Flood plain management

Flood and slide barrier on road Jiuzhaigon, China. *WWF. J. S. Marsh*

example, river fisheries are an important source of protein in many countries and reed beds provide materials for traditional types of housing. The fertilization due to the deposition of silt by frequent inundation can make the flood plain of great agricultural importance, which humans have used for centuries. Indeed, early agriculture first developed on the flood plains of the Nile, the Euphrates and the Tigris rivers in the so-called fertile crescent and today these same flood plains are still feeding the vastly increased populations now living there.

In addition to supporting the values sketched above in their natural state, flood plains have proved to be attractive sites for industrial and commercial development and for housing because of the availability of flat land adjacent to water. For these developments, the floods that were originally responsible for creating the flood plain are a natural enemy, causing damage, leading to demands for flood hazard mitigation. It is tempting, but naive, to recommend that these developments should be banned from the flood plain, but they are of great economic importance to society as a whole, providing employment, living space, food and other necessary products and services. To leave the flood plain barren is not a feasible alternative. Flood plain management requires the balancing of the benefits of the different activities against the costs (monetary, tangible and intangible) of flood damage over time so as to arrive at a decision on the wise use of flood plain lands and waters.

How do we decide on "wise use"? Thomas's definition is that wise use occurs when the activities on the flood plain are compatible with both the flood risks to human life and property and to the risks, arising from human activities, to the flood plain's natural functions. The principal strategies for reducing loss of life and property are (1) modification of the flood to reduce its velocity and depth or to change its location, for example, by using a dyke or upstream flood control dam; (2) modification of the susceptibility to loss in the presence of a flood, for example, by preventing certain uses of the flood plain, by raising structures above flood level or by evacuating populations in times of flood; and (3) modification of the consequences of unavoidable losses, for example, by flood insurance or disaster relief assistance. Compatibility with the flood plain's natural