- Assisting in planning mitigation projects
- Mobilization of people to implement the project on volunteer basis
- Monitoring of mitigation project construction etc.
- Maintenance and operations of the mitigation projects.

During emergency situations such as typhoon, the BDATs disseminate warnings and instruct the residents to prepare for the upcoming storm events. If evacuation might be needed, the BDATs manage the evacuation centres or ensure that those concerned are properly evacuated.

How is the BDAT formed?

AS THE PNRC'S partners in undertaking the ICDPM, the BDAT is formed in a participatory manner. After the barangay has been identified in consultation with the LGU and barangay officials, the following are the activities in forming the BDAT. In case where there are existing Barangay Disaster Response Teams, then they can be trained to become BDAT since the latter would be doing tasks for disaster mitigation and prevention.

1. Send a letter to the Barangay Chairman formalizing the selection of the barangay as the site of the ICDPM. This has to be given personally so as to provide greater time to further explain the approach and for establishing greater rapport with the official. Assisted by the PNRC volunteers, set an appointment for the PNRC Chapter staff to attend the regular session of the Barangay Council.

2. Prior to the Barangay Council meeting, make courtesy visits to other barangay officials for information dissemination and for community integration. This will help in facilitating the entry of the PNRC in the community.

3. During the Barangay Council meeting, the PNRC staff introduces the PNRC, the history, principles, programs and services and the ICDPM as the new approach to disaster management. An open forum will follow the presentation. IEC materials such as the posters and comics can be given to the officials to give them greater information about the ICDPM and to further stir their interest.

   Towards the end of the meeting, suggest to the BC officials to call a barangay assembly to discuss the ICDPM. The BC officials can be asked to prepare and to lead in the conduct of the barangay assembly.

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4. During the barangay assembly, the PNRC representative shall orient the people on the PNRC history, principles, programs and services, and the ICDPM. The open forum should be able to clarify the questions and issues raised by the residents, particularly the expectations and requirements from the various institutions such as the PNRC, the LGU, the Barangay Council and residents.

5. Once the assembly agreed to the ICDPM implementation in the barangay, the PNRC representative shall ask the Barangay official to facilitate the selection of the participants to the Community-Based Disaster Management training. Initial list can be taken from those nominated by the residents.

6. The long list of possible participants to the CBDM training shall be screened by the PNRC staff and the BC officials. They shall be the future BDAT members, hence proper screening shall be done. Among the criteria that can be used are:

   - Must have shown interest and involvement in community activities
   - Must have good reputation in the community
   - Must represent a sector or an organisation
   - Must be a permanent resident
   - Must be willing to become a participant

7. The formal formation of the BDAT takes place during the community-based disaster management training. During this training, the participants would have been oriented and equipped on the various aspects of the PNRC and the ICDPM.

How do we train the BDAT?

THE ICDPM is anchored on the principle of participation and bayanihan. This also entails developing their capacity, which rests on efficient education and information dissemination. ICDPM deals with training and education at different levels, but always relies on a participatory approach.

FOR THE BDATs and community leaders, the purpose is to enhance the people's capability in disaster management through prevention, mitigation and preparedness. There are popular educational materials developed such as comic books, leaflets and posters which are effective for disseminating information on disaster management. These materials are written in Filipino language – simple, colourful and with contents and situations familiar to the local people.

THE THREE POSTERS produced by the programme aim to raise awareness towards hazard preparedness and prevention:

- risks of erosion and landslides in case of slope deforestation in mountain areas
- typhoon warning, risks and preparedness for coastal areas
- preserving mangrove forests as coastal protection

THE BDAT UNDERGOES a series of training, the first of which is the Community-Based Disaster Management Training. During the pilot testing of the ICDPM, this training was done on a live-in basis to ensure the participation and concentration by the participants. This time, the PNRC Chapter, the LGU and the BC can come out with an appropriate arrangement. It is recommended that the LGU and the BC take care of the cost of the training while the PNRC assumes the provision of the technical expertise and materials needed during the training.

What are the main elements of the BDAT training?

As can be gleaned from the training curriculum, the CBDM training provides an orientation and the processes involved in ICDPM. A separate training manual is available on how to conduct this training.

A ten-day practicum follows the CBDM training. This time, the BDAT members lead in the conduct of the various activities needed to complete the ICDPM activities. A ten-day training for the barangay residents is called for through the combined efforts of the BC and the BDAT for the following activities:

- **Participatory Rural Appraisal**
- **Hazards Mapping**
- **Planning for Disaster Mitigation Projects**

These three activities are discussed in the succeeding chapters.

