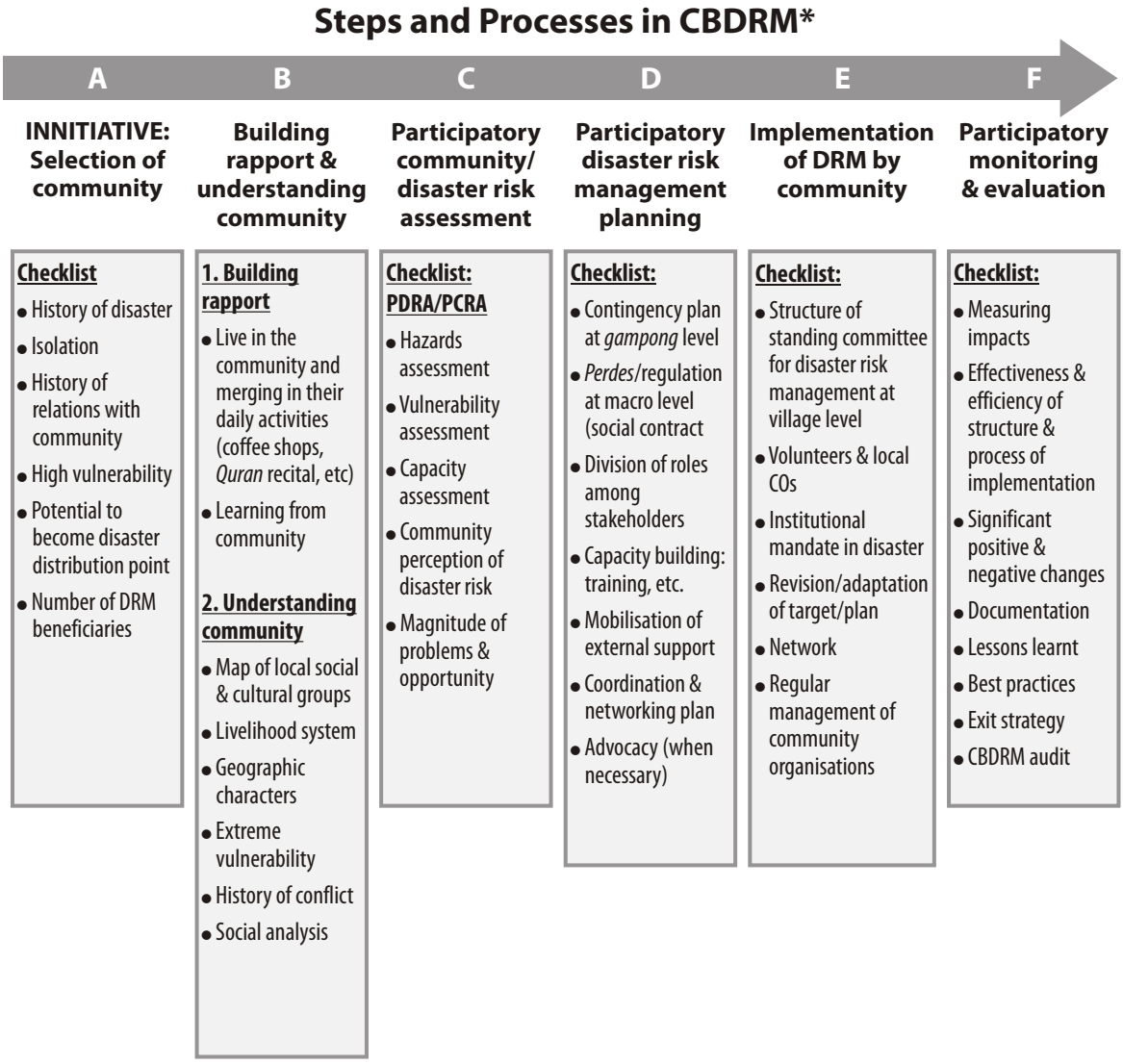

Figure 5.1. CBDRM Processes

- Building rapport with and understanding community. This is essentially the stage in building relationship and trust with local community. After rapport is built, community general positions in social, economic and political aspects are understood. Deeper understanding on the dynamics of community will be conducted later during the participatory risk assessment.
- Participatory Disaster Risk Assessment (PDRA). This is a diagnostic process for the identification of risks that community are facing and how they deal with them. This stage is aimed at predicting the need for disaster management and is necessary to be carried out to see if needs can be met with available resources. A PDRA is a thorough assessment on community exposure to hazards and an analysis on their vulnerability as well as their capacity. The results of a PDRA will become the basis for all activities, projects and programs in disaster risk reduction. A disaster risk assessment should be participatory and identifies the nature, coverage, and magnitude of negative impact of hazards to

community and its households in a given period of time that can be predicted. Community disaster risk assessment also facilitates the process to identify the negative impacts (damage and loss) that may or likely to result to livelihood assets at risk. Joint risk assessment can include assessment of community perception of risk, mapping of the characteristics of hazards, mapping of vulnerability, mapping of capacity to cope with hazards, mapping of capacity to deal with vulnerability, risk identification, risk evaluation and appraisal, equal distribution of potential resources available and their mobilisation, and analysis and joint reporting to community. A situation analysis can start with the profile of the community in understanding disaster risk through participatory research on the history of disaster; geo-climatic, physical, and spatial characteristics; social politic and cultural structure, economic activities and vulnerability groups.

- Program planning and planning formulation. This stage is done after the participatory analysis of risk. The community themselves will identify risk reduction activities that will reduce vulnerability and increase capacity. The activities are further elaborated into the plan for disaster management at community level (improving capacity & reducing vulnerability to increase the ability to prevent, mitigate or prepare), benefit and outputs (reducing risk), planning of important activities, identification and raising financial support, and formulation of plans of activities.
- Implementation of program managed by community. This stage is always put at the top of the efforts in risk reduction. During this stage the risk reduction plans that have been formulated and agreed upon are implemented through a number of activities: organisation of implementation of activities, mobilisation of resources, implementation of planned activities, monitoring of activities and using the result of monitoring to improve risk reduction planning. CBDRM should work toward implementation of community plans and encourage the involvement of other members of community to support the implementation of activities.
- Participatory monitoring and evaluation. This is a communication system where information flows among those involved in the project: community, officers, and supporting organisations, government institutions, and relevant donor. Appraisal and feedback are not common in this stage despite their significance. Appraisal of result of activities against the expected output in disaster reduction is expected to be able to be used in early assessment of the effectiveness of efforts. Results of evaluation are used in the empowerment of other community to improve their capacity in disaster reduction.

Many practitioners and experts in the Indonesian Association for Disaster Management (MBPI) agree that institutionalisation of CBDRM is key requirement for a sustainable CBDRM. CBDRM is an endless effort. However, in the context of project or program that requires sustainability of practices at the grass root level, at the end of the external input processes is the agenda for institutionalising of disaster reduction that are community based to ensure sustainability, dissemination and integration. This is possible through establishment of organisations and community rules in disaster reduction. At this stage, a mechanism for consultation is also established between people organisations and other actors. This is necessary as interventions in disaster risk reduction that involve other parties are generally only part of the entire efforts in risk reduction. Therefore, community has to continue the efforts on their own using their own resources. Such institutionalisation is essentially aimed at ensuring the sustainability of risk reduction efforts.

As indicated above, disaster risk management is a process to ensure community in disaster prone areas are capable to cope with hazards and their vulnerability on their own. Therefore, active participation of at-risk community in the identification, analysis, implementation, monitoring and evaluation of disaster risk is necessary to reduce their vulnerability and increase their capacity. It means that community is at the heart of decision making on and implementation of disaster risk management. If CBDRM is not seen as a project only but instead as a process of community organising, sustainability of disaster risk management by community and their institutions is a must.

Other issues that are worth noting in the process of CDBRM are (1) documentation, (2) appraisal and feedback, (3) dissemination and integration, and (4) institutionalisation and consultation. Such efforts are key to ensure the success of CBDRM and can serve as learning for the local community (Paripurno, 2006b).

- **Documentation is an integral part of monitoring and** evaluation. On other cases, documentation of the process of learning and dissemination of successful practices to other communities and areas are important to prevent as much as possible overlaps of similar disaster risk reduction efforts. Dissemination will be possible to be conducted not only on geographical basis but also on sectoral basis that will at the same time attempt to integrate disaster risk reduction into development and other aspects of life and to establish the culture of disaster risk reduction.
- **Appraisal and feedback.** Appraisal and feedback tend to be ignored despite the fact that appraisal of result of activities can be used to make early assessment of the effectiveness of risk reduction efforts. Result of evaluation can be further used in improving capacity in disaster reduction.
- **Dissemination and integration.** Documentation of the process of learning and dissemination of successful practices to other community and areas is important in preventing as much as possible overlaps of efforts in disaster risk reduction. Dissemination will not only be conducted geographically but also on sectoral basis that will at the same time work towards the integration of disaster risk reduction efforts into development and for building the culture of disaster risk reduction.
- **Institutionalisation and consultation**. At the end of the process is institutionalisation of community based disaster reduction by encouraging the establishment of people organisation in disaster risk management to ensure sustainability, dissemination and integration. At this stage a mechanism of consultation is also built between people organisation and other actors. This is important because disaster risk reduction intervention that involves the participation of other stakeholders is in most cases part of the efforts in reducing the entire risk and community has to rely on themselves to continue the efforts. Institutionalisation of disaster risk reduction efforts will ensure sustainability of the efforts.

At disaster risk management stage, an adaptation to the framework of risk management (ISO 3100) can be carried out:

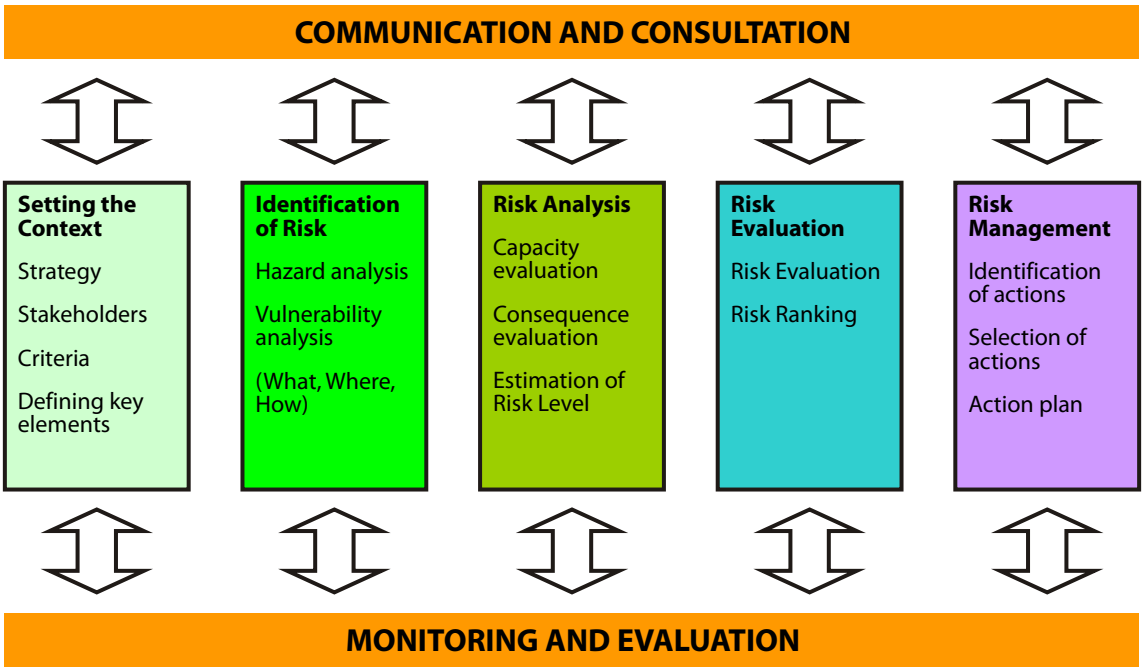

Figure 5.2. Risk Management Processes

5.3. SUSTAINABILITY OF CBDRM

The following are the factors that contribute to successful CBDRM.

- Application of best practices or good practices in the development of CBDRM.
- Balance between participation (bottom-up) and external input (top-down).
- Adoption of traditional organisational structure (indigenous people or local community) and mechanism for decision making (formal and informal).
- Capacity building activity (community and community organiser).
- Various forms and channels of media for raising the awareness and education of community by taking into account dialect, values, and culture.
- Multi-stakeholders partnership. Community is the main actor while external stakeholders and community organisers act as facilitators only
- Community's vision on disaster, community's ownership, real participation of community
- Capacity building (training or workshop) in the entire cycle of project or program, which includes technical and non-technical aspect.
- Community organizing with a vision for social change
- Preservation of CBDRM by community organisers and community.

A number of principles for sustainable CBDRM are:

- It is the people, human being, and community who make CBDRM processes sustainable.
- Sustainability of the participation of people or community is greatly depending on ”link and match” between disaster reduction activities and project or program with immediate strategic or practical needs

- Active involvement of community in the process of study and decision making in the identification of realistic solutions, feasible preparedness, and mitigation solutions
- Relevance of involvement in establishing ownership, even when achievement is not as expected, which will ensure sustainability of CBDRM activities.
- Unity or cohesiveness of the people, community, individuals, or society in the commitment for disaster reduction is made sustainable with CBDRM practices.
- The existence of institution that settles in the community (such as Imaginary *Mukim/*Village) can ensure sustainability of CBDRM processes that aim at protecting the lives and livelihoods of community in a sustainable way.
- The process and participation in building confidence at the community level; community are confident because they have sovereignty in the use and management of their own resources to minimise impacts of disaster at the local level (self-empowerment),
- Involvement in participatory assessment to ensure sense of ownership, commitment to mobilisation of resources for collective or individual action in disaster mitigation,
- The trust in and support to the process of capacity building in providing appropriate and doable mitigation solutions
- Although it takes time, CBDRM is cost effective and self-reliant

6 CBDRM IN INDONESIA

6.1. INSTITUTIONALISING CBDRM IN INDONESIA

Internal debates have evolved among community and members of the Indonesian Society for Disaster Management (MPBI) on how to develop a scenario for institutionalising CBDRM at different (macro, meso, and micro) levels. At the micro level, a scenario is envisaged that will create an enabling condition or environment where CBDRM is recognised as an important instrument in disaster risk management agenda of the government and NGO/private sector. As described in Figure 1, CBDRM is considered as the main pillar in DRM activities in Indonesia.

Debates about the concept of "resilient village" and the discussion community and forum on "preparedness village", "resilient village" as well as a number of disaster sensitive village attributes are all the processes to institutionalisation.

