Annexes

Annex 1

Diseases to be monitored when people are housed in temporary shelters

Disease[1]	Main Causes
Diarrhoeal diseases	Overcrowding. Contaminated water and food.
Measles	Overcrowding
Respiratory complaints	Poor housing conditions. Shortage of blankets and clothing.
Malaria	A new environment with a type of malaria against which the refugees have no protection. Stagnant water becoming a mosquito breeding ground.
Meningococcal meningitis	Overcrowding in a region where the disease is endemic (it is often seasonal in certain places)
Tuberculosis	Overcrowding.
Helminths, particularly hookworm	Overcrowding. Poor sanitation.
Scabies (a skin disease caused by mites)	Overcrowding. Poor bodily hygiene.
Xerophthalmia (infant blindness)	Vitamin A deficiency (xerophthalmia is often provoked by measles or some other acute infection).
Anaemia	Malaria, hookworm, shortage or poor assimilation of iron and folate.
Tetanus	Injuries in an unvaccinated population. Poor obstetrical practice may cause tetanus of the newborn.

[1] People suffering from malnutrition are particularly at risk of serious attacks of all these diseases. Good nutrition therefore constitutes an effective preventive measure.

Annex 2

Specimen record card for use by person in charge of family grouping in preparing health report in collaboration with local health personnel

Date	**Grouping**		**Prepared by**
SHELTER No	FEVER Name and age of person concerned	DIARRHOEA Name and age of person concerned	DOES NOT FEEL WELL Name and age of person concerned and description of complaint

Annex 3

Nutrition

Recommended daily energy and protein intakes for healthy individuals[1]

Group	Energy in MJ ($kcal_{th}$)	Proteins (g)		Approximate proportion of the population in a developing country %
		Mixed diet with some animal protein	Cereals, possibly with legumes	
0–1 year	3.4 (820)	14 (breast-feeding, supplemented after 6 mths by weaning foods)		3 0
1–3 years	5 7 (1360)	21	27	9 0
4–6 years	7 7 (1830)	25	33	8.7
7–9 years	9.2 (2190)	29	37	8 5
10–14 years:				
boys	11.7 (2800)	46	58	6 3
girls	10 3 (2450)	40	50	6.2
Male adult (moderately active)	12 6 (3000)	49	62	29.2
Female adult (moderately active)	9 2 (2200)	39	48	26.2
Pregnancy (latter half)	10.7 (2550)	49	63	1 5
Lactation	11 5 (2750)	60	77	1.4

[1] Adapted from DE VILLE DE GOYET, C., SEAMAN, J & GEIJER, U., *The management of nutritional emergencies in large populations* Geneva, World Health Organization, 1978.

If an adequate energy supply is not provided, some protein will be burnt to provide energy and not used for body growth or repair, i.e. it will be used in the same way as carbohydrate or fat, which are much less expensive.

A part (20–40%) of the energy requirement should be supplied from fats or oils, which greatly enhance the palatability of the diet, diminish its bulk (important for younger children) and reduce transport requirements.

Energy requirements vary widely even in normal individuals. They are also increased by physical activity. For example, a 65-kg man requires daily:

6.3 MJ (1500 $kcal_{th}$) when resting in bed day and night.

11.3 MJ (2700 $kcal_{th}$) if lightly active in the daytime (clerk, office worker)
12.6 MJ (3000 $kcal_{th}$) if moderately active 8 hours a day.
14.6 MJ (3500 $kcal_{th}$) if doing heavy work 8 hours a day (labourer).

Much higher intakes are required for the treatment of malnutrition

Weight-for-height[1]

A Young children (both sexes)

Height (cm)	Weight (kg)				
	Standard	90% standard	80% standard	70% standard	60% standard
50	3.4	3.1	2.7	2.4	2.0
51	3.5	3.2	2.8	2.4	2.1
52	3.7	3.3	3.0	2.6	2.2
53	3.9	3.5	3.1	2.7	2.3
54	4.1	3.7	3.3	2.9	2.5
55	4.3	3.9	3.4	3.0	2.6
56	4.6	4.1	3.7	3.2	2.8
57	4.8	4.3	3.8	3.4	2.9
58	5.1	4.6	4.1	3.6	3.1
59	5.3	4.8	4.2	3.7	3.2
60	5.6	5.0	4.5	3.9	3.4
61	5.9	5.3	4.7	4.1	3.5
62	6.2	5.6	5.0	4.3	3.7
63	6.5	5.8	5.2	4.6	3.9
64	6.7	6.0	5.4	4.7	4.0
65	7.0	6.3	5.6	4.9	4.2
66	7.3	6.6	5.8	5.1	4.4
67	7.6	6.8	6.1	5.3	4.6
68	7.9	7.1	6.3	5.5	4.7
69	8.2	7.4	6.6	5.7	4.9
70	8.5	7.6	6.8	6.0	5.1
71	8.7	7.8	7.0	6.1	5.2
72	9.0	8.1	7.2	6.3	5.4
73	9.2	8.3	7.4	6.4	5.5
74	9.5	8.6	7.6	6.6	5.7
75	9.7	8.7	7.8	6.8	5.8
76	9.9	8.9	7.9	6.9	5.9
77	10.1	9.1	8.1	7.1	6.1
78	10.4	9.4	8.3	7.3	6.2
79	10.6	9.5	8.5	7.4	6.4
80	10.8	9.7	8.6	7.6	6.5
81	11.0	9.9	8.8	7.7	6.6
82	11.2	10.1	9.0	7.8	6.7
83	11.4	10.3	9.1	8.0	6.8
84	11.5	10.4	9.2	8.0	6.9
85	11.7	10.5	9.4	8.2	7.0
86	11.9	10.7	9.5	8.3	7.1
87	12.1	10.9	9.7	8.5	7.3
88	12.3	11.1	9.8	8.6	7.4
89	12.6	11.3	10.1	8.8	7.6
90	12.8	11.5	10.2	9.0	7.7
91	13.0	11.7	10.4	9.1	7.8
92	13.2	11.9	10.6	9.2	7.9
93	13.5	12.2	10.8	9.4	8.1
94	13.7	12.3	11.0	9.6	8.2
95	14.2	12.8	11.4	9.9	8.5
96	14.5	13.0	11.6	10.2	8.7
97	14.8	13.3	11.8	10.4	8.9
98	15.0	13.5	12.0	10.5	9.0
99	15.3	13.8	12.2	10.7	9.2
100	15.5	14.0	12.4	10.8	9.3
101	15.8	14.2	12.6	11.1	9.5
102	16.1	14.4	12.9	11.3	9.7
103	16.4	14.8	13.1	11.5	9.8
104	16.7	15.0	13.4	11.7	10.0
105	16.9	15.2	13.5	11.8	10.1
106	17.2	15.4	13.8	12.0	10.3
107	17.5	15.8	14.0	12.2	10.5
108	17.8	16.0	14.2	12.5	10.7
109	18.2	16.4	14.6	12.7	10.9

B Adults

Height (cm)	Males (weight in kg)				Female (weight) in kg)			
	Standard weight	80% standard	70% standard	60% standard	Standard	80% standard	70% standard	60% standard
140					44 9	36 0	31 5	27 0
141					45 4	36.4	31 8	27,3
142					45 9	36 8	32 2	27 6
143					46.4	37 2	32.5	27 9
144					47 0	37 6	32 9	28 2
145	51 9	41 6	36 4	31 2	47 5	38 0	33 3	28 5
146	52 4	42 0	36 7	31 5	48 0	38 4	33 6	28 8
147	52 9	42 4	37 1	31 8	48 6	38.9	34 0	29 2
148	53 5	42 8	37 5	32 1	49 2	39 4	34.5	29 6
149	54 0	43 2	37 8	32 4	49 8	39 9	34 9	29 9
150	54 5	43 6	38 2	32 7	50 4	40 4	35 3	30 3
151	55 0	44 0	38 5	33 0	51 0	40.8	35 7	30 6
152	55 6	44 5	39 0	33 4	51 5	41 2	36 1	30 9
153	56 1	44 9	39 3	33 7	52 0	41 6	36 4	31 2
154	56 6	45 3	39 7	34 0	52 5	42 0	36 8	31 5
155	57 2	45 8	40 1	34 4	53 1	42 5	37 2	31 9
156	57 9	46 4	40 6	34 8	53 7	43 0	37 6	32 2
157	58 6	46 9	41 1	35 2	54 3	43 5	38 0	32 6
158	59 3	47 5	41 5	35 6	54 9	44 0	38 5	33 0
159	59 9	48 0	42 0	36 0	55 5	44 4	38 9	33 3
160	60 5	48 4	42 4	36 3	56 2	45 0	39 4	33 8
161	61 1	48 9	42 8	36 7	56 9	45 6	39 9	34 2
162	61 7	49 4	43 2	37.0	57 6	46 1	40 4	34 6
163	62 3	49 9	43 6	37 4	58 3	46 7	40 8	35 0
164	62 9	50 4	44 1	37 8	58 9	47 2	41 3	35 4
165	63 5	50 8	44 5	38 1	59 5	47 6	41 7	35 7
166	64 0	51 2	44 8	38 4	60 1	48 1	42.1	36 1
167	64 6	51 7	45 3	38 8	60 7	48 6	42 5	36 4
168	65 2	52 2	45 7	39 2	61 4	49 2	43 0	36 9
169	65 9	52 8	46 2	39 6	62 1	49 7	43 5	37 3
170	66 6	53 3	46 6	40 0				
171	67 3	53 9	47 1	40 4				
172	68 0	54 4	47 6	40 8				
173	68 7	55 0	48 1	41 2				
174	69 4	55 6	48 6	41 7				
175	70 1	56 1	49 1	42 1				
176	70 8	56 7	49 6	42 5				
177	71 6	57 3	50 2	43 0				
178	72 4	58 0	50 7	43 5				
179	73 3	58 7	51 3	44 0				

[1] From DE VILLE DE GOYET, C., SEAMAN, J. & GEIJER, U. *The management of nutritional emergencies in large populations.* Geneva, World Health Organization, 1978.

