

## **PART IV**

### **DISASTER REHABILITATION**

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## CHAPTER 17

### DISASTER REHABILITATION AND RESETTLEMENT

In a country's response to disaster it will usually be found that the phases which follow one another form a continuous process, one phase actually merging into the next one. The period of emergency operations and disaster relief (Chapter 16) largely coincides with the duration of the conditions, such as those of a tropical cyclone, which are causing the disaster. When these conditions moderate or move away a period of rehabilitation follows (or may already have begun) and, in some aspects at least, rehabilitation merges into a process, which may be a very lengthy one, of resettlement.

These considerations illustrate the continuous and cyclical nature of the various components of disaster prevention and preparedness. A disaster brings one cycle to an end and initiates the next one. During the disaster, surveys are carried out for the preparation of situation reports covering human casualties and material damage. These surveys are needed to enable decisions to be made on the action required during the actual emergency and in the period immediately following. Later, when conditions are more static, a thorough and carefully planned survey is made in order to draw up a formal assessment of the damage that has occurred (see Chapter 18). This assessment provides a basis for re-examining the principles, objectives and plans for disaster prevention and preparedness. It is to be expected that in both prevention and preparedness, weaknesses and gaps would be detected and, as a result, additional measures for prevention and preparedness would be approved by the government concerned. Furthermore, there would probably be changes in the implementation of preparedness plans and the whole organization for emergency operations would be improved in the light of the experience gained in an actual disaster. It naturally follows that, in the aftermath of disaster, the procedures for rehabilitation and resettlement may contain elements of disaster prevention as well as disaster preparedness.

#### Rehabilitation

The basic purpose of rehabilitation is to provide services and facilities which will restore to communities, families and individuals their former living standards whilst at the same time encouraging any necessary adjustments to drastic changes caused by the disaster that has occurred. If, as a result of the material damage suffered in a locality, a large-scale programme of rehabilitation is seen to be required, the aim might be to improve rather than merely restore the accustomed living standard and social conditions.

Morale is one of the most important factors in rehabilitation. This factor should be considered in relation to the community itself and also in relation to families and individuals. It is possible for people to emerge from a disaster in a hopeless and apathetic state of mind. If this attitude is allowed to persist, people affected will become over-dependent on welfare services and be a permanent burden on the nation. A spirit of high morale can be fostered by helping people to realize that the efforts made on their behalf are prompted by a regard for their value to the country and by the desire to promote feelings of self-reliance and a determination to participate in the work and social life of a community growing in prosperity.

#### *Financial provision for rehabilitation*

It should be accepted that in spite of all the measures for disaster prevention and preparedness, each visitation by a tropical cyclone or by other adverse natural phenomena is almost certain to result in damage and economic losses. As a country's development proceeds, the total amount of material at risk becomes progressively greater and

so it must be anticipated that the damage caused by a tropical cyclone would be, in absolute terms, all the greater. As a result of damage surveys and assessments that should be made after every disaster (see Chapter 18), governments should be in a position to make provision in annual budgets, as a kind of insurance, in order to have funds available for at least a substantial portion of the losses that might occur in the next disaster. Governments which take these steps would also appreciate that rehabilitation must be a widely co-ordinated programme involving a number of departments and voluntary organizations and that as far as possible all necessary action should be planned in advance.

### *Rehabilitation programme*

Rehabilitation should be carried out in a two-pronged programme covering on the one hand the victims of the disaster and on the other hand the public services and amenities. For the victims, assistance may include the repair of homes, the provision of basic home needs such as furniture and kitchen utensils, the provision of food and clothing and resettlement. The latter subject, resettlement, is a complex issue and is further discussed below.

The rehabilitation of public services and amenities makes a most important contribution to the recovery of a community and would include such matters as the repair of roads and bridges, the restoration of the various public utilities, assistance for industry and commerce to resume full activity and all manner of help to agriculture (recovery of land, replacement of crops and livestock, repair of irrigation facilities, etc.).

