TRAINER'S GUIDE

This guide is a companion to the module on Vulnerability and Risk Assessment, and is designed to help you present the material in an interesting and interactive manner. There are two parts of this guide. The first, "The Basics" gives some advice for the presentation of any material for an adult audience. The second, "The Specifics" relates specifically to the module on Vulnerability and Risk Assessment. It provides a step by step guide through the presentation of the material covered complete with overheads, group excercises, and even reminders for taking breaks as needed. Although the guide can be the basis for a complete and structured presentation , your creativity and response to the dynamics of the training session are essential to providing a good learning experience. Improvise as you see fit, and always remember to relate the material presented to the experiences and needs of the participants.

THE BASICS

Preparation

Careful preparation is the key to any successful presentation. If you are familiar with your audience , it is important to tailor the material presented to relate to their experiences. You should first look over all of the material available and then select those materials suitable to the time constraints of the training session and the needs of the participants. Try to augment the materials with items that are "closer to home" for the audience. Related articles from local newspapers and magazines can strengthen the points being made and give them more relevance for the individual participants.

Also remember that the discussion may go far afield from the material presented despite your best efforts to "keep on track." This is not necessarily a problem as long as the discussion covers the areas that are of concern to the audience and are related to the material at hand. It will be up to you to decide if the material being covered is of value to the group. Remember that time is always in short supply and should be used to the best advantage of all concerned. To make these decisions you will have to be familiar enough with the material to know what parts can be left out or covered very quickly with your particular audience.

The physical environment of the training and the visual aids that you use can either strengthen or weaken your presentation. Small matters of detail can often make a training run smoothly if properly attended to and planned for. The following are a few of these "small things" that should not be overlooked:

- If you intend to use a flip chart for presentations or for group exercises, be sure to have an adequate supply of paper and markers.
- Check out the markers to make sure that they are in good working order (not dried up).
- Make sure that the stand or stands are stable.
- Bring tape and pins if you need to attach sheets to the wall.
- Remember extra lamps for the slide or overhead projector.
- Test equipment before setting up for the presentation.
- Look over the room for the presentation and be aware of electrical outlet locations. Will you need extension cords?
- Be aware of window and door locations . Arrange the screen and projector to allow for exit and entry from the room without disruption of the session.

The basics of adult learning

The participants of this training session are your colleagues. They bring with them many insightful experiences that may enhance the session. As such, the

basic tenets of "classroom learning" do not always apply. Remember the following points when giving a presentation for an adult audience:

- The participants will learn the material better if they can relate it to personal experience or daily use application.
- As your colleagues, the participants will be more interested in the session as a whole if they can actively participate rather than simply listen.
- As adults, the participants are responsible for their own learning, and should be encouraged to ask questions that will provide them with what they really need to know.
- The learning objectives of the session should be defined at the outset.
- You should be flexible but remember the basic thrust of the session. The participants have various learning styles, but they are attending this session to learn about this topic.

The ice breaker

Often the most difficult and the most important part of the training session is the beginning. It is important to get off to a timely start and to set the proper pace in order to complete the session in the time available. Participants need to be introduced to one another and made comfortable in their surroundings. They also need to be quickly prompted to take an active role in the training. This may be done with an "icebreaker."

One typical exercise is to divide the participants into pairs and have them interview each other. After a few minutes have the interviewers introduce their counterparts to the group as a whole.

Another idea is to ask the participants to introduce themselves and to each give a short statement of their expectations of the course or give a short narrative about experience they have had with the topic to be covered.

Whichever method you decide to use, the point is to quickly get all of the participants to actively participate (even if in a small way) as soon as possible.

The first ten minutes

You have your material, you have your audience, you even have an icebreaker ready to use. This is one way of getting started.

1. Welcome the participants and introduce yourself and the topic to be covered.
2. Use your icebreaker to get everyone involved in the process.
3. Review the learning objectives of the session. Ask the participants for additional objectives that they may wish to pursue.
4. Make it clear to the group that the session is to be interactive and that active participation in the session is the norm. Encourage the participants to ask questions as they arise, and to freely add their own input on issues that they have had personal experience with.
5. Outline your schedule (and strive to keep it). You may want to appoint or ask for a volunteer timekeeper to help keep the session on schedule.

Group exercises

To give some variety to the session and to keep the participants actively involved, you may want to mix in some group activities or exercises. Some of the basic types of activities are a follows:

Example 1

Divide the group into smaller groups and assign a short question or case study. Have the groups identify the pertinent issues to the session topic and have them compile by consensus a list of their conclusions. Ask that one of the group members be the reporter who will then present their findings back to the "plenary."

Example 2

Pose a general question to the group as a whole and then "brainstorm" the issues using a flip chart or the overhead projector to record the results. If the question serves as a "pre-test," preserve the list and then review it after the material has been covered in the session.

Example 3

Role playing scenarios. Work up a possible scenario that might occur in the participants' day to day activities. Have the group break into sub groups who will take on the role of agencies or individuals responsible for different aspects of the scenario and have them work through the issues in this way.

Audio visual aids

Audio visual aids can greatly enhance your presentation. To be effective they must:

- Clearly illustrate the topic at hand
- Hold the attention of the participants
- Focus attention on the essential points
- Reinforce the message that the presenter is trying to get across

This guide has a complete set of overheads included which can be used to present the topic. You can add to or delete from this collection of overheads as you see fit. Clear acetate sheets and colored felt tip markers will allow you to highlight areas on the overheads provided or to create instant overheads as needs arise. If you are going to rely on the overhead projector for your presentation you should follow these reminders:

- Clean the lens and surface in advance
- Set up the screen and the projector in advance, if possible, then set up the screen as high as possible and at an angle to the wall
- Face your audience, not the screen, and use a ruler or pointer to direct attention to the appropriate points as they are discussed
- Turn off the machine when not in use

THE SPECIFICS:

Vulnerability and risk assessment

The following guide is designed as an aid to the presentation of the module on "Vulnerability and Risk Assessment". Although the overheads provided and the cues to the presentation are a complete set, they are really only a starting point for your presentation.

If your available time is less than 3 hours for the full presentation, you will have to decide which points you will cover and those which you will not address. If your personal experience has given you additional insights or illustrations of the points presented, integrate them into your presentation. You may want to edit out, or add overheads to the presentation.

Similarly, you must know your audience and their needs in order to make the presentation pertinent to the group. If the information is available early enough, you can alter the material to suit the particular needs of the trainees. Remember, the guide is for a "generic" presentation on this topic, and your input can help to "bring the information home" to the participants.

Materials you will need

All of the usual items required for any presentation are listed under the first part of this guide: "The Basics". Some additional items particular to this module are as follows:

- Copies of the training module "Vulnerability and Risk Assessment". You may prefer to distribute these at the end of the session in order to keep the group more focused on the presentation.
- Copies of the case study "Reducing Disaster Risk in Mexico City Vecindades". You will need to pull out the separate sections in the module (on colored pages) and bind them together for distribution.
- A copy of the UNDP/UNDRO Disaster Management Manual
- Copies of other examples of risk mapping, vulnerability maps or studies, or other documents you may have access to
- Copies of "An Overview of Disaster Management" module

The Presentation

This presentation is based on a total of three hours.

INTRODUCTION *(15 minutes)*

Welcome

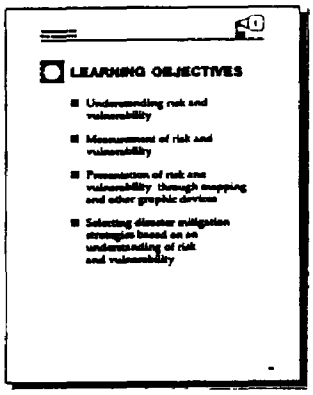
Introduce yourself, have participants introduce themselves (try an icebreaker).

Topic identification

Introduce the topic "Vulnerability and Risk Assessment." Explain your format, schedule, and arrangement for breaks and messages.