Topic	Content	Training objectives	Training methodology
Introduction (1 hour)	Appendiks I. Review of programme Appendiks II. Levelling of expectations	Appendiks III. Provide overview Appendiks IV. Develop facilitator – participant relationship	Lecture & discussion
Overview of Red Cross/ Crescent movement (1 hour)	Appendiks V. History and strategic direction of RC/RC	To recognize the service rendered by the organisation, and its guiding principles	Lecture Discussion Visual aids
ICDPM (3 hours)	Overview of ICDPM Objectives of programme Roles and structure of Disaster Action Teams	To become familiar with the ICDPM aims, and its special role at the community level To understand the function of BDAT – and the participants future roles in disaster management	Lecture Discussion Workshops Role play
Disaster awareness (10 hours)	What is disaster Kinds of hazards affecting the Philippines Common causes and effects of natural and man-induced hazards	To be able to identify and understand the general effects and impacts of hazards Understand how a hazard can turn into a disaster	Lecture Discussion Workshops
Emergency services and response (28 hours)	• What to do during emergencies • Evacuation options • Purpose of public information • Community basic first aid	• To be able to outline the major considerations which apply to response • To be able to understand the requirements for effective response • To identify the resources relevant to various aspects of response • Knowledge of basic first aid • Ability to train others in the community in basic first aid	Lecture Discussion Workshop Demonstration Return demonstration
Disaster management concepts (12 hours)	• What is disaster management – in general and especially in The Philippines? • The disaster management cycle • Standard operating procedures of Red Cross disaster management	• Understand disaster management in the community setting • Understand the concepts involved in disaster management • To be able to reduce or avoid human, physical and economic losses suffered by individuals, by the society and by the country at large	Lecture Discussion Visual aids Workshops Group discussions
Disaster management planning (10 hours)	• Spot mapping and field exercises • Identification of resources in the community • Capacity and vulnerability assessment • Problem-tree analysis • Objective-tree analysis • Ranking & prioritisation of problems	• To be able to identify potential risks and hazards in their community • To be able to identify and recognise existing local resources • To help the community identify their capacities and vulnerabilities • To be able to assist the community in identifying existing problems through the methods introduced during the training • To be able to prepare a sample Community Disaster Action Plan	Lecture Discussion Visual aids Workshops
Community organising (12 hours)	• What is 'community organising'? • Components and principles involved • Community organising exercises	• Understanding your community • Identifying the volunteers' roles in managing disasters • Determine how the community organising concepts can be applied in community disaster management	Lecture Discussion Visual aids Workshops

Participatory Rural Appraisal for Community-Based Disaster Management

What is Participatory Rural Appraisal for Community – Based Disaster Management?

THE PARTICIPATORY RURAL APPRAISAL (PRA) is a community-based approach in making an assessment of the community. It is a way of learning from, and with, community members to investigate, analyse, and evaluate constraints and opportunities, and make informed and timely decisions regarding development projects (Theis and Grady, 1991). It is not just a research technique but a way for the community members to learn about their situation, to identify problems and needs and to plan course of actions that can respond to the identified needs. The participatory tools and techniques are described in the latter part of this chapter.

WHEN APPLIED TO Community-Based Disaster Management, it entails the refocusing of some of the data requirements and analyses to DM related concerns such as hazards, resources, vulnerability and other human capacity for disaster response.

CONSIDERING THE NATURE of the ICDPM, this method can be used for both rural and urban communities. In the ICDPM, the time allotted in conducting this is six to ten days, which serves as the practicum for the BDAT members.

How to proceed with the PRA-CBDM

The PRA-CBDM shall be conducted by the BDAT after they have undergone the theoretical training on the CBDM. One of the outputs of this theoretical phase is the action plan for conducting the practicum PRA-CBDM. Prior to the actual conduct, the BDAT shall:

- Set the schedule and call a community assembly for the purpose of preparing for the PRA-CBDM.
- Prepare the program and the lectures
- Set the administrative matters like the venue, materials and funding arrangement.

The suggested schedule for the conduct of the PRA-CBDM is as follows:

Day One: Assembly meeting for the BDAT to give feedback about the theoretical training they had. This is also the time when the BDAT members make the arrangement for the conduct of the PRA- CBDM.

Day Two: The BDAT conducts house to house survey and ocular survey to make an assessment of the hazard situations in the community.

Day Three: The BDAT consolidate the initial data they got from the visits and ocular survey. These are plotted in a hand-drawn "spot map". The PNRC provides technical assistance in the processing and analysis of the data.

Day Four: The participants are given an orientation on the PRA-CBDM tools and techniques. They are divided into workshop groups to conduct the appraisal using the tools assigned to them.

Day Five: The participants present the data gathered through the PRA-CBDM and consolidated analysis is done for the whole community. Community problems and needs are identified and prioritised.

Day Six: Community planning is done through workshop groups. Each group come out with a plan of action for particular problems and need identified. (See next Chapter)

THE PRINCIPLES for conducting these activities are discussed during the CBDM training. The guidelines presented in the readings and references during the conduct of the CBDM training can be consulted for conducting these activities.

What are the tools and techniques for PRA-CBDM?