Arm-circumference-for-height, young children (both sexes)[1, 2]

Height (cm)	Standard arm circumference (cm)	90% standard	85% standard	80% standard	75% standard	70% standard	60% standard
54	11 1	10.0	9 4	8 9	8 3	7 8	6 7
56	11.6	10 4	9 9	9 3	8 7	8 1	7 0
58	12 2	11 0	10 4	9 8	9 1	8 5	7 3
60	13 0	11 7	11 0	10 4	9 7	9 1	7 8
62	13 9	12 5	11 8	11 1	10 4	9 7	8 3
64	14 2	12.8	12 1	11 4	10 6	9 9	8.5
66	14 4	13 0	12 2	11 5	10 8	10 1	8 6
68	14 8	13 3	12 6	11 8	11 1	10 4	8 9
70	15 4	13 9	13 1	12 3	11 5	10 8	9 2
72	15 6	14 0	13 3	12 5	11 7	10 9	9 4
74	15 7	14 1	13 3	12 6	11 8	11 0	9 4
76	15 8	14.2	13 4	12 6	11 8	11 1	9 5
78	15.9	14 3	13 5	12 7	11 9	11 1	9 5
80	15 9	14 3	13 5	12 7	11 9	11 1	9 5
82	15 9	14 3	13 5	12 7	11 9	11 1	9 5
84	16 0	14 4	13 6	12 8	12 0	11 2	9 6
86	16 1	14 5	13 7	12 9	12 1	11 3	9 7
88	16 2	14 6	13 8	12 9	12 1	11 3	9 7
90	16 2	14 6	13 8	13 0	12 1	11 3	9 7
92	16 3	14 7	13 9	13 0	12 2	11 4	9 8
94	16 4	14 8	13 9	13 1	12 3	11 5	9 8
96	16 5	14 9	14 0	13 2	12 4	11 5	9 9
98	16 6	14.9	14 1	13 3	12 4	11 6	10 0
100	16 7	15 0	14 2	13 4	12 5	11 7	10 0
102	16 8	15 1	14 3	13 4	12 6	11 8	10 1

Height (cm)	Standard arm circumference (cm)	90% standard	85% standard	80% standard	75% standard	70% standard	60% standard
104	16 9	15 2	14 4	13 5	12 7	11 8	10 1
106	17 1	15 4	14 5	13 7	12 8	12 0	10 3
108	17 3	15 6	14 7	13 8	13 0	12 1	10 4
110	17 4	15 7	14 8	13 9	13 1	12 2	10 4
112	17 6	15 8	15 0	14 0	13 2	12 3	10 6
114	17 8	16 0	15 1	14 2	13 3	12 5	10 7

[1] From DE VILLE DE GOYET, C. SEAMAN, J & GEIJER, U *The management of nutritional emergencies in large populations* Geneva, World Health Organization 1978.
[2] This method is not used by the League of Red Cross and Red Crescent Societies for its assessment of nutritional status because it is more reliable as a means of measuring malnutrition

Indicators of likely need for a supplementary feeding programme (SFP)[1]

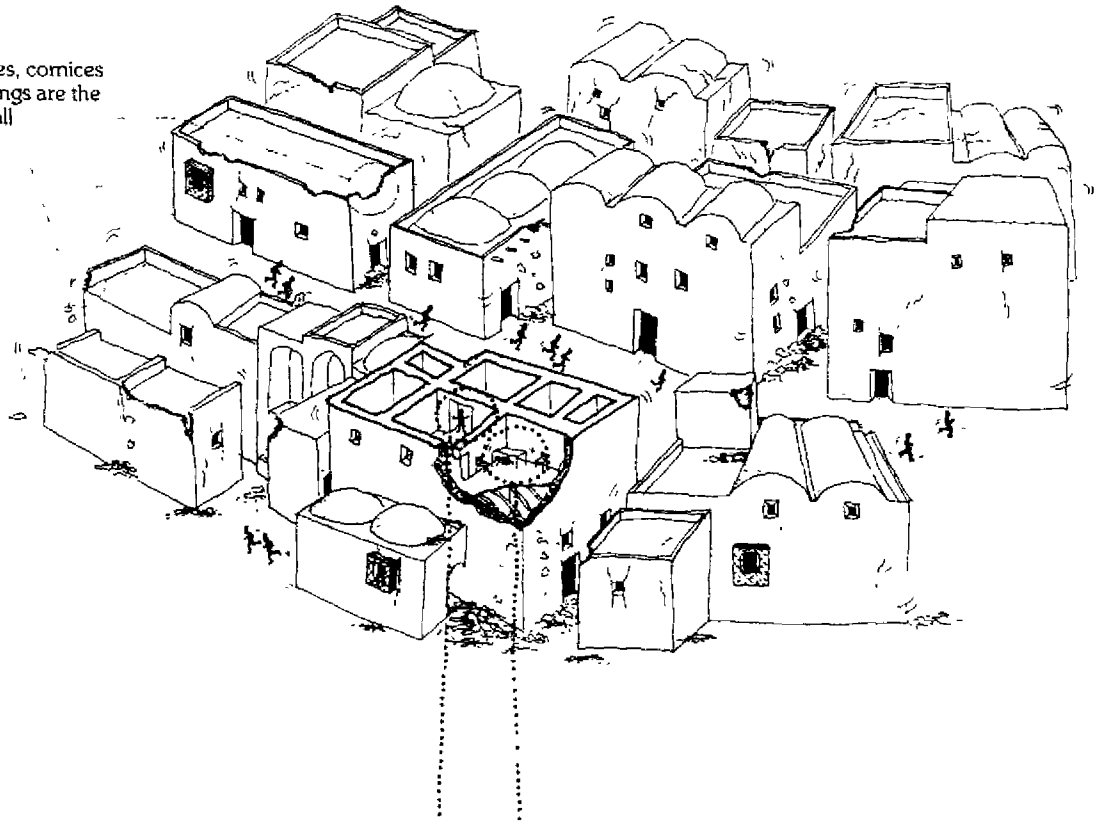
Major indicator[2]	Other factors	Type of SFP
General ration averaging less than 1500 kcal per person/day	None	For all vulnerable groups, as soon as possible
Over 20% children malnourished		
10–20% children malnourished	General ration averaging less than 2000 kcal per person/day	
	Severe public health hazards	
	Significant diseases (esp. measles) prevalent or imminent	
	None	Selective within vulnerable groups: at least for all malnourished
5–10% children malnourished	Any of above	
	None	No SFP individual attention to malnourished. (Whatever the other factors available resources are probably better used correcting/minimizing them)
Under 5% children malnourished	Any of above	

[1] Adapted from *Handbook for emergencies* Geneva United Nations High Commissioner for Refugees, 1982.
[2] Percentages are of children under 5 years old under 80% weight-for-height

Annex 4

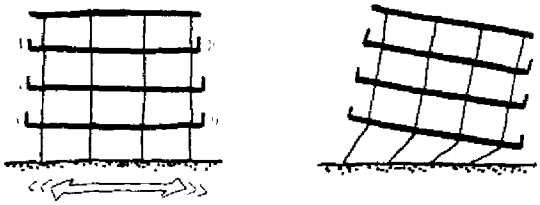
What to do in an earthquake

When an earthquake surprises people indoors, the spontaneous reaction is often to rush outside, but be careful... If your house is built of *adobe, banco, cob* or similar materials, and if the street is wide enough — wider than the buildings are high — go out and make your way along the middle of the street towards a square.



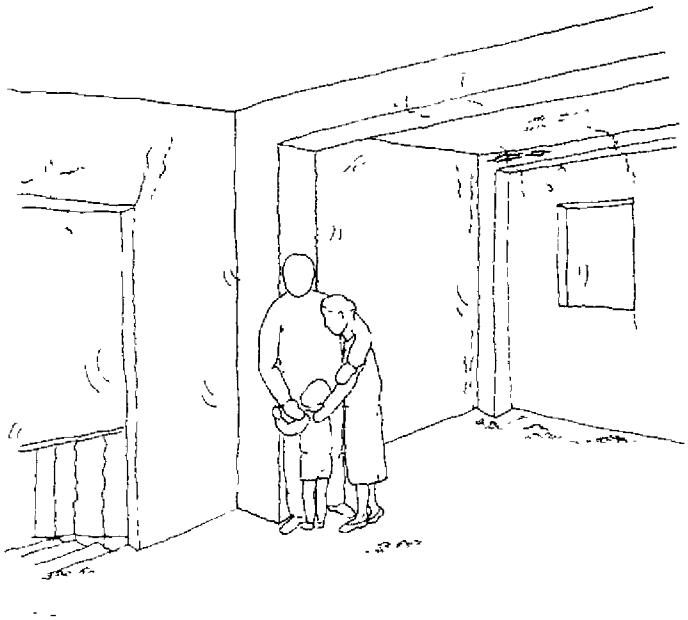
If the streets are narrow, however, stay indoors and get under a doorway or into an inside corner of the room or under a table.

If your house is of *concrete* or *steel* and you are on the ground floor, go out and walk along the middle of the street towards a square.



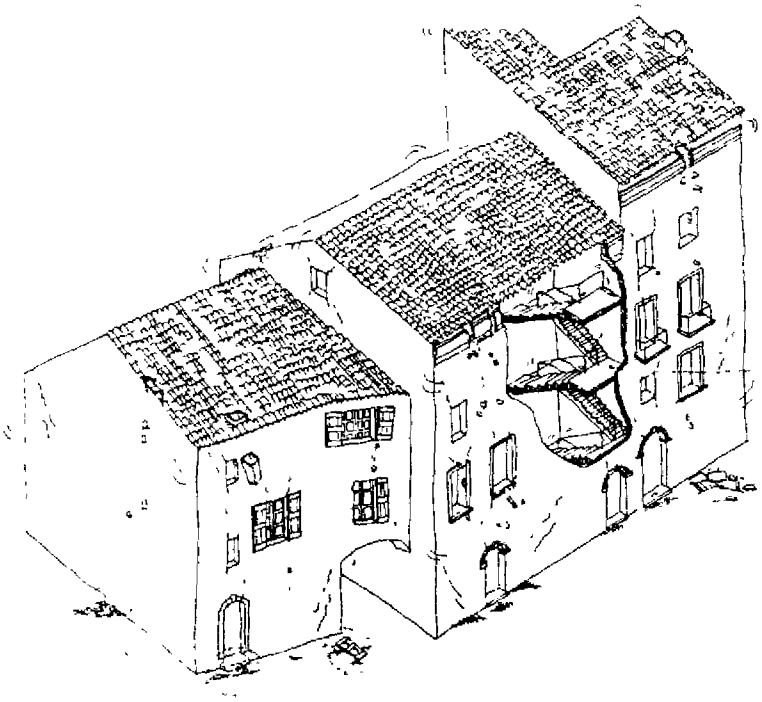
The ground floor collapses first. The higher floors offer greater resistance.