Objective setting

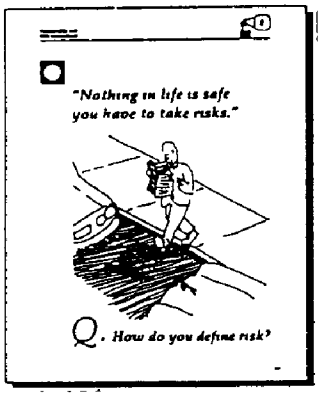
Ask participants to list their learning objectives on a flip chart or wall chart.



1 *Learning objectives*

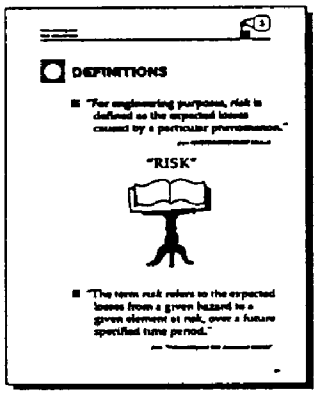
Compare the participants' learning objectives with these.

PART ONE: UNDERSTANDING RISK *(45 minutes)*



2 *"Nothing in life is safe . . ."*

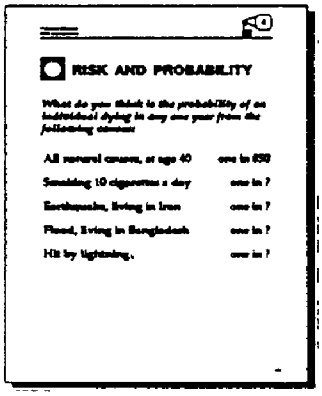
Show the overhead—ask the participants to define risk. Record answers on a flip chart or wall chart.



3 *Definitions*

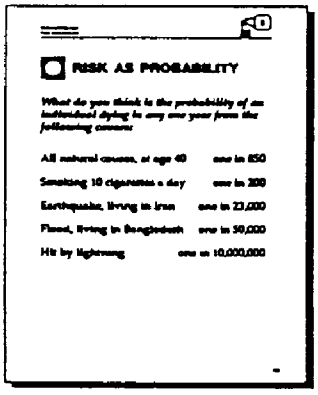
Read through the definitions of risk and compare them to the definitions given by the group.

▲ *Warning!* Cover this point quickly and then move on. The discussion of terms and definitions can often take too much valuable time in the presentation without leading to any consensus or particular point. The idea is to simply acknowledge that terminology differs among users, and to agree on a definition to be used for this training.



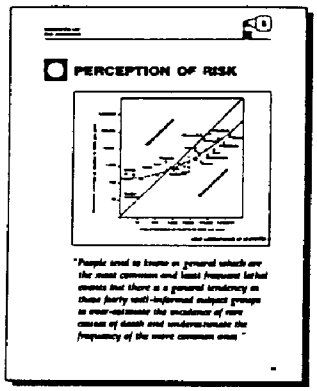
4 *Q. Risk as probability*

Ask the participants to provide answers for the questions on the overhead.



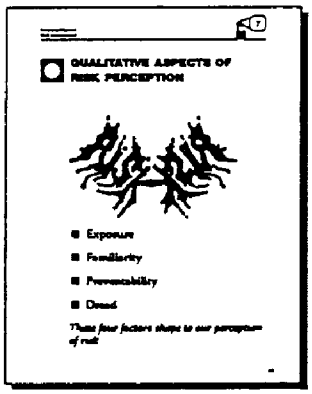
5 *A. Risk as probability*

Compare group answers to those given. Note the general trend (if any) in variance of group response from actual probability given.



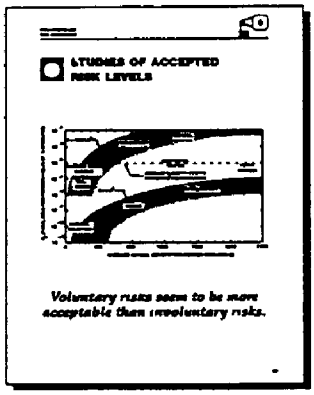
6 *Perception of risk*

Read the quotation from the training module and compare to elements on the graph.



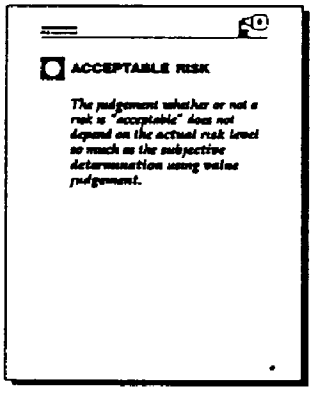
7 *Qualitative aspect of risk perception*

Discuss the four factors affecting our perception of risk.



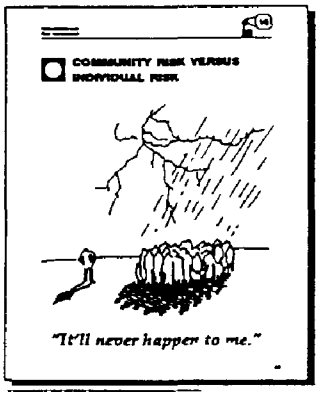
8 *Study of risk levels*

Introduce the concept of voluntary versus involuntary risks.



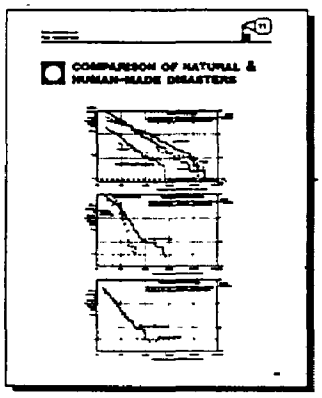
9 *Acceptable risk levels*

Read quotation and ask the group for examples of "value judgements" that affect our acceptance or unacceptance of various risk levels.



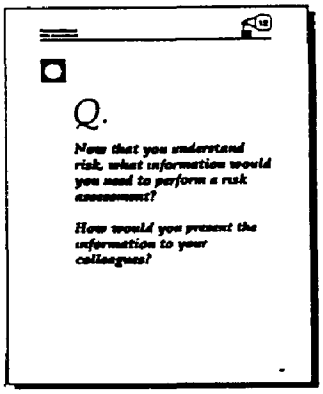
10 Community risk versus individual risk

Compare the individual's role in risk management to that of the community.



11 Comparison of natural & human-made disasters

Show the overhead and point out comparative risk of death associated with the various disaster types listed. Ask the participants if these results agree with their perception of the various risks involved.

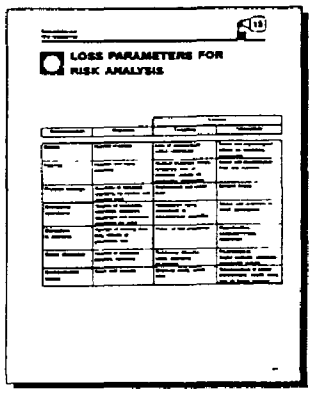


12 Question

Ask the questions given in the overheads. You may want to break up the group into sub-groups, and conduct this as a small group exercise, having a member of each group present their findings on a flip chart. You may want to add more detail or set up a scenario of interest to the group for this exercise.

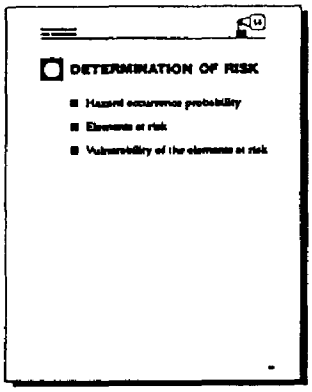
BREAK *(15 minutes)*

PART TWO: RISK ASSESSMENT *(45 minutes)*



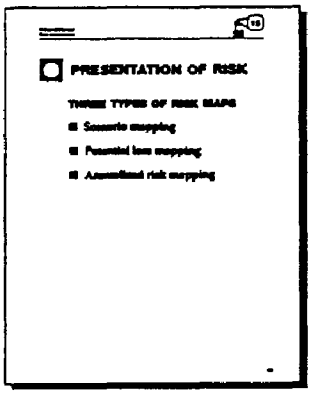
13 *Loss parameters*

Discuss the chart stressing the tangible versus intangible losses.



