

TABLE 1 - Most serious Industrial accidents occurring in the world from 1970 up to 1986 (from OECD and ANSA)

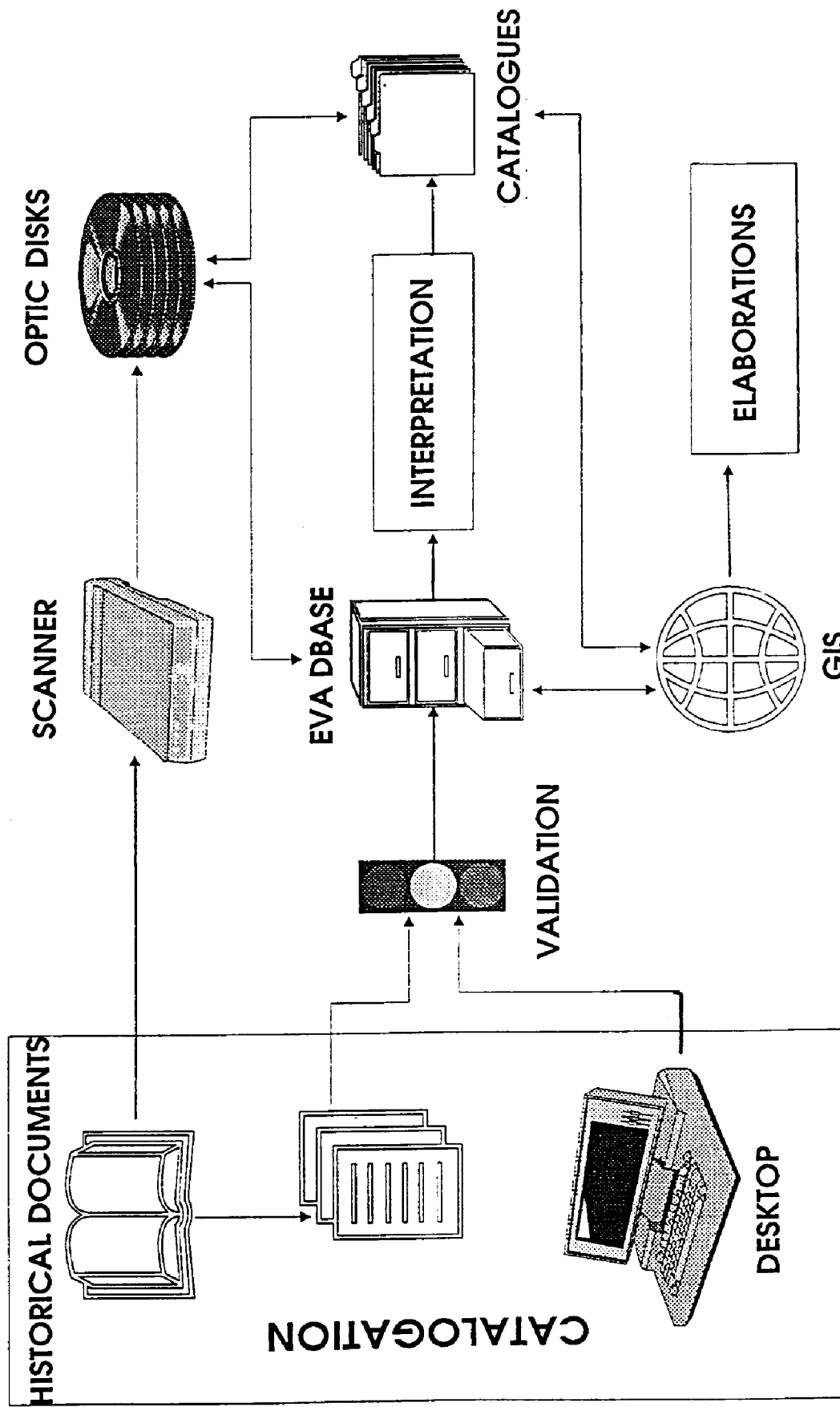
Date	Place	Type of accident	Substances involved	Number of dead	Number of injured	Number evacuated
1970	- Osaka (Japan)	Explosion	Gas	92	0	-
1973	- Fort Wayne (USA)	Rail accident	Vynil chloride	0	0	4.500
	- Market Tree (USA)	Rail accident	GPL	0	0	2.500
	- Greensburg 1.06	Rail accident	Chloride	0	8	2.000
1974	Flixborough (GB)	Explosion	Cyclohexane	23	104	3.000
	Decatur (USA)	Rail accident	Isobutane	7	152	-
	- Wenetachee (USA)	Explosion (rail accident)	monoethyla mmonic	2	112	-
	- Houston (USA)	Explosion (rail accident)	Butadiene	1	235	-
1975	- Beek (Holland)		Propylene	14	104	-
	- Eagle Pass (USA)	Road Accident	GPL	17	34	-
	- Heinstetein (West Germany)	Accident in storage	Oxide	0	0	10.000
1976	23.02 Houston (USA)	Explosion of silos	Grain	7	0	10.000
	13.04 Lapua (Finlandia)	Explosion	Explosives	43	0	-
	10.07 Seveso (Italy)	Leakage into atmosphere	Dioxine	0	193	730
	- Houston(US A)	Road accident	Ammonia	6	178	-
	-Baton Rouge (USA)	Explosion of plant	Chlorine	0	0	10.000
1977	- IRI (S. Korea)	Explosion of train		56	0	-
1978	11.07 Los Alfaques (Spain)	Transport accident	Propylene	216	200	-

