WATER POLLUTION

The main polluting agents have been classified by the Public Health Service (USA) into:

- domestic sewages and other substances involving an oxygen consumption;
- pathogenic agents;
- fertilizing elements;
- organic chemical products;
- solids coming from the soil erosion;
- radioactive substances;
- warmth coming from industrial plants and thermoelectrical plants.

Water pollution is caused almost exclusively by the human activity: from the complex of these activities three polluting groups are determined:

- chemical pollution: due to substances modifying water characteristics;
- physical pollution: due to variations of warmth or to solid waste modifying the physical properties of water;
- biological pollution: due to pathogenic organisms.

The first legislative interventions in Italy, from 1933 to 1942, foresaw a radical transformation of the productive systems taking care of waters, but in time they realized that the protection of chemical, physical (winning in the end) and biological properties of water did not sufficiently safeguard primary importance goods like public health and, in general, the environmental ecological patrimony.

The "legge quadro" of 10th May 1976, n. 319 (so called "Merli Act" established the first legislative intervention aiming at the protection of the environment from the water pollution, introducing into the Italian legal system rules concerning the sewage of polluting substances and detecting the concentration limits of such substances in waters.

The Legge Merli found the territorial institutions absolutely unready, since they had considered normal to discharge effluent waters into rivers, lakes and the sea that the found nearest the urban and industrial settlements.

The technical functions of supervision and control over all the discharges were entrusted to Provinces releasing the final authorization.

With the "Decreto Legislativo n. 1521/1999, absorbing two important community instructions, the Merli Act is abrogated and the subjects concerning the protection of waters are redefined (namely we speak about a Testo Unico about waters).

Competences of territorial institutions

The already cited D.Lgs n. 112/1998 attributing functions and administrative tasks of the State to Regions and local institutions on environment, provides for the State having the role of a guide, through the approval of measures by subordinate institutions; it is up to the Regions every enterprise to reach the objectives of environmental quality of waters, the planning and balance of regional water resources, the fixing of criteria of authorization of discharges; it is up to the Provinces the functions that are delegated to them by regional Acts, besides the control of the right enforcement of national and regional regulations concerning the protection from hygienical-sanitary-environmental pollution.
The functions of the municipalities concern the planning of water and sewer network, the control over the civil and industrial consumptions of waters.

The “Autorità di bacino” (Basin Authority) has got a fundamental role in drawing up the Plan for the protection of waters, as its advice is binding for the acceptability of the plan by the Region.

As to sea pollution, it comes both from unexpected events (for example accidents occurred to ships) but above all from constant activities such as discharges of substances and waste.

In defence of the sea the Italian system issued the Act n.979/1982 that provides for a general scheme of protection for the sea and seacoasts from pollution, valid for the whole national territory. Such act prescribes for the defence of the sea environment:

- the construction of structures for the loading and unloading of hydrocarbons and dangerous substances.
- The realization of underwater conducts for the conveyance of dangerous substances
- The realization of plants for the treatment of ballast and washing waters of the ships carrying dangerous substances

This five-year plan aims above all to foresee potentially dangerous events and to organize defence interventions to limit the damages when these occur. As to hydro-discharges coming from the soil, territorially competent regions have to comply to the limits prescribed by the “Testo Unico” on waters that by the way establishes the prohibition of abandonment and discharge of waste into the sea.
RIGHT OF ENVIRONMENT

When we speak of environment, we generally mean the complex of physical, chemical and biological conditions in which the life of organisms carries on. The protection of environment is by now a fundamental right of the human being: they pay more and more attention to environmental problems and by this time all the legal prescriptions have introduced an act concerning the protection of environment.

- On the 1st of January 1970: is issued in the United States an important set of rules about the environment protection that is the National Environmental Policy Act, while in 1970 the Stockholm Committee of the United Nations that faced environmental problems at an international level, ended with the Declaration about the human habitat, constituting the first important step towards the international right of environment.
- In 1974: the UNO issues the Chart of economical rights and duties of states.
- In 1982: the UNO sanctions the world chart of Nature, that underlines the relationship that is to be found between the correct use of environmental resources and the peaceful coexistence among peoples.

Even the European Community has showed great sensibility about the right of environment campaign and has dealt with the following sectors:

- preservation of nature
- preservation of waters
- recycling of waste
- care in the use of dangerous elements

But it has established also some objectives for precautionary measures and countermeasures for damages occurred in the environment.

- A communitary prescription of 1991 orders all the member states of the Community to foster interventions to reduce and dispose of waste.
- In 1992 the Maastricht treaty was signed in which the European Community undertakes to improve the quality of environment.

The situation of the degradation of the environment in Italy can be described by a series of phenomena that are rather worrying, such as the acoustic and the atmospheric pollution in towns (caused mainly by the enormous numbers of vehicles in circulation), the water pollution (caused by the industries waste), the hydro-geological instability that produces floods, the shortage of green areas (due to forest fires), the great heaps of urban rubbish for which they cannot find a suitable placing stirring up serious problems for their disposal.

- The Constitution foresees in the art. 9 the preservation of the landscape as a richness of collectivity
- The first act for the protection of environment dates back to 1966 and it is known as “anti-smog” act
- In 1976 they issued the Merli act aiming to give an organic solution to the problem of water pollution due to industrial wastes
- In 1982 they regulated the discharge of waste in general and of toxic and harmful ones in particular. In 1985 comes into force the Galasso decree connected to the preservation of the landscape.
- In 1986 they established the Ministero dell’ambiente (Environment Ministry) whose constituting Act established the prohibition to damage nature and compels the author of a fact like that to refund the damage to the State.
Organoleptic characteristics of water

- Colour
  - Natural causes
  - Artificial causes
- Taste
- Smell
  - Gas
  - Ammoniacal substances
  - Phosphorated substances
- Turbidity
  - Humus
  - Natural causes

Pollution of rainwater

- Damages to vegetation
- Damages to chemical ecosystem
- Damages to monuments and buildings
- Damages to health

Pollution of rainwater

- Lack of oxygen
- Presence of toxic substances
- Variations in temperature