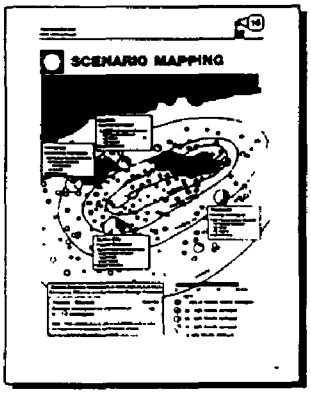
14 *Determination of risk*

Explain the three essential components of risk determination.



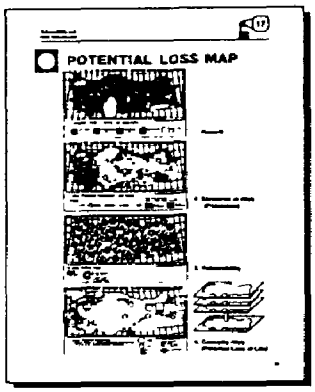
15 *Presentation of risk*

List the three types of risk maps discussed in the training module. Ask the group for other methods of presentation of risk that they are familiar with.



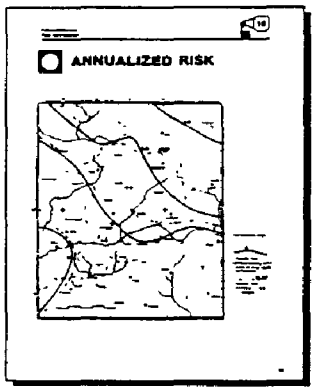
16 *Scenario mapping*

Guide the participants through the information presented in the map. Ask the group to make note of what types of information are not presented.



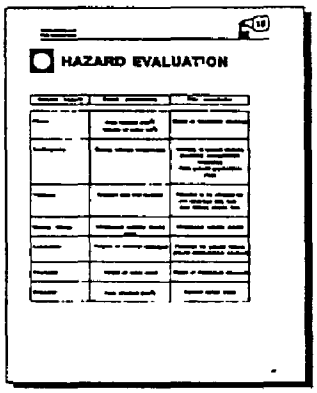
17 *Potential loss mapping*

Show the overhead and explain that the first 3 maps are combined to produce the last one.



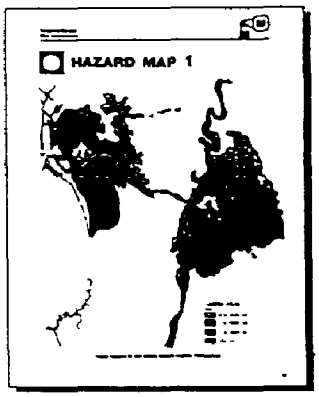
18 *Example 3*

Show the overhead and ask the participants if there is any benefit of this type of mapping over the previous examples shown.



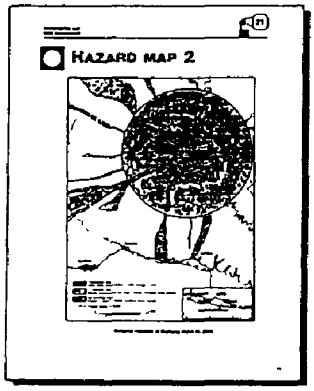
19 *Hazard evaluation*

Note the differences between "site parameters" and "event parameters" on the chart.



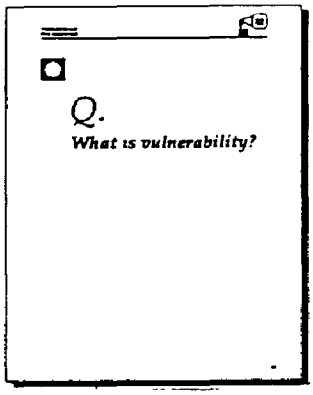
20 *Hazard map 1*

(Briefly show this overhead, along with #21, as examples of hazard mapping)



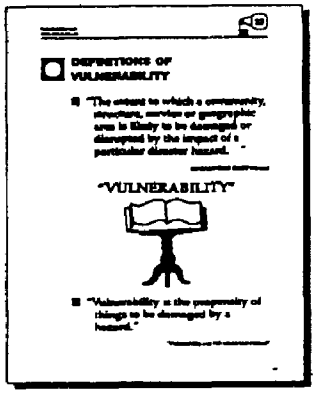
21 *Hazard map 2*

(Briefly show this overhead, along with #20, as examples of hazard mapping)



22 *What is vulnerability?*

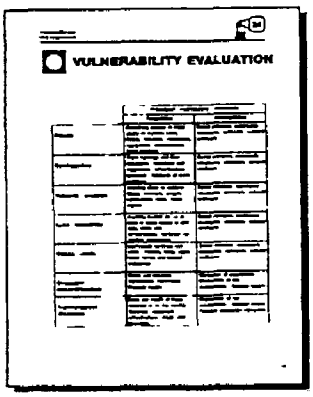
Ask this question and record response on a wall chart or a separate overhead with a felt tip marker.



23 *Definition of vulnerability*

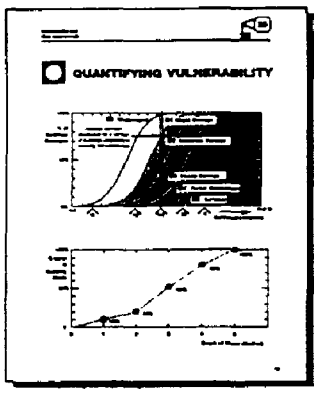
Show the overhead and compare the definitions. Ask participants to explain differences between these and their own definitions.

▲ *Warning!* Cover this quickly and get on to the next point. Definitions can take up valuable time without resolving anything. The real importance of this overhead is simply to acknowledge that different definitions exist, which need to be understood.



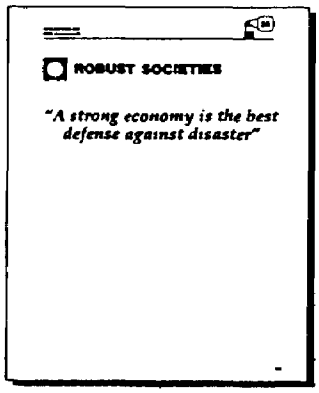
24 *Vulnerability evaluation*

Discuss the tangible and intangible aspects of loss. Note difference in losses as a function of the different disaster types.



25 *Quantifying vulnerability*

Show the overhead and explain the graphs. Discuss information that is well presented in this format. Ask what information is not presented here.

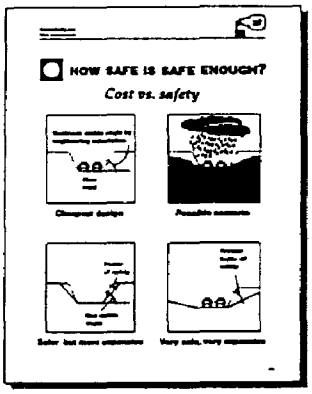


26 *Robust societies*

Read the quote. Poll the group to find out if the majority agree with this statement. This is a good discussion topic to end this part with.

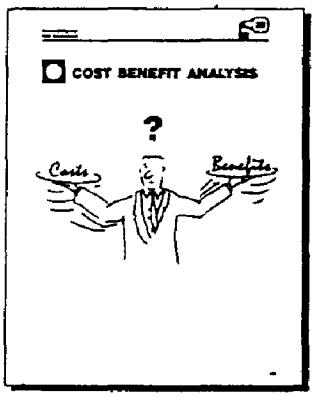
▲ *Warning!* This discussion will run long if you let it. Try to keep on schedule.

PART THREE: APPRAISING DISASTER MITIGATION OPTIONS *(45 minutes)*



27 *How safe is safe enough?*

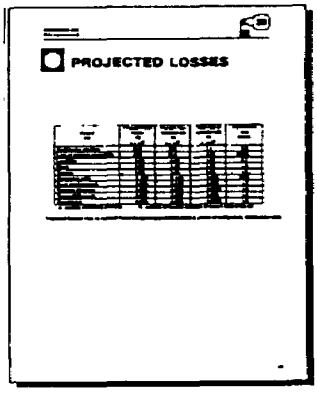
Guide the group through the illustrations on the overhead. Make the point that a "factor of safety" is usually designed into this type of project, but the question is how much extra safety do you plan for? At what cost?