Date	Place	Type of accident	Substances involved	Number of dead	Number of injured	Number evacuated
1979	Youngstown (USA)	Loss (road accident)	Chlorine	8	114	3.500
	2.11 Huimanguile (Mexico)	Explosion of gas-mains	Gas	58	0	-
	- Xilatopec (Mexico)	Explosion (road accident)	Gas	100	150	-
	- Oxford (GB)	Road accident	Chlorine	0	99	-
	- Manfredonia (Italy)	Plant	Ammonia	0	0	10.000
	- Regensburg (WGermany)	Fire at plant	Nitrogen oxide	0	40	2.000
	28.03 Three Mile Island (USA)	Nuclear accident	Fission products	0	0	200.000
	6.02 Brenen (Germany)	Explosion of mill	Flour	14	27	-
	- Novosibirsk (URSS)	Plant accident	Chemical substances	300	-	-
	10.11 Missisuaga (Canada)	Rail accident	Chlorine and butane	0	0	200.000
	- Crestiview (USA)	Rail accident	Ammonia and Chlorine	0	14	4.500
	Crystal city(USA)	Pesticides		0	0	6.000
1980	3.05 Mandir Asod	Explosion of plant	Explosives	50	0	-
	24.08 INDIA	Explosion of plant	Explosives	40	0	-
	23.10 ORTUELLA (Spain)	Explosion	Explosives	51	0	-
	BANGKOK (Thailandia)	Explosion	Explosives	54	0	-
	Sommerville (USA)	rail accident	Phosphorus trichloride	0	300	23.000
	- Barding (GB)	fire at plant	Sodium cyanide	0	12	3.500