The annual CBDRM conference during the past four years is indication of efforts in institutionalising CBDRM. The starting involvement of universities and research centres from all over Indonesia in the discussion and debate about the forms of CBDRM is a positive indication of the institutionalisation of CBDRM according to the context of each region and the risks they are facing. In the context of policy making, especially at the provincial and district Agency for Development Planning (*Bappeda*), institutionalisation of CBDRM is envisaged through the integration of CBDRM into the parts or stages of the Development Planning Deliberation Meeting (*Musrenbang*) at different levels, as follows:

↑	5- *Musrenbang* at the National level
↑	Post *Musrenbang* at the Provincial Level
↑	4- *Musrenbang* at the Provincial Level
↑	Central Coordination Meeting (*Rakorpus*)
↑	The Forum for Local Government Unit of Work (SKPD) at Provincial Level
↑	Post *Musrenbang* at District/city level

↑	3- *Musrenbang* at District/city level
↑	The Forum for Local Government Unit of Work (SKPD) at District/City level
↑	2-*Musrenbang* at Sub-District Level
↑	1-*Musrenbang* at Village Level
↑	Village Meeting, Community Group (farmers, cattle farmer, fisher folk, school committee, etc.)

The incorporation of the agenda for Climate Change Adaptation as an integral part of CBDRM and the other way around the incorporation of CBDRM agenda as a key instrument in Climate Change Adaptation have put CBDRM as the main tool and framework in disaster risk reduction. In this regard, apart from building CBDRM as a body of knowledge that is supported by empirical evidence and inter-disciplinary studies and researches, in the future a draft Code of Conduct should be formulated that govern CBDRM practitioners with clear values that are not conflicting with the principles described in Figure 1.1 of this book.

The process and practices for the institutionalisation of CBDRM have actually started since a decade ago in Indonesia. Now, Indonesia has witnessed the ninth time of the implementation of the CBDRM Conference, with the upcoming 10th Conference to be held in 2014, whose results will be incorporated in the revision of this guideline, when applicable. The revision itself will become part of the process in the institutionalisation of CBDRM. A closer look at around 20 versions of publication on CBDRM with different focus of activities and the local context of risk, CBDRM again shows itself as an alternative framework with the potential to be the mainstream in risk management.

6.2. VALUES AND PRINCIPLES

During the second CBDRM Symposium in Jakarta in 2006, CBDRM practitioners formulated the following principles of CBDRM:

- To implement disaster risk reduction efforts together with community in disaster prone areas to be later managed by the community themselves using their own resources and based on their own capacity.
- To avoid the emergence of new vulnerabilities and dependence of community in disaster prone areas to external actors.
- Disaster management is an integral part of the development processes and natural resource management to ensure sustainability of the lives of the communities in disaster prone areas.
- Multi-sector, multi-disciplinary, and multi-culture
- The use of holistic approach in the entire stages of disaster management and integrative approach (by linking program with other needs)
- Participatory right from the stage of planning to the program completion (strata, group, gender)

- Doing no harm to existing system, including local trust and tradition
- Building local partnership to ensure sustainability of the program in areas where external intervention is necessary
- Humanitarian work is not charity work; instead it can be held accountable to the community. So accountability is key
- Prioritising the roles and participation of local community in coping with disaster.
- Putting emphasis on the participation in community awareness raising program
- Transparent
- Building trust and reciprocity

6.3. CODE OF ETHICS OF PRACTITIONERS

Ethics are a system of values and moral norms that serve as the compass for guiding the behaviour of individuals or a group, while code of ethics are a set of principles or moral values (Bertens 2005, p. 6). As a professional community, CBDRM practitioners should have a reference code of ethics of professionalism that work to prevent moral hazards. Such code of ethics should be consistent with and become an integral part of the philosophical and ideological background already described in the previous section. In this regard, ethics are understood as code of ethics that are intended to govern moral behaviour of CBDRM practitioners through a set of written conditions that are expected to be upheld firmly by practitioners.

The first and foremost accountability of CBDRM practitioners is to the community where CBDRM is implemented. CBDRM practitioners are held responsible for ensuring that disaster risk management are performed in such manner that really contributes to disaster risk. Although CBDRM is a continuous effort that knows no end and risk will always be present in our everyday lives, it is expected that disaster risk will be reduced with CBDRM interventions. In addition, CBDRM practices should work towards avoiding as much as possible the possibility of creating new risks and vulnerability that is beyond the capacity of the community to cope with.

The practices of CBDRM are based on legal foundations when implemented in the context of a program or project and under an institutional framework. When implemented by individuals, the practice is not governed by formal sanctions and therefore it is difficult to be held accountable. Practitioners are bound by formal administrative requirements and procedures to be accountable to the institution they are working for. In many instances, there are individual initiatives that become drivers of change as the concept of social entrepreneurship by Ashoka Foundation would promote. In this fashion, individuals who start the initiatives in CBDRM have to be directly responsible to the community and the prevailing law and legislations.

Many contexts in Indonesia show that community live in the context of formal administration governed by formal institutions and organisations as well as in the informal context governed by customary and religious institutions. In Aceh, both systems can work alongside each other where the formal unit of community is the village or sub-district while in the *adat* system it is *gampong* or

mukim. In Flores of East Nusa Tenggara, village unit is sometimes in parallel with or in intersects with the administrative unit of the church. In this context, CBDRM practices do not work in vacuum and instead have to work in a collective accountability. In the context where government administration is the sole system, the government is still seen in the context of accountability.

A CBDRM practitioner themselves is part of the community of practitioners and therefore is bound by obligations and loyalties to fellow CBDRM practitioners, including by the responsibility to be transparent about what they are doing, through sharing of knowledge and experience, and involvement in developing CBDRM as the field of practices.

There are a whole range of principles offered that can be referred to as the behavioural guidance for CBDRM practitioners. Among other things are the ones offered by Netting, Kettner dan McMurty (1993: 57—60) which Kapp (1987) that mention three ethical values in working with community:

- *The principle of autonomy*. It is the attitude of putting the rights and the freedom of community to determine their own way of life in the implementation of all plans and steps by CBDRM practitioners and individuals. It is also about the role of the practitioners to provide inputs and to facilitate the assessment of the consequence of choices with community having the final say on what steps they are going to take.
- *The principle of beneficence is* the reflection of the spirit of altruism to do the things for the welfare of the community. In addition to motivating CBDRM workers to work with the community, this principle should also be complied with to remind CBDRM practitioners to take caution not to create paternalistic relationship that will eventually lead to the violation of the principle and worse to create community dependency to CBDRM practitioners or other actors.
- The principle of *justice* is the spirit to give what are the true right of individual or community. This principle is more about providing more to those who have less rather than equal distribution. In principle, CBDRM practitioners should ensure that the benefits from disaster risk management are distributed fairly to those who are rightful.

6.4. CBDRM EXIT STRATEGY

In the early part of this book it was described that there are three parallel stages in CBDRM: entry (input), processes (throughput), and exit (outputs /outcomes). In the context of a project, an exit strategy is required to ensure sustainability of CBDRM. The exit strategy of a CBDRM program aims at ensuring the sustainability of the program impacts and activities after the program has ended.

Rogers and Macias (2004: 8) believes that an exit strategy of a program is a special plan describing how the program intends to withdraw from an area of intervention while ensuring that achievement of development goals of the program is not jeopardized and that further progress towards these goals will continue. There are three basic approaches exit strategy. They are: 1) phase down, 2) phase over, and 3) phase out.

A phasing down is gradual reduction of program activities to prepare for program phase out and phase over. A phasing out involves the activities to withdraw or stop the resources of a program without turning it over to other institution or group for continued implementation. While a phasing over is the stage of transferring responsibilities of program activities and management to local institutions or individuals in the area of program implementation.[8]
The choice of program exit strategy of will depend on the program objectives and characteristics. If permanent and self-sustaining impact and changes of the program have been achieved and there is no need for further implementation to ensure sustainability of impacts, a phase out strategy is ideal. An example of this is programs that aim at changes in behaviour and programs in infrastructure construction. The phase down and phase over strategies require the participation of the community, individuals, or the government to ensure the impact of a program can be sustained.[9]

Referring to the above concept of exit strategies by Rogers, it is appropriate for CBDRM to use phasing down and phasing over strategies as exit strategy. The choice is based on the grounds that CBDRM activities have to be implemented continuously. Whether or not funding is available, as long as community has to live with hazards, CBDRM activities will have to continue. With the requirement for the involvement of community in CBDRM activities as the main actors that will lead to where the direction of the program goes, it is all the more necessary to have the exit strategy in which management of CBDRM interventions have to be transferred from the external stakeholders to the local community. This is also in line with the principle that external actors act as facilitators only in CBDRM activities.

6.5. CBDRM AUDIT: INPUT FROM HFA

Among the challenges in CBDRM is finding a facilitator with sound knowledge on community resilience as defined by the Hyogo Framework for Action (HFA) to facilitate participatory evaluation of CBDRM activities. Local resources and a language that is easily understood by community should be used in the process of assessing the progress of DRM implementation in each criteria guided by proxy questions. An example of this is the process in ranking the aspect of preparedness and protection of public facilities and prioritisation of gender perspective, economic development and social protection in DRM. Meanwhile, in the process of assessing the progress, a facilitator must understand that planning at the local level and voluntary spirit are major aspects that need to be maintained in DRM activities.

In Indonesia, the progress in the implementation of DRM has been assessed against HFA indicators through a *Views from the Frontline survey* by Yakkum Emergency Unit (YEU) that involved various actors from local government, NGOs, and community in 2009. This exercise is a good way of using the criteria in HFA indicators to assess the progress of Indonesia in DRM.

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[8] "Strategi Mengakhiri Program: Pengalaman Program Penanggulangan Kemiskinan di Indonesia" [The strategy for ending a program: experience from poverty reduction program in Indonesia], Sri Kusumastuti Rahayu dan Rizki Fillaili, Yayasan Semeru Newsletter.

[9] *Ibid*

Experience from a number of countries has indicated that societies and local community are information agents that can describe the level of the progress in DRM and CBDRM. In addition to that, extensive experience shows that community based audit can also be used in assessing such progress. This method has been initiated and used by the *Humanitarian Accountability Partnership* (HAP) in their evaluations of many post-disaster interventions in Asia and Africa.

COMMUNITY BASED DISASTER RISK MANAGEMENT (CBDRM)

GUIDELINES

BOOK

2

CBDRM TECHNIQUES AND TOOLS

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MASYARAKAT PENANGGULANGAN BENCANA INDONESIA
(INDONESIAN SOCIETY FOR DISASTER MANAGEMENT)
2011

1 FACILITATION

Effective disaster risk management requires the good will and the capacity of stakeholders involved in disaster risk management. In the absence of the active participation of stakeholders in finding the solutions to their own problems and their lack of involvement in the decision making processes on disaster risk management (DRM), DRM implementation will not be effective, can be misunderstood or even worse fail. Facilitation occurs at different levels (Figure 1.1), from the smallest level of groups to the engagement of many stakeholders. Those requirements will have a leverage on the importance of the efforts in creating an enabling environment for stakeholders to be able to

- Identify and find solutions to their own problems
- find solutions to conflicts
- make collective decisions
- make joint planning
- make a rapid evaluation of what has gone wrong
- manage their own selves

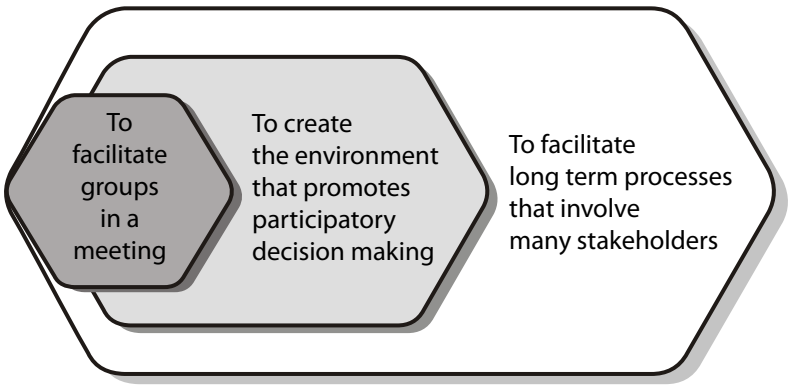


Figure 1.1. Level of facilitation

This is where facilitation process is important in the context of disaster risk management (DRM). Facilitation is necessary at a number of levels of DRM, including providing support to complex and longer term participatory processes that involve a whole range of stakeholders and facilitating one-off meeting with small groups (see Figure 1.1).

1.1. THE DEFINITION OF FACILITATION

Facilitation can be defined in a number of ways. It can refer to the ability to enable or facilitate or assist other people to be empowered on their own simply by being present, listening, and responding to the needs of the people, or by providing support to people, groups or organisations during the participation processes. The term "facilitating/guiding" has been used broadly by different stakeholders. It can mean a specific role in a group which is associated with specific values. These guidelines will define what it means by "facilitation" and identify the corresponding principles and responsibilities.

The English word "to facilitate/facilitation" traces back to the Latin word "facilis" which means "making it easier". The Oxford Dictionary defines the word as "to render easier, to promote, to help forward; to free from difficulties and obstacles". In a broader context, facilitation can be defined as the process of "making something easier" to achieve a certain goal. It can also mean "to serve and render it easier for training participants in participating in learning activities to achieve experience-based goals" while the person who "renders it easier" is called the "facilitator".

1.2. BASIC VALUES OF FACILITATION

- Democracy: Everyone has equal opportunity to take part in the process of learning and participants are free of prejudice.
  Everyone has equal opportunity to take part in learning processes where s/he participate as a prejudice-free participant. Meeting is prepared jointly by facilitators and participants. Meeting agenda is developed to meet participants need and flexible to changes. During the time that facilitators work with participants, no hierarchical organisation structure is enforced.
- Responsibility: Everyone is responsible for their own life, experience and behaviour, including responsibility for participants participating in a meeting or training. A facilitator is responsible for the plan already made, what activities to do, and how this will influence the content, participation and process of the meeting/training. A facilitator is also responsible for themselves and what happens to them, be sensitive to how and to what extent participants are willing and capable of taking responsibilities during a meeting or training. Through experience, participants can learn to take increased responsibility.
- Collaboration: Facilitators represent their own true values, feelings, concerns, and priorities in working together with all training participants and facilitators should build the atmosphere that will promote honesty and openness among participants. It also means that facilitators have to be honest to the participants and to themselves about their own capacity. They have to represent themselves fairly and not to go beyond their capacities in playing their role as facilitators.
- Equality of role: every facilitator has the role to contribute to participants and should be given equal opportunity to do so. Facilitators are aware that they can learn from participants. At the same time, each facilitator has the right to choose and make a decision whether or not to take part in the discussion of a particular topic in a training or meeting.