IN CONDUCTING the PRA-CBDM, the tools and techniques used are simple and participatory. An ordinary community resident can do the task, using the local language. The various tools are described in the Annex 6.1-6.15. The tools and techniques are the following:

- Review of Secondary Sources
- Direct observation
- Ranking
- Preference ranking
- Diagrams
- Participatory Mapping
- Mobility Map
- Hazard Map
- Transect
- Seasonal Calendar
- Time Trends
- Historical Profile
- Livelihood Analysis
- Flow Diagram
- Venn Diagram

THE DATA THAT CAN be generated from these tools can be used to identify the needs and the problems of the community, with a special focus on the disaster situation, vulnerability, capacities and resources. With the active participation of the people in these exercises, they can learn and deepen their understanding about their community. This can lead to a greater commitment to work voluntarily for the well being of the community.

ANNEX 6.1-6.15

The tools and techniques presented in this section are excerpts, abridged and modified versions from a training manual *"Participatory Rapid Appraisal for Community Development"* Theis and Grady, 1991

Annex 6.1

REVIEW OF SECONDARY SOURCE

Secondary data are source of information which are relevant to the area or subject of the planned PRA and are available in published or unpublished form (e.g., reports, statistics, maps, aerial photos, films).

Secondary sources from the background information for any information gathering and much time can be saved by knowing which data already exist and do not have to be collected again. Secondary sources are also useful for clarifying the PRA topic and formulating hypotheses by reviewing what has already been said or written about the topic and what has been missed in existing secondary sources.

Secondary sources should be reviewed before the fieldwork and prepared in the form of:

- diagrams
- tables and lists
- brief summary paragraphs
- copies of maps and photographs

Cautions:

- do not spend time on the review of secondary sources which could be better spent in the field
- be skeptical and critical
- look out for what has been missed

EXERCISE: REVIEW OF SECONDARY SOURCES

1. Which secondary sources are available for the purpose of the planned PRA?
2. What information can we get from these sources?
3. How can we summarize these secondary sources?

Annex 6.2

DIRECT OBSERVATION

Background Information

ONE DANGER WITH PRA is being misled by myth, rumors, and gossip. People often have beliefs about their values and activities which do not correspond with reality. It is common to be told about a custom, but probing for the last occasion when it was practiced reveals that is has either lapsed or perhaps was never practiced at all. As a consequence, direct observations of important indicators to support and cross-check findings are essentials. The indicators can also be

used to generate on-the-spot questions to ask community members without preparing formal questionnaires beforehand.

Methods for Direct Observation:

- Measurement: use of tapes, scales, or other devices to directly measure things in the field, like size, weight of harvest, or volume of fuel wood.

- Indicators: any object, event, process, or relationship which can be directly observed and used as an indicator of some other variable that is more difficult or impossible to observe(e.g., house type as indicator for wealth of a household). Indicators should be valid, specific, reliable, relevant, sensitive, cost-effective, and timely.

- Recording: notebooks and record sheet, diagrams, photographs, collections of samples of objects (e.g., pest-infested crops, children's toys).

- Hazards analysis through observation of erosion in the river, cliff and mountains; current flow speed and magnitude; levels of flooding marks; congested areas very vulnerable to fire; and the like.

- Sites and their vulnerability: markets, transportation (buses, taxis, trains), worksites, homes, health post, school/class, times before and after public meetings, places of worship, places of entertainment, hairdresser.

- Use observation checklists to ensure that observation is done systematically and observations from different sites are comparable.

- Use all senses while observing: smell, listen, touch, taste, and participate/share in the activities in the community.

- When observing a complex event (e.g., ritual celebration such as circumcisions or sports events), the team should plan and divide roles to provide multiple viewpoints. Different observers could concentrate on different groups of people, such as women, men, children, or tourists.

- Observe variations in dress as this may indicate status, class, wealth, ethnic, religious, or political affiliations.

DIRECT OBSERVATION IS systematically observing objects, events, processes, relationships, or people, and recording these observations. Direct observation is a good way to cross-check respondents' answer. Use a checklist to do observation systematically.

RANKING

RANKING OR SCORING means placing something in <u>order</u>. Analytical tools, such as ranking, complement semi-structured interviewing by generating basic information which leads to more questioning. They may be used either as part of an interview or separately.

Strengths of ranking:

- useful for sensitive information, especially for determining the most disastrous hazards in the community. The people can be asked to list the disaster they had before. The following questions can be posed: What disasters happened in the community which had the greatest loses? Which of these hazards continue to be present up to this time?

- Provides priorities, especially when the community is about to determine which problems should be acted upon first.
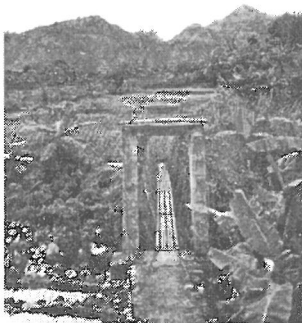
Guideline for Ranking

- Let people do it their own way
- Use people's own units of measurement
- Use people's own names for whatever is to be ranked
- See if you can adapt local games for ranking
- Probe the reasons for the order of the ranking
- Be prepared
- Be patient

PREFERENCIAL RANKING

Preference ranking allows the PRA team to determine quickly the main problems or preferences of individual villagers and enables the priorities of different individuals to be easily compared. Voting is also a form of preference ranking.

