



Floods in Lisbon, November 1983.

The non-structural flood defence measures to be considered here include land-use planning and zoning to control the use of flood-prone areas, flood-proofing of existing structures, soil and water conservation to reduce flood flows and forecasting and warning systems. The aim of all these methods is to keep people and their property out of the way of floods. They are often portrayed as working with nature in contrast to the structural measures described in the previous chapter, but this is a false distinction. Any flood control system needs to use an appropriate mix of structural and non-structural measures. The two can and should complement each other.

Control of flood plain development

This is the most important of the non-structural measures for flood plain management. Flood plain maps (see chapter 3) indicate the areas that are subject to flooding and thus where development needs to be controlled if flood damage is to be reduced. A variety of methods is available for controlling development and the particular methods adopted will depend on the legal and administrative systems of the country. Usually, control will involve some form of land-use regulations. These need to be set in the appropriate legal context, depending on the planning system of the country. Experience shows that flood plain regulation is most successful when it is fully integrated within the land and development planning system at national or provincial level. Purely local regulation systems often fail because of legal or political challenges. Integration within the national or provincial planning system gives the flood plain regulation system additional legitimacy because the national system is familiar to citizens, embodies the necessary review and appeal procedures to ensure fairness and will promote uniform standards. On the other hand, integration within the national or provincial planning system also means that planners consider flood aspects when granting planning permission for new developments.

The regulations establish zones where particular types of development are prohibited. These zones must be based on an accurate flood plain map drawn to a specified design flood level so that the effect of the regulations is clear to all concerned. Flood plain regulation has been found to be a cost-effective method of minimizing flood damages associated with