1.3. AIM OF FACILITATION

- To create a constructive and interactive meeting atmosphere. Good facilitation promotes the atmosphere that enables participants to have equal and active participation in discussion and problem solving and to express their opinions and aspirations freely, in respect of each other. Facilitation removes barriers or constraints and build informal atmosphere necessary for creating mutual understanding and agreement.
- To increase participation and productivity of consultation. Facilitation ensures a focus and well-structured meeting and consultation to help achieve the objectives of a meeting and to ensure optimal participation of stakeholders.

1.4. PRINCIPLES OF FACILITATION

- All participants have the legitimacy to express and negotiate their aspirations and interests. Facilitation needs to be based on a logical framework that refers to strategic decision making process to ensure focused discussion and achievement of real results of the meeting. For this purpose, a facilitator needs to ensure that discussion is on its track and that the meeting runs efficiently and effectively in terms of time management.
- A facilitator has the role to ensure that participatory processes and mechanism lead to the desirable outputs.
- A facilitator should ideally has facilitation knowledge, skills, and experience that can be applicable to the topic under discussion
- A facilitator needs to be able to identify the right technical tools (such as meeting room that meets the requirements, development of meeting agenda and activities, materials development, logistical issues, presentation tools such as flip chart, meta plan papers and others.

1.5. STEPS IN FACILITATION

- Clearly define the clear purpose and objectives of the meeting, what the main outputs and the necessary processes are in a terms of reference.
- Use visualisation techniques and effective moderation to organise opinions, initiatives, or ideas in a participatory manner.
- Attempt to listen to participant's contribution and make a conclusion or organise participants' opinions and ideas.
- Develop the logical structure of discussion to ensure focus of discussion and real output of the meeting.
- Build enjoyable and informal atmosphere to encourage free interactions among participants of the meeting.
- Try to make participants to speak and contribute to the discussion by providing appreciation and emotional support.
- Create a positive and constructive dialog.
- Consolidate the results of discussion to lead to agreement or consensus

- Create a conducive condition that will lead to the commitment for follow up and implementation of the outputs of the meeting. Participants need to be clearly aware of what the future follow up actions are. For that, a written agreement should be developed and signed by all participants. In addition, facilitators need to make sure that the names, addresses and contact details of participants are recorded to make it easier to implement follow up actions.

1.6. REQUIREMENTS TO BECOME A FACILITATOR

To be a facilitator, someone needs to be able to see the difference between a teacher and a facilitator, understand the basic principles of facilitation and know what should and should not be done.

A teacher or a trainer normally uses a conventional pedagogy approach that includes a one way communication on teaching. In presenting information or knowledge, a teacher tends not to use synthesis technique because they feel that they have more knowledge than the students and that students are just blank pages they can write on or empty glasses that they can fill. With such approach, a teacher tends to be more static while students tend to be more dynamic. A facilitator uses the approach of andragogy or adult learning that do not assume them to be more intelligent than the students, where two-way communications are involved in collecting information and knowledge from participants. The technique of synthesis is also used in this approach.
During a facilitation process, a facilitator has to treat participants as adults who have knowledge and experience in the course of their life. To do that, a facilitator should use clear and respectful language and way of speaking that are easily understood by the participants. Facilitator should let participants to create the dynamics of the discussion and to be the traffic control in the communication between facilitator and participants. A good facilitator must help build collective learning processes to ensure that both facilitator and participants gain more knowledge and skills. To be able to do this, a facilitator has to give as much and as equal attention as possible to all participants by making equal and regular eye contacts and show pleasant face. It is not recommended to stand with the back on the participants when giving explanations or to read presentation slides without any break.

In exercising their role, a facilitator should not:

- think that they are more knowledgeable than the participants
- regard themselves as a patron or a superior
- dominate conversation except when presenting new issues or assigning tasks
- maintain personal argument
- give comments that underestimate or belittle participants
- make abusive comments on participants' physical appearance or gesture
- make fun of the answers or presentations made by participants

Before getting into the actual facilitation exercise, a facilitator should:

- be physically and mentally ready
- establish facilitator team

- discuss with colleagues or members of facilitator team
- have good understanding of the workshop/seminar/training objective
- have good knowledge on types of workshop/seminar/training
- have good understanding of the situation and condition
- be familiar with the characters of the participants
- develop the syllabus and modules or facilitation plan
- make attendance sheet
- ensure balanced division of sessions
- prepare the required materials and tools
- make sufficient inspection of the equipment, slide projector, sound system, and room layout

Just before the facilitation, a facilitator should:

- be ready at the venue before participants arrive or 15 minutes ahead of schedule.
- ensure that all participants are present (and sit on their allocated seats)
- ensure that all participants have filled in the attendance sheet
- announce that the event is about to begin and if all participants are ready
- Greet and welcome participants

During the facilitation, a facilitator should:

- introduce himself/herself if it is the first time for them to be the facilitator for the event
- always remember what a facilitator should and should not do
- check the session objectives
- explain the topic of the sessions
- keep the time
- always say thank you

After the facilitation, a facilitator should:

- tidy up all the stationeries and equipment used to make it easier to continue to the next process
- compile and keep all the notes on the processes and results of the events
- take a brief break before going to the next session
- if possible take turn with other members of the facilitator team to avoid fatigue and also to avoid participants from getting bored.

2 PARTICIPATORY RESEARCH TOOLS

2.1. INTRODUCTION

Whether consciously or not, when working with communities, a number of social research tools are commonly used by the communities of CDBDRM practitioners in Indonesia. Any facilitator will be fully aware that CDBRM tools are in fact social research tools. The tools can be used in various ways. It can be a combination of tools or individual tool, depending on the planned CBDRM activities and goals. In most cases, when using the tools, some NGO workers and CBDRM practitioners would criticize the data provided by the government, for instance those provided by the National Bureau of Statistic (BPS) and the regional (*kabupaten*) governments without being able to provide their own data at the micro level. Such attitude is by and large not advisable.

Debate always evolves around whether researchers should use qualitative or quantitative approach. In this case, Kanbur Ed., (2001)[1] quoting Carvalho & White (1997), says that the quantitative approach to poverty measurement and analysis is defined here as one that typically uses random sample surveys and structured interviews to collect data – mainly, quantifiable data – and analyzes it using statistical techniques. By contrast, the qualitative approach is defined as one that typically uses purposive sampling and semi-structured or interactive interviews to collect data – mainly, data relating to people's judgments, attitudes, preferences, priorities, and/or perceptions about a subject, in this case disaster risk.

To be competent, a CBDRM facilitator must have a range of skills, which include a combination of skills in Rapid *Rural Appraisal* (RRA), *Participatory Rural Appraisal* (PRA), *Participatory Learning Action* (PLA), and a range of other basic tools specifically required for participatory disaster management. In most cases, however, junior CDBRM facilitators lack these skills or if they do have the skills, they are not capable of using them in disaster context. The figure below illustrates the links, methods and tools used in information collection and CBDRM analysis (see Boli et al., 2004, and ET Paripurno, 2006).

[1] See http://unstats.un.org/unsd/methods/poverty/QQZ.pdf [last accessed on 4 December 2011]

A number of new CBDRM tools have been created both intentionally and unintentionally in the context of CBDRM in Indonesia. The peer review approach used by Muhammadyah Disaster Management Center (MDMC) in Garut and Padang, Indonesia in their CBDRM programs, for instance, was created unintentionally. Disaster risk maps were created by elementary school children and revised by the youth and adults in the area, to be distributed later to households to raise new awareness of disaster risks among parents.

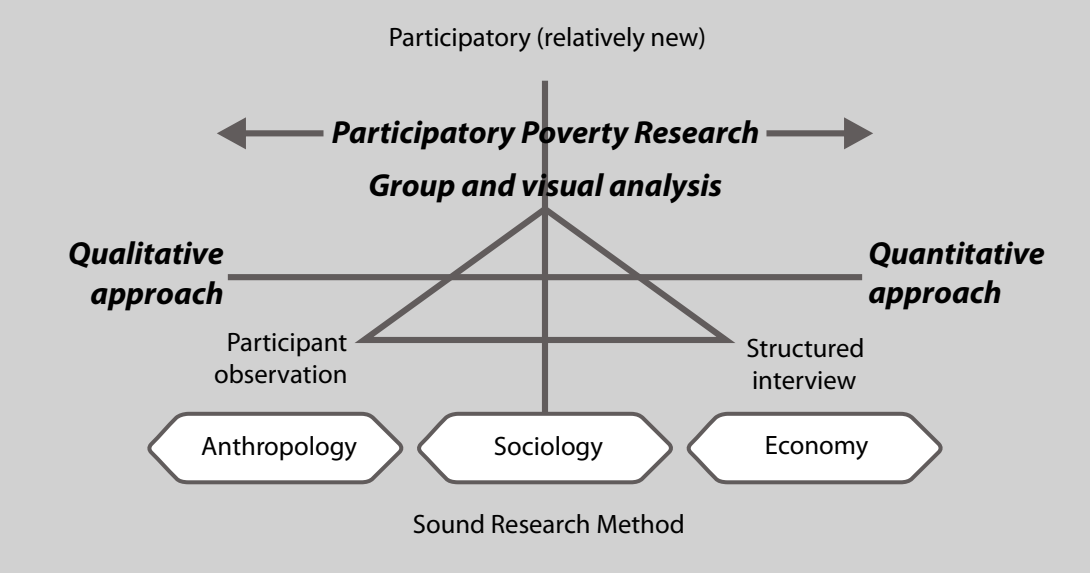


Figure 2.1. Dimension and Results of Qualitative-Quantitative Interactions. Jonathan during the FLMS-PMPB Workshop, 2004, processed from Kanbur (ed.), 2001

CBDRM programs that have tried to mainstream the right of a child into CBDRM through games and tools such as mind mapping show give evidence that children undoubtedly have significant roles in CBDRM. For example, high school children are more aware of climate change issues because they learn Geography at school. Tools such as mind mapping can give the illustration of the network of disaster risks, cause-effect analysis and help to fill the gaps in the existing PRA/RRA tools used for mapping risks, hazards, and vulnerabilities in the context of disaster management.

RRA – Relaxed rural appraisal	PRA/PLA – Participatory learning and action	CBDRM – Participatory disaster risk management
• Secondary data (collect and review) • Identifying village level "experts" • Semi-structured interview (written checklist which is open for new/unexpected questions)	• Resource mapping • Village history • Wealth ranking (at household level) • Livelihood analysis • Trend analysis • Profile of female and male daily activities	• Combination of PRA and RRA • Hazard map and hazard calendar • Vulnerability/capacity map • Combination of vulnerability, capacity, and hazard • Vulnerability development map • Pentagon Asset map

• Participatory observation • Sequence of analysis: focus to specific groups/specialists • Case study Transect	• Seasonal calendar • Venn Diagram (institutional map) • Cause-effect map • Ranking and scoring • Mobility map • Problem tree	• Inventory of coping capacities • Risk perception index (identification and ranking) • most significant change / MSC (story based evaluation) • Oral history of disaster • Focus group discussion • PAR matrix • Mind mapping • HCVA • Institutional game • Household survey • CBDRM peer review at the village level

Source: modified from Lassa, Nakmofa and Ramli, 2007

2.2. MAPPING

A map is commonly understood as a projection that shows the biophysical conditions of the earth with more emphasis on the projection of the length and width dimension of an area. A map is a widely known source of information, including:

- topographic map (displaying the surface of an area),
- geological map (showing the components and types of earth rock layers),
- cadastral map (showing the size and status of ownership of land parcels),
- hydrological map (showing the water features of an area)

Mapping is one of the tools used in participatory assessment to depict and assess the conditions of an area and the environment in length and width dimension. Mapping is done by plotting a range of information into available media. A map can depict the state of public resources at the village level, and the social, economic and other states of the village community in details according to the chosen themes. A map can also provide an overview of the problems of expectations of the society, which is in accordance with the scope and themes that will be discussed. A map is key in provision of information for community development and participatory mapping. In disaster management, a map can provide partial description of a certain area, the vulnerability of certain households or communities to certain hazards, the locations of resources that can be used for disaster preparedness, mitigation or emergency response. A map summarises the spatial locations of main points, helps communication and promotes discussion on significant issues within the community. A map can present a range of topics including where assets are at risk to hazards and where community resources are available.

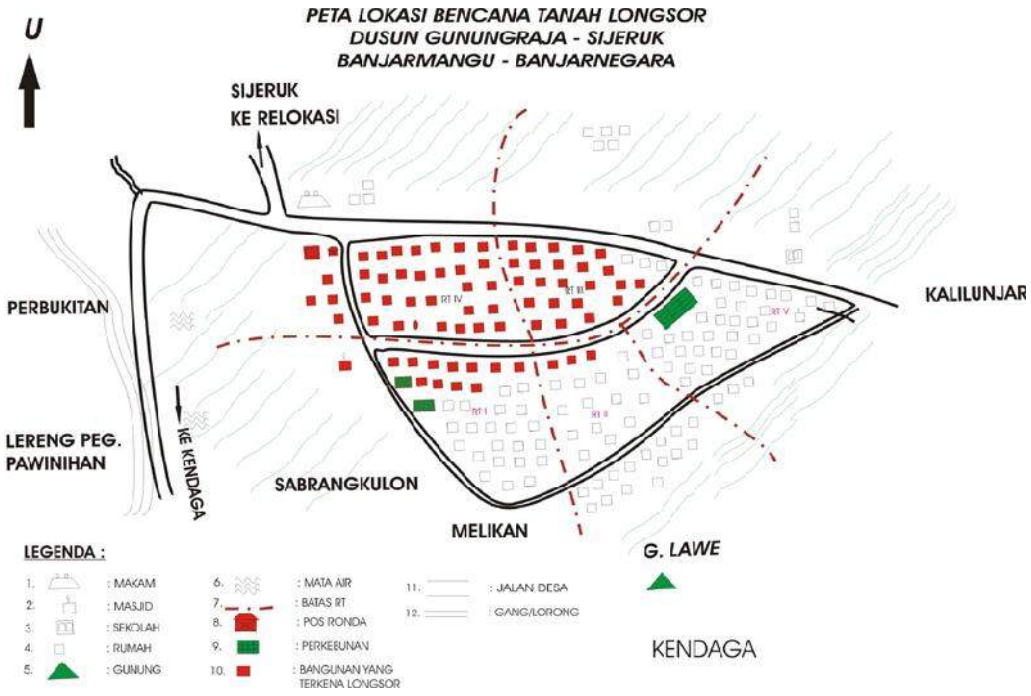


Figure 2.2. Participatory Map of the Landslide area in Sijeruk of Banjarnegara, Indonesia
(Source: Bambang Sasongko, PRA Report on Sijeruk, 2008)

All these information can be presented using a map and a model, both on ground and on paper. Mapping on ground can be done easily and quickly by many people and corrections can be easily made. Villagers prefer this type, especially the elderly, women, and children. Mapping on ground is simple because it only needs to be drawn on the ground using a stick and significant points can be marked using seeds, leaves or branches, for instance when drawing a village. The disadvantage is that for documentation, a paper map will have to be redrawn from the mapping on ground.