### *Insurance schemes*

In certain countries, e.g. Japan and the United States, importance is attached to the role that disaster insurance can play in the mitigation of the effects of disaster. In the case of governments which have not yet introduced, or encouraged firms to introduce, such insurance schemes, it would be worth while investigating how they might provide a means of covering damage in specified sectors of the economy, e.g. agriculture, in order to facilitate rehabilitation. It could well be found that in a comprehensive programme to minimize the human and economic losses resulting from natural disasters, insurance offers an additional course of action which would complement all other measures designed for disaster prevention and preparedness. One of the advantages to be noted is that if firms and individuals were covered by disaster insurance, the costs of government assistance to the victims would thereby be reduced. Of course, not everyone could afford such insurance but people who have the means should be encouraged as an act of public spirit to effect their own insurance policies against disaster.

### **Resettlement and relocation**

Relocation is a potentially important component of a rehabilitation programme following a disaster. In the period immediately following the emergency phase of a natural disaster, displaced populations need to be resettled as part of the process of rehabilitation. Relocation may occur either in the area or region of origin or, as often happens, in temporary sites pending further planning and reconstruction decisions. The authorities should be keenly aware of the fact that "temporary" settlements very soon become permanent. Therefore, all preparedness plans should identify suitable land on which to relocate disaster-stricken and homeless populations in the short term and foresee the possible results of such relocation in the medium to long term. The problems of so called "temporary" relocation are extremely complex and the soundest approach in general terms may be, as part of preparedness plans, to earmark adequate land for long-term rehabilitation and reconstruction. Resettlement involves not only questions of location but also such aspects as availability of employment, transport and services. It is evident that the formulation of disaster-preparedness (and rehabilitation) plans calls for close inter-ministerial and inter-departmental co-ordination at all levels of government. Ministries responsible for housing and urban development, public works, regional and physical planning, etc., are important contributors to the state of disaster preparedness.

