

Did You Know?

Chitral, the north-westernmost area of Pakistan, is a region of glaciated mountain ranges and deep, narrow valleys. Flash floods occur regularly from June to August. Property, agricultural land, and irrigation channels are damaged because the arid, vertical landscape often limits settlement and cultivation to active alluvial fans. However, few people die from flash floods because they have learned from experience to identify and interpret environmental signs and signals associated with them: changes in cloud colour, water flow, intensity and frequency of rainfall, and unusual sounds and unusual presence and movements of wildlife. Local stories tell about people forgetting prior experiences with flash floods. Major destructive flash floods may not take place often enough – once or twice per generation – for villagers to remember them and to influence their decisions about where to settle.

Households adopt a few, simple short-term strategies such as storing food, saving administrative papers and other important belongings with relatives or neighbours, moving to safer places especially at night, and running to higher ground. Communities and households also adopt long-term adjustment strategies.

For instance, building houses in safe areas, having dispersed landholdings, and different sources of income to spread the impact of flash floods among their physical and economic assets. This gives people some flexibility and helps them bounce back from natural hazard events more quickly than they would without any coping mechanisms. Many strategies are not designed for natural hazards preparedness, but contribute to it indirectly. Examples of long-term strategies also include adjustments in natural resource management. In Chitral, some communities regulate grazing and deforestation through customary rules. Many people believe flash floods are caused by environmental degradation, especially deforestation and overgrazing by goats. Long-term strategies also include technical and structural aspects like building grain stores, terraces to prevent damage to houses by rockfalls, and traditional retaining walls using local materials to protect settlements and fields from water.

Chitral District is also prone to earthquakes. Locally, traditional houses made of a sophisticated combination of wood, stones, and clay are believed to be earthquake resistant. However, houses built in this way are disappearing because there is

not enough wood and new trends favour separate rooms and larger windows.

Folklore, songs, proverbs, and traditional ceremonies are repositories of collective and family memories of past events. Again, they may not be entirely about hazard preparedness but may incorporate elements of it. Local religious and other key leaders, elders (both men and women), and other social actors are often the key knowledge-carriers about past hazards and the ones who make sense of imminent hazards. Traditional early warning systems for flash floods include a diversity of decentralised strategies used on an ad hoc basis. However, the district is now in a period of transition between traditional early

warning systems and new ones, leaving most communities in an institutional vacuum. The early warning system as of 2006 mainly relied on new, centralised technologies, and these do not reach many isolated communities. Overall, many changes are occurring in the district: a combination of factors (historical, environmental, socioeconomic, demographic, institutional, and political) influences community knowledge and practice of natural hazard preparedness in a complex way. Some factors have helped to reduce people's vulnerability to natural hazards (e.g., better access to water by developing irrigation channels with the help of non-government organisations); others have increased their vulnerability (e.g., population growth forcing people to settle in more vulnerable areas).