SCIENCESPRINGDAY

FACULDADE DE CIÊNCIAS E TECNOLOGIA
UNIVERSIDADE NOVA DE LISBOA

Earth Sciences Department

Geoenvironmental engineering

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Objectives

The main objective is to respond to the needs of the industries for solving problems related to contaminated soils and groundwater, in order to give solutions for site environmental requalification and straight the relations between university research and graduation programmes for society needs.

Methodology

1. Geological / hydrogeologic site characterization (site sampling and data analysis: GIS, multivariate data analysis, remote sensing) [Fig.1]
2. Geostatistical and groundwater modelling of contaminated plumes [Fig.2]
3. Definition of risk model (source–pollutants transport–exposure targets) [Fig.3] Quantitative risk analysis for human health and ecosystems
4. Definition of remedial actions and monitoring [Fig.4]

Expected Results

• resolve environmental contamination problems related to mining industries, waste management activities, chemical industries, oil companies…
• development of innovative methodologies to asses contaminated plumes migration within PhD and MSc thesis in Geological Engineering
• define specific actions to avoid ecosystem and human health risks
• organization of post-graduate training for ground contamination modelling, risk assessment and mitigation
• collaboration with other universities and institutes
• publication of scientific papers in national and international journals

Funding:

Fig.1 - Data collection and analysis