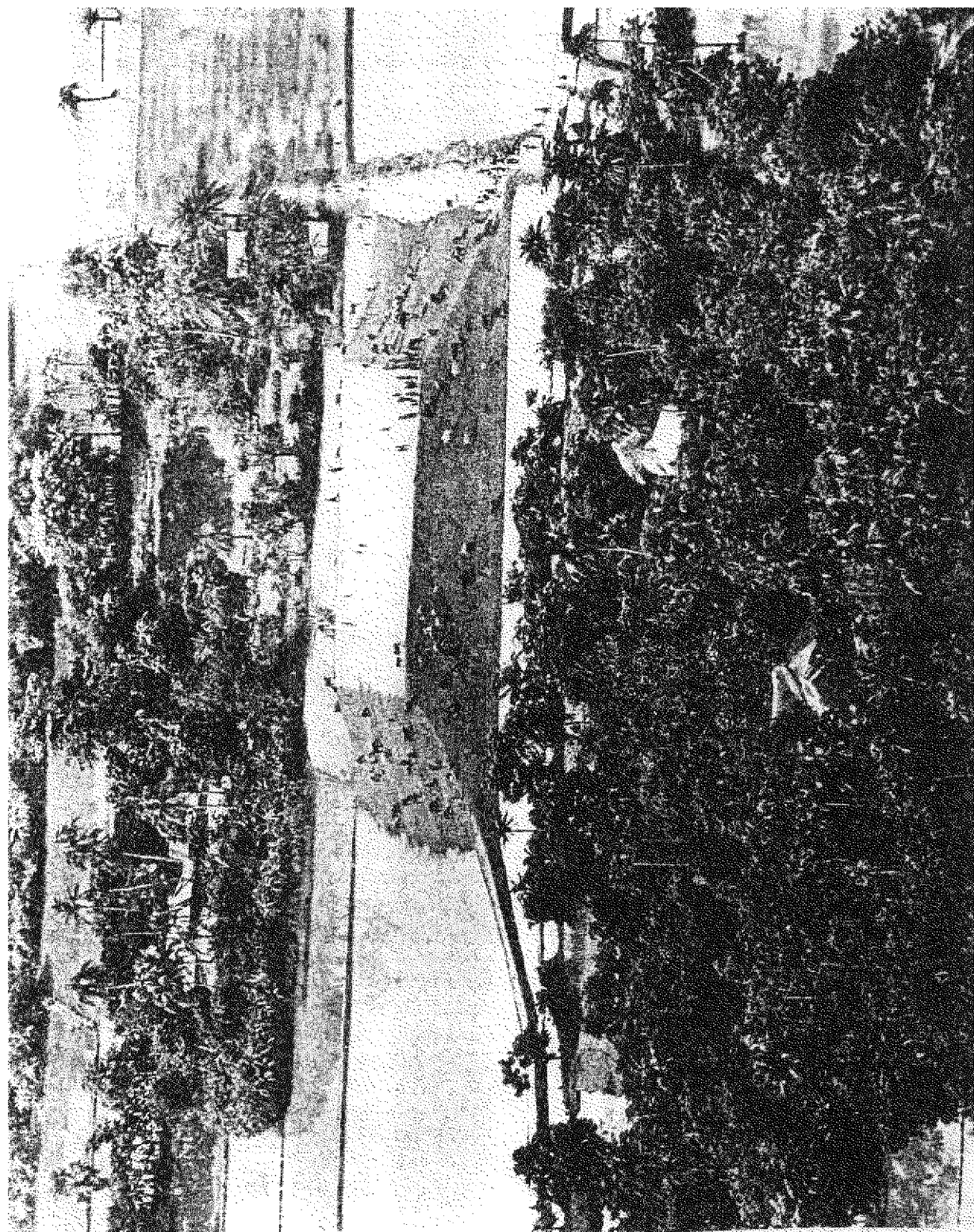


Plate III — The work of rehabilitation after the November 1970 tropical cyclone struck Bangladesh. (Photo: League of Red Cross Societies — J. Mohr)

*The choice between relocation and reconstruction*

With regard to the question of a return to the same location as was occupied before the disaster occurred, the attitude of families is likely to differ from that of government departments and the business community. It would be quite normal for individual families to wish to return to their exact pre-disaster location. Land ownership, family and neighbourhood ties all help to influence the desire to remain. On the other hand, unless there is an exceptionally important vested interest in the affected area, government departments and industrial and commercial firms may take a more flexible view and be prepared to move their own activities to an alternative but acceptable area. Although these various preferences should be given due weight, decisions should be made within the framework of government plans for land and other reforms. Implementation of these plans should not be modified without very good reason.

Factors that should be taken into account when consideration is being given to reconstruction in the area previously occupied include the following:

- (a) *The disaster-vulnerability of the area.* If the area is highly vulnerable and, for example, experiences tropical cyclones relatively frequently, relocation should certainly be considered. The main point is that land use should be in line with vulnerability to as great an extent as possible. If the work of rebuilding and reoccupation is going to be in danger of being nullified a few years later, it should clearly be preferable to develop in a new, less vulnerable location.
- (b) *Extent of damage in the area.* This requires a detailed survey by competent experts in order to assess, building by building, the soundness and safety of each structure and whether it could be repaired sufficiently to comply with minimum safety requirements. If this condition can be satisfied, repair would probably be the least costly and most acceptable form of reconstruction taking into account the vulnerability factor.
- (c) *The condition of public utilities.* The post-disaster condition of water supply, sewage systems, gas and electric power, roads, etc., can exercise a decisive influence on the choice between repair and relocation. The capital and social costs of restoring these facilities on a recurring basis can be very heavy and this consideration should be weighed with the area's vulnerability and other factors.
- (d) *The availability of resources.* This includes financing for housing and reconstruction, insurance, manpower, equipment and materials.
- (e) *Land use, land ownership and land tenure.* Experience after major disasters shows that people for the most part do not wish to move from where they have lived previously. This feeling, combined with the strong pressures exerted by landowners, has often had the result that many cities have been rebuilt in accordance with their former land-use pattern. However, when the material damage in a city is widespread, the opportunity is available for local authorities to carry out physical, social and economic reform, to implement policies and to enforce the application of planning codes which take risk evaluation into account. Authorities would therefore be well advised to have redevelopment plans ready so that if a city or a part of it is destroyed, reconstruction can be carried out in a safer area. It is emphasized that such a programme would require strong official backing to overcome any organized resistance to the changes.