28 *Cost benefit analysis?*

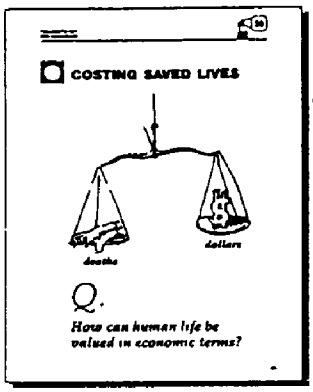
Introduce the basic approach to decision making in development programs through cost benefit analysis.

Poll the group to find out how many people have had personal experience dealing with these calculations.



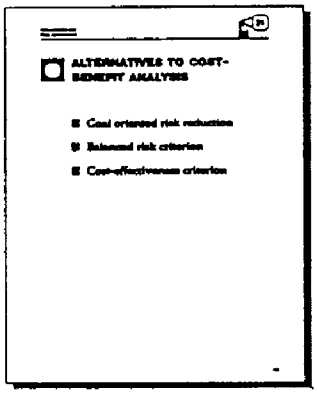
29 *Study of risk levels*

Show the chart and note the benefit/cost ratio column.



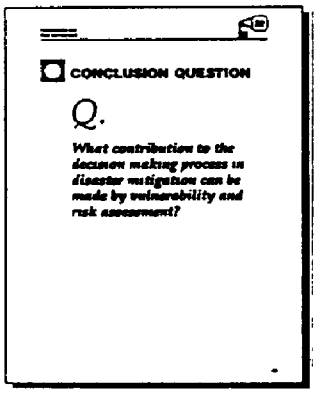
30 Costing saved lives

Ask the question, "How can human life be valued in economic terms?" Take down answers from the group on a flip chart.



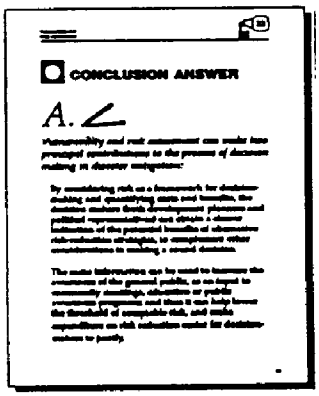
31 Alternatives to cost benefit analysis

Explain the three alternatives to cost benefit analysis covered in the training module.



32 Concluding question

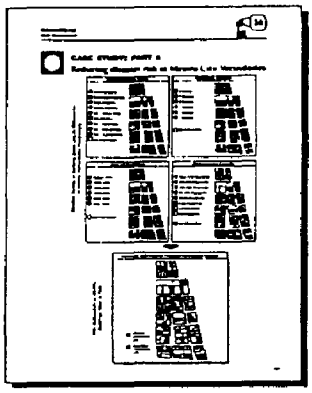
Ask the group to give answers to the question. This is a good topic for a small group exercise. Ask the sub-groups to convene and prepare an answer to the question as well as an example from their experience illustrating their answers.



33 Concluding answer

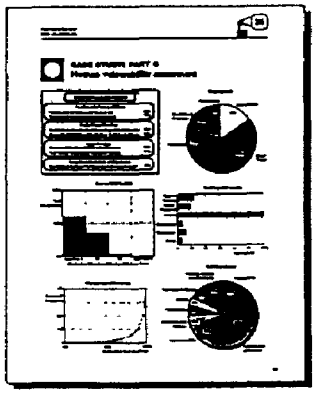
Show the overhead and read the answer to the question from overhead #32. Ask the participants for additional answers not given in the overhead.

OPTIONAL CASE STUDY *(as time allows or jump to "wrap-up")*



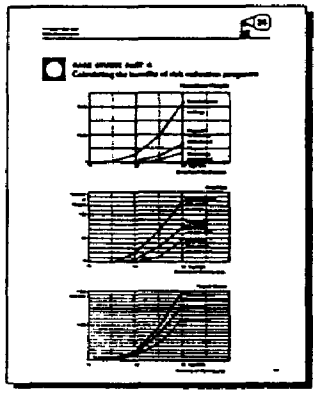
34 Case study: Part A

Distribute copies from the training module. Include all three parts. Go through the maps explaining each as required. Use the overhead as a reference to guide the participants through the information in the hand-outs.



35 Case study: Part B

Explain the graphs and charts comparing the human vulnerability assessment presented in each. Ask the participants to note what assumptions have been made by the assessment.



36 Case study: Part C

Again, explain the diagrams and compare the benefits of the two risk reduction programs for each of the three categories of loss: homeless people, fatalities, repair costs.

Lead a discussion in the role of political and economic factors in making a decision on which program proposed, if any, the community should initiate.

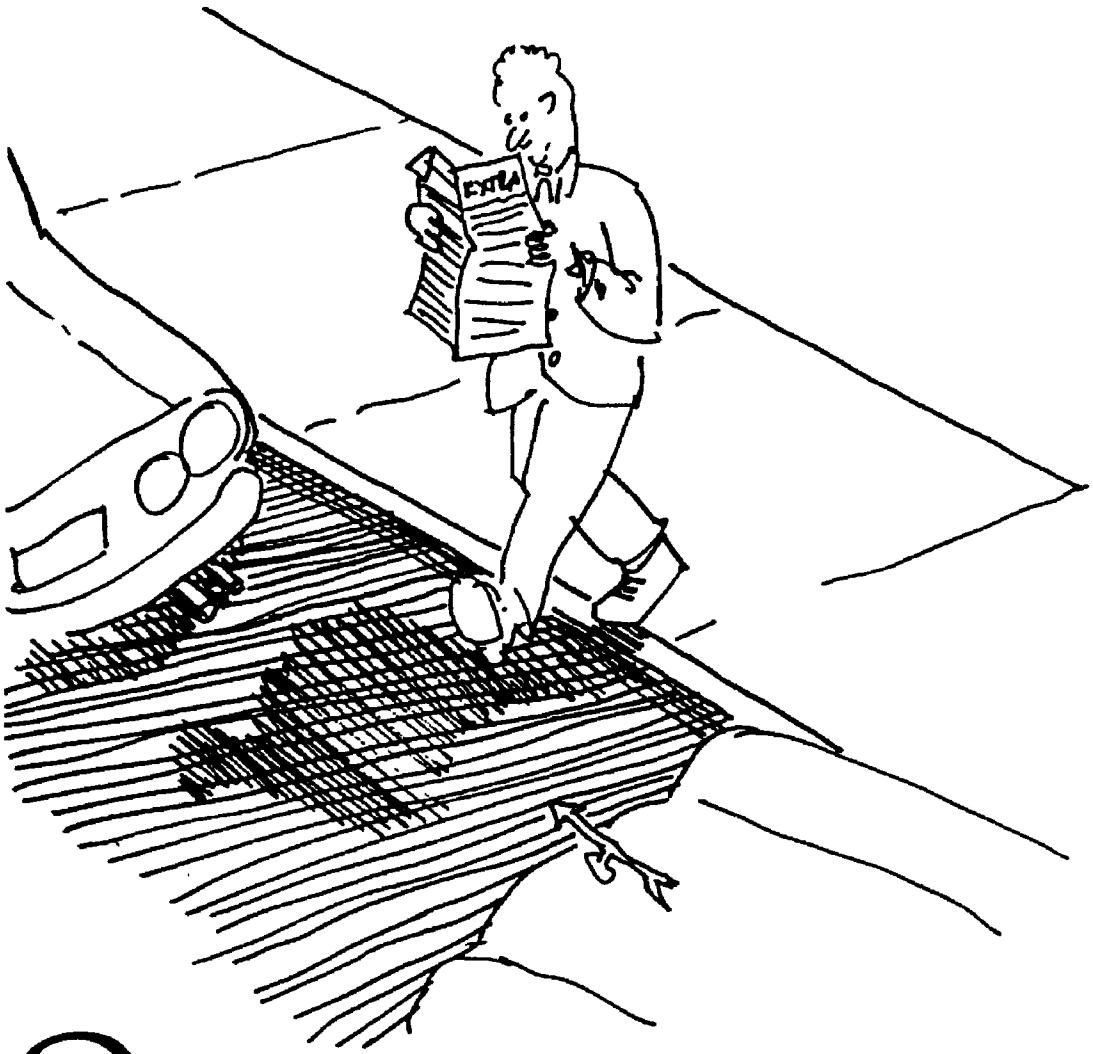
WRAP-UP *(15 minutes)*

- Recall major issues covered in the session.
- Identify conclusion reached.
- Identify questions left unanswered.
- Ask everyone to complete the evaluation form and thank them for attending.