Mapping on paper has its advantages, such as the result can be immediately used or kept by the villagers for documentation and community members with higher level of education and the young people can be easily involved. The disadvantages include the limited space on the paper that can make it difficult to draw a more detailed description, lack of participation of the community due the inability to engage more people during paper mapping in contrast with ground mapping.

A modelling is an advancement of mapping on ground in the sense that it is three dimensional and shows greater details on the existing features. Arguably, modelling is a way of “making” the miniature of a real village. In this sense, modeling is not commonly used as it is called in mapping. The advantages of modeling include the better participation of people in contrast with mapping on ground. However, modeling has its disadvantages that it needs more preparation and materials (mud, charcoal, ash, dirt, sand, branches, grasses and anything that can be used in the village replica) and the information presented cannot be transferred. To do that the information has to be copied on paper or photographed. In addition, it takes longer to carry out a modelling.

In mapping of management of resources, the type of resources will be the main focus of the mapping, for instance mapping of ecological resources, access to economy, water resources, and many more. Different groups (for instance by gender or age group) can lead to different maps with of the same themes and locations. The resulting maps can represent the problems identified and discussed by the groups and in the end can be compiled in whole or in parts according to need.

In the context of disaster management, mapping of a village aims at facilitating community members to give attention to existing resources and hazards and to reassess the village capacity and vulnerability. Community members and the wider society can benefit from mapping and modelling. Mapping is community's effort to make a detailed assessment of their own environment and "themselves". The benefits include:

- community members can make critical identification of the locations, magnitude, and distribution of capacity, vulnerability, resources, and hazards.
- Community members can establish a linkage between different resources and hazards whose spatial positions have been identified. The result is the mapping of the spatial information on the level of capacity and vulnerability of each zone, for instance safe/vulnerable zone to landslides, safe/vulnerable zone to flood, safe/vulnerable zone to pyroclastic flow, safe/vulnerable zone to pollution of hazardous waste, alternative evacuation route.
- To the common people, mapping is useful to find the portrayal of an area, including its events, problems, constraints, sources of hazards and available resources.
- Mapping with community members can build good participation because it is relatively easy and fun to do.
- The result of mapping can usually be used in information collection using other participatory assessment methods, such as transect, interview, and ranking.
- Modelling and mapping can be developed further to collect information on intermittent ecological changes, which are signs of increased intensity of hazard, in the mapped area. The changes can be presented in one map or more.

Modelling and mapping are developed based on the imagination of community members of the changes evolving in, for instance, the next 20 years. The imagination can be the indirect reflection of the aspiration of the community regarding their village, both in relation to development programs and problem solving plans, for instance the planned locations for the sediment-retaining dam, first aid posts, bunkers, and alternative route. Imagination can also be traced back to, for instance, 10 years before. In the context of disaster management, imagination can be built and simulated on slow onset and rapid onset disasters.

Imagination can be linked with the occurring causes and effects, for instance on what will happen when a forest is totally clear-felled. What may happen is perhaps annually recurring flood and drought. Imagination on more specific issues can also take place, for instance on what can happen in the next 20 years in a particular coastal area which is totally converted into brackish water fish ponds. And there are a whole range of possibilities for imagination.

2.3. HISTORICAL FLOW

Historical flow is a multi purpose tool used for sequencing priorities. This tool is more accurate than, for instance, ranking used in assessing the links between village institutions and is used for arranging a whole array of information into a structured sequence by making comparisons to allow village community members to be able to make assessment and priorities. This technique is therefore arguably the one used to analyse the information gathered.

Communities can benefit from the use of this method to trace back and understand local, regional, national as well as international events that have influenced and made significant changes to their lives. Communities can collectively seek to identify the causal relationship of what have happened around them and assess the root causes of changes. This method altogether strengthens the awareness of the communities of their existence and promotes the younger generation's respect of what their predecessors have done.

To the rest of the society, this method establishes awareness of particular communities, their histories and their perspective of changes. The discussion involved in this method is a process of learning from experience to allow people to be able to build from good causes and to avoid the bad ones. Hence, any disaster management program should take into account the use of historical flow.

In many cases, information bias can emerge as a result of the public's excessive reaction to an event that it is difficult to identify a real event with a legend or myth. The public's objectiveness can be very subjective when it involves their personal perspectives. Clear limitation of when the event started is relatively effective to avoid the bias and instead of personal issues and perspectives, events are discussed. In some cases and some communities with strong communal ties, bad events are often seen as a disgrace and are hidden from the public. In other cases, the role of the local government officials can be too strong that community members are too afraid to say anything about events. In such instances, it is difficult for community members to decide when events actually took place and therefore a facilitator is necessary to probe into the community members' memory of what have happened and when an event actually happened between two other events.

Table 2.1. The Food History of Ngemplak sub-Village of Parangtritis, Indonesia (Source: KAPPALA - PRA of Ngemplak sub-village, 2003)

Period	Event
1942	The Japanese occupation period. Farmers with spacious rice field holdings usually kept harvest for themselves. The harvest was only enough for consumption for 3-6 months. For the rest of the year, they worked odd jobs to make a living and were paid with rice. For half day labour, a farmer was paid 2 coconut shell cups of rice (equivalent to around 2/3 kg), which was only enough for one meal. In the absence of rice, the people will eat tiwul - a local

	carbohydrate dish made from cassava- arrowroot, cassava, corn, and the stem of a banana tree. They normally had two big meals in a day, in the morning and in the evening.
1943	A big flood occurred but it did not affect the agriculture because the farmers grew local flood-resistant rice variety. Barter was common because people did not have money for exchange. The government distributed new currency and each household was provided with 4 ketips or 40 cents. One ketip can buy a coconut shell cup of rice.

2.4. SEASONAL CALENDAR

The life of the rural communities is very strongly influenced by seasons. Seasonal calendar is one of the techniques used in collecting information related to routines (cycles) within a "fixed" period of time. Seasonal calendar is used in participatory assessment to help make qualitative analysis of collected information based on that fixed period of time, for instance throughout the dry season-rainy season (which does not necessarily cover the whole 12 months).

In resource mapping, seasonal calendar can be associated with changes of the ecological capacity of an area from time to time in the use of resources, for instance certain bird cycle, certain cycle of medicinal plant, water cycle, and bamboo cycle. It is best to relate the components identified in the seasonal calendar with the components of resources that have been mapped during the transect.

This technique can also be used in disaster management to compare the cycles of activities in the communities with disaster events that commonly occur. Significant information related to natural disaster management can be digged out, including:

- the state of the climate, rainfall, water availability (flood arrival, landslide risk, draught risk)
- harvest (food availability, food insecurity, food scarcity),
- labour (insufficient farm labour, labour migration to the urban areas),
- pest attack (food availability)
- disease outbreak
- availability of cattle feed
- agriculture/animal husbandry product variations
- income

Information can be collected from groups of community members. Mixed groups can be formed for community members from different areas. This difference can be explained using seasonal calendar and will enrich the information collected. There should be community members who can explain about the information collected.

Community members benefit from seasonal calendar in assessing the patterns of time used in community activities during the whole season. From the disaster management perspective, an assessment can be made of the patterns of community vulnerability and capacity, resource potential and the risks that community face throughout the year.

Seasonal calendar can be used in trying to bring a whole range of new ideas in the effort to increase community's capacity and reduce their vulnerability, especially in responding to critical time in disaster (such as flood, prolonged drought). From the assessment, a strategy can be developed on the management of resources and disaster management during the whole season. This can as well be used in designing appropriate new programs for resource management and disaster management.

It is not always necessary to use Gregorian calendar when using seasonal calendar. Instead, conventional calendar can also be used, for instance month one for January, month two for February and so on. Other calendars that can be used include the Islamic calendar (Shawwāl, Dhū al-Ḥijja, and so on). Other uncommon calendar system applicable in other regions can also be used for instance the time keeping used by the Javanese called *pranotomongso* (for instance *wuku,* and *mongso*), that is based on measurement of the length of the sun's shadow at noon.

2.5. INTERVIEW

Interview is a method of collecting information from different perspectives of the community, other local stakeholders, and external experts on events and trends that lead to stress, differential vulnerability, and effectiveness of adaptive behaviour. Such informal discussion can be done by using a checklist of open questions to gather general as well as specific information, to analyse problems and opportunities, to make plans, etc. Types of interview include group interview, focus group discussion, individual interview, and interview with key informants.

Interview is carried out in a semi-structured manner. This method is one of the most common used by scientists. Semi-structured interview can be held with individuals, households as well as groups. Individual interview can be carried out with key informant(s) or selected individual. A key informant is someone who will be interviewed because he or she has more knowledge, skills and experience than other community members and will speak based on what he or she knows. A selected individual is a “model” who is considered a “representative” profile of a certain community group. Household interview is held to assess the aspects of community life at the household level. Group interview can be referred to as “collective response to questions”. Group discussion will be held to reach a consensus in responding to predetermined issues and questions. Local community members can also be trained as interviewers while at the same time also become members of the group interviewees.

For the local community, an interview is a process of learning from an outsider who comes to visit their homes. For some rural people – maybe also people in the city – a visit to one's house is seen as a token of appreciation and also a media for information sharing. For the outsider, house visit can also be used to carry out data triangulation, especially to capture the “trivial” things about the aspects of farmers' life at the household level that might have been difficult to probe during group discussion/meeting.

An interview guide has to be developed for a semi-structured interview. Pick up lines need also be thought about to open up main interview. The checklist of questions needs to be developed according to the theme. In the context of natural disaster management, for instance, a disaster management checklist of questions has to be prepared to include topics to be discussed that can probe into and strengthen the concept of disaster management applicable in the practices of resource management, household issues, perspective of problems at the village level, and recommended solutions. Subject key informants/selected individual informant, households and groups need to be prepared. The selection is based on the theme and objective of the interview and takes into account age, gender, and background diversity.

There are no special tips for doing an interview but at least a relaxed and trustful atmosphere must be built. Questions are made in such away that interviewees do not feel forced to answer. Interrogation-style or journalist-style of interview should be avoided by all means. The following are recommended type of questions:

- Descriptive question to probe into information on details of activities, for example: "What happened after the ground water in this area was over- exploited?"
- Structural question to confirm how the informant understands the circumstances and organises his/her knowledge, for instance "The pyroclastic flow did not seem to cause destruction to all houses in the area. Why is that possible?"
- Contrast question to seek comparative answer for two completely different issues, for instance: "What do you find different between the way people manage the forest now with the way it was ten years ago?"
- Problem question to provide the opportunity to informant on how to analyse problems and reflect on specific cases in specific circumstances, for instance "Why do you think flash flood has recurred in this area during the past three years? What do you think the solution is?"

This approach has the following advantages:

- it can be used to give detail explanation
- it can be used to make a recheck easily
- it can bring passively participating community members to express their opinion during group discussion
- it can limit the domination of participating individual(s) or group (s) during discussion

On the other hand, the method is not favourable because it takes more time.

Interview can lead to different results with different interviewer. Interviewer's biased guidance, for instance, can lead the subject of interview to give misleading answer that the interviewer may have desired or subjective opinion that represents a particular group of people.

Different communities will show different capacities. The same question asked to children, women, men, the elderly, the lowly educated and other segments of the society can lead to different answers. Someone's knowledge is closely related with age, gender, division of labour in a group or neighbourhood, economic status, the environment, history, and experience.

2.6. INCOME ANALYSIS

When associated with the level of community's capacity and vulnerability to disasters, livelihood and level of income are significant part of disaster management. It means that income can directly and indirectly contribute to community's capacity and vulnerability at many different levels. Community living on the slope of Merapi volcano of Indonesia who raises cattle, for instance, is exposed to direct vulnerability to pyroclastic flow during the dry season because they have to forage grasses way up to the volcano peak due to scarcity on the lower ground. Farmers living on peat land areas in Rawa Pulo of Jember district, East Java, Indonesia, on the other hand, are indirectly prone to constriction of peat land due to changes in rice cultivation pattern from local variety to common variety of rice.

Income analysis is one of the techniques used for collecting information on the types of community income generating activities within a fixed period of time. In participatory assessment, it is used to make quantitative and qualitative assessment of the levels of vulnerability and capacity of each income generating activity. Information is collected from community groups. Mixed groups can be established for community members from different areas. The variety of origins of community members will be explained in the analysis and will enrich the information collected. There should be someone in the community who can explain the information collected.


KALENDER PENGHASILAN MASYARAKAT

DUSUN : COT AMPLAM KECAMATAN
DESA : SENGKO MULAT
KAB. : ACEH BESAR.

NO.	JENIS PENGHASILAN	BULAN 1	2	3	4	5	6	7	8	9	10	11	12	KETERANGAN
1.	KESEHATAN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.5 %
2.	TAMBAK IKAN				✓				✓				✓	4 %
3.	TERNAK KAMBING	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9 %
4.	TERNAK KERBAU	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9 %
5.	TERNAK SAPI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9 %
6.	TERNAK BEBEK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9 %
7.	TERNAK AYAM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	9 %
8.	PETANI JAGUNG				✓									9 %
9.	-"- CABAI				✓		✓	✓						9 %
10.	-"- DURIAN						✓	✓	✓					9 %
11.	-"- MANGGA				✓									9 %
12.	NELAYAN	✓	✓								✓	✓	✓	7.5 %
13.	BENGKEL													2 %
														100 %

Figure 2.3. Calendar of community income
(Source: Paripurno, CBDRM for Community Action Plan, 2007)

Income analysis can be linked with the mapping of changes of capacity of an area and the pattern of community's coping mechanism from time to time in relation to use of resources, for instance the mapping of the cycle of certain bird species, certain medicinal plant cycle, water cycle, flood cycle, tidal cycle, bamboo cycle, and many more. It is best to relate the components identified in the income analysis with the components of resources that have been mapped during transect.