An interesting example of relocation is to be seen in India where large numbers of settlements have been shifted laterally or vertically. In the State of Gujarat disastrous floods occurred in 1970 and, as a result, the government decided that some 300 villages situated in low-lying areas along the Narmada and Tapti rivers should be relocated on higher ground nearby. These transfers were practicable because the inhabitants in their new dwellings were near enough to the flood plains for their agricultural activities to be maintained. This condition was an essential one because if the villagers had been moved far from their fertile land, there would have been a tendency for them to drift back and form squatter settlements.

- (f) *Social considerations.* Consideration should be given to age distribution, employment conditions, schooling and the self-help skills that are so valuable for construction. In any plan for the same area, a critical factor is often the distinction between the destroyed buildings (i.e. beyond repair) and damaged buildings which can be repaired. As pointed out above, repair is generally more economical. In the case of destroyed structures, urban

development should be taken into account from the point of view of improvement of land use such as the creation of park areas, widening of streets, elimination of congestion and so on. As for the home-owner whose house is destroyed, if he is not to rebuild on the same site the authorities should pay compensation and should assist him to obtain new land and long-term housing finance.

- (g) *Legislation.* Disaster-prevention legislation is sometimes slow to be implemented because of the disruption that might be caused for an unacceptable period. If disaster brings devastation to an area, the legislation for disaster prevention should be studied before any plans for reconstruction are drawn up. This is particularly important if the area has been declared an unsafe or high-risk area. Disaster may thus accelerate relocation which may have been planned already but not carried out. In such cases, great attention should be given during and following the emergency phase to prevent the erection of temporary housing which may in effect become permanent housing.
- (h) *Employment and industry.* For industrial reconstruction the economy of the community is a factor to be considered. If an industry is damaged but not destroyed, there should be added work for the labour force in making repairs. Furthermore, the restoration of employment is a vital factor in the recovery of a community in both morale and economic activity. In the case of complete destruction of industry, there may be a strong incentive because of the vulnerability factor to relocate employment and thus create a strong attraction for general resettlement or relocation. The relocation of employment, of course, depends upon a variety of important factors including transport facilities for the employees, proximity to railheads and ports, sources of water and power, and the question of safety. Decisions to relocate should be based on vulnerability and cost-benefit analyses.

#### *Resettlement – a wider view*

Resettlement on a regional or national scale may be considered as a disaster-prevention measure. However, viewed on its own, and for one purpose only, it is an expensive, and probably questionable solution, particularly for certain types of natural disaster. However, in flood-prone areas, the issues are clearer than in many other disaster-prone situations, and the community as a whole may see a common benefit in moving on to higher and safer ground. Resettlement should be integrated within the broader framework of comprehensive regional development and meshed in, for example, with the opening of new land or new settlements. Resettlement should not disturb existing economic activities before alternative economic activities are guaranteed. It should also be noted that complex social and economic problems of land acquisition and land expropriation are associated with resettlement. Land tenure and ownership disputes may serve to delay or frustrate resettlement policies and programmes. Consequently, resettlement proposals should have the backing of clear and strong land-development policies, accompanied by equitable compensation schemes with sufficient public and private financial backing.

Resettlement programmes may require parts of the population to move to different areas of the country, or simply on to safer ground nearby. In either case, attention must be given not only to physical and economic change, but also to social and cultural change. Care should be taken to include adequate social planning as well as economic and physical planning when undertaking resettlement.

The scale and level of resettlement are important considerations. It is virtually impossible to change the predominant population pattern within a country or region except at tremendous capital and social cost. Nevertheless, natural disasters may require and even provoke a certain amount of migration between regions of a country. However, these factors become elements of the overall regional planning process, and are therefore not the sole responsibility of disaster-management agencies.

The resettlement of individual communities to safer locations within a given region or sub-region is quite another problem and so long as it does not automatically or fundamentally alter existing regional patterns, this may be feasible. The problems associated with individual or *ad hoc* resettlement schemes involving individual communities are more readily definable, but nevertheless do call for careful social planning, employment planning, infrastructure planning and capital investment planning.