If you live on a higher floor, remain indoors near an internal pillar.



Staircases are a weak point

If your house is of *stone, brick* or the like and you are above the ground floor, do not go into the stairwells but position yourself under a doorway in a load-bearing wall.



Bracketed stairs are a weak point.

Balconies, cornices and railings are the first to fall.

If you are on the ground floor and the street is wide enough — wider than the buildings are high — go out and walk along the middle of the street towards a square.

Annex 5

Mercalli scale of earthquake intensities (MS)[1]

Intensity	
I	Only detected by seismographs, not felt by persons.
II	Detected indoors by a few persons, particularly on the upper floors of buildings.
III	Detected indoors by several persons: windows may vibrate and objects swing.
IV	Detected out of doors by a few persons and indoors by many; crockery rattles and floors and ceilings creak as they would if a heavily laden lorry were passing along a cobbled street.
V	Detected by the whole population of a locality. Awakens many sleepers. Causes liquids to spill. Makes suspended objects swing considerably and small objects move. Some bells ring.
VI	Awakens all sleepers. Frightened people leave their homes. The shock makes all bells ring and lighting fitments swing. Clocks stop. Trees shake, books and small objects fall off shelves and furniture. In badly built dwellings roughcast surfaces crack and plasterwork falls.
VII	General alarm, but well-built structures suffer no damage. Church bells ring. Cracks appear in some buildings. Chimneys in a poor state of repair fall and may damage roofs. Windows are broken. The mud in ponds is stirred up. Waves form on some watercourses. Variations occur in the level and width of sources of water. There are landslips on river banks and cracks appear in roads. Dwellings in tropical areas made of interwoven leaves and branches and the wooden houses of Japan remain intact.

[1] Some countries use the Rossi-Forel scale of one to ten. The Richter scale measures the magnitude of an earthquake, i.e the energy released. Above Richter magnitude 5 5 damage is generally caused.

VIII General alarm and panic Gaping cracks appear in well-built structures. Tree branches break off. Furniture moves about or is overturned, lighting fitments are damaged. Fissures several centimetres wide appear in the ground. Lake water becomes muddy. New lakes may be formed. Springs may disappear or appear and their level and capacity may change several times. Church belfries and factory chimneys are most damaged. Rocks fall from mountain slopes. Driving is made difficult. Statues twist round on their pedestals or fall.

IX General panic. Partial or total destruction of about 50% of buildings. Numerous cases of damage to furniture and objects in houses. Animals flee. Monuments and statues fall. Reservoirs are damaged. Some underground pipes are broken.

X Most stone buildings are destroyed. Solid wooden buildings and bridges suffer damage and some are destroyed. Water and gas mains are broken. Cracks appear in the streets. Fissures are formed in loose ground and landslides occur along slopes and river banks The water of lakes and watercourses is thrown up on to the banks.

XI Stone buildings completely destroyed. Solid structures of timber and branches only survive in isolated cases. Even the best-built bridges are destroyed. Railway rails are twisted. Dykes disintegrate.

XII No manmade structures survive. Changes in topography occur: fault slips, important horizontal displacements, mountain landslides, lake formation, the appearance of new watercourses, etc.

Annex 6

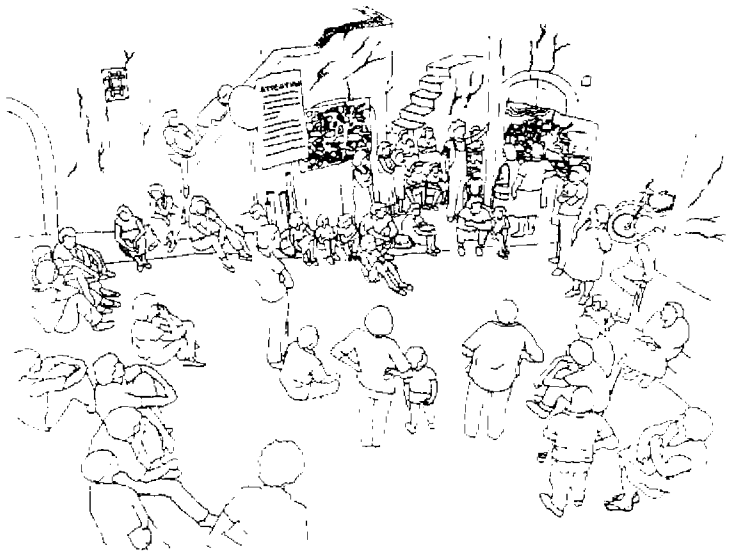
Community risk maps

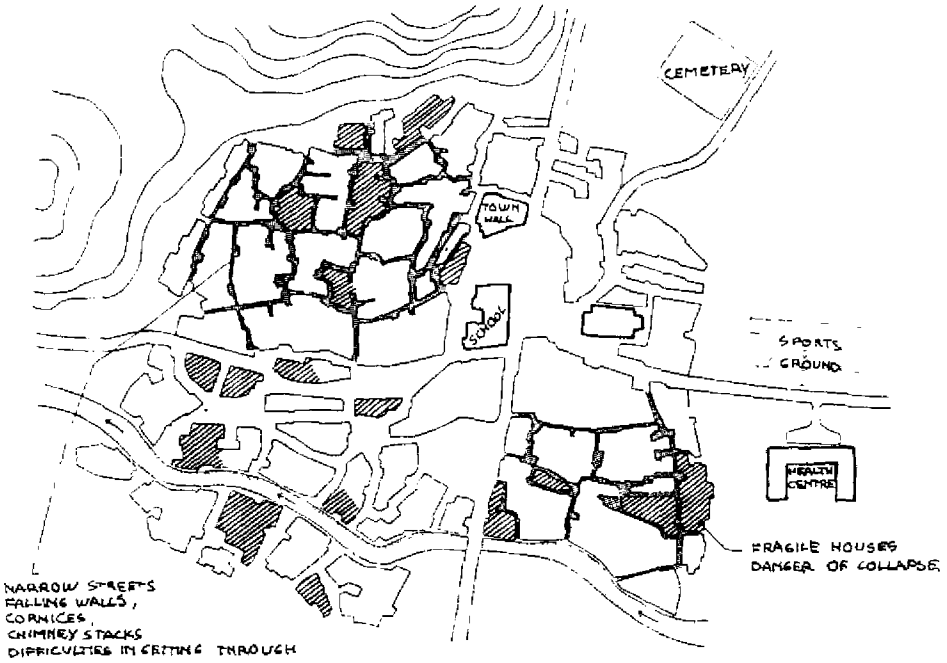
Risk maps drawn up by the community and local health personnel are not professional cartographic productions. They serve rather to underpin the community activity of discussing and assessing the risks.

The essential point in drawing up risk maps is precisely the work of community education and preparation on which they are based. It is during meetings to compile risk maps that it is possible to tackle the subject of the kinds of preventive action to take in each particular situation in the event of disaster.

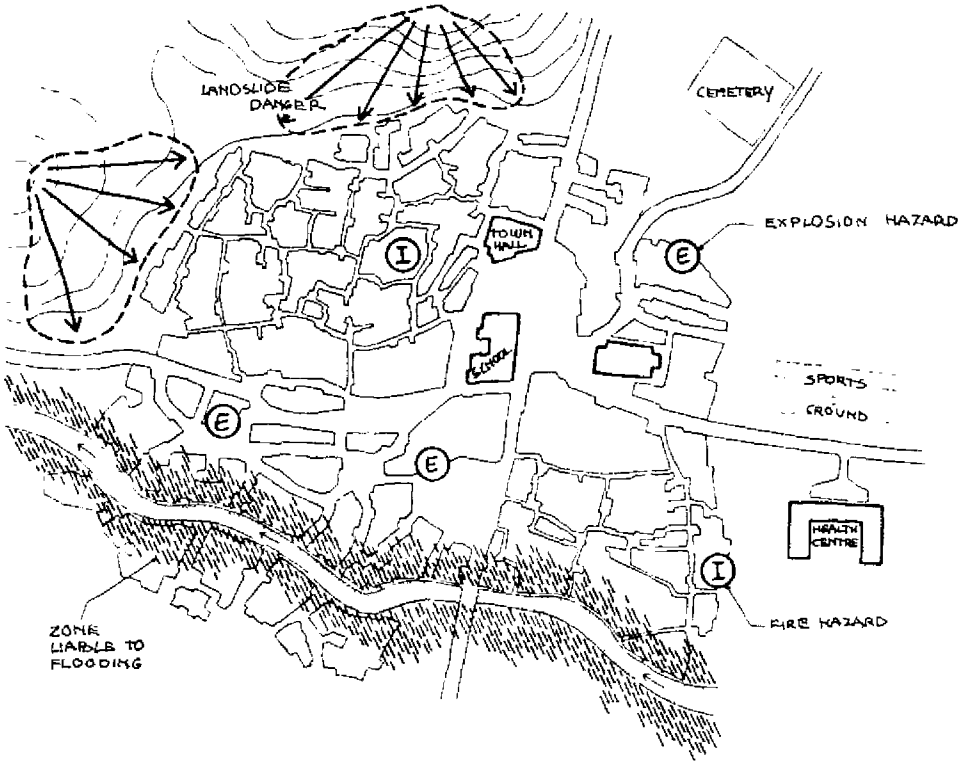
Thus, as each risk is catalogued in the course of these meetings indications can be given on how to reduce it Examples are the strengthening of flimsy dwellings, sanitation, the listing of places of refuge in the event of floods, etc.