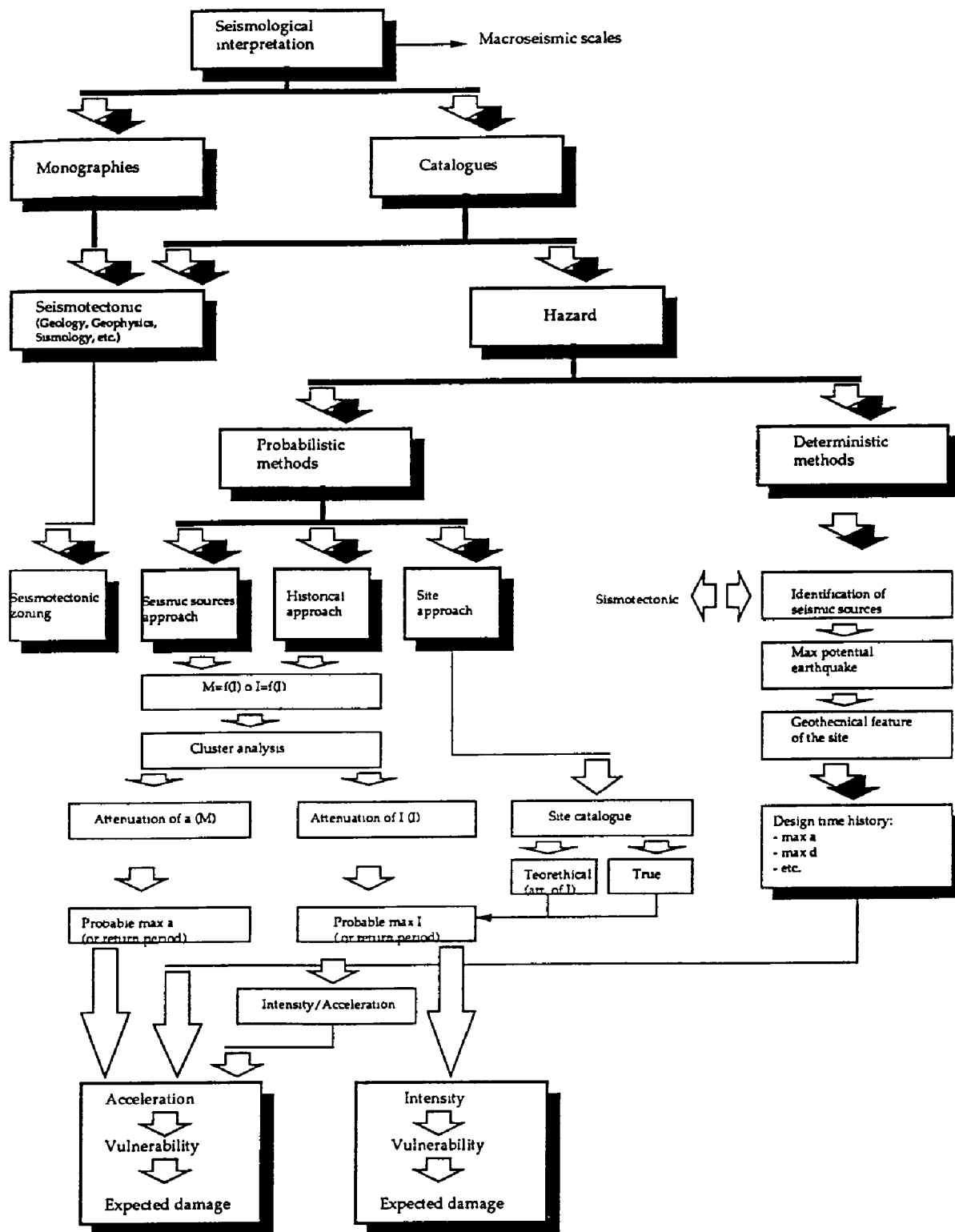
Date	Place	Type of accident	Substances involved	Number of dead	Number of injured	Number evacuated
1981	10.12 Tacoa (Venezuela)	Explosion	Hydro-carbon	145	1.000	-
1982	28.09 LIVINGSTON (USA)	Rail accident	Chemical substances	0	0	3.000
	- Taft (USA)	Explosion	acrolein	0	0	17.000
1983	7.12 TELEAJEN (Romania)	Explosion of plant	Polyethy-lene	100	100	-
1984	25.02 Sao Paulo (Brazil)	Explosion of pipes	Petrol	508	-	-
	19.11 STJ. IXHUATEPE C (Mexico)	explosion of tanks	GPL	452	4.248	300.000
	2.12 Bhopal (India)	Leakage into atmosphere	Methyl	2.500	1.000	200.000
	- Gahri Dhoda (Pakistan)	Explosion of gas mains	Natural gas	60	0	-
1985	02 Telejen (Romania)	Explosion of plant	Polyethy-lene	150	100	-
	19.07 Stava (Italy)	Collapse of dam		199	-	-
	21.12 Napoli (Italy)	Explosion of tanks	Petrol	4	150	2.000
1986	26.04 Chernobyl (URSS)	Nuclear accident	Fission products	28*	100	135.000
	13.07 Il Cairo (Egypt)	Explosion of gas-mains	Gas	5	9	-
	1.11 Daynia (Bulgaria)	Explosion of plant	Vynil chloride	17	19	-
	1.11 Basilea (Switzerland)	Fire at store	Chemical substances	0	15	-

* only direct people

1* These are only "immediate" deaths, not taking into account delayed effects.