This technique can also be used in disaster management to analyse risk and benefit of different community income generating. The result can be used by community members to select activities that will allow them to get good income with minimum risk. Community members can also benefit from the income analysis to raise new ideas to improve their capacity and reduce vulnerability, especially in responding to critical time in disaster (such as flood, prolonged drought).

From the result of the income analysis, the best strategy for resource management as well as disaster management throughout the seasons can be developed. The result can also be used in designing appropriate new programs for resource management and disaster management.

2.7. GARDEN SKETCH

Garden sketching is used in participatory assessment to provide clear description of community activities in managing their yard/garden. Garden sketches of different locations can show the different sizes of land, plant varieties, different cropping patterns and management. The decision on garden sketch made by community members is a general reflection and description of the level of community wellbeing.

In the context of disaster management, transect/village observation is conducted to facilitate community members to re-identify resources and hazards at household level in more details and reassess capacity and vulnerability.

People can make indirect use of garden sketch in understanding the trends of local community in managing resources. To some households, garden is their live food stock. Fruit and vegetables crops are normally grown on such garden and can meet their need for daily food consumption. Garden sketch can also portray community food security and resilience, as reflected from their use of the garden, for instance:

- alternative food crops (for instance cassava, sweet potato, corn)
- vegetables (such as cassava, sweet potato, papaya, jackfruit, hummingbird tree, Indian fleabane)
- fruit crops (such as jackfruit, guava, papaya)
- medicinal plants and spices (such as ginger, galangal, turmeric, great morinda)

Community resilience can also be identified from the way they divide spaces in the house, for instance:

- bedroom that is also intended as a bunker, safe zone, room for expecting women and the elderly.
- *Bale-bale* or bench for evacuation of expecting women and the elderly

- Bath tub for protection from pyroclastic flow
- Under a table/bench/bed for protection earthquake
- Attic, rice mortar for protection from flood.

For community members, garden sketching is a process of sharing experience and knowledge with others and also a self-awareness raising effort. Farmers also have the opportunity to assess the "structure" of their garden to give greater benefit.

2.8. HOUSEHOLD ACTIVITY

Household activity is a technique used in assessing the time utilization by community for daily routines. It is used to get the patterns of activities between men, women, and children within a household or community group. Assessment of daily routines is related with the natural changes of the level of roles and position of individuals to access resources with regard to their capacity and vulnerability to disaster. Close attention should be given to the patterns of dependency and imbalance with regard to access to resources, especially in relation to the capacity of each individual household.

This technique combines data from interview, mapping, and activities and can be used in assessing the capacity and vulnerability of members of household within a specific space and period. In the context of disaster management cycle, capacity of members of household can be mapped if there are details of the daily routines of members of household.

Discussion on household activities can raise community's awareness that they are their own actors in the daily cycle of disaster management. The discussion will raise ideas to enhance capacity and reduce vulnerability by changing the allocations of time for daily routines.

Outsiders can benefit from the approach as they can see how community manages their time for daily routines. Each individual community has their own typical pattern of time management. The time management of the community of traders will be different from the time management of fisherfolks and farmers, for instance. Time management is essential in calculating availability of time for programme operation. Changes of allocation of time can always be possible. Therefore, when necessary, comparisons can be made between community's daily activities a couple of years before and their daily routines now, and important changes can be identified.

2.9. MATRIX RANKING

Matrix ranking is a technique used to sequence priorities. It is more precise than the technique used in ranking the relations among village institutions. Matrix ranking is created to make comparisons of the whole range of information in a structural way to enable community members to assess the information and make priorities. It is a basically a method of analyzing collected information.

Matrix ranking is used to help community to choose the most feasible activity that suits their environment, capacity and vulnerability. Ranking is done after the criteria for ranking is agreed. Prioritisation can be made on the basis of wealth, level of profit, level of need, level of productivity, level of vulnerability, land suitability, land capacity, reason for discomfort, early information provision and the possible links between problems. Priorities can change over time, depending on the need and target of communities. Therefore, it is best to leave community members to choose their own priorities.

In the context of disaster management, variation of matrix ranking can be done by identifying the links between the level of vulnerability and level of capacity of within the border of community areas (based on the types of land, slope, and locations to the river). Matrix ranking can also be made with additional notes required on possible solutions to identified problems.

This tool is best used in deciding or making a choice. A number of assessment activities involved in the use of this tool includes:

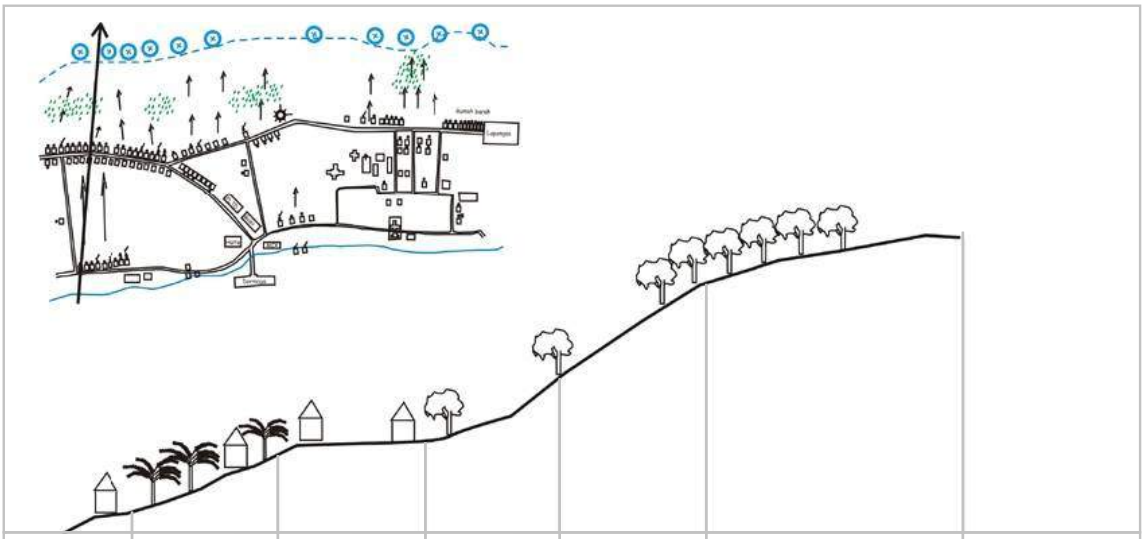
- Selection of applied technology, for instance in deciding whether a dam will be constructed of bamboo, timber, concrete, soil or rock; whether a bunker will be made vertical or lateral and made of board, timber, concrete or bamboo.
- Prioritising over the main problems that are going to be solved: health care, infrastructure, or settlement.
- Prioritising over/ranking of income
- Ranking by comparing the significance of each choices against each other, which will eventually give the same result

Cause and effect analysis using tree diagram will facilitate better exercise of ranking.

2.10. TRANSECT

Literally, transect means a cross section or the profile of the earth surface. In participatory assessment, a transect walk is an observatory walk to make the profile of any given area or path. A transect is conducted by walking along or cutting across an agreed or defined area that is considered to have the information needed. In the context of disaster management, transect is known to be a key and representative tool for participatory assessment. The tool does not only provide information on the conditions of a given area from length and height dimension but also other information that will add weight to the existing map/modelling. The result of the transect wall is presented in a diagram for further discussion.

A transect can be conducted by traversing through a village in a fairly straight path, usually starting from an upper reach and moving downwards towards the village and back to the upper reach. In this way morphology expression and the profile of the village will be very visible. Transect can also be done longitudinally for instance along river path, road, village/forest borders, lahar flow, new road, and footpath. Transect can also be conducted in circle, back and forth, or in zigzag. In an activity, transect can be divided into a number of different groups who traverse along different path.



◆Beach house ◆Boat parking dock ◆Pier	◆Settlement ◆Coconut plantation ◆Boat repair	◆Settlement ◆Road ◆Public facilities	◆Garden ◆Yard	◆Forest ◆Garden ◆Evacuation points	Forest	Land use
0-2 metres	2-8 metres	8-10 metres	10-15 metres	15-40 metres	40-65 metres	Estimated altitude above sea level
◆	◆Water source ◆Coconut ◆Firewood	◆Water source	◆Firewood ◆Vegetables ◆Sweet potato ◆Water source	◆Wood ◆Betel nut ◆Game animals	◆Wood ◆Wild fruits from the forest ◆Game animals	Resources
Earthquake Tsunami	Earthquake Tsunami	Earthquake Tsunami	Earthquake Tsunami	Earthquake	Earthquake	Hazards

Figure 2.4. Transect walk of Marsinam village of West Papua, Indonesia (Source: Sigit Purwanto, 2009)

Transect can be conducted by putting attention on key problems/themes, which means that information collection will be emphasized on significant issues related to the problems/themes. Therefore, in addition to general transect of village resources, other specific transects can also be conducted such as transect of natural resources, ecological transect, transect to observe the impact of disasters and so on. Essentially, this method explains the meaning and components met along the way to be associated with the selected themes. For open theme, the explanation will be very elaborate and details.

In disaster management perspective, village transect/observatory walk in general is intended to facilitate community members to identify again existing resources and hazards in more details and reassess the village capacity and vulnerability. For this purpose, during the transect the following issues are also identified and discussed:

- Problems on resources: crop pest and diseases, soil fertility decline, water volume decline during the dry season, height of tidal wave, level of erosion, deforestation, and many more.
- Village existing potentials that have not been managed properly to improve capacity and reduce vulnerability: medicinal plant, morphological bunker, water management system.
- Perception and expectation of community members in relation to management of the area

To some community members, a transect can as well serve as the forum for confiding in on a number of issues to outsiders that will help them identify their own problems in a more direct manner. In disaster management, a transect that is conducted as part of a disaster management planning can as well serve as the effort to revitalize community spirit. Transect can help outsiders or the participatory assessment team to make direct observation of the condition on the ground as well as to complement information collected. Local community will explain geographical and social aspects during the observatory walk. Discussion will take place during the walk, especially on significant locations. The discussion will be sharpened during the development of the result of transect.

Transect can be used in programme planning through direct observation during need and potential assessment. It can also be used in programme evaluation to assess changes that have happened.

Transect can be developed to collect information on ecological change – a sign of hazard increased intensity – over time. The changes can be represented in a number of diagrams. Transect can be built upon the imagination of local community members of the changes happening during, for instance, the next 20 years. The imagination will provide indirect reflection of community members aspiration on development programs and problem solving plans related to their village. For disaster prone areas this could mean the planning for the locations of sediment retaining dam, first aid posts, bunker, and alternative routes for evacuation. Imagination can also trace back, for instance, to the past 10 years. Imagination and simulation can also be built on slow onset and rapid onset disaster. Such exercise can help to relate the causes and effects of events. The exercise can imagine and simulate, for instance, what happens when forest is clear felled; imagination built may see resulting annual flood and draught. More specific imagination can also be built on many other issues, for instance on what may happen in the next 20 years to a coastal area that it is entirely converted into brackish fish ponds.

When exercising transect, the following should be noted:

- Transect team should ask questions and discuss among members of the team (especially community members) on the things observed. It is not wise to interrupt what community members have to say or to show doubt on information provided by community members. It is recommended to allocate sufficient time to make the observatory walk and to make discussion during and after the walk. It is not recommended to rush things.
- Information provided by community members, both members of the team or those met during the walk, especially related to the main information collected, for instance on problems and suggested solutions.
- If camera/video camera is available, it is good to make pictures or record objects that are relevant to the main themes to motivate discussion with community members in the future.
- In some cases, transect has to be conducted for a long time during noon and when the day is clear. Due to community members' activities, it may not be possible to conduct a transect walk during the day. If that is the case, transect can be conducted indoors. Similarly, imaginary mapping exercise can be done. Although it is possible, less information will be collected compared with actual transect outdoor.

2.11. SUSTAINABLE LIVELIHOOD ANALYSIS

Sustainable Livelihood Framework is also used to understand many aspects of rural life, with the following focus: (1) livelihood patterns and strategies at individual, household and rural community level, and changes of livelihood over time; (2) look in depth and observe the characteristics and constraints faced by and discrimination against vulnerable/poor/marginalised groups; (3) mapping of the institutional context of rural life and livelihood with equal emphasis on mapping of favourable actors as well as unfavourable ones. (4) community natural resources and their interactions with livelihood strategies, and access of the poor/marginalized to available resources.

The definition of disaster risk management (DRM) in Sustainable Livelihood paradigm shows that disaster is seen as "events" as well as "the process" of the loss of or damage to livelihood. DRM is further understood as the systematic and sustainable efforts in reducing or preventing the risk of the loss of livelihood (human, social, water/soil/air, physical/infrastructure, financial) assets with the emphasis on the time before disaster occurs.

Figure 2.5 gives an illustration of how a given household or community unit depends their life and livelihood on the different assets that they have or assets that materially and immaterially embedded on the unit. They include social, human, economic and financial, natural resource and environmental, and physical/infrastructure capitals. However, access to the assets are often influenced by social relations (such as gender, economic class, age, ethnicity, religion/race), institutional influence (rules, customary law, habit, the market), and organization (such as NGO/INGO, government officials and the government in a broader sense, religious institutions such as the mosque and church, and religious institutions in the broader sense) that make them vulnerable to shocks such as natural disaster and war/conflict, or to trends such as economic crisis, fluctuating price, population growth and population problems, as well as technology advancement and macro policy.