STEPS OF PREFERENCE RANKING

1. Choose a set of problems or preferences to be prioritized. These should be, for example, flooding of the community or the erosion in the river.
2. Ask the interviewee to give you her favored items in this set, in order of priority. Get a list of 3-6 items from each interviewee.
3. Repeat for several interviewees.
4. Tabulate the responses.

EXAMPLE OF PREFERENCE RANKING

CONSTRAINTS TO AGRICULTURAL PRODUCTION

Problem Ranking	Respondents						Total Score	
	A	B	C	D	E	F		
Drought	5	5	3	5	4	5	27	a
Pests	4	3	5	4	5	4	25	b
Weeds	3	4	4	1	3	3	18	c
Costs of inputs	2	1	2	2	2	2	11	d
Labor shortage	1	2	1	3	1	1	9	e

5 = most important, 1 = least important

A diagram is any simple model which presents information in an easily understandable visual form.

Value of diagrams:

- they greatly simplify complex information
- the act of constructing a diagram is an analytical procedure
- they facilitate communication
- they stimulate discussion
- they increase consensus among team members
- they are an excellent way to involve community members and to discover their views and categories by encouraging them to draw diagrams on their own

Possible diagrams include:

Concept	Diagram
Space:	map, transect
Time:	seasonal calendar, daily routine chart, time trends, historical profile
Relations:	flow diagrams, livelihood analysis, systems diagram
Decisions:	decision tree, Venn diagram

Annex 6.6
PARTICIPATORY MAPPING

DRAWING MAPS

- Before visiting the field obtain maps and/or aerial photographs of the area.
- Prepare simple outline maps showing key features and landmarks.
- Mark in roads, rivers, canals, schools, mosques, churches, government offices, etc.
- In the field obtain a spatial overview through general exploration, a view from a high vantage point (watertank, hill, tree, high building), and group interviews.
- Obtain local place names.
- Revise the maps and add more detail through the fieldwork as you receive new information.

Maps can be drawn for many topics:

- physical features
- hazards in the community
- demographic data, especially those vulnerable to specific hazards
- social and residential stratification (wealth, ethnicity, religion)
- a village's use of natural resources
- fields and land use
- spatial arrangement of a house/use of space by different social groups
- mobility
- water
- soils

PARTICIPATORY MAPPING

Participatory mapping allows the PRA team to discover the "mental maps" of community members.

Steps:

1. Decide what sort of map should be drawn (hazards, social, natural resources, farm, etc.)
2. Find people who know the area and the topic of the mapping exercise, and who are willing to share their knowledge.
3. Choose a suitable place (ground, floor, paper) and medium (sticks, stones, seeds, pens, pencils) for the maps.
4. Help the people get started but let them draw the map by themselves. Be patient and don't interrupt them. It's their map.
5. Sit back watch or go away!
6. Keep a permanent (paper) record including mappers' names to give them credit.

Annex 6.7

MOBILITY MAP

CONTACTS WITH the "outside world" and decision-making power in a community are often closely linked. Spatial mobility in many societies can be used as an indicator for a person's contact with, and knowledge of, the outside world and his authority in the community. It may also indicate vulnerability, freedom, wealth, empowerment, education, or consciousness. The mobility map allows us to record, compare, and analyze the mobility of different groups of people in a community (e.g., old men, young men, women, children, educated).

1. Complete a mobility map for yourself for the last week/month/year.
2. Use different colors or patterns for different activities.

Example of legend of mobility map:

Work: _____

Visiting: ....

Health Care: ._._._._._._._._._.

Marketting: - - - - - - - - - - - -

Education: xxxxxxxxxxxxxxxxx

3. Form subgroups based on your gender, job, or marital status.
4. Compare maps in your subgroup and prepare one representative mobility map for your subgroup.

In disaster preparedness, the mobility map can help identify the normal route of people before or during events. This can help in mapping safe and dangerous routes the people take. Mapping this out will help in making risk assessment and planning alternative mobility plans in case on disaster.