Structure of ENEA EVA data base and data bank for natural disasters in Italy since 1000 A.D.



Complexity of procedures for seismic hazard and risk assessment (from seismological interpretation of historical data to risk assessment)

5277

COMITATO NAZIONALE PER L'ENERGIA NUCLEARE
- DIREZIONE CENTRALE SICUREZZA NUCLEARE E PROTEZIONE SANITARIA -

TAV. V INTERSEZIONE DELLE CARTE TEMATICHE

LEGENDA:

-  AREE RISULTANTI
 AREE CON ALTA PRESENZA DI PICCOLI CENTRI ABITATI
1 AREE CON INTENSO USO TURISTICO DEL TERRITORIO
2 VINCOLI NATURALISTICI
3 VINCOLI ARCHEOLOGICI
4 AREE CONDIZIONATE DALLA PRESENZA DI VIE DI COMUNICAZIONE PRIMARIE
5 AREE FORTEMENTE INTERESSATE DA VINCOLI MILITARI

0 10 20 30 40 50 60 70 80 90 100
KM

5127

4827

4677

4527

4377

4227

4077

1313

1463

1613

1763

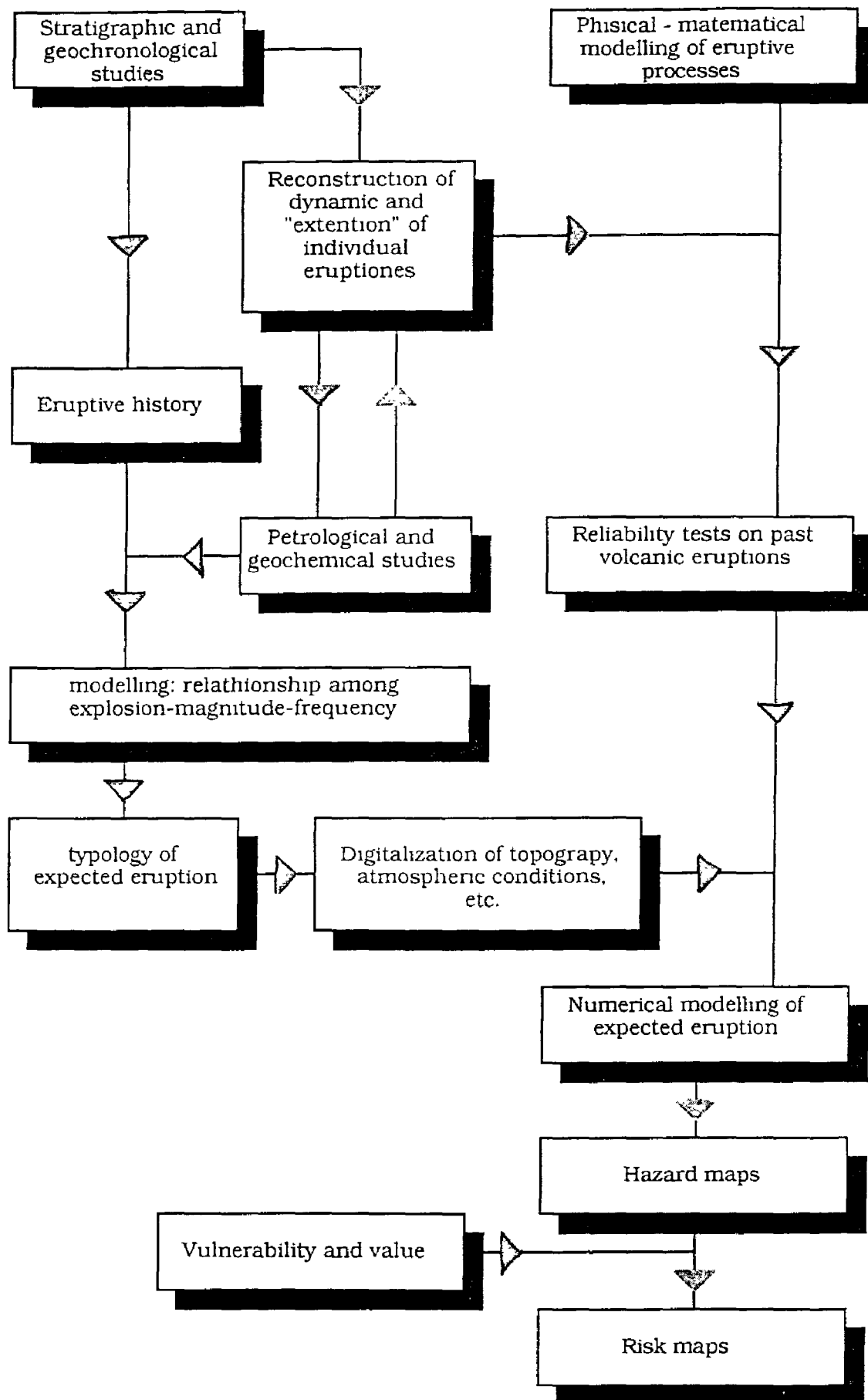
1913

2063

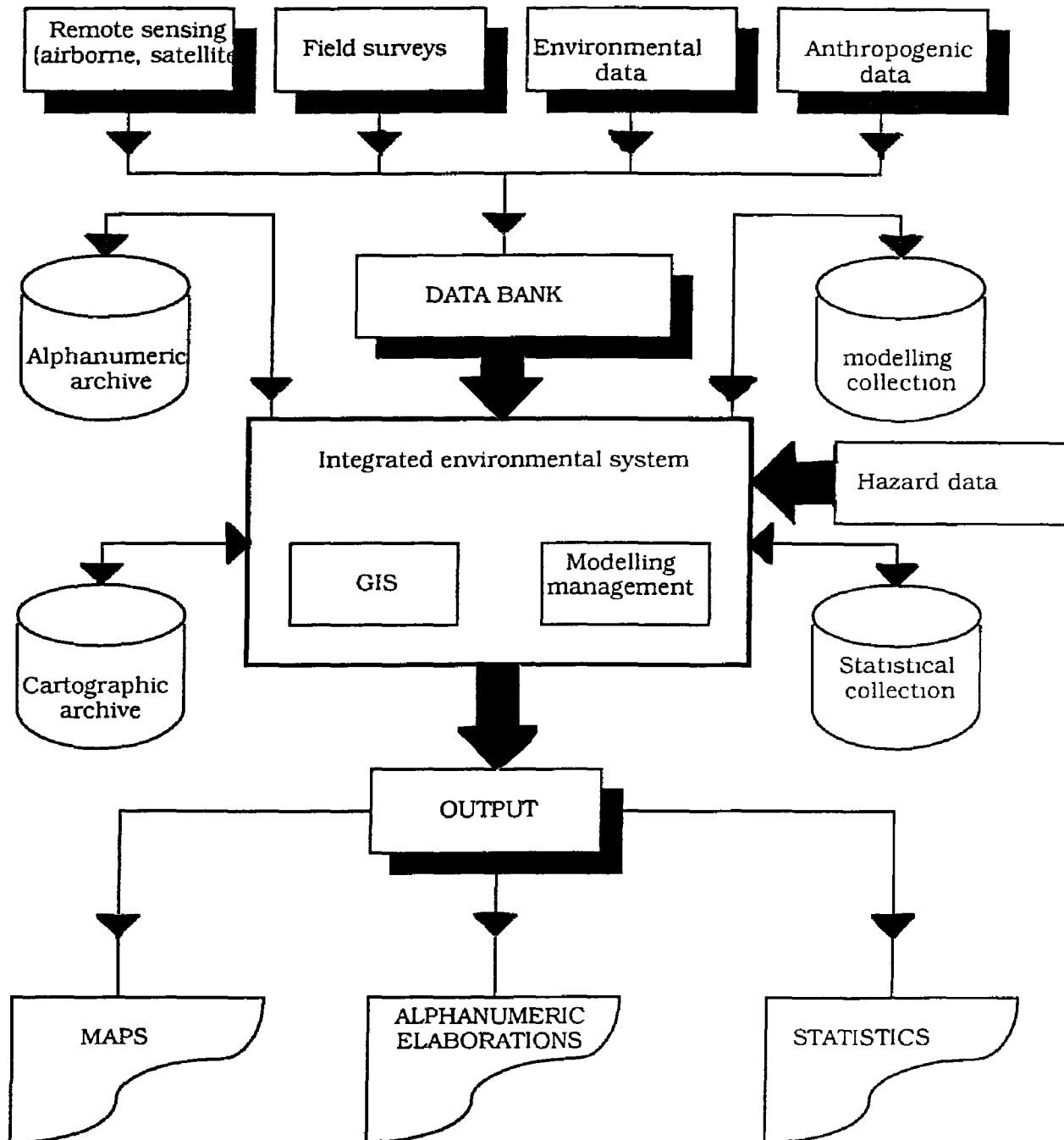
2213

1313

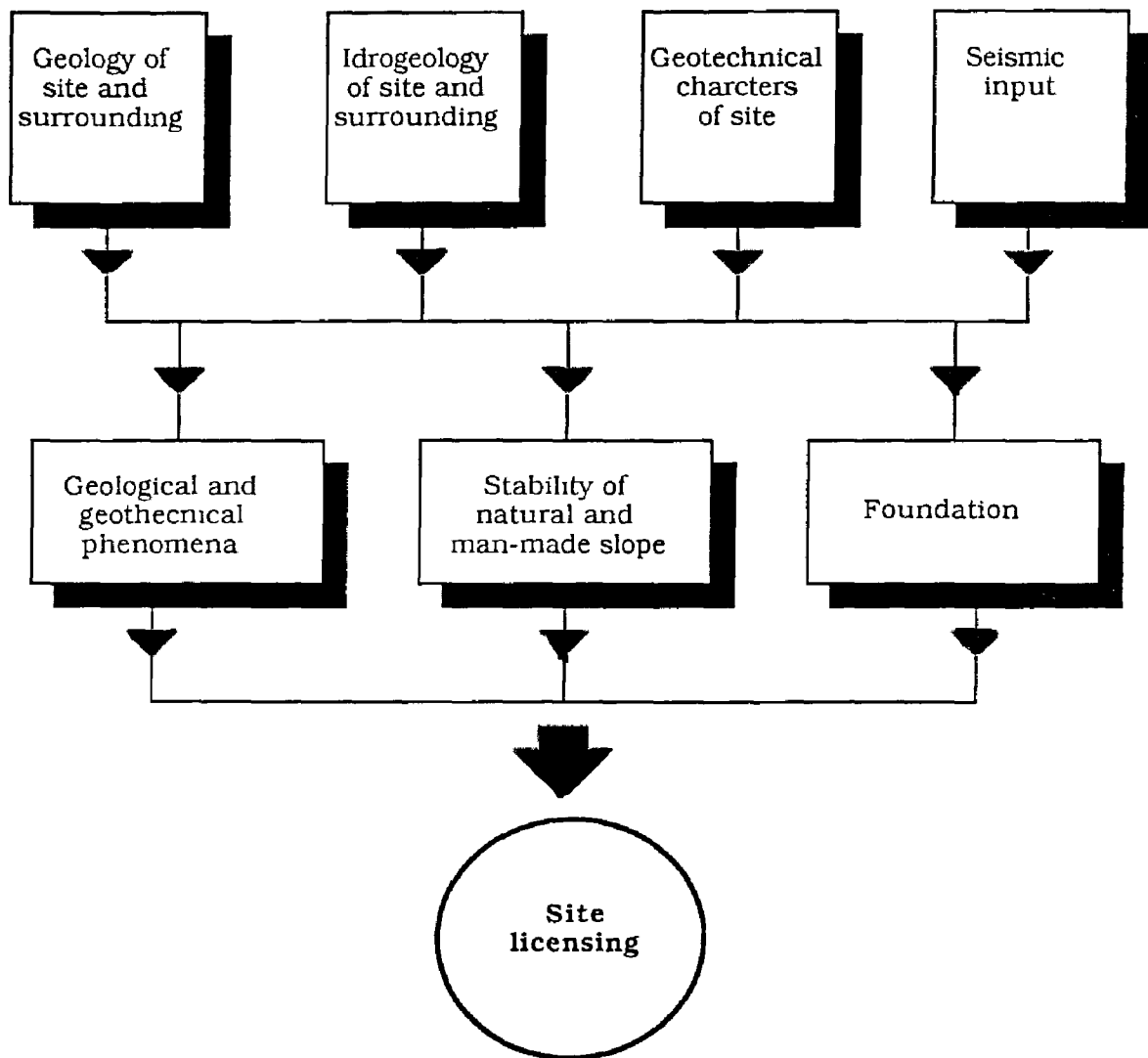
Methodological approach for the realization of hazard and risk volcanic map