LEARNING OBJECTIVES

- Understanding risk and vulnerability
- Measurement of risk and vulnerability
- Presentation of risk and vulnerability through mapping and other graphic devices
- Selecting disaster mitigation strategies based on an understanding of risk and vulnerability

"Nothing in life is safe . . . you have to take risks."



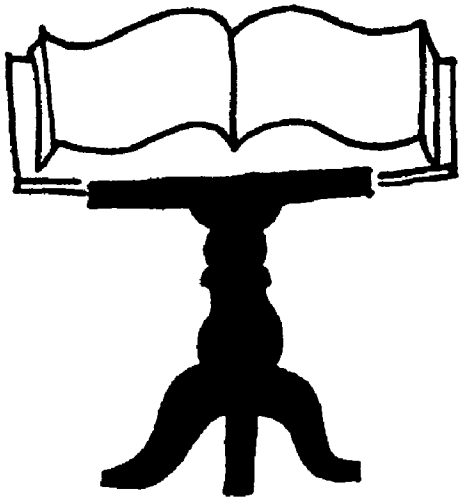
Q. How do you define risk?

DEFINITIONS

- "For engineering purposes, ***risk*** is defined as the expected losses caused by a particular phenomenon."

from UNDP/UNDRO DMTP Manual

"RISK"



- "The term ***risk*** refers to the expected losses from a given hazard to a given element at risk, over a future specified time period."

from "Vulnerability and Risk Assessment Module"

RISK AND PROBABILITY

What do you think is the probability of an individual dying in any one year from the following causes:

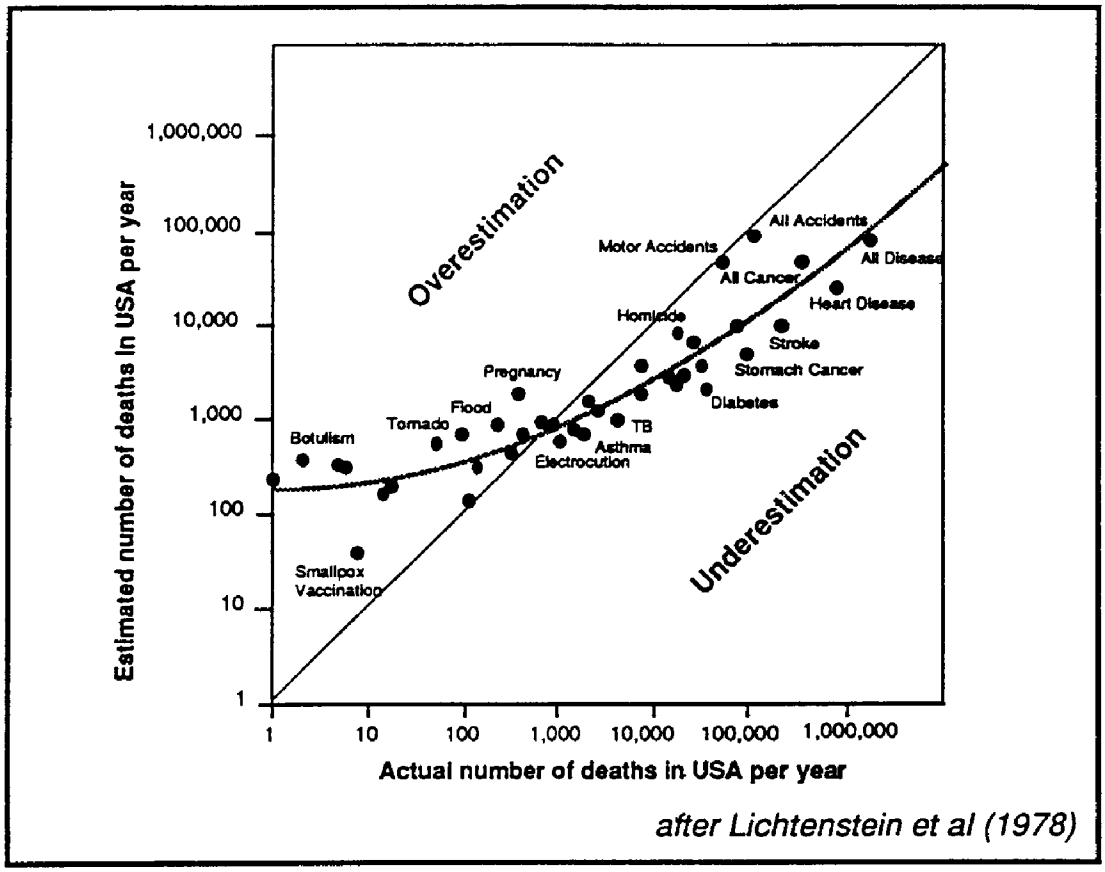
All natural causes, at age 40	one in 850
Smoking 10 cigarettes a day	one in ?
Earthquake, living in Iran	one in ?
Flood, living in Bangladesh	one in ?
Hit by lightning	one in ?

RISK AS PROBABILITY

What do you think is the probability of an individual dying in any one year from the following causes:

All natural causes, at age 40	one in 850
Smoking 10 cigarettes a day	one in 200
Earthquake, living in Iran	one in 23,000
Flood, living in Bangladesh	one in 50,000
Hit by lightning	one in 10,000,000

PERCEPTION OF RISK



after Lichtenstein et al (1978)

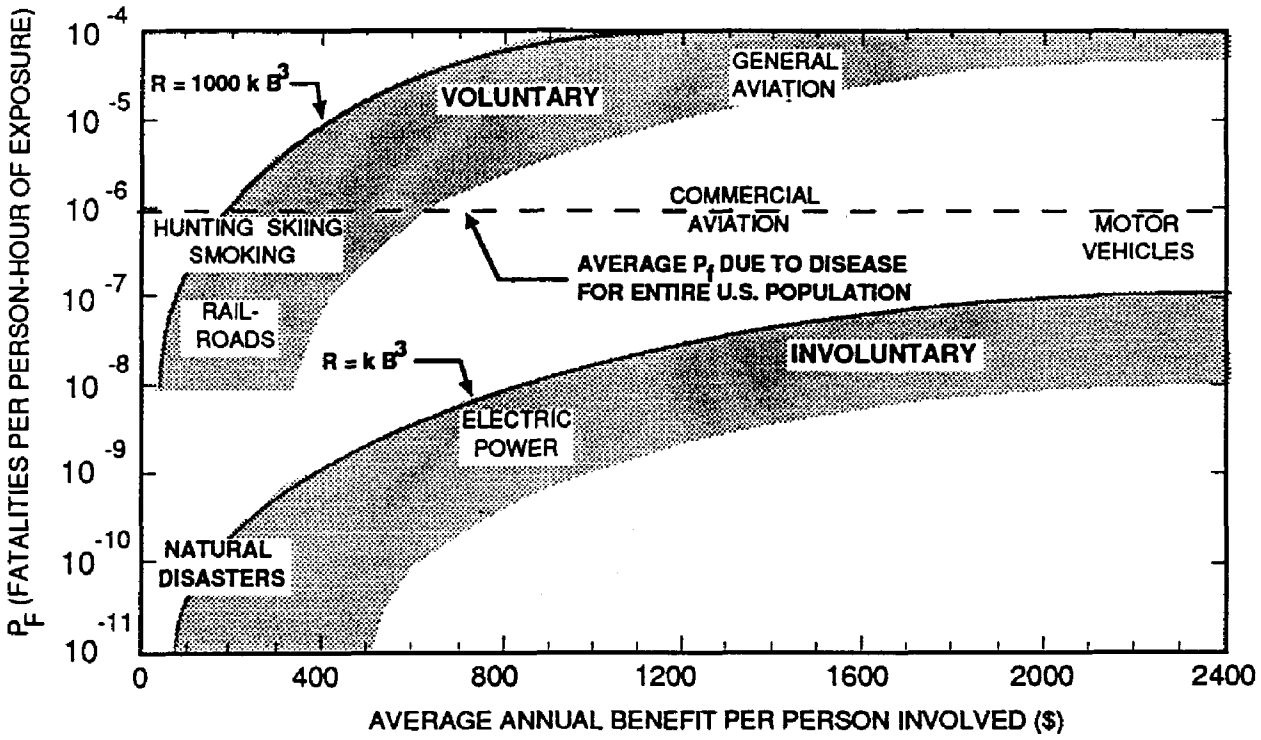
"People tend to know in general which are the most common and least frequent lethal events but there is a general tendency in these fairly well-informed subject groups to over-estimate the incidence of rare causes of death and underestimate the frequency of the more common ones."