It is useful to encourage the establishment of a group of volunteers ready to work more intensively with the local health personnel. In the event of a disaster, this group, which will have taken part in drawing up the risk map, can help to monitor the situation at all the points at risk. This will give a rapid idea of what has happened on the basis of the points considered to be most exposed to risk, so that relief priorities can be organized in the most effective way. If the area to be covered has been shared out beforehand, the damage and the requirements can be assessed more easily and quickly.

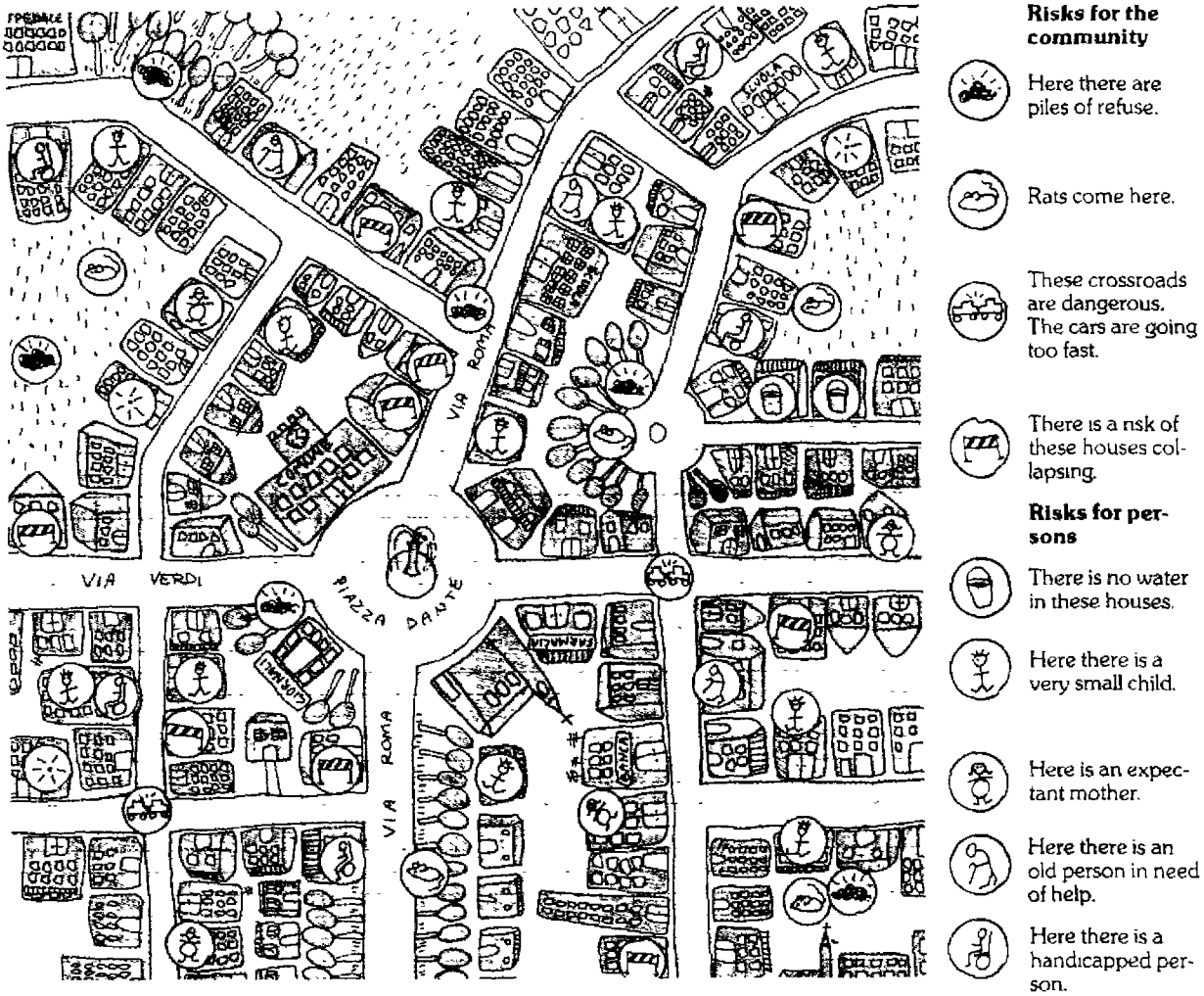




Risks to buildings



Other risks



District risk map prepared by schoolchildren (1986)

Annex 7

The signs of danger in disaster-damaged buildings

After an earthquake or any other happening that damages houses, the inhabitants.

... feel insecure and anxious because of the danger, the cracks, doors that will no longer shut, etc.

... suddenly rediscover signs of damage, even those that existed before,

... always have the feeling that the damage, the cracks and the subsidences are getting worse day after day.

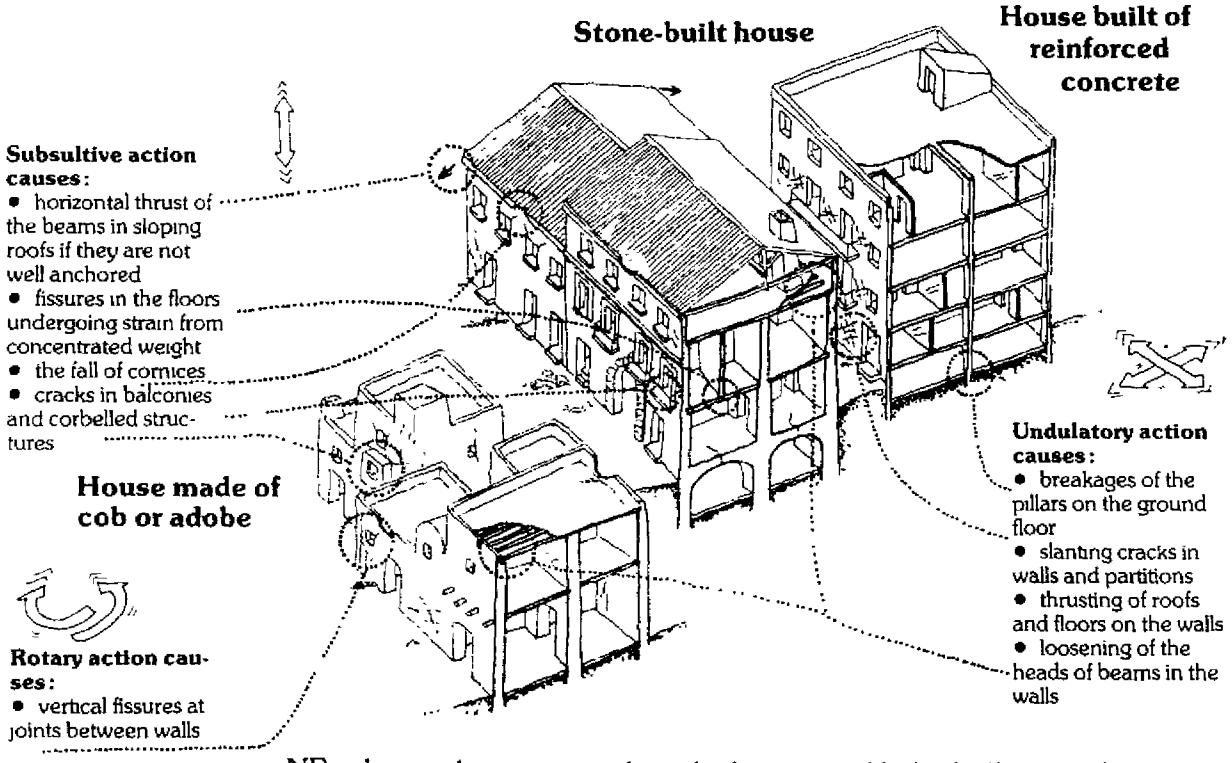
It is essential to be ready to reply to such questions as:

Is there a risk of my house collapsing?

What if there is another earthquake shock?

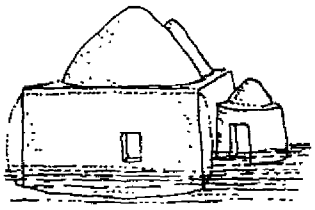
What can be done to strengthen the house?

How buildings behave in a disaster

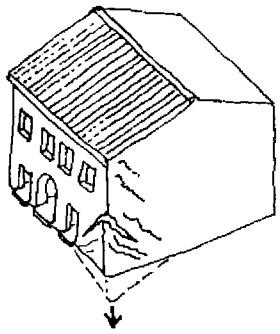


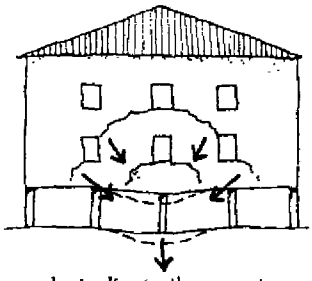
NB: almost always an earthquake has several linked effects so that a mixture of different types of damage and cracks is found.

Floods reduce the cohesion of soils, there is therefore a risk that foundations may collapse.



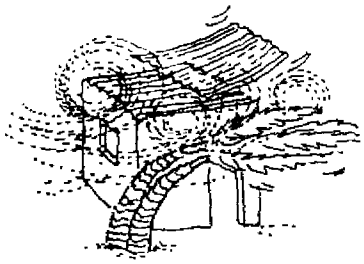
Structures of cob, masonry or lean concrete become engorged with water and may collapse even if there is no subsidence of the foundations

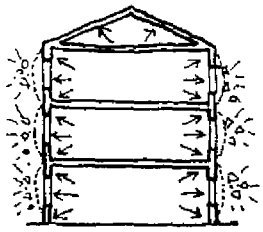


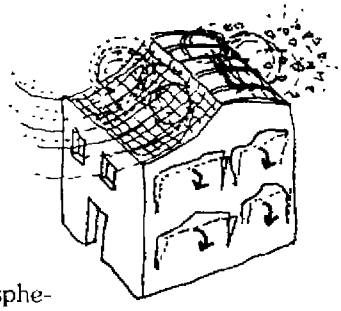


The cracks indicate the point which has given way.
The longer the flooding lasts, the greater the risks: check the cracks!