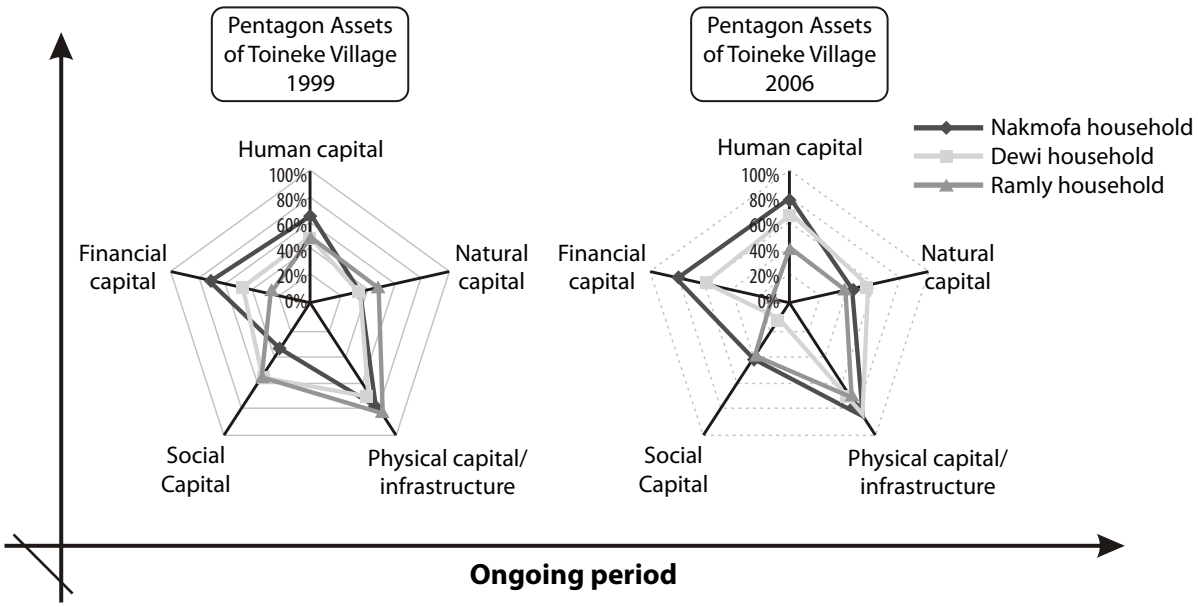


Figure 2.5. Illustration of the trend in changes of assets in the last 5 years in Toineke Village of South Central Timor district, Indonesia (PMPB 2007 in Saragih, Lassa and Ramli, 2007)— modified for pre- and post-disaster context.

Livelihood platform	Structure and processes	Vulnerability context	Livelihood strategy	Basis of livelihood activities	Outcomes
	Social relation: Gender Class Age Ethnicity/Race	**Vulnerability context** Trends: Population Migration Technological change Price fluctuation Makro policy National & global economic trends		**Natural resource based** Agriculture Cash crops Animal husbandry Non farm natural resources Forest/marine products collection	**Livelihood security** Stable level of income Level of risk Seasonal
Assets: Social capital Human capital Financial capital Natural capital Physical capital	**Institutional:** Rules & customary law Habits Market Land tenure	**Vulnerability context** Shocks Flood, drought, earthquake, tsunami, pest, diseases, epidemy hazards Conflict/war	**Livelihood strategy**	**Non-natural resource based** Trade Services Manufacture Remittances Transfers	**Natural/ecological sustainability** Soil quality Land quality Water Grassland Forest Biodiversity
	Organisational: Association NGOs Administrator Government Mosque/church				

Figure 2.6. Checklist of Assessment on Community Livelihood System
Source: Ellis (2000) in Saragih, Lassa and Ramli (2007)

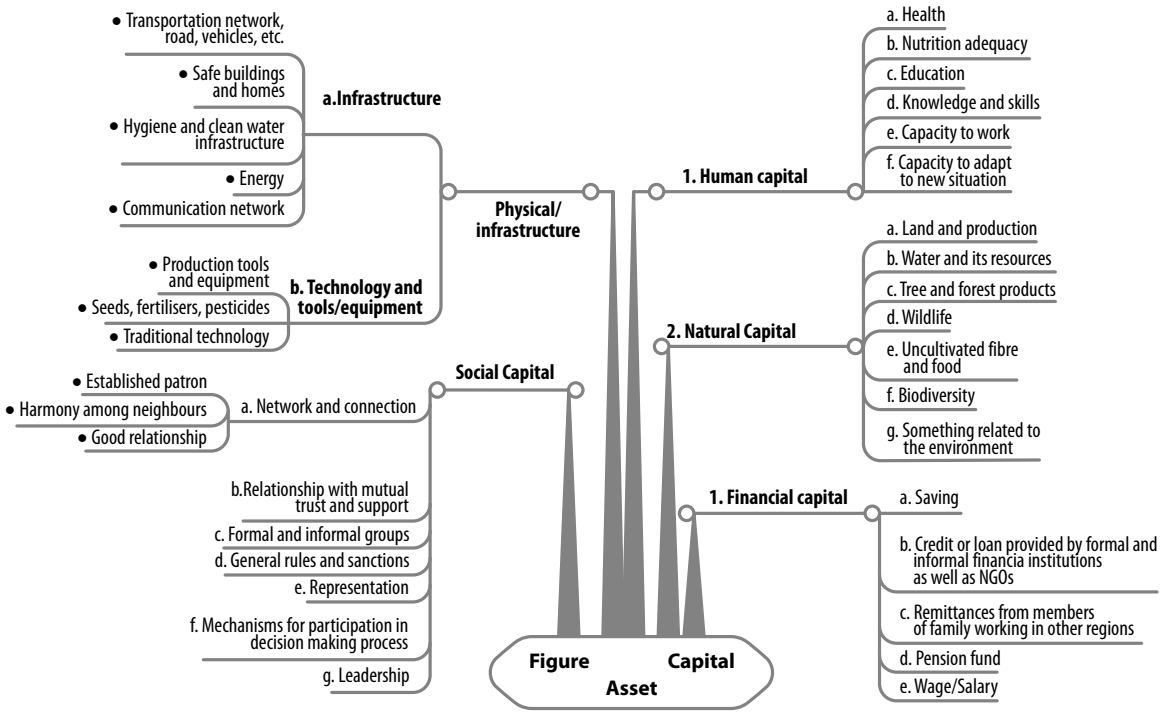


Figure 2.7. Capital Assets that are potentially lost or increased before, during, and after a disaster (Figure quoted from Saragih, Lassa and Ramli, 2007).

Against this context, livelihood strategies at household or community level can consist of a number of activities that can fall into two categories: natural resources-based and non-natural resource-based livelihood activities. Including in natural resource-based activities are agriculture, animal husbandry or cattle raising, fishery, commodity trade, non-timber forest product trade, and trade of other crops. Non-natural resource based activities are common trade, services, industry and manufacture, aid and remittance. Both categories of activities will help to achieve livelihood security such as stable income, reduced risk and sustainable ecology in terms of the quality of soil, forest, water, and sustainable biodiversity.

2.12. STAKEHOLDER ANALYSIS

Stakeholder analysis is a method first used in management science to identify or serve the interests of the various stakeholders in the business sector. This analysis is rooted in the study of political economy and studies related to cost-benefit analysis and environmental economy, also the theories of decision making, multi-criteria analysis, environmental impact asset, PRA and Conflict resolution (Grimble dan Wellard, 1996; ADPC 2003 in Lassa, Nakmofa and Ramli, 2007).

Stakeholder analysis is also used in the procedure for identifying and analyzing key groups/individuals that have interests in a project, issues or system. This method can help identify and analyse stakeholders who have been positively and adversely influenced by external intervention, project, policy, change and/or disaster. This method is often used in PRA/RRA.

In the context of CBDRM, stakeholer/actor analysis is a strategy to identify key actors/stakehodlers concerned in disaster management at the village or community level. Mapping of key stakholders and other actors who have willingness to, can, have the capacity to be or should be involved in community based disaster risk management should be conducted by stakeholers at risk. These stakeholders will also provide strategic recommendations and a whole range of activities that will promote the participation of key stakeholers.

Table 2.2. CBDRM Stakeholder Mapping in Village X

Stakeholders who can support CBRDRM	
Stakeholders who might oppose CBDRM	
The status of the relationship with local community	
Interest and expectation of each stakeholder	
Power relations	
Role in CBDRM	
Necessary CBDRM actions	

One of the PRA tools that is often used in relating institutional factors with the community is Venn Diagram (not discussed in this book). However, the illustration above is a simple tool that can be used at the community level to map institutions with the horizontal axis describing the more adversely affecting power to the right, the centre point as the neutral point, while horizontally approaching zero is the institutions that give advantageous influence to village community. The vertical axis represents level of power. For instance, a head (*keucik*) of an imaginary village in Aceh

has a great power while at the same time together with other organizations such as the militia can become the inhibiting factor to village development. Other imaginary example can include a widow who is in the favourable quadrant for the low level of power as part of the poor.

In another real example in Wolodhesa of Sikka, Flores, NTT, school children put the Head of supporting community health centre (*Pustu*) and group in the unfavourable position with medium level of influence. Meanwhile, children put loggers in the same unfavourable position with high influence, as with head of the village and the midwife. The children also considered the priest of the village had the highest power – way above the head of the village, but in the unfavourable quadrant.

In the context of CBDRM, all actors in the unfavourable quadrant should be identified to be transformed into the favourable quadrant in CBDRM activities to ensure a more equal mapping decision making.

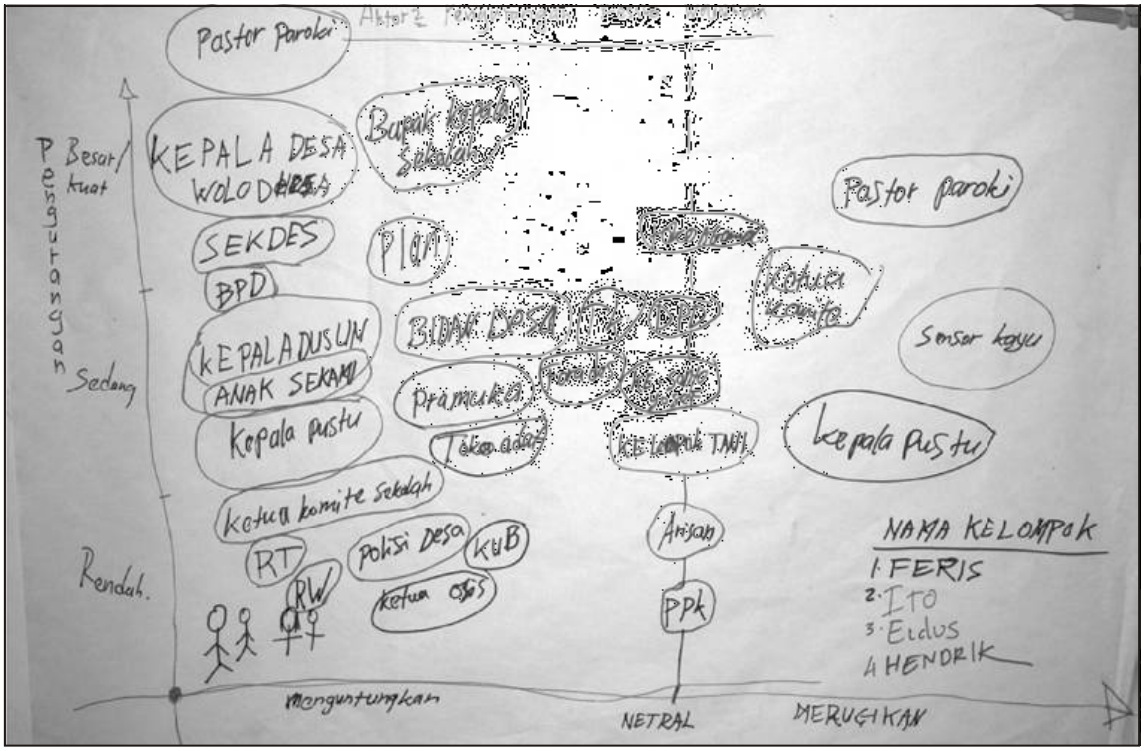


Figure 2.8. The Influence and Impact of Power
(Source: Avianto Amri/Vanda Lengkong–Plan Indonesia, 2008)

2.13. ANALYSIS OF RESOURCES

In summary, an analysis of resources for CBDRM will involve the following: What resources are needed; what resources are available; if resources are available, whether they are accessible ; why resources are not accessible; what resources need to be created; what strategies need to be developed to create and mobilize resources; whether strategies are accessible and created by other actors.

Table 2.3. Example of Matrix Analysis of CBDRM Resources

Key disaster reduction activities at the village level	Resources required to run the activities	Time required	Availability, location, ownership and control of resources		Actions and interventions to access available resources	How to access gaps of resources for CBDRM
			Accessible	Not accessible and why		

Table 2.4. Example of Matrix of CBDRM Basic Requirements

Basic requirements for CBDRM		Supporting resources
Components	**Materials**	
Individual	Thought, effort, skills, money and time spent	• Human resources: labour, skills, knowledge and technology • Materials and procurement such as first aid, construction materials, liquid asset, etc • Equipment: communication and transportation, radio, TV, mobile phone, truck, tractor, etc • Facilities; warehouse, big building for evacuation centre, communal mosque, school building/government offices • Leadership and organization • Money
Group	Group assets are available and can be used/donated	
Local institution	NGO, schools, Community Health Centre and assets can be used for disaster reduction at village level	
Village government	Village regulation, village programs, and village assets to be used for disaster reduction at village level	
Natural resources and physical & geographical conditions	Village land plots, water, topography at higher altitude relative to flooding and tsunami, road condition, renewable natural resources (biogas), and so on	

2.14. MIND MAP

Mind map is the easiest way of organizing information into and out of the brain. This is a simple, effective, creative method of literally mapping what is in human brain. Mind map helps facilitators to communicate more rapidly, be more creative, save time, give solutions to problems, focus mind, organize and express thoughts, have better recollection, learn faster and more efficiently, focus on one subject, connect separated parts of information, and group and make comparisons of concepts.

Mind map can be used in the early stage of hazard, vulnerability, and capacity analysis to build links and enabling atmosphere between facilitators and participants, and to identify background, disaster experience, and many other information. All age groups can benefit from mind map.

Figure 2.9. Mind map by children
(Source: Avianto Amri/Vanda Lengkong – Plan Indonesia 2008.)

One example of mind map includes the one that is intended to explore information on participants' name and age, parents' occupation, their daily activities, what scare them the most and why, what disaster experience they have, number of members of household, and latest education level. Experience shows that when involving children, mind map is an interesting tool to be used. Children above 10 years of age are normally capable of using it.

2.15. ANALYSIS OF HAZARD, VULNERABILITY, AND CAPACITY

Many factors contribute to vulnerability and there are a number of definitions on vulnerability. In this book, vulnerability is defined as susceptibility to external shocks; the level of loss or damage that may happen when extreme events occur; the disfunctioning of normal functions due hazards; and the lack of capacity of individuals/groups in anticipating, deaing with, or fighting against the impact of natural disasters and other non-natural stresses.

Vulnerability can also be understood as the inability of a household or community unit to respond to death casualties, economic loss, damage, and disruption resulting from a hazard that occurs in a periodic, cyclical, sudden, slow, and long term manner.

If disaster risk is the composite of vulnerability, capacity and hazard, a mapping of the perception of community of risk is necessary. This exercise is known as risk ranking, which is conducted by community under the guidance of CBDRM facilitators.