QUALITATIVE ASPECTS OF RISK PERCEPTION

- Exposure
- Familiarity
- Preventability
- Dread

These four factors shape to our perception of risk

STUDIES OF ACCEPTED RISK LEVELS

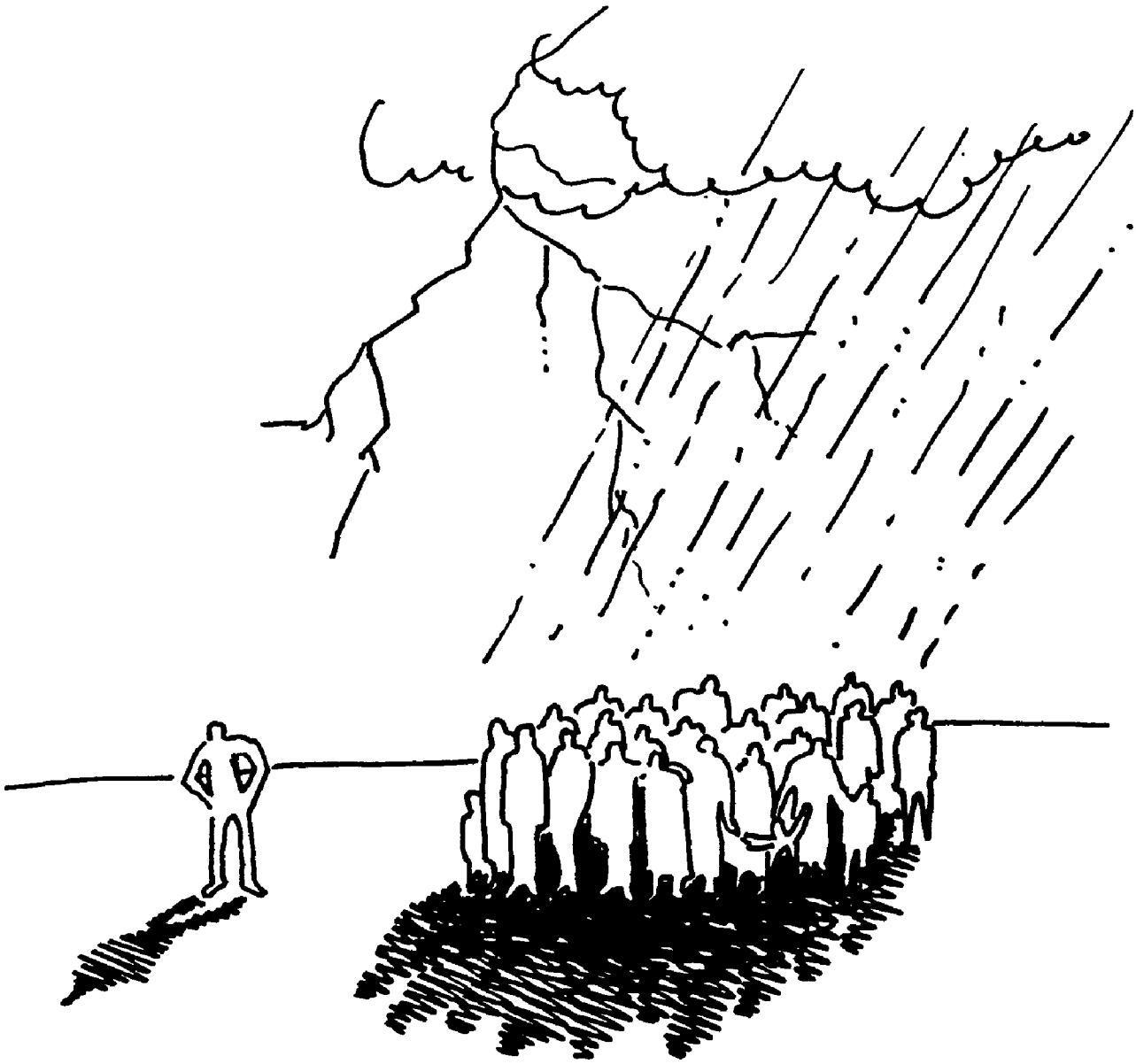


Voluntary risks seem to be more acceptable than involuntary risks.

ACCEPTABLE RISK

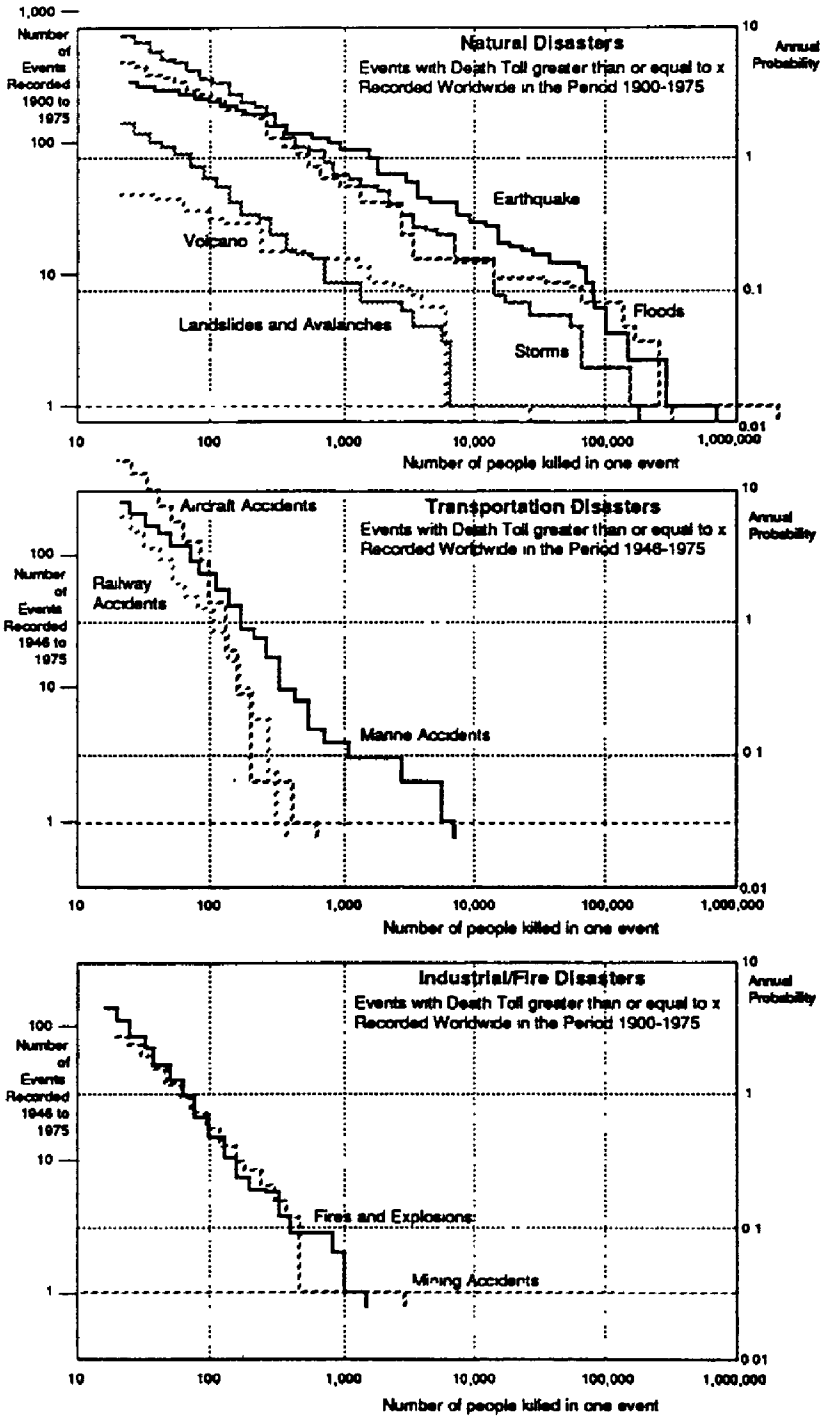
The judgment that risk is "acceptable" is not something that depends on ***actual risk level*** *so much as a* ***subjective determination*** *using* ***value judgments.***