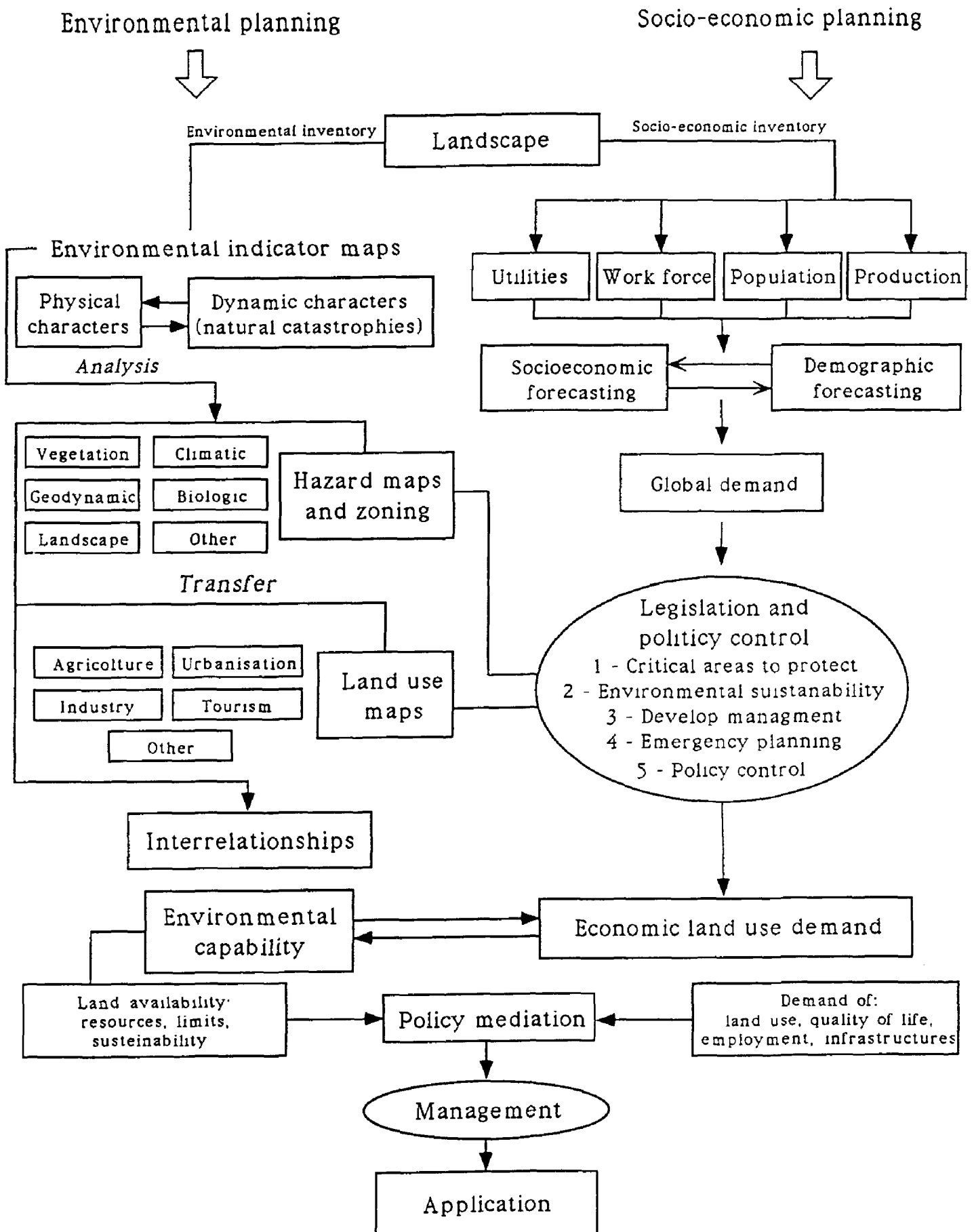
**Path of Integrated Environmental System for global management
of Vesuvius areas**