Annex 6.8

TRANSECT

A transect is a diagram of main land use zones. It compares the main features, resources, uses, and problems of different zones.
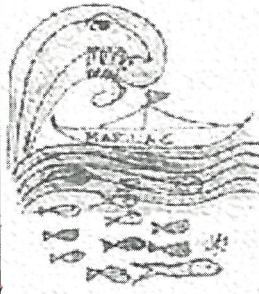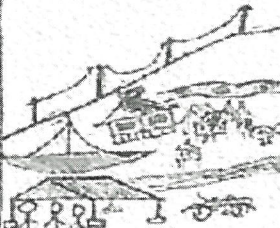
Steps of preparing a transect:

- Find community members who are knowledgeable and willing to participate in a walk through their village and surrounding areas.
- Discuss with them the different factors to be drawn in the transect (rivers, crops, land use, trees, soils, etc.) and which route to take.
- Walk the transect.
- Observe, ask, listen, (don't lecture).
- Discuss problems and opportunities, especially the hazards in the community.
- Identify the main natural and agricultural zones, and the physical hazards.Sketch distinguishing features. For each zone describe:

- soils
- crops
- livestock
- hazards/problems
- solutions
- opportunities/ capacities to mitigate hazards
- Draw the transect.
- Cross-check the transect with key informants.

RESOURCES			
BOAT FISH, & OTHER MARINE PRODUCTS	BOAT, SCHOOL, RIVER, STORE, KURYENTE, DAAN MANOK, BABOY, MOTORSIKLO, COMM PEOPLE,	RICEFIELDS, KAMOTE SAGING, NIYOG, CORN OTHER ROOT CROPS, CARABAO & OTHER LIVESTOCK, BUNGAY KAHOY, RIVER, TREES	TREES, BIRDS, WILD ANIMALS, SPRING
JOBS: LIVELIHOOD OBALS COMMUNITY ON	DRINKING WATER, FOR TRANSPORTATION, COMMER CIAL, LEARNING, SUPPLY SYSTEM, POWER SOURCE	COMMERCIAL CONSUMPTION FOR HOGS	FOR COMMERCIAL LUMBER, HOUSE & FUEL
PROBLEMS			
STORM SURGES, TYPHOON, TSUNAMI	FLOODS, TYPHOON, NO POTABLE DRINKING WATER NO HOUSING STRUCTURE INADEQUATE STORM DRAINAGE HIGH RISK AREA, LACK OF LEARNING CENTERS, SHORTAGE OF FOOD SUPPLY, HEALTH ISSUES HEALTH FACILITIES, LACK OF CONS. GROUPS, FOOD PRODUCTION	INADEQUATE WATER AT USAGE RAINFED RICE FARM, EROSION, FLOODED	LANDSLIDE, FOREST FIRE FLASH FLOOD

SEASONAL CALENDAR

How to Prepare a Seasonal Calendar

- Use squared (graph) paper.
- Draw a 12-month or 18-month calendar as appropriate. It need not start in January and should reflect the indigenous seasonal categories. Note: Don't impose your calendar. In some parts of the world the Western calendar is not used, and non-monthly intervals are relevant for the indigenous calendar.
- Obtain information from secondary sources and from interviews.
- Obtain quantitative information qualitatively. For example, for hazards they face during the month:
- First determine the most "dangerous" months by asking your informants a series of questions such as:

  "What are the hazards you face during each month?"

  "What losses do you encounter? "

  "What do you do then?"

- Similarly, if no rainfall data is available, determine the four wettest months, then the four driest months, and then the four middle months.
- An alternative method is to have community members use seeds, small fruits, stones, goat droppings, or the small and reasonably uniform counters to quantify. Sticks can be broken in different lengths and used to indicate relative magnitude. In this way an entire seasonal calendar can be constructed with sticks, stones, and seeds on the ground.
- Indicate the range(s) of planting and harvesting dates.
- Combine all seasonal patterns into one diagram to show correlations between different variables and identify any problem or opportunity time within the year.
- Cross-check and refine the seasonal calendar throughout the fieldwork. Watch out for seasonal and non-seasonal variations.

THE SEASONAL is a calendar showing the main activities, problems, and opportunities throughout the annual cycle in diagrammatic form (it really is a series of different diagrams shown on a single sheet). It helps identify the months of greatest difficulty and vulnerability, or other significant variances which have an impact on people's lives. A seasonal calendar can be used to summarize, among other things.

- indigenous seasons
- climate (rainfall and temparatures)
- crop sequences (from planting to harvesting)
- crop pests and diseases
- collection of wild fruits and herbs
- livestock (birth, weaning, sales, migration, fodder)
- livestock diseases

- income generating activities
- labor demand for men, women, children
- prices
- marketing
- human diseases
- social events
- types and quantity of cooking/heating fuel
- migration
- income and expenditures
- debt
- quantity or type of food consumed (diet)
- annual holidays

INDICATORS	Jan.	Feb.	Mar.	Apr.	May	Jun
Climate						
Agriculture						
Fishing/Aqua						
Religious Act.						
Health et all						
Socials et all						
Economic						

SEASONAL CALENDAR

INDICATORS	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Climate						
Agriculture						
Fishing/Aqua						
Religious Act.						
Health et all						
Socials et all						
Economic						

TIME TRENDS

Time trends show quantitative changes over time and can be used for many variables, including:

- yields
- area under cultivation
- livestock population
- prices
- interest rates
- migration
- time and distance to collect fuelwood and fodder
- population size and number of households
- birth and death rates
- malnutrition rates
- projects expenses
- rainfall

Method:

- use squared paper (or other materials)
- try to obtain data for at least ten years
- plot interactions of two or more variables on the same sheet
- obtain information from secondary sources and interviews
- ask community members to draw their own time trend diagrams
- where numbers are not available, show trends qualitatively or use qualitative methods to obtain quantitative data (see counters and sticks used for the seasonal calendar)

Annex 6.11
HISTORICAL PROFILE

Historical profile reveals important information for understanding the present situation in a community (e.g., the casual link between colonial land rights and deforestation and erosion). It provides a summary overview of the key historical events in a community and their importance for the present situation. Such events may include:

- hazards and disasters face by the community and degree of losses remembered by the people
- building of infrastructure (roads, schools, canals, railroads)
- introduction of new crops
- outbreaks of epidemics
- droughts and famines
- changes in land tenure
- changes in administration and organization
- major political events

The following matrix can be used to determine the historicity of hazards in the community, for example, flooding:

Historical Profile of Flooding

Year	Levels of Flooding (height)	Losses or damages		Other Remarks

Information is best taken from secondary sources (books, reports, archives) and from interviews with key informants (e.g., old people, leaders, school teachers).

Annex 6.12

LIVELIHOOD ANALYSIS

Livelihood analysis diagrams are used to help interpret the behaviors, decisions, and coping strategies of households with different socioeconomic characteristics. For example, a female-headed household with irregular income is likely to have different problems and needs, or spending patterns, than the household of a rich merchant or a government employee, and may adopt different coping strategies in the case of a crisis. Variables for a livelihood analysis may include:

- household size and composition
- number of labor migrants in the household
- livestock and land ownership
- proportion of income by source
- expenditures
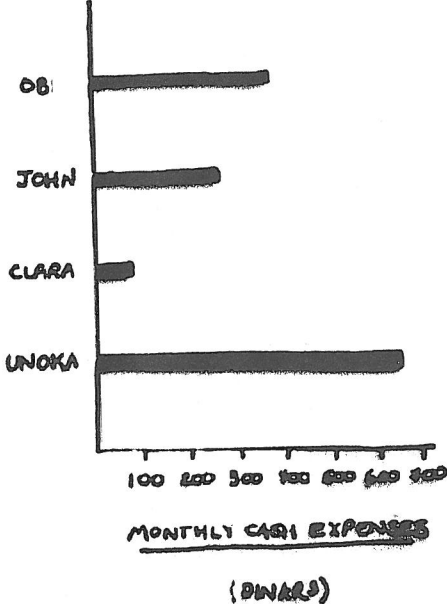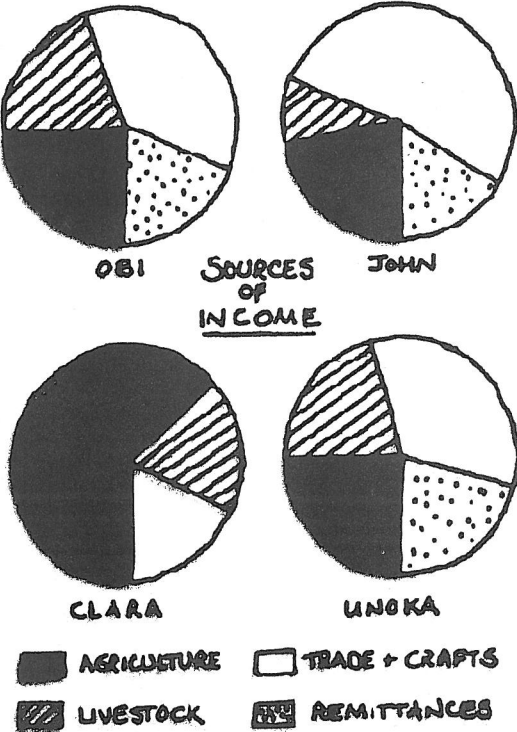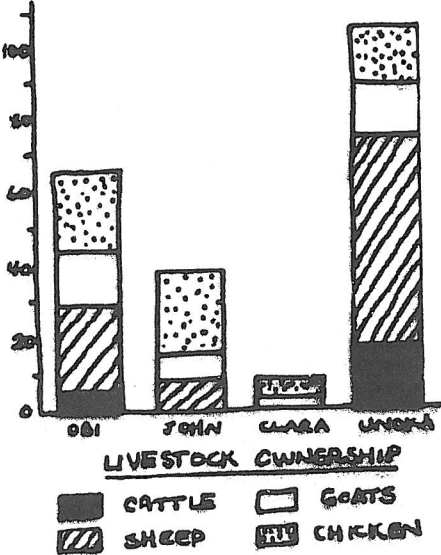- seasonality
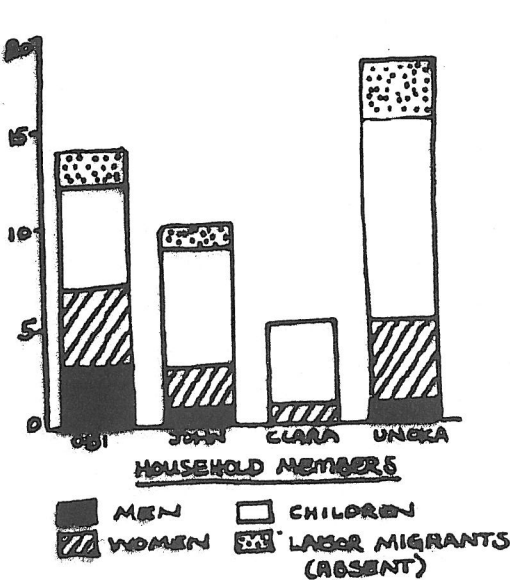- relative income
- credit and debt

