Sources of (Data) Information for Hazard Mapping

There is a vast array of sources of hazard information, including various public and private libraries, offices and reference centers at international, national, regional, and community levels. These entities may be concerned with infrastructure, community facilities, economic development, resource exploration, land use planning, emergency preparedness, geotechnical studies, disaster response, and many other activities. Sometimes these sources coordinate their compiling of hazard information, but it cannot always be expected. Many of the users of development planning information are also compilers of natural hazard information. Tinsley and Hollander (1984) have compiled a list of governmental earth-science agencies and selected major international organizations whose functions are similar to those of the U.S. Geological Survey.

Some hazard information can be extracted or inferred from photographic, topographic, geologic, hydrologic, climatologic, and soils information already prepared for settled regions. Chapter 10 of this primer, on landslide hazard mapping, suggests local authorities responsible for public works, forestry, and agricultural activities as being valuable sources of information because of their familiarity with past problems.

The Organization of American States (1969) in its casebook on physical resource investigation for environmental development cites suggestions for obtaining information on hazards. These include existing resource surveys; aerial photography; personal reconnaissance; exploratory, reconnaissance, semi-detailed, and detailed surveys; aerial photography, orthophotos, and photogrammetric mapping; geologic surveys; flood studies; and soil erosion surveys.

Hazard information may also be obtained from remote sensing data.

Examples of the Types of Information Needed to Assess the Hazard Potential of Natural Phenomena

	EARTHQUAKE	**LANDSLIDE**	**HURRICANES**	**RIVER FLOODS**
LOCATION	Epicenters	Inventories	Landfall	Channel
	Geologic formations	Geologic formations	Path	Floodway
		Slope		Floodplain
				Elevation
SEVERITY	Intensity	Velocity	Wind velocity	Volume
	Magnitude	Displacement	Rainfall	Velocity
	Acceleration			Rate of rise
	Displacement			
LIKELIHOOD OF	Recurrence interval	Earthquake recurrence	Historical occurrence	Historical return

OCCURRENCE				periods
	Slip rates			Flood of record
	Historical seismicity	Rainfall patterns		Design event
		Bank cutting rates		

Most of the information used in natural hazard assessments is generated by three principal networks: international and national natural phenomena research and monitoring centers and universities; disaster management entities; and multi sectoral and sectoral planning agencies, ministries, and public utilities. While some may appear in scientific language or as statistical data, other readily usable information may be found in the form of maps, reports, newspaper and magazine articles, proceedings from hazard-related workshops, historical records, etc. Users of hazard information include many agencies at the community, regional, national, and international levels, a number of which are also important produces of information.