COMMUNITY RISK VERSUS INDIVIDUAL RISK



"It'll never happen to me."

COMPARISON OF NATURAL & HUMAN-MADE DISASTERS



Q.

Now that you understand risk, what information would you need to perform a risk assessment?

How would you present the information to your colleagues?

LOSS PARAMETERS FOR RISK ANALYSIS

		Losses	
Consequences	**Measure**	**Tangible**	**Intangible**
Deaths	Number of people	Loss of economically active individuals	Social and psychological effects on remaining community
Injuries	Number and injury severity	Medical treatment needs, temporary loss of economic activity by productive individuals	Social and psychological . Pain and recovery
Physical damage	Inventory of damaged elements, by number and damage level	Replacement and repair cost	Cultural losses
Emergency operations	Volume of manpower, man-days employed, equipment and resources expended for relief	Mobilization costs, investment in preparedness capability	Stress and overwork in relief participants
Disruption to economy	Number of working days lost, volume of production lost	Value of lost production	Opportunities, competitiveness, reputation
Social disruption	Number of displaced persons, homeless	Temporary housing, relief, economic production	Psychological, Social contacts, cohesion, community morale
Environmental impact	Scale and severity	Clean-up costs, repair cost	Consequences of poorer environment, health risks, risk of future disaster

DETERMINATION OF RISK

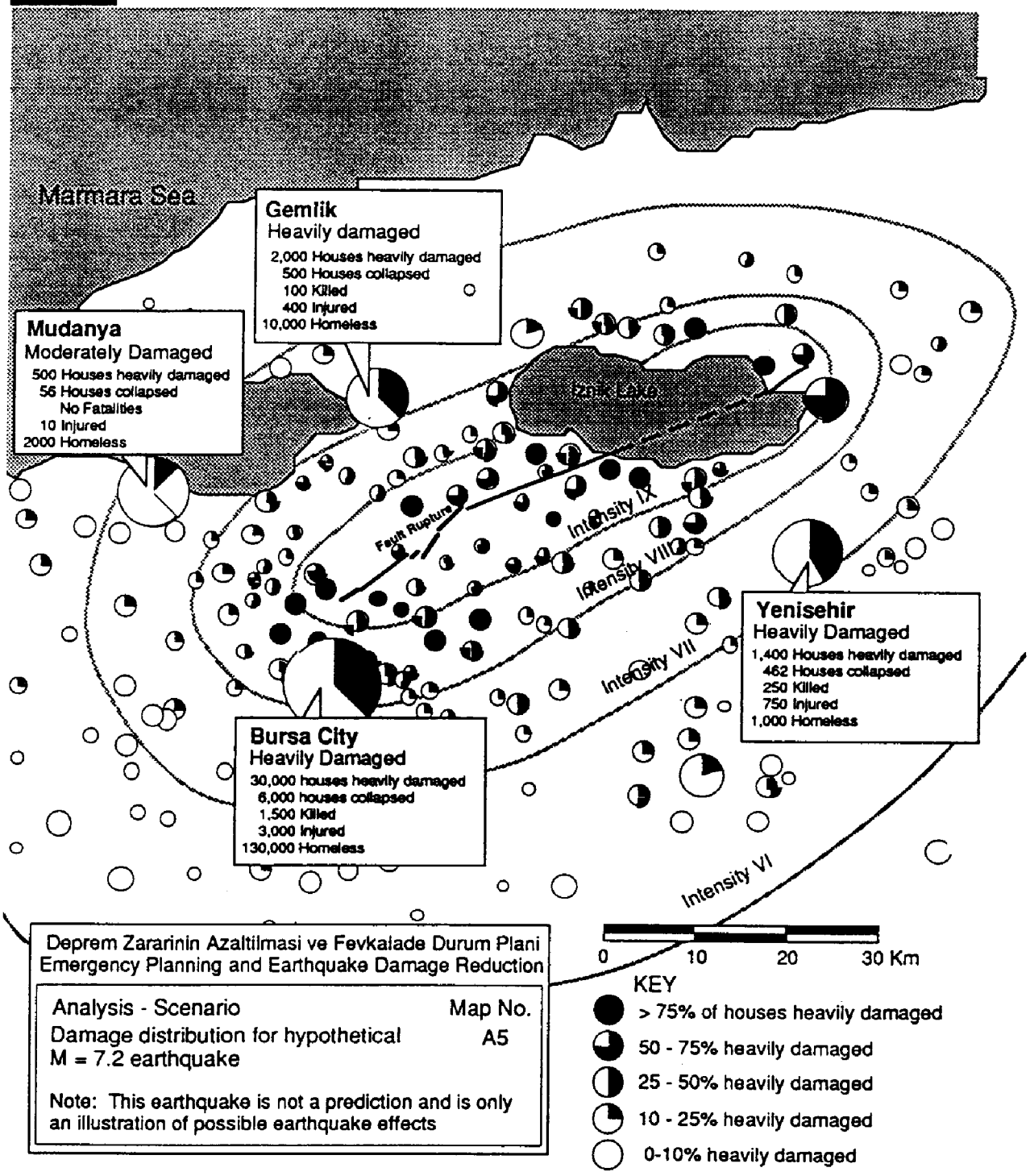
- Hazard occurrence probability
- Elements at risk
- Vulnerability of the elements at risk

PRESENTATION OF RISK

THREE TYPES OF RISK MAPS

- Scenario mapping
- Potential loss mapping
- Annualized risk mapping

SCENARIO MAPPING

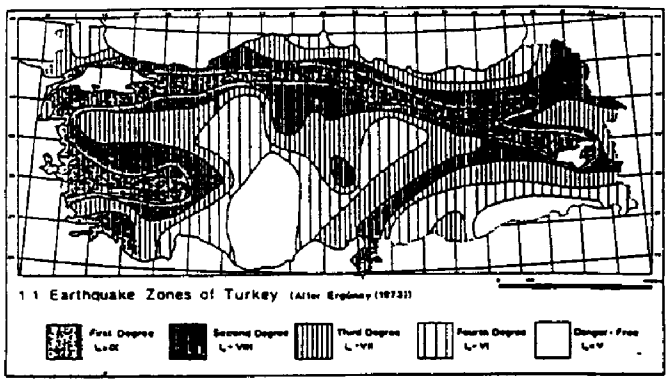


Deprem Zararinin Azaltilmasi ve Fevkalade Durum Plani
Emergency Planning and Earthquake Damage Reduction