Cyclones cause damage above all to roofs and windows and sometimes also to load-bearing elements that are not sufficiently rigid.





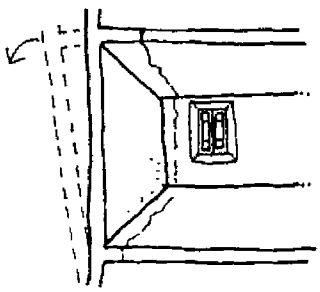


Because of the drop in atmospheric pressure that precedes a hurricane, a building may "burst" and cracks may appear in the walls

Landslides cause the subsidence of foundations or smash down outer walls: this damage is similar to that caused by floods or cyclones.

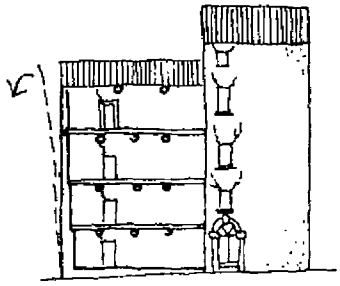
Whatever the cause of the damage, it is essential to be able to recognize *dangerous situations*:
— cracks that weaken load-bearing structural elements,

Vertical cracks in load-bearing walls or horizontal cracks in the floors near to and parallel with the facade.



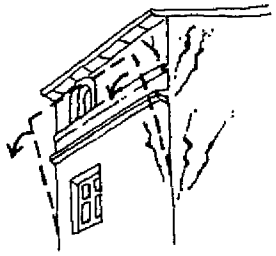
The facade is as if separated from the building frame and may therefore collapse

Vertical cracks in the internal walls, running along the same axis on all storeys.



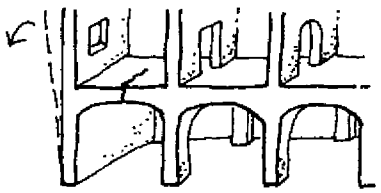
The building is as if cut open vertically. The various parts may come away in the event of another shock.

Cracks in the corners, growing larger from the bottom upwards



In this case there are horizontal thrusts on the tops of the walls that tend to burst the building open.

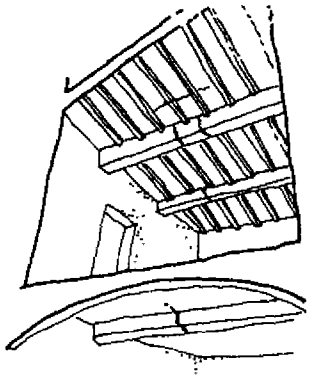
Cracks on vaulting, parallel with the outer walls.



In this case there are horizontal thrusts on the walls that are not counterbalanced and tend to burst the building open

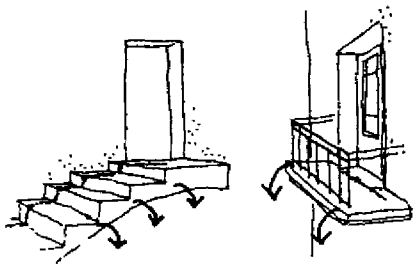
— cracks that show that load-bearing elements have been broken.

Cracks that are transverse in relation to the orientation of the floors or the beams.



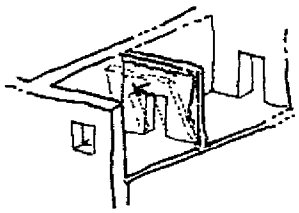
In this case the bearing elements are broken. The floor may cave in.

Cracks at the base of stair treads supported on the walls. Cracks all along the balcony floor



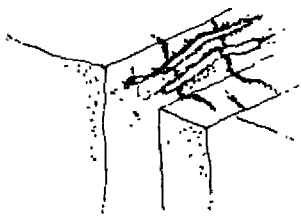
The stairs and balconies are now left with only a single point of support. If it gives way, they will collapse.

Cracks on both sides of light partitions and the length of the ceiling.



In this case the partition is not anchored and may fall.

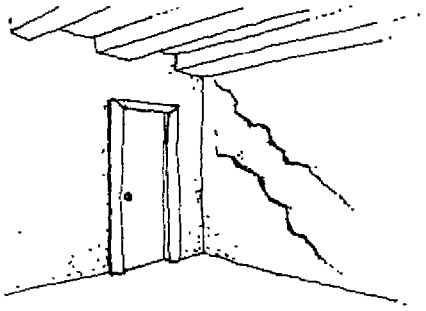
Cracks in reinforced-concrete structures, exposing the reinforcement rods.



In this case the shock has been considerable and the rods are no longer doing their job. The structure may collapse.

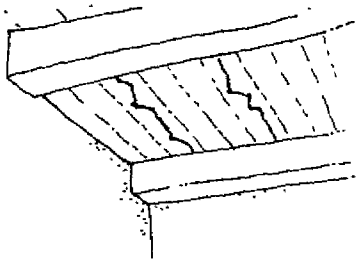
Other sorts of crack, even though they may seem important, are *not dangerous.*

Slanting cracks.



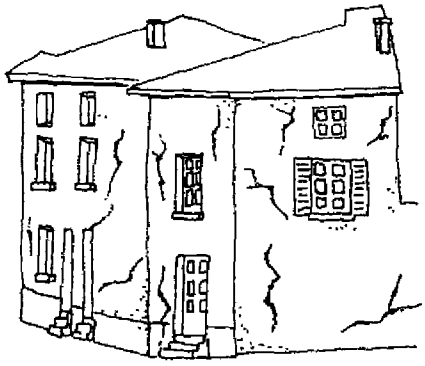
There is no loosening of the vertical load-bearing elements (walls, pillars, etc) or the horizontal ones (floors, etc.)

Cracks in the floors parallel with the girders and joists.



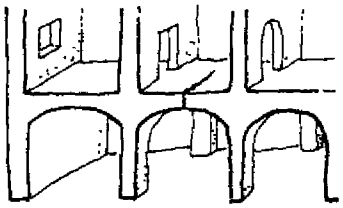
Girders and joists are separated from each other but each of them remains firm.

Irregular cracks in the walls on various storeys.



The loadbearing elements are weakened but on the whole the building is holding.

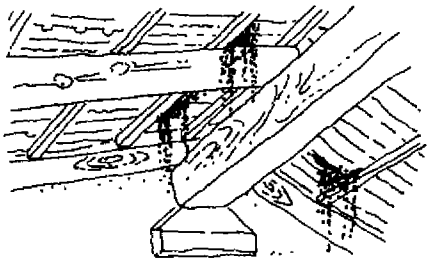
Cracks in arches or vaulting which are not supported on the outer walls



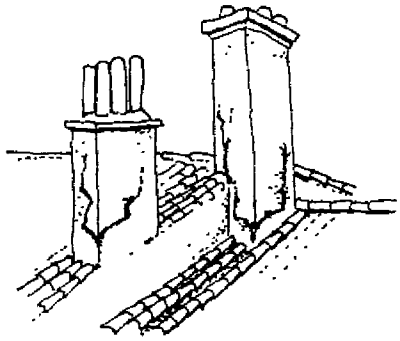
If the support perimeter cannot sag outwards, the arches and vaulting are very unlikely to give way.

What can be done right now to avoid the damage increasing and enable people to live in safety?

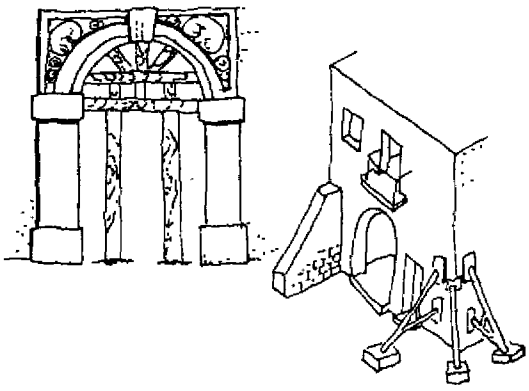
Protect the building from later damage by rain or infiltration
- replace the broken tiles or protect the roof with plastic sheeting, corrugated iron, etc.
- repair the damage to piping.



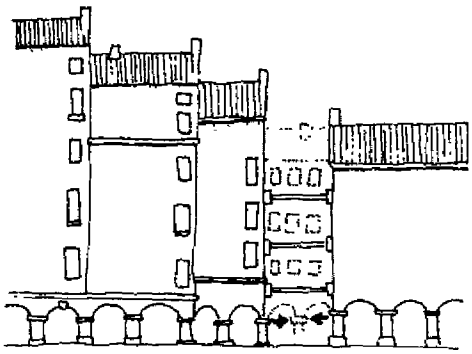
Demolish elements that are not holding firm and which are not necessary to make the house inhabitable: false ceilings, balconies, chimneys, etc.



Shore up elements that are not holding firm but are needed to make the building inhabitable: stairs, lintels, floors, load-bearing walls.



Counter the horizontal thrusts which were counter-balanced before but are not any longer because of the collapse of an element.



Annex 8

Resource maps

Drawing up maps of the resources available in the event of a disaster is a good way of preventing or alleviating the consequences of such a disaster. Resource maps complement risk maps.