Steps:

- clarify indigenous definition of "household"
- choose variables to be recorded (household size, number of animals, source of income, type/size of house)
- choose basis of socio-economics stratification (size of household, amount of land owned, main source of income)
- devise data collection table
- produce copies of data table for each team member
- obtain quantitative data qualitatively (see seasonal calendar)
- interview at least 8 individual community members
- cross-check information through direct observation of key indicators
- prepare livelihood analysis diagram
- ask community members to draw their own diagrams. For example, for pie charts: a circle is found, formed or drawn as the basis of the diagram. The circle can be on the ground, on paper, in the form of a plate covered with grain, or any convenient circle that can be found in nature of manmade. Invite people to quantify proportions by drawing lines out from the center of the circle. The segments thus formed represent percentages.

The livelihood analysis is very important in analyzing the vulnerability of the people. During disasters, the livelihood of the people are the one that are generally affected and this analysis can provide input for determining possible losses, how the losses can be mitigated through analysis of the trends for livelihood and the ways of rehabilitating affected livelihood.

Example of a Livelihood Analysis Diagram

HOUSEHOLD MEMBERS

- ■ MEN
- ▨ WOMEN
- □ CHILDREN
- ▨ LABOR MIGRANTS (ABSENT)

LIVESTOCK OWNERSHIP

- ■ CATTLE
- ▨ SHEEP
- □ GOATS
- ▨ CHICKEN

SOURCES OF INCOME

OBI   JOHN

CLARA   UNOKA

- ■ AGRICULTURE
- ▨ LIVESTOCK
- □ TRADE + CRAFTS
- ▨ REMITTANCES

MONTHLY CASH EXPENSES

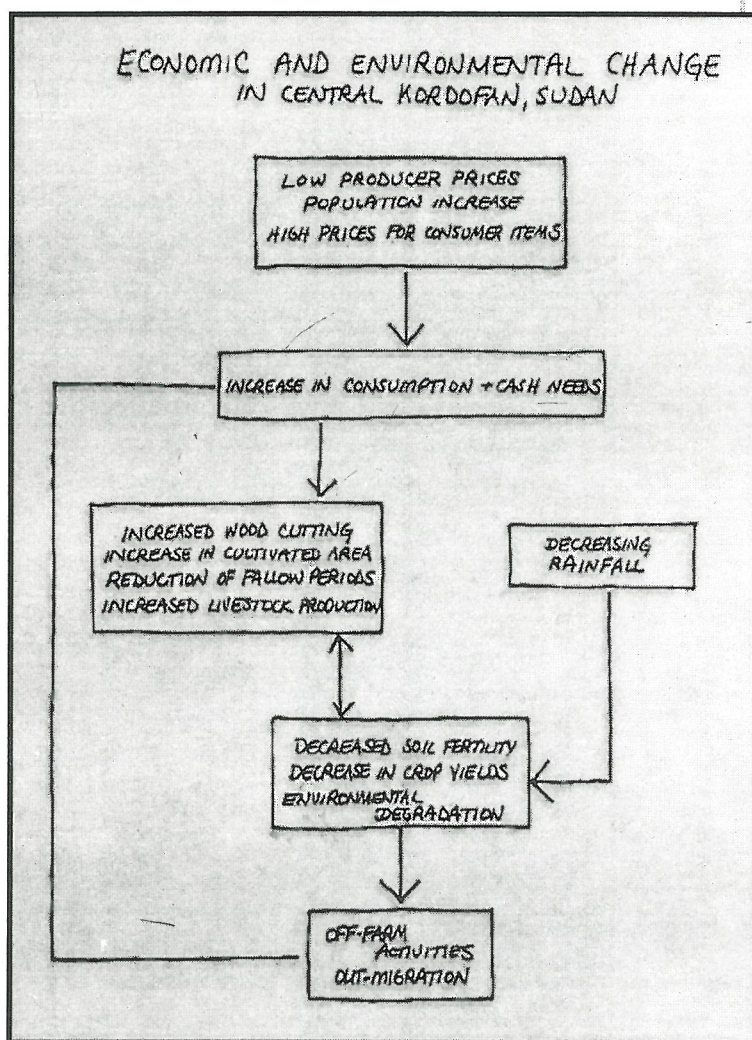(DINARS)

Annex 6.13

FLOW DIAGRAM

A flow diagrams show causes, effects, and relationships between key variables.