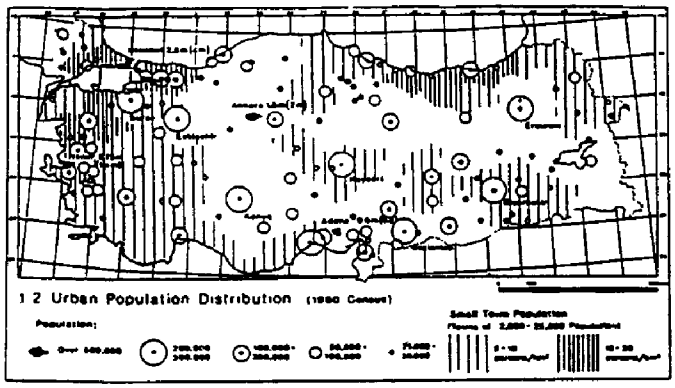
Analysis - Scenario	Map No.
Damage distribution for hypothetical M = 7.2 earthquake	A5

Note: This earthquake is not a prediction and is only an illustration of possible earthquake effects

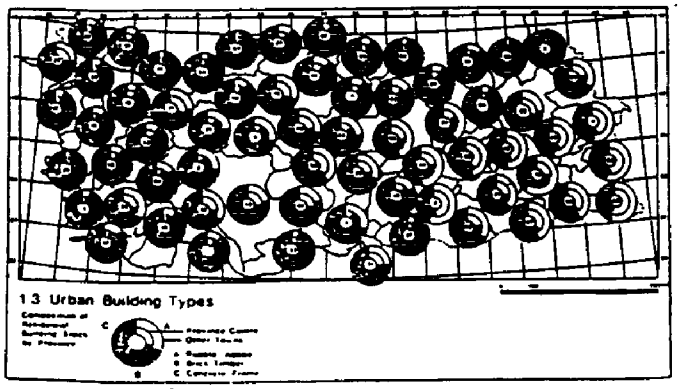
POTENTIAL LOSS MAP



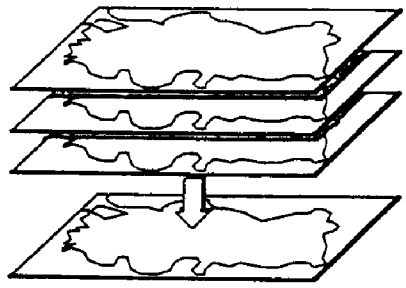
1. Hazard

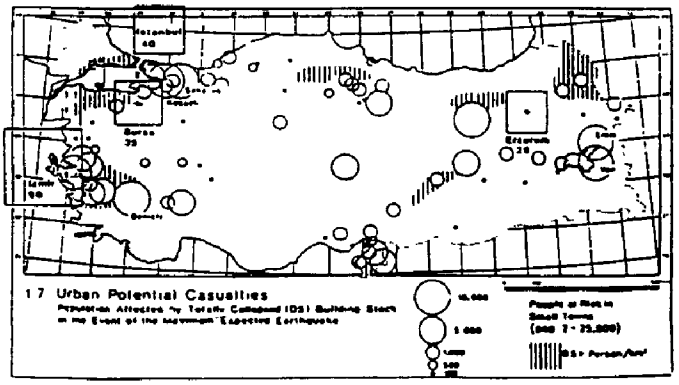


2. Elements at Risk
(Population)



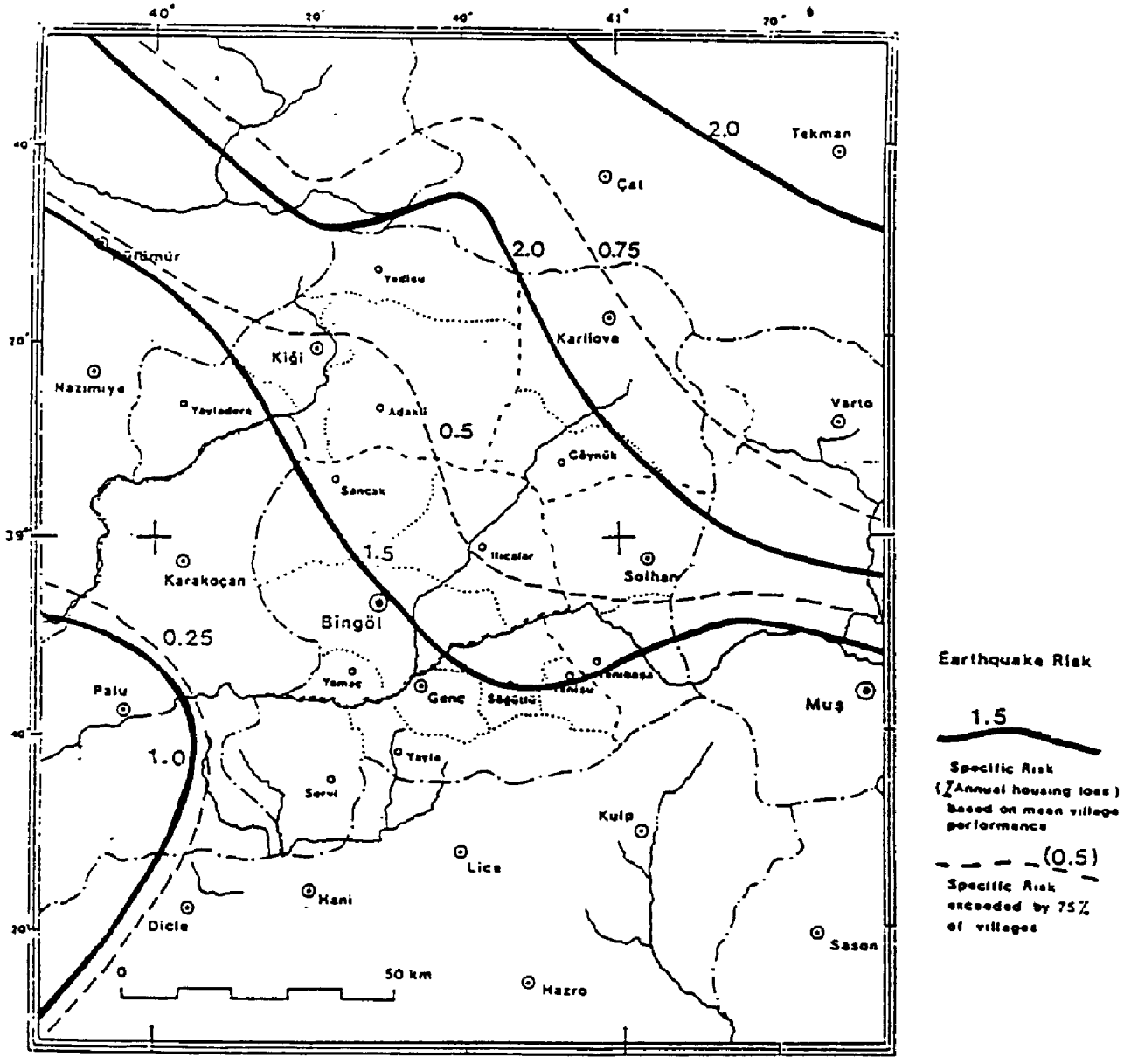
3. Vulnerability





4. Casualty Risk
(Potential Loss of Life)

ANNUALIZED RISK



HAZARD EVALUATION

Natural hazard	Event parameters	Site parameter
Flood	Area flooded (km^2) Volume of water (m^3)	Depth of floodwater (metres)
Earthquake	Energy release (magnitude)	Intensity of ground shaking (modified mercalli/MSK intensity) Peak ground acceleration (%g)
Volcano	Eruption size and duration	Potential to be affected by: ash coverage (m); lava ; dust fallout; debris flow
Strong Winds	Windspeed velocity (km/h) Area	Windspeed velocity (km/h)
Landslide	Volume of material dislodged	Potential for ground failure; ground displacement (metres)
Tsunami	Height of wave crest	Depth of floodwater (metres)
Drought	Area affected (km^2)	Rainfall deficit (mm)