



The importance of geoethics in the "Land of Fires"

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How was it possible that one of the most fertile soil worldwide called by Romans “Campania Felix”, became one of the largest mass poisoning in a Western country? Answer is in the tons of toxic wastes illegally dumped into the fields all around area between Naples and Caserta, which now is known as “Terra dei Fuochi” (The Land of Fires - due to illegal wastes burning). In last 25 years two main emergencies affected Campania, one official started in 1994 due to local waste management system problems, another more hidden and older due to criminal gangs which earn money by illegal disposal of toxic wastes. Those two emergencies are interconnected and have grown in absence of respect for people’s health and unknowledge of environmental themes. Apart from judging legal issues, the only evidence visible to public opinion is that during waste emergencies in Campania, decision makers, admitting also their good faith, didn’t consider enough environmental risks and decided, in order to solve emergency, to dump wastes in not geological feasible sites, such as landfills at the feet of Vesuvio national park or in abandoned quarries such as Chiaiano tuff pit, exposing local inhabitant and economic activities to high risks.

This work wants to underline that geoethics is fundamental as much as the need of geologists participation to whole remediation processes and to raising environmental awareness in the society. Maybe these themes seems to be trivial but geological competences are very important in understanding of pollution risks. This knowledge is practically obscure to decision makers and people, often media provides uncorrected informations which improve the fear of population. In example the idea that whole groundwater in the area is polluted is wrong and is strongly reducing the purchase of agricultural products of the area, and the only way to assess real contamination is site-specific characterization. Indeed Campania plain has a complex stratigraphic architecture with volcanic, alluvial and marine deposits which cause strong spatial and vertical variation of permeability. These deposits host two multi-layer aquifer system, separated by semipervious tuff horizon, whose leakance phenomena are due to local stratigraphic changes, but mostly upward. High density of wells for private and agricultural uses at different depths reduces the separation between two overlaying aquifers, increasing locally the risk of contamination. For this reason it is important have a precise idea of local geology in a way to define precisely water circulation and real risks. Recently geological community started to take seriously into account this problem, encouraged by some alarming forensic geological studies and by rising interest of public opinion due to increase of cancer cases.

Current risk is that after landscape, groundwater and rural economic cycle devastations, camorra gangs may introduce itself in the remediation business. For this reason it is fundamental that all professional figures involved in this phase and in particular geologists will be first guards of legality. In this moment geologists have an important responsibility, to demonstrate that geological knowledge is fundamental for human society to preserve and remediate territory and its population.