Examples:

- Relationship between economic, political, cultural, and climatic factors causing environmental degradation

- Flow of commodities and cash in a marketing system

- Production cycle for a major commodity

- Effects of major changes or innovations (impact diagrams)

- Organization chart

Steps:

- select processes or relationships to be analyzed

- obtain information from secondary sources and from key informants

- keep diagrams simple, less than 20 boxes

- use boxes for key variables, and arrows to connect boxes

- include process and/or quantities alongside arrows in production cycles

- use + or – signs in impact diagrams to indicate positive or negative relationships

- ask community members to draw their own flow diagrams

ECONOMIC AND ENVIRONMENTAL CHANGE IN CENTRAL KORDOFAN, SUDAN

LOW PRODUCER PRICES
POPULATION INCREASE
HIGH PRICES FOR CONSUMER ITEMS

INCREASE IN CONSUMPTION + CASH NEEDS

INCREASED WOOD CUTTING
INCREASE IN CULTIVATED AREA
REDUCTION OF FALLOW PERIODS
INCREASED LIVESTOCK PRODUCTION

DECREASING RAINFALL

DECREASED SOIL FERTILITY
DECREASE IN CROP YIELDS
ENVIRONMENTAL DEGRADATION

OFF-FARM ACTIVITIES
OUT-MIGRATION

VENN DIAGRAM

A Venn diagram (named after the man who created it) shows the key institutions and individuals in a community and their relationship and importance for decision-making

Steps:

- identify key institutions and individuals responsible for decisions in a community or organization
- identify degree of contact and overlap between them in terms of decision-making. Overlap occurs if one institution asks or tells another to do something or it they have to cooperate in some way.
- obtain information from secondary sources, group interviews, or from key informants
- size of circle indicates importance or scope
- arrange as follows:

Separate circles	=	no contact
Touching circles	=	information passes between institutions
Small overlap	=	some cooperation in decision making
Large overlap	=	consider cooperation in decision making

- draw the Venn diagram first in pencil and adjust the size or arrangement of circles until the representation is accurate. When you are satisfied, go over the pencil with a marker for easy reading. Experiment with different materials.
- encourage community members to draw their own Venn diagrams
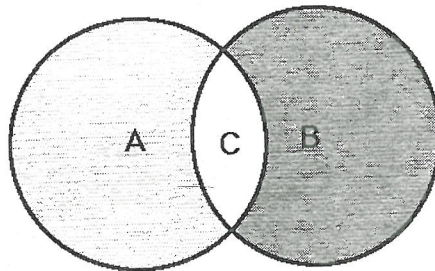
The Venn Diagram is made up of two or more overlapping circles. It is often used in mathematics to show relationships between sets. In language arts instruction, Venn Diagrams are useful for examining similarities and differences in characters, stories, poems, etc.

It is frequently used as a prewriting activity to enable students to organize thoughts or textual quotations prior to writing a compare/contrast essay. This activity enables students to organize similarities and differences visually

◆7◆ Hazard mapping

What is hazard mapping?

THE HAZARD MAP is a reminder to community to be always conscious of disaster. Before the community can decide on how best they can reduce their vulnerability to natural hazards, it is necessary to pinpoint what are the most important local hazards – perceived or real – and who and what they are jeopardising. Therefore, the DMS staff assist the BDATs in producing hazard maps of the barangay, showing:

' General infrastructure and topography of the area

' Areas which are, or could be, most affected by disaster situations relevant to the local area

' Resources, homes, community facilities (schools, churches, parks, etc.), or important productive units (farmland, shops etc.) located in the dangerous areas.

' Possible ways to mitigate the effects of hazards

HAZARD MAPPING requires that the added experience of community be compiled so that, for example, the extent of flooded areas during different storm surge cases can be plotted. However, some hazards are less obvious – especially if they have not caused trouble previously. Therefore, the ICDPM staff have some basic hazard recognition training to enable them to assist in assessing unrecorded risk situations. As an example, the ICDPM team might observe a steep, denuded slope showing signs of erosion, and brings the risk of a local landslide to the attention of the BDAT – and they may add the risk zone to the map. It is important to realise that the PNRC staff are not engineers or geologists, so in some cases they may recommend to call in specialist to provide a professional assessment of a potentially critical situation.

DEPENDING ON the size and complexity of the barangay community and landscape, it takes trained personnel between three days and two weeks to complete the mapping field work in one barangay. Usually the whole BDAT, some barangay officials and some times municipal engineer personnel – and a lot of spectators – are involved. Thus, the mapping