Table 2.5. Example of Matrix of Hazard Analysis

Type of hazard	Contributing Factor	Warning	Early warning	Speed	Frequency	Time	Duration
Flood Drought Earthquake Conflict Landslide Pollution Disease epidemy							

Identification from Tabel 2.5 will further be derived into quantitative levels in 1 to 5 scale. For this purpose, smal stones or leaves can be used. For instance, if flood has been a significant problem in terms of frequent occurrence and increased intensity, the problem will be assigned with a weight score of 5. In one instance, it is interesting to note that a daily problem such as rash can be assigned higher weight than tsunami, as shown in Table 2.5a.

Table 2.5a. Level of Risk by Hazard (Le Rhop Village of Xxxx)

Hazard	Frequency	Extent of Problem	Impact	Value/Score
Flood	5	5	4	14/I
Diarhea	5	3	3	11/II
Conflict	2	4	5	11/II
Rash	5	2	3	10/III
Tsunami	1	3	5	9/IV
Tidal wave	5	2	2	9/IV

Table 2.5a gives a strong indication that grassroot community's scale of priority of risk is different than that formally understood by formal government and non government organisations. Figure 2.10 gives a precise illustration that extreme but rare events such as tsunami are often not seen as priority in the list of community daily needs. Therefore, it is important to identify the scale of priorities among grassroot community and it is a mandatory in the context of CBDRM.

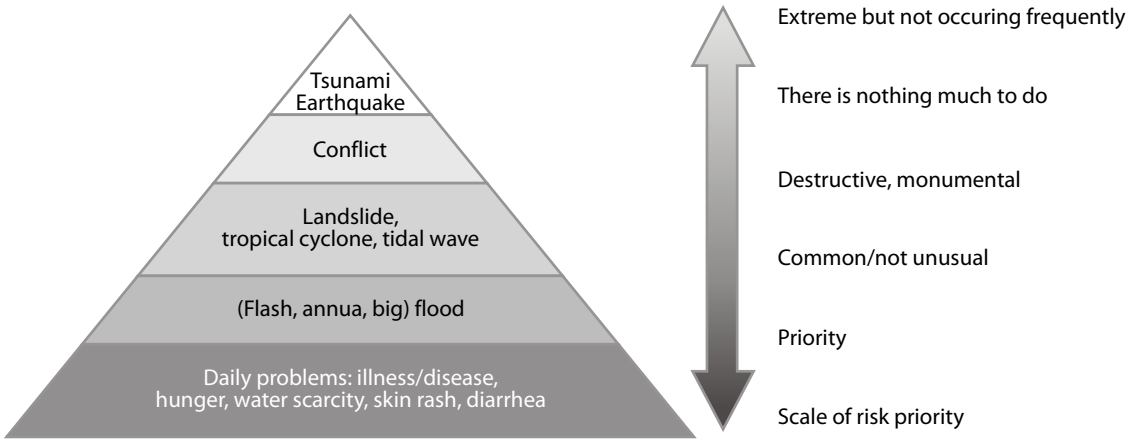


Figure 2.10. The link between hazards and frequency of events

During asessment, vulnerability may not be very visible because signals are for longer term. When asessing such signals, factors that tend to change in direction and intensity should be identified clearly, even those that do not seem to show any changes, so that adaptation of loca livelihood system can be made. For instance, many of the economic symptoms such as the decline of real prices in tropical agriculture commodities in the long term can be relatively forecasted. However, other symptoms can be affected by sudden changes. We also need to know the differences among local, national and global symptoms.

	Vulnerability		**Capacity**	
	Female ♀	Male ♂	Female ♀	Male ♂
Physical/Material				
Social/Institutional				
Motivational				

Figure 2.11. Gender based vulnerability
Source: Anderson and Woodrow (1998: 12)

Framework of analysis such as Vulnerability and Capacity Analysis (VCA) divides vulnerability into three: first, material vulnerability (cash, land, equipment, food, employment, access to credit/loan, social institutional vulnerability (social network, family relations, local and national welfare institution), and attitudinal/motivational vulnerability (self confidence, in control, power, capacity). Figure 2.11 gives an illustration on how gender based vulnerability can be assessed while Figure 2.12 a presents a matrix that will help see the level of community vulnerability firmly by economic status or class.

	Vulnerability			Capacity		
	Rich	Medium	Poor	Rich	Medium	Poor
Physical/Material						
Social/Institutional						
Motivational						

Figure 2.12. Vulnerability by Class,
Source: Anderson and Woodrow (1998: 12),

Vulnerability analysis includes the analysis of social vulnerability in classical sense, when certain social groups and factors related with the context of vulnerability can be identified. Although it is important to narrow down the area of analysis, it is also necessary to think in the broader sense of the factors that contribute to community vulnerability to avoid overlooking problems that are not easily visible. For example, discussion on seasonality should also take into account direct as well indirect impacts.

The context of vulnerability refers to seasonality, symptoms, and unexpected events that affect community livelihoods. The distinctive feature of this context is that it can not be controlled by the local community, at least in the short and medium term. Therefore it is important to identify the ways in which adverse effects of vulnerability can be indirectly minimised, including by creating better resilience and improving overall security of livelihood. Such step is important because the most crucial response to seasonality and adverse catastrophic events is asset security. However, in most cases the poor and the marginalised do not have any assets they can sell off in times of distress, meaning that they lack the capacity to be able to respond positively by securing asset like the way the better-off do. It is also worth noting that vulnerability is a function of time, meaning that since things evolve, community vulnerability in the past, present and future may also change.

2.16. OTHER TOOLS:

- *Review of secondary data*: Collection of other relevant data on community from published as well as unpublished sources (map, news clipping, reports, etc) to get initial description of the situation and context.
- *Drama, role play and simulation*: Exhibition of who are affected, what are damaged during disaster, or how community is prepared and responds to hazard events.
- *Diagram and visualisation*: Diagram and visualisation are symbolic representation of information and are the key elements of community based analysis. Map, modelling, diagram, matrix are the tools used in conducting analysis, making comparisons, establishing links and trends.
- Gender based advantage matrix: Showing the different access and controls to gender based production advantages. Gender roles show local resources and capacities and gender based differentials in access and control to the resources, especially local capacity and resources in times of disaster and disaster prone resources.

- Cause and effect: The tool is used primarily in identifying causal effect relationship, which is shown by an arrow diagram of the links of many aspects. Capacity and vulnerability is the main focus of this activity
- Folksongs, folk tales, and poetry: collection of information on knowledge, trust, and habits from song, stories, tales, and poems.

3 COMMUNITY ORGANISING

3.1. COMMUNITY ORGANISING (CO)

is essentially a range of activities that aim at building community to have a better, more prosperous and just life with reference to human dignity and the entire humanity. The main thoughts of community organising include:

- Community is empowered to build their own life
- Community organising is only effective with active involvement of all components of community who act both as stakeholders and beneficiaries.
- Community has indigenous knowledge and wisdom to live a natural life
- Effective community development requires active involvement of all elements of the community as actors and beneficiaries of development at the same time
- Community has the ability to play the different roles in their own development

In general community organising is defined as the process of building power through involving as many constituencies as possible in identifying hazards they share and the solutions to these hazards; identifying people and structures, bureaucracy, and government officials that can help to make those solutions possible; developing targets to achieve; and building an institution that is democratically controlled by the constituents that can develop the capacity to manage hazards and embodies the will and the power of the constituencies (Dave Beckwith and Cristina Lopez, 1997: 2-4.)

Table 3.1. Basic thoughts on community organising[2]

Strategy and approach in community organising	• Participatory approach • Intensive and sustainable facilitation • Cost-effective and easy media of communication that can be used • Strengthening of learning network to build a dynamic civil society • Prioritisation of local community potential

[2] Dave Beckwith & Cristina Lopez, *Simpul Belajar Pengorganisasi Masyarakat. Catatan Pertama Pengalaman Belajar Praktik Pengorganisasian Masyarakat di Simpul Belajar*. Bogor: Yayasan Puter, 2001, pp. 28–30

Criteria of community organising process	• Rooted in social and culture • Participatory planning, implementation and monitoring with community members • In respect and recognition of the rights and dignity of community members • Sustainable and disaster-risk-reducing functions and benefit of natural resources • Prioritising community initiatives for transformation • Consistent and gradual efforts
Basic principles of community organising	• Pro and for the interest of community • Using holistic instead of casuistic approach • Independent and building empathy • Accountable to the people • Promoting community initiatives • Discussion to reach joint decision making (musyawarah) and avoiding intervention • Ecosystem and disaster reduction oriented
Stages of activities in community organising process	• Mingling with community (preliminary information, building up contacts, making friends, acknowledging arrival, involved to listen, actively involved in discussion, participate in collective work, monitoring and evaluation • Social assessment (primary and secondary data survey, social analysis, documentation and publication, monitoring and evaluation) • Developing preliminary activities (issues identification, discussion to reach collective agreement, problem and solution identification, development of joint agenda, documentation of processes, monitoring and evaluation). • Implementation of activities (in line with collective agreement achieved from the discussion during the previous stage, for instance: dialog, training, negotiation, strike, etc). • Establishment of people's organization • Overall monitoring and evaluation • Action reflection

3.2. CBDRM AS SOCIAL PLANNING

In 1970 Rothman and others (Rothman et.al.,1995) discuss about work with communities and compare three approaches in community intervention, namely community development, social planning, and social action. This section will discuss about social planning. Based on Rothman's ideas about social planning, this section will present the arguments on disaster management and community based disaster risk management using social planning network.

Although the root causes of disaster may be traced back to the complex problems within community and/or unjust power structure, the focus of disaster management is on the disaster itself and its elements: hazards, vulnerability and community's lack of capacity. In this regard and seen from the goal of disaster management, disaster management works are more of a process of solving problems related to hazards and the impact of disasters rather than an overall community development or a change in power structure of the community.

Table 3.2. Community Based Disaster Management Planning (Rothman et.al. 1995)

No	***Practice Variable***	***Social Planning***
1	Goal categories of community actions	Reduction of and management of the impact of disaster for survival and growth.
2	Assumptions concerning community structure and problem conditions	Community specific characteristics (poverty, geographical location, demographic and social-economic conditions) that make them prone to hazards with insufficient management capacity
3	Basic change strategy	Gathering data about hazards, vulnerability, and lack of capacity; and making decisions on the most logical course of actions.
4	Characteristic change tactics and strategy	Mostly building consensus, both among segments of community as well as with the private sector or the government in power; or when necessary creating conflict.
5	Main role of CBDRM actors	Fact gatherer and analyst, program implementer and expediter.
6	Medium of change	Guiding formal organization and treating data towards development of disaster management programs.
7	Attitude towards power structure	The government as the sole bearer for responsibility and sponsorship of disaster management programs developed by community
8	Boundary definition of the beneficiary system	Segment of community who is most affected by disaster and/or holder of power and community interest, and total community involvement in some cases.
9	Assumption on interest of community sub-parts	Individuals and community segments with reconcilable interests, or conflict when consensus is not reached.
10	Conception of beneficiaries	Consumers and beneficiaries of disaster management.
11	Conception of beneficiary roles	Stakeholders who are vulnerable to disaster but are potential agents of change
12	Empowerment	Assessment of disaster condition: providing information to communities on choices of available disaster impact reduction and management.

CBDRM workers are more likely to use the strategy for collecting data on disaster and helping relevant key disaster management practitioner's community to make the right decisions based on logical course of actions. Only in some special cases that CBDRM workers will make use of social processes to reach a consensus with all segments of community and only in extreme cases that they use mass mobilization as the strategy for fighting against the power structure. In disaster management processes, CBDRM actors put themselves as the “experts” and at the same time

facilitators with special skills and advantages in information collection and analysis. In that sense, they can become the persons that community members can consult to on the development, implementation and acceleration of disaster impact reduction and management programs.

The dynamic of power relation in CBDRM is based on the assumption that the state is the sole duty bearer in disaster management while communities are the right bearers, users, as well as beneficiaries of services. In the end, it should be realized that all the results from community disaster management planning should be integrated into government disaster management plans and funded formally by the national and regional budget.

Stakeholders involved in CBDRM will be most likely specific segments of community who are most related to disaster occurrences, for instance community groups most vulnerable to disasters, opinion makers such as educators, religious leaders, community leaders, and traditional leaders. Only in specific circumstances such as during mass campaign or simulation exercises that all segments of the community will be likely to be involved.

CBDRM places community as disaster management beneficiaries and user. Their vulnerability to disaster is even the more reason for their empowerment through education and awareness raising on the links between government responsibility and the right of the community, the skills for managing information, decision making, and disaster management program planning.

At this point, this book has discussed CBDRM as a relatively different approach and model than community development, social action or field services. Caution should be taken from this point when using the term “community based” because it implies mental attitude, perception, strategy, and tactics that are consistent with the ideology of CBDRM. The next section below will delve deeper into the processes where the practical aspects of CBDRM are applied.

3.3. CBDRM FOR COMMUNITY ACTION PLAN

Community Action Plan (CAP) id developed from the efforts to address problems in development planning that tends to ignore the role of community. CAP is aimed to respond to the concerns that development has the tendency to be top-down and does not address underlying problems at the community level and that it has instead led to more inequality and injustice.

CAP is a participatory exercise carried out to encourage community to develop a plan and perform the plan into action. A CAP is a very structured participatory planning process. Conceptually, a CAP promotes community participation on all stages of development planning.

There are three main stages in CAP: pre-CAP, CAP Workshop and post CAP. A pre-CAP consists of (1) rapid participatory assessment to explore community perception of today's problems, (2) collection of a whole range of information for the development of village profile, (3) development of village map by presentation of result of assessment, (4) pre-CAP meeting for scheduling CAP workshop, (5) preparation for the workshop implementation. A workshop on CAP normally consists of (1) inventory of community problems, (2) assessment of impact of the problems to community, (3) set priority of problems and short and long term solutions to the problems, (4) development of action plan, (5) identification of action plan, (6) risk mitigation action plan. A post CAP will normally consist of (1) implementation and maintenance, (2) documentation, monitoring and appraisal, (3) project completion, and (4) feedback for better implementation.

There is a strong impression that disaster management and development are separate issues and that community is the real object of both. Community based disaster risk management (CBDRM) establishes the awareness that disaster is a social deconstruction that solution to root causes of vulnerability and understanding of hazards should be established. Awareness should be built that a significant disaster risk will potentially lead to disaster.

In this regard, CBDRM is seeking to find the answers to the structural and functional changes happening within community. Any such answer will have to be centered on social analysis and science. Community structure and functions are oriented towards enhancing community capacity to be able to understand the characters of hazard and manage vulnerability. From CBDRM activities, it is hoped that changes in structures and functions will take place within community. Community will be the main decision makers in disaster management by referring to their own vision and perception of social construction. Community will take the role as the manager who can identify their own needs, define their own objectives and goals, implement and assess the achievement of their own disaster management programs.