The local health personnel collaborate in preparing them with the community's technical services and the local authorities. The aim is to determine beforehand the resources that could be used in the event of a disaster and to indicate the places where they can be obtained. Various types of resources are distinguished:

A. **Those used to reach victims:**
- four-wheel-drive vehicles, boats, lorries, cars bicycles, other means of transport, petrol stocks,
- emergency lighting equipment, means of signalling to the victims

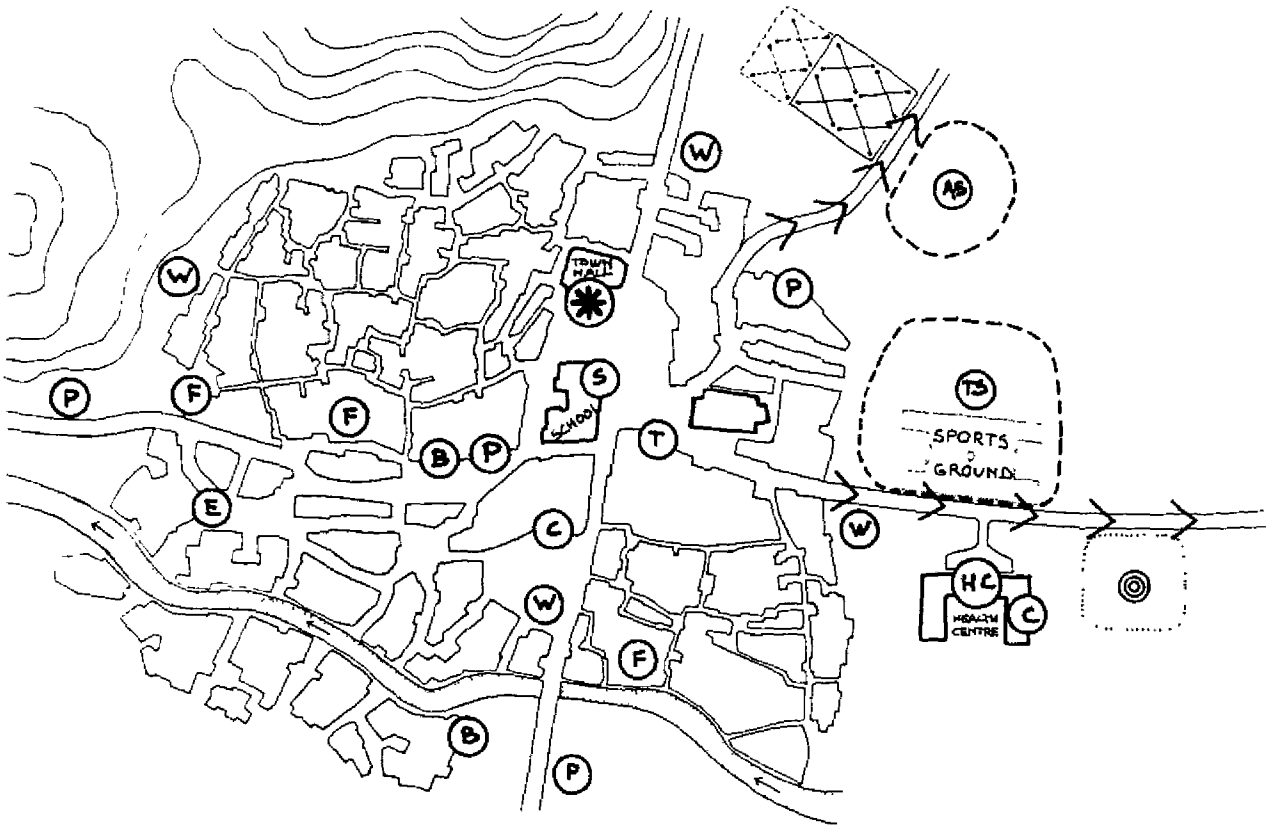
B. **Those used to extricate the victims:**
- spades, picks, ropes, pulleys, buckets, ladders, chain saws, shears, saws, toolboxes, pocket torches, blankets,
- power shovels, earthmoving equipment, cranes

C. **Those needed for giving emergency care:**
- general supplies for the health facility,
- emergency health equipment, medicaments,
- ambulances or other means of transport.

D. **Those needed for providing temporary shelter:**
- buildings considered to be disaster-proof and which can serve as rallying points (schools, public buildings),
- stores of tents, camping equipment, caravans and other structures and materials that can be used to provide shelter,
- the site chosen for the first temporary shelters,
- shelters for animals.

E. **Those needed for survival:**
- foodstuffs,
- clothing, boots and other footwear,
- blankets, means of heating,
- means of lighting,
- products for personal hygiene, cleaning and disinfection,
- means of waste disposal,
- simple sanitary engineering equipment

F. **Those needed for transport:**
- base point for transport (buses, lorries, cars, three-wheeled vehicles, other means of transport).



Information and relief coordination centre.

Operational base: emergency care and triage of the injured.

Shelter (public buildings, etc)

Public transport – buses, cars, lorries.

Stocks of petrol and fuel oil. Gas cylinders.

Plant and equipment for rubble clearance and the restoration of communications

Stocks of blankets, clothing, heating apparatus

Stocks of products for cleaning, disinfestation and disinfection

Food stocks.

Stocks of water or water-supply points

Site and facilities for burying the dead.

Route and direction of evacuation

Site for temporary shelters.

Shelter for animals.

Landing strip

A resource map prepared by the community committee for emergencies

G. Those needed for communications:

- centre for coordinating information, with megaphones, dispatch riders, batteries, generating plant, priority telephone lines, other means of communications,
- local radio stations,
- amateur radio operators ('radio hams').

H. Those needed for evacuating the population:

- preferred routes,
- ways and means,
- rallying points and sites for temporary shelters.

I. Those needed for the transport and burial of the dead:

- means of transport,
- sheets, stretchers, leather gloves, rubber gloves, boots, disinfectants, quicklime,
- spades, power shovels, earth-moving equipment

Maps of the resources available in the event of a disaster are discussed at meetings attended by the various senior officials of the public services and local authorities. The meetings are open to other bodies interested (associations, voluntary groups, etc.). A resource map is not a professional cartographic product but merely a graphic summary of what has been agreed. The ideal would be for the maps to be accompanied by one or more leaflets or notices summarizing instructions to the population on what to do if disaster should strike the area.

Annex 9

Medical equipment of the health centre or hospital for coping with a disaster

The following is a model list of medical equipment and supplies that would be useful in the event of a disaster. The items selected will depend on the professional skills available in the team.

Syringes, sterile disposable, Luer 2 ml
Syringes, sterile disposable, Luer 10 ml
Needles, sterile disposable, 0.8 × 40 mm/G21 × 1½" (0.8 × 38 mm)
Needles, sterile disposable, 0.5 × 16 mm/G25 × 5/8"(0.5 × 15 mm)
Interchangeable glass syringes, Luer 2 ml
Interchangeable glass syringes, Luer 10 ml
Interchangeable needles, Luer, 144 assorted
Sterile swabs
Suture set
Needle-holder
Scalpel handle
Artery forceps
Dissecting forceps
Disposable blades
Scissors, straight
Scissors, suture
Thermometer, clinical
Stethoscopes, standard and fetal
Sphygmomanometer, aneroid
Vaginal speculum, Graves
Tongue depressor, metal
Urethral sounds, Foley type Nos 10–18
Drains or tubes for thoracic drainage with ancillary equipment and bottles
Tourniquets
Assorted tips
Tracheal cannulae
Kit for intravenous injections in children
Laryngoscopes for neonates, children and adults (complete)
Endotracheal tubes
Oxygen masks for children and adults + oxygen supply
Nasogastric tubes, infant No 5 (premature baby) polyethylene
Nasogastric tubes, infant No. 8 (newborn) polyethylene
Nasogastric tubes No. 12 polyethylene
Needles, epicranial
Gloves, re-usable
Gloves, sterile disposable
Dressing trays with lid, stainless steel
Basins, kidney, 350 ml, stainless steel

Annex 9

Basins, round with lid, 240 ml, stainless steel
Basins, round, 600 ml, stainless steel
Gauze swabs, 5 × 5 cm, packets of 100
Gauze swabs, sterile 10 × 10 cm, packets of 5
Eye pads (sterile)
Paraffin gauze dressings, 10 × 10 cm, tins of 36
Sanitary towels
White cotton wool, 500 g roll
Zinc oxide plaster, roll 25 mm × 0 9 m
Gauze bandages, 25 mm × 9 m
Gauze bandages, 50 mm × 9 m
Gauze bandages, 75 mm × 9 m
Plaster of Paris bandages, 3 inches by 3 yards (75 mm × 2 7 m) packets of 1 dozen
Pneumatic splints, a selection
Safety pins, 40 mm
Hand towels
Soap, disinfectant
Plastic sheets

Annex 10

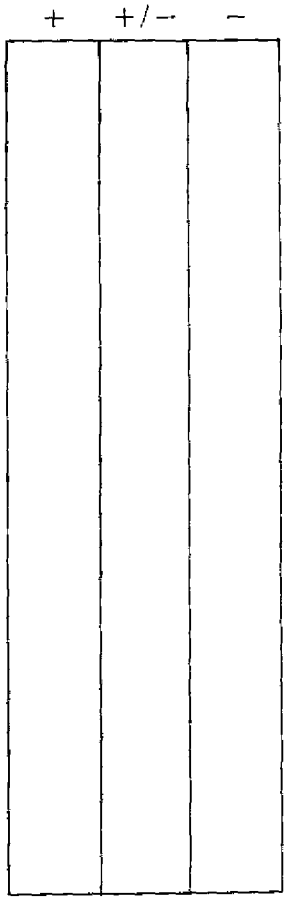
Outline schedules for self-evaluation in the event of disaster

Self-evaluation schedules comprise a series of questions which the community's emergency committee and the local health personnel put to themselves in order to adjust and evaluate the action taken in the event of a disaster.

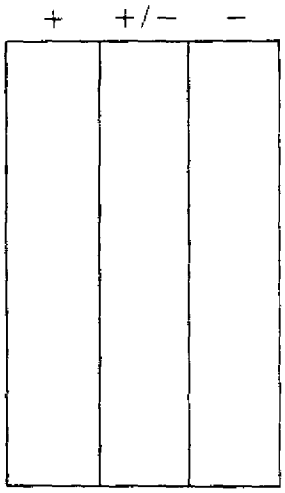
The questions in the schedule should be adapted to the specific situation in which action is being taken.

The schedules presented here are models intended to help the communities and the local health personnel to prepare their own self-evaluation. Drawing up self-evaluation schedules in normal times is a useful way of preparing for emergencies.

Self-evaluation schedule for action taken by the community



1. *Self-evaluation questions for the situation immediately following the disaster*
   - 1.1 Has a community emergency committee been set up?
   - 1.2 Have relief teams been organized?
   - 1.3 Is anything being done for isolated families?
   - 1.4 Have arrangements been made to pick up the injured and take them to the health centre or hospital?
   - 1 5 Have dangerous buildings been evacuated?
   - 1 6 Have steps been taken to solve the problems that are most urgent for the survival of the victims:
     - 1.6.1 Water
     - 1.6.2 Food
     - 1.6.3 Shelter?
   - 1.7 Has a place been assigned for the dead to be kept while awaiting burial?
   - 1.8 Are steps being taken to identify the dead?
   - 1 9 Has an information coordination centre been established?
   - 1 10 Have communications been established with the central (regional, national) authorities?