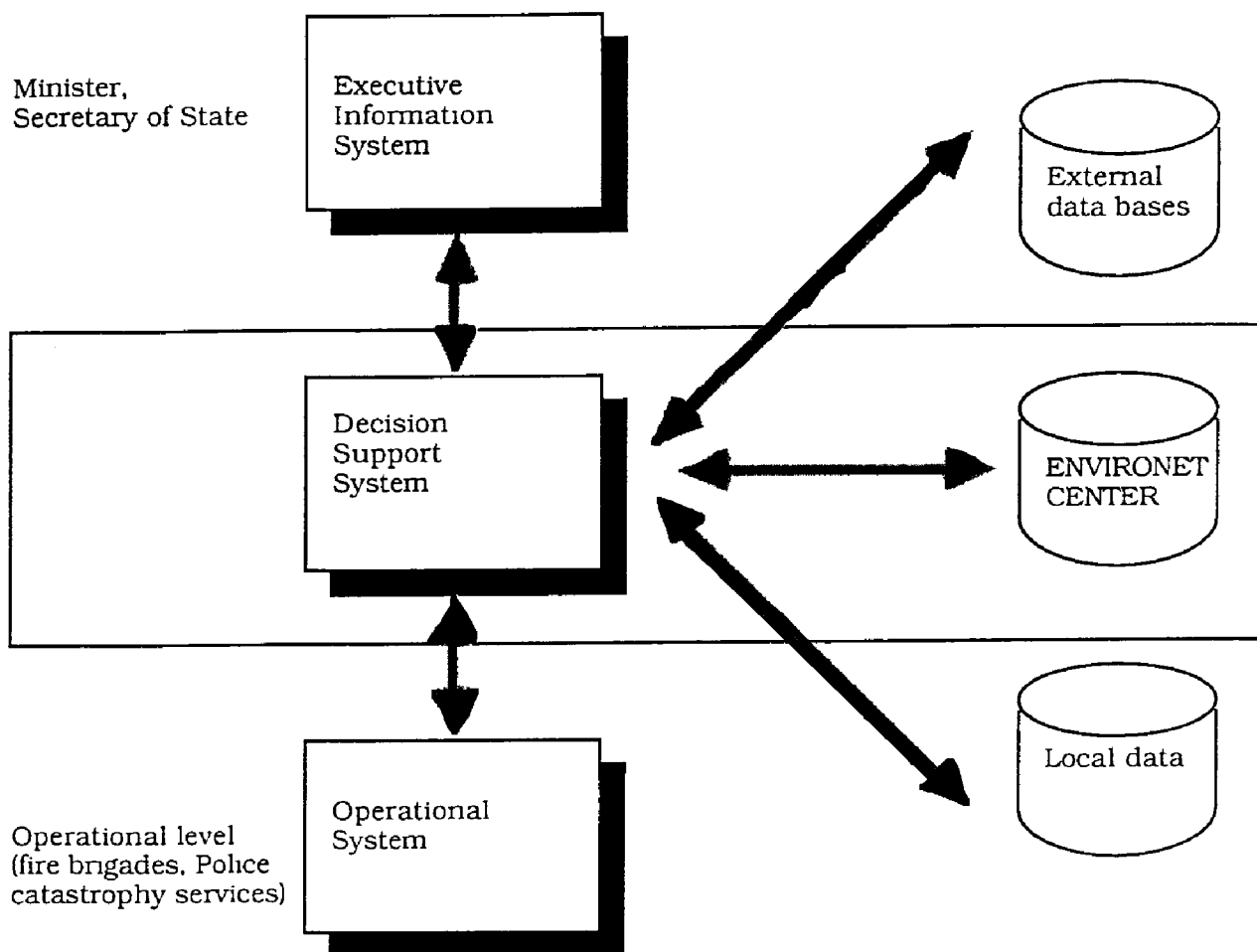
Assessment of geological and geotechnical stability of nuclear facilities



Relationship between Environmental and Socioeconomic Planning



ENVIRONET: a prototype network for environmental data exchange



Relationship among Public Administrations, Scientific and Industrial Policies and Community on Environmental Safeguard