The main point in CBDRM is the involvement of outsiders in risk management activities with community members and their exit when community has established strengthened capacity in disaster risk management. A number of processes are involved in CBDRM, but the following stages can be followed wholly or in part: (1) selection of target communities, (2) establishing rapport and understanding community, (3) develop situation analysis and community profile, (4) enhancing capacity and understanding context, (5) participatory assessment of disaster risk levels, (6) participatory disaster risk management planning, (7) implementation & participatory monitoring of disaster risk, (8) evaluation and feedback, (9) expansion & integration, (10) institutionalization & consultation.

3.4. COMMUNITY ORGANISING PROCESSES

As explained before, community based disaster risk management is a process of facilitating community in disaster prone areas to be able to manage hazards in their environment and their vulnerability to hazards. Therefore, at-risk community should be actively involved in the identification, analysis, implementation, monitoring and evaluation of disaster risk to reduce their vulnerability and increase their capacity. It means that community is the centre in decision making on and implementation of disaster risk management.

A number of significant issues concerning community organising have to be given attention, as follows:

- It is a fact that community is often considered lacking capacity and in time of disaster, they are often seen as helpless objects. Therefore, capacity strengthening should be attempted and media for collective work should be identified.
- Community organising needs to be understood as a concerted effort in finding tactical and strategic solutions because individual work will be hard. In the context of disaster, community or community group strength are very meaningful physically as well as psychologically.
- The success and strength of community organising will lead to successful and more prompt problem solving.

Technically there are two types of capacity building for community:

- Inward capacity building: strengthening community capacity to protect themselves from possible adverse stresses or hazards, including through training, mentoring, and education.
- Outward capacity building: strengthening community capacity by carrying out outward activities, for instance by visiting the parliament. Such form of capacity building will influence stressor and increase community bargaining position in fighting for their rights.

The actors in community organising activities are called *community organisers* (CO). Community organizers are faced with the challenge of how to find the entry point to make community to welcome and open up freely to them, from which community organisers will be able to probe into the problems, history, potentials and other aspects of community life under their facilitation. To be able to go through this process, community organisers can live with the community, attend their meetings, build empathy and feel what community members go through, build communication with leaders, and so on. It is also important to take special attention to language, culture, creativity and flexibility. Based on experience, it will take time to integrate into the community, depending on the way community organisers behave and approach the community.

Community organising is important in disaster management work, especially to increase the level of community participation in disaster risk management. In addition, the participation of community as the subject and actor at the same time in disaster risk management is very important and will determine the success of disaster management stages.

Community participation is a process to give more authority to community to jointly solve problems. Division of authority will be done based on the level of involvement of community in the activity. Community participation aims at providing a better way of addressing problems by giving roles to community to contribute for more effective, efficient, and sustainable implementation of activities. Participation of community can start from the stage of concept development to the stages of construction, operation-maintenance, and monitoring and evaluation. There are 7 levels of community participation based on the mechanisms of interaction: (1) rejection, (2) information sharing, (3) consultation, (4) consensus and joint agreement, (5) collaboration, (6) capacity and risk sharing, and (7) empowerment and partnership. Further, based on the link between the role of community and programme implementer, there are three levels of community participation: (1) Working for the community, (2) working together with the community, and (3) the work by the community.

Community based disaster risk management processes involve a whole range of stakeholders and actors. *Stakeholders in* disaster risk management can be generally divided into three: (1) *beneficiaries*: community who receives direct and indirect benefits, (2) *intermediary*: community groups, organizations or individuals who can provide advice or facilitation in disaster risk management, including: consultant, expert, NGO, and disaster professionals, and (3) *decision makers*: organizations/institutions who have the authority to make decisions and legal foundation such as government agencies and disaster council.

Selection and screening of stakeholders are done using the stakeholder analysis method through 4 stages: (1) stakeholder identification, (2) appraisal of stakeholder interest in disaster risk management activity, (3) appraisal of the level of influence and interest of each stakeholder, and (4) formulation of the strategy for stakeholder participation plan in disaster risk management in each phase of activities. All stages are carried out by promoting learning activities and improve community potentials to actively participate in act ivies, and provide opportunities to take part and have the authority in decision making processes and allocation of resources in disaster risk management.

COMMUNITY BASED DISASTER RISK MANAGEMENT (CBDRM)

GUIDELINES

GLOSSARY OF TERMS IN DISASTER MANAGEMENT

Adaptation (to climate change): *The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities***

Being disaster-prone: geological, biological, hydrological, climatic, geographical, social, cultural, political, economic, and technological conditions or characteristics in a territory that for a certain period of time may decrease the territory's capability to prevent, reduce, be fully prepared to, and respond to negative impacts from a certain danger.

Capacity (1)**:** Control of resources, the means and power that community has that helps them to be prepared, prevent, mitigate, manage, cope and recover from the impact of disaster.

Capacity (2): The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals.

*Capacity may include infrastructure and physical means, institutions, societal coping abilities, as well as human knowledge, skills and collective attributes such as social relationships, leadership and management. Capacity also may be described as capability. Capacity assessment is a term for the process by which the capacity of a group is reviewed against desired goals, and the capacity gaps are identified for further action.***

Capacity development: The efforts in developing the capacity of the people or community or organisational infrastructure in reducing the levels of risk. Capacity development also includes development of institutions, financial resources, political awareness, and other resources such as technology at different level and sector of the society.

Champion: A champion in disaster risk reduction is an individual who is influential and concerned about disaster risk reduction. The individual is willing to make disaster risk reduction a priority. She or he can be a government officer specially assigned for this task, a professional from different fields or a community activist. Institutions and even the state can also play the role as champion.

Climate change: The state of increase in the average temperature of the earth surface that leads to changes in other climate elements such as the rise of the sea level, increased water vapour, and change in rainfall pattern and air pressure, which eventually change the pattern of the global climate.

Community: A social unit of organisation that shares common interest (for instance academic community), area of residence (neighbourhood unit, community unit), or legal border (village, sub-district, etc). Other definition include a group of members of the society who may have one similarity or more such as those who live in the same neighbourhood, are exposed to the same hazards, or have been affected by the same disaster, who eventually have the same problems, concern and hope about disaster risk.

Community Based Disaster Risk Management (CBDRM): An approach that promotes grass root community in the management of disaster risk at the local level. The approach needs a series of efforts that include self-interpretation of hazards and disaster risk that community live with, priority of disaster risk management/reduction and self-monitoring and self-evaluation of disaster risk reduction efforts.

Coping capacity: The ability of people, organizations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters.

The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during crises or adverse conditions. Coping capacities contribute to the reduction of disaster risks.**

Contingency Planning: A management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.**

Culture of safety: The culture in which awareness of risk and risk reduction measures are parts of the daily life (Lingkar Association)

Disaster (1): A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

*Disaster is a function of the risk process. It is a result of the combination of the exposure to hazard, the conditions of vulnerability that are present, and insufficient capacity or measures to reduce or cope with potential negative consequences***

Disaster (2): an event that runs a risk of disaster.*

Disaster management: A series of efforts encompassing policies on development with disaster risk, disaster prevention, emergency response, and rehabilitation.*

Disaster management conduct: A series of efforts encompassing planning and implementation of disaster management before, during and after a disaster, that include emergency response, recovery, prevention, mitigation and preparedness.

Disaster risk: Potential loss from a disaster in a given area and in a specific period of time such as death casualties, injuries, illnesses, threatened lives, lack of sense of security, displaced, damage or loss of assets, and disruption to community activities.*

Disaster risk reduction (DRR) (1)**:** The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.**

Disaster risk reduction (DRR) (2): A series of disaster management activities before, during and after disaster that put the emphasis on reduction of impact of disaster.

Disaster Risk Reduction Education (1)**:** Education for disaster risk reduction. The conscious and well-planned effort in the process of learning for strengthening the capacity of learners in disaster risk reduction and building the culture of disaster safety and resilience.

Disaster Risk Reduction Education (2): An interactive process of mutual learning between people and institutions with a broader coverage than formal education in schools and universities. It includes recognition and the use of indigenous and local knowledge on the protection from natural disaster. (UN-ISDR)

Disaster risk reduction mainstreaming: The process by which disaster risk reduction considerations are given more priorities by organisations/individuals involved in the decision making on economic, physical, political, and social cultural development at the national and local level; and the processes by which disaster risk reduction is taken into consideration in the decision making. The process involves incorporating disaster risk reduction considerations into the medium term strategic framework and institutional structures , local or sectoral policies and strategies, and also into planning of projects/activities in a given location.

Early warning (1): A series of activities of giving an urgent warning to community about a potential disaster in a certain area by authorized agency.*

Early warning (2): The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss.

*This definition encompasses the range of factors necessary to achieve effective responses to warnings. A people-centred early warning system necessarily comprises four key elements: knowledge of the risks; monitoring, analysis and forecasting of the hazards; communication or dissemination of alerts and warnings; and local capabilities to respond to the warnings received. The expression "end-to-end warning system" is also used to emphasize that warning systems need to span all steps from hazard detection through to community response.***

Emergency response: A series of actions taken immediately during a disaster event to deal with its adverse impacts, such as rescue and evacuation of disaster victims and survivors, material possessions; provide basic necessities and protection; manage displaced people; and recover infrastructures and facilities.

Evacuation: The immediate efforts before, during and/or after the occurrence of a disaster to save the lives of disaster affected community

Global warming: The increased concentration of the greenhouse gases in the atmosphere due to human activities all over the world, leading to the increase in radiation trapped in the atmosphere. As a result, average temperature of the earth surface has increased.

Carbon dioxide, methane (CH_4), nitrous oxide (N_2O) are primary greenhouse gases. The gases are produced from the combustion of fossil fuels in the energy, transportation and industrial sectors. Other greenhouse gases are HFCs, PFCs and SF6, which are produced by industry in the form of refrigerants and aerosols. Although these gases "only" contribute less than 1% of the total greenhouse gas emissions, they have much higher potential emissions compared to CO_2, CH_4 and N_2O which lead to pretty much similar amount of emissions produced by CO_2, CH_4 and N_2O.

Hazard (1)**:** A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.**

Hazard (2): An event or a series of events threatening and disturbing the community life and livelihood, caused by natural and/or non-natural as well as human factors resulting in human fatalities, environmental damage, loss of material possessions, and psychological impact.*

Hydrometeorological hazard: Process or phenomenon of atmospheric, hydrological or oceanographic nature that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

*Hydrometeorological hazards include tropical cyclones (also known as typhoons and hurricanes), thunderstorms, hailstorms, tornados, blizzards, heavy snowfall, avalanches, coastal storm surges, floods including flash floods, drought, heat waves and cold spells. Hydrometeorological conditions also can be a factor in other hazards such as landslides, wild land fires, locust plagues, epidemics, and in the transport and dispersal of toxic substances and volcanic eruption material.***

Mitigation: A series of efforts to reduce disaster risk, through physical development as well as awareness and improved capability to face hazards.*

Preparedness (1): A series of activities in anticipation of disaster through organizing as well as efficient and effective measures.*

Preparedness (2)**:** Pre-disaster activities that are undertaken in the context of disaster risk management and are based on a sound risk analysis. It can include development/improvement of the entire strategy for readiness, policy, institutional structures, warning and forecasting ability, and the measures for helping community at risk to save their life and assets by establishing alertness to disaster and taking the right action in coping with hazards and the actual disaster. (UN OCHA)

Public awareness: The extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards.

*Public awareness is a key factor in effective disaster risk reduction. Its development is pursued, for example, through the development and dissemination of information through media and educational channels, the establishment of information centres, networks, and community or participation actions, and advocacy by senior public officials and community leaders.***

Prevention (of disaster): A series of activities to reduce or eliminate disaster risk, through reducing disaster threat and disaster-prone people's vulnerability.*

Reconstruction: Rebuilding of all facilities and infrastructure, community and government institutions in post-disaster areas, aimed specifically to enable growth and development of economic, social and cultural activities, enforcement of law and order, and revival of public participation in all aspects of community life in post-disaster areas.*

Recovery: A series of activities aiming at bringing the conditions of disaster-affected community and the environment back to pre-disaster conditions by restoring the functions of institutions, infrastructure, and facilities through rehabilitation.*

Rehabilitation: The repair and recovery of all aspects of public or community services to an adequate level in post-disaster areas with the main target of normal or functioning aspects of government administration and community life in post-disaster areas.

Resilience: The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.**

Risk assessment: A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.**

Source:

*Indonesian Law (*UU*) No 24 year 2007 on Disaster Management

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In the context of Indonesia, during the past five years at least 15 publications have been published on CBDRM, including:

- "Paket Pelatihan Analisis Kapasitas dan Kerentanan secara Partisipatif " Oxfam UK (Edward Turvill & Honorio De Dios, 2010) (translation)
- Collection of Experience on CBDRM in Aceh (Affan Ramli, 2009)[8] ?
- Panduan Pengelolaan Risiko Bencana oleh Komunitas Peka Gender UNDPRA Aceh (Paripurno, 2009)
- Panduan Desa Tangguh yang dikembangkan Projek ERA/UNDP-Bappenas, Desember (draf December, 2008). ?
- Kerangka Kerja Penanggulangan Bencana Berbasis Komunitas (Puji Pujiono, 2008)
- PRBBK untuk CAP, GTZ GSLGR – MPBI (Paripurno, 2008)
- Manual CBDRM Training bagi CSO-CSO di Aceh dari Indosasters (2007)
- Penerapan PRA untuk Manajemen Bencana. Pusat Studi Manajemen Bencana UPN Veteran Yogyakarta (Paripurno, 2006a)
- Penanggulangan Bencana oleh Komunitas. Pusat Studi Manajemen Bencana UPN Veteran Yogyakarta (Paripurno, 2006b) ?
- Panduan Umum Penanggulangan Bencana Berbasis Masyarakat (PBBM) yang diterbitkan oleh Yayasan IDEP (2004) ?
- Manual CBDRM PMPB Kupang (Yoseph Boli, dkk., 2004)
- Manual CBDRM oleh ADPC (Abarquez dan Murshed, 2004)—diterjemahkan Oxfam GB, 2008

[1] Containing experience on the implementation of CBDRM in Aceh by JKMA and Prodeelat Association.

This book is written and published by **MPBI** with the support of
PSMB, **Lingkar**, **UNDP-SCDRR**, and translated with the support of **APADM** and **Planas**