1.11 Have the most urgent requirements to be met from outside assistance been evaluated, taking into account the number of people needing assistance, the type of assistance necessary and the resources available on the spot?

1.12 Are steps being taken to reunite families?

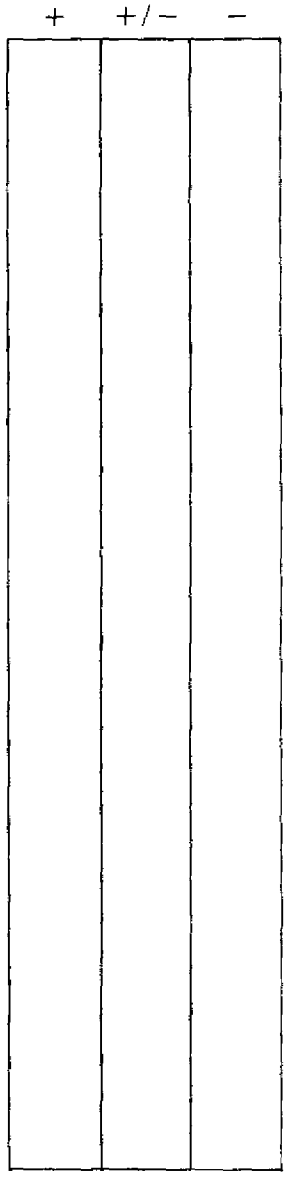
1.13 Have safety instructions been issued?

1.14 Are steps being taken to circulate information on:

1.14.1 the consequences of the disaster,

1.14.2 the dangers that subsist,

1.14.3 factors that may reassure people?



2. *Questions for self-evaluation in the post-disaster period*

2.1 Are communications being maintained with the central authorities?

2.2 Is information on requirements being coordinated?

2.3 Are local voluntary workers being coordinated?

2.4 Are voluntary workers from outside being coordinated?

2.5 Is inappropriate aid being successfully prevented and avoided?

2.6 Are relief supplies being fairly distributed?

2.7 Is contact being maintained with all family groupings?

2 8 Have families been reassured who are living in buildings that are damaged but not dangerous?

2.9 Has an appropriate site been chosen for temporary shelters?

2.10 In setting up shelters for disaster victims have family and neighbourhood relationships and socio-economic and cultural needs been taken into account?

2.11 Have the victims been organized in family groupings?

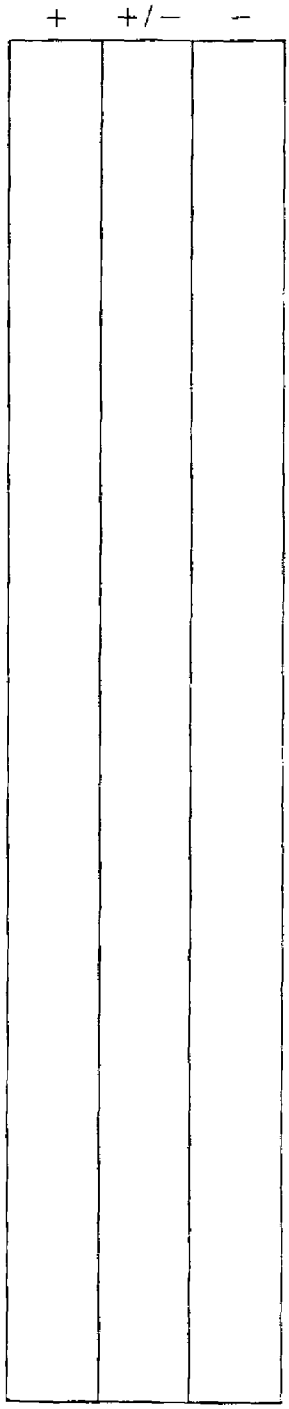
2.12 Have the essential problems been dealt with:

2.12.1 water supply,

2.12.2 the provision of clothing, footwear and blankets,

2.12.3 food supply,

2.12.4 facilities for preparing hot meals,



2.12.5 the installation of latrines,
2.12.6 facilities for washing clothes and pots and pans,
2.12.7 collection and disposal of waste?

2 13 Have short meetings been arranged in the community to discuss the various problems and find solutions to them?

2.14 Have steps been taken to encourage solidarity, mutual assistance, and constructive efforts among people?

2.15 Have school activities started up again?

2.16 Have initiatives been taken for community action by children?

2 17 Have steps been taken to combat false rumours?

2.18 Have measures been adopted to ensure that there is no favouritism in the distribution of relief supplies?

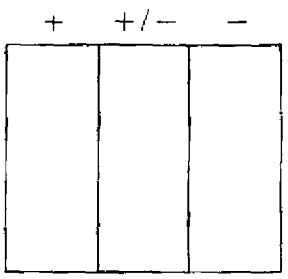
2.19 Is care being taken to ensure that voluntary workers from the outside do not take the place of local manpower but help to take the situation in hand again?

2.20 Have victims been encouraged and helped to resume their activities?

2.21 Have initiatives been taken to facilitate economic recovery on the basis of putting local resources to good use?

2.22 Have steps been taken to ensure that people participate in drawing up plans of reconstruction, rehabilitation and development and that those plans are in line with needs and the local culture?

2.23 Are arrangements in force to avoid:
2.23 1 delays,
2.23.2 crippling disputes,
2.23.3 favouritism,
2.23.4 speculation,
2.23.5 dishonesty,
2.23.6 violence?

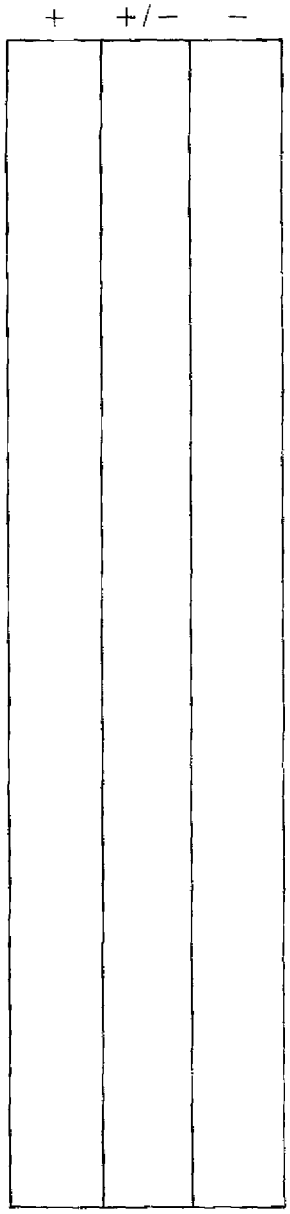


3. *Self-evaluation questions on disaster preparedness*

3.1 Has an emergency committee been set up?

3.2 Is the committee active?

3.3 Have steps been taken to:
3.3.1 analyse past experience of emergencies,



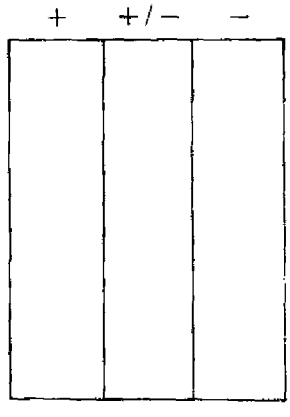
3.3.2 ascertain the risks of a disaster in the area and its foreseeable consequences,
3.3 3 determine what resources the community has available to deal with the consequences of a disaster,
3.3.4 train voluntary workers for rescue and first-aid work,
3.3.5 inform and educate the public on the hazards and on how to behave in the event of a disaster:
3.3.5.1 in the schools,
3.3.5.2 at place of work,
3.3.5.3 in the community,
3.3.5.4 in associations?

3.4 Has a community plan been drawn up to deal with an emergency, organizing activities in essential fields.
3.4.1 rescue work,
3.4.2 emergency care,
3.4.3 communications,
3.4.4 the supply of:
3.4.4.1 water,
3.4.4.2 food,
3.4.4.3 power,
3.4.5 temporary shelter if required,
3 4.6 transport,
3.4.7 sanitation,
3.4 8 dissemination of information and instructions?

3.5 Have emergency-preparedness exercises been organized?

3.6 Has twinning been arranged with one or more communities for action in the event of a disaster?

Self-evaluation schedule for action by the local health personnel



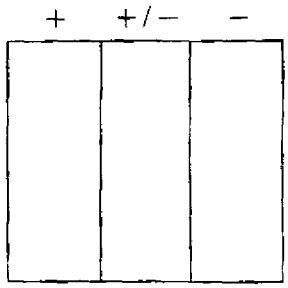
1. *Self-evaluation questions for the situation immediately following the disaster*

1.1 Has the health centre or hospital been organized to take in the injured?

1.2 Have arrangements been made for sorting the victims into categories?

1.3 Has the help of voluntary workers been enlisted for the reception of victims?

1.4 Have arrangements been made for evacuating to properly equipped centres patients who cannot be dealt with on the spot?



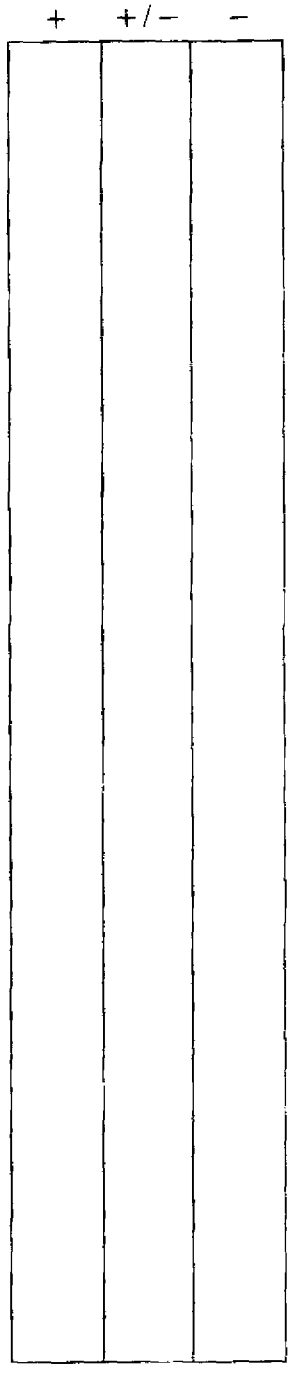
1.5 Have the type and quantity of drugs and medical supplies needed been estimated?

1.6 Has their provision been ensured?

1.7 Has the cooperation been obtained of local private and contract health staff?

1 8 Has liaison been established with the community's information coordination centre?

2. *Questions for self-evaluation in the post-disaster period*



2.1 Are the injured and sick being provided with routine care?

2.2 Has the disease-monitoring and health information system been activated by using voluntary workers and those in charge of the family groupings?

2.3 Are health education activities being conducted on:

2.3.1 using safe water,

2.3.2 individual and family hygiene,

2.3.3 cleanliness of the temporary shelters and the environment,

2.3.4 using the latrines

2.3.5 control of flies, disease vectors and rodents,

2.3.6 control of lice, fleas and other parasites (avoiding methods that give offence or involve discrimination against people)?

2.4 Are vulnerable groups being looked after?

2.5 Has the continuation been ensured of the vaccination and health protection programmes being conducted before the disaster?

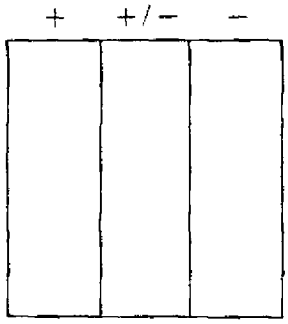
2.6 Are steps being taken to give psychological support to the victims and to deal with mental health problems?

2.7 Has the assistance of specialists from the intermediate level been obtained?

2.8 Has liaison been established with suitably equipped centres so that patients can be sent to them who cannot be dealt with on the spot?

2.9 Has liaison been established with laboratories suitably equipped for the necessary diagnostic activities?

2.10 Are periodic reports on the health situation being drawn up?

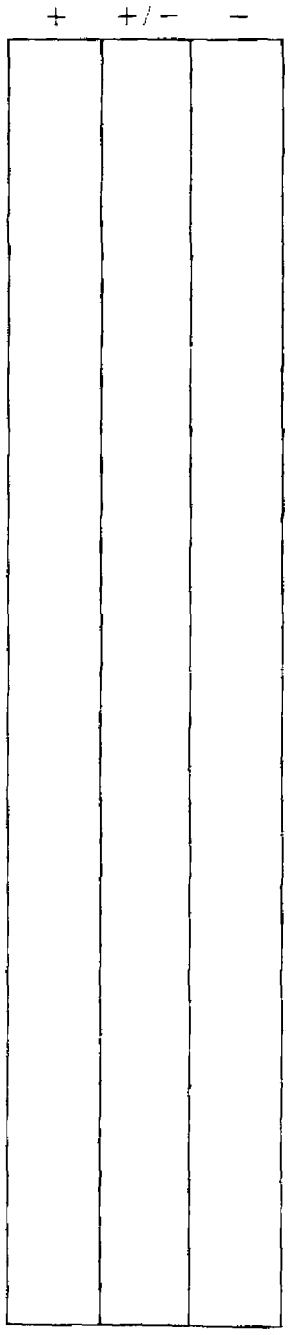


2.11 In organizing health work, has allowance been made for the territorial distribution of clusters of victims?

2.12 Are health activities being organized in such a way as to make it easy for people to participate and take responsibility?

2.13 Are the activities of voluntary health workers from elsewhere being coordinated?

3. *Questions for self-evaluation in regard to emergency preparedness*



3.1 Has a plan of action been drawn up for the utilization of the health centre or hospital in the event of a disaster?

3.2 Are the supplies available that would be needed in the event of a disaster:
- 3.2.1 drugs,
- 3.2.2 consumable health supplies,
- 3.2.3 items of health equipment,
- 3.2.4 water,
- 3.2.5 basic supplies for running the health facility?

3.3 Do the local health personnel know their tasks in the event of a disaster?

3.4 Have steps been taken to give professional training on dealing with emergency cases?

3.5 Have activities been organized to train voluntary health workers to cope with emergency situations?

3.6 Are emergency preparedness activities or exercises being carried out with the population:
- 3.6.1 in the schools,
- 3.6.2 in workplaces,
- 3.6.3 in associations,
- 3.6.4 in the community,
- 3.6.5 as part of twinning schemes?

3.7 Have preparations been made for liaison with centres equipped to deal with emergency requirements?

3.8 Has a plan of action been drawn up to cope with the eventuality of the health facility being badly damaged in a disaster?

3.9 Is there collaboration with the community emergency committee?

3.10 Is an assessment periodically made of the community's health status, indicating potential risks in the event of a disaster?

Annex 11

The League of Red Cross and Red Crescent Societies (LORCS)

There are national Red Cross and Red Crescent Societies in 144 countries, bringing together large numbers of voluntary workers trained in emergency care and other health activities. In the event of a disaster and in emergency-preparedness activities these voluntary workers can provide the local and national authorities with considerable assistance.

All the national societies are federated in the League of Red Cross and Red Crescent Societies (LORCS). In the event of a disaster LORCS coordinates the international assistance given by its national societies and channelled to the victims through the Red Cross (or Red Crescent) Society of the stricken country.

For further information on the League of Red Cross and Red Crescent Societies and for the address of the nearest Red Cross or Red Crescent Society, please write to LORCS, P.O. Box 372, 1211 Geneva 19, Switzerland.

Annex 12

A short reading list for local health personnel[1]

Alma-Ata 1978: Primary health care. Report of the International Conference on Primary Health Care, Alma-Ata, USSR, 6–12 September 1978. Geneva, World Health Organization, 1978 ("Health for All" Series, No. 1).

ASSAR, M. *Guide to sanitation in natural disasters.* Geneva, World Health Organization, 1971.

CAROLINE, N. L. *Life supporting resuscitation and first aid.* Geneva, League of Red Cross and Red Crescent Societies, 1984.

The community health worker. working guide, guidelines for training, guidelines for adaptation. Geneva, World Health Organization, 1987.

DE VILLE DE GOYET, C., SEAMAN, J. & GEIJER, U. *The management of nutritional emergencies in large populations.* Geneva, World Health Organization, 1978

Emergency health management after natural disaster. Washington DC, Pan American Health Organization, 1981 (Scientific Publication No. 407).

Environmental health management after natural disasters Washington DC, Pan American Health Organization, 1982 (Scientific Publication No. 430)

Guidelines for nurses in disaster preparedness and relief Geneva, League of Red Cross and Red Crescent Societies, 1985

GUNN, S. W., MURCIA, C. & PARAKATIL, F. *Dictionnaire des secours d'urgence en cas de catastrophe.* Paris, Conseil International de la Langue Française, 1984.

Handbook for emergencies. Geneva, United Nations High Commissioner for Refugees, 1982.

Health services organization in the event of disaster Washington DC, Pan American Health Organization, 1983 (Scientific Publication No 443)

OFFICE OF THE UNITED NATIONS DISASTER RELIEF COORDINATOR, GENEVA *Disaster prevention and mitigation: a compendium of current knowledge. Volume 8 Sanitation aspects.* New York, United Nations, 1982.

[1] To obtain publications, slides, films or videocassettes on disasters and the role of health personnel, please write to WHO, Emergency Preparedness and Response, CH-1211 Geneva 27, Switzerland, PAHO, Emergency Preparedness and Disaster Relief Program, 525 Twenty-third Street NW, Washington DC 20037, United States of America; Office of the United Nations High Commissioner for Refugees, Palais des Nations, CH-1211 Geneva 10, Switzerland

On being in charge · a guide for middle-level management in primary health care. Geneva, World Health Organization, 1980.

PROTEIN-CALORIE ADVISORY GROUP OF THE UNITED NATIONS SYSTEM. *A guide to food and health relief operations for disasters* New York, United Nations, 1977.

The Red Cross in emergency medical actions. Geneva, International Committee of the Red Cross/League of Red Cross and Red Crescent Societies, 1983.

The treatment and management of severe protein-energy malnutrition. Geneva, World Health Organization, 1981.

WESTERN, K. A *Epidemiologic surveillance after a natural disaster.* Washington DC, Pan American Health Organization, 1982 (Scientific Publication No. 420).

WHO emergency health kit: standard drugs and clinic equipment for 10 000 persons for 3 months Geneva, World Health Organization, 1984 (new edition in preparation).

WHO publications may be obtained, direct or through booksellers, from:

ALGERIA: Entreprise nationale du Livre (ENAL), 3 bd Zirout Youcef, ALGIERS

ARGENTINA: Carlos Hirsch, SRL, Florida 165, Galerías Güemes, Escritorio 453/465, BUENOS AIRES

AUSTRALIA: Hunter Publications, 58A Gipps Street, COLLINGWOOD, VIC 3066

AUSTRIA: Gerold & Co., Graben 31, 1011 VIENNA I

BAHRAIN: United Schools International, Arab Region Office, P O Box 726, BAHRAIN

BANGLADESH: The WHO Representative, G.P.O. Box 250, DHAKA 5

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YUGOSLAVIA Jugoslovenska Knjiga, Terazije 27/II, 11000 BELGRADE

ZIMBABWE: Textbook Sales (PVT) Ltd, 1 Norwich Union Centre, MUTARE

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The purpose of this Guide is to help communities and local health personnel cope with natural disasters such as earthquakes, cyclones and floods. External relief (from governments or international organizations) is essential for solving many of the problems, but if those affected do not rely upon it entirely, and if they organize themselves properly, they will help to improve the quality of the relief.

The Guide sets out clearly what should be done by the community and by local health personnel at the time of the disaster to organize rescue work and emergency care, and later on to solve the many survival and health problems resulting from the disaster.

Finally the Guide describes the various emergencies to which natural disasters can give rise and the steps that communities and local health personnel can take to prepare for the eventuality of a disaster and to prevent and mitigate its consequences.

The text is liberally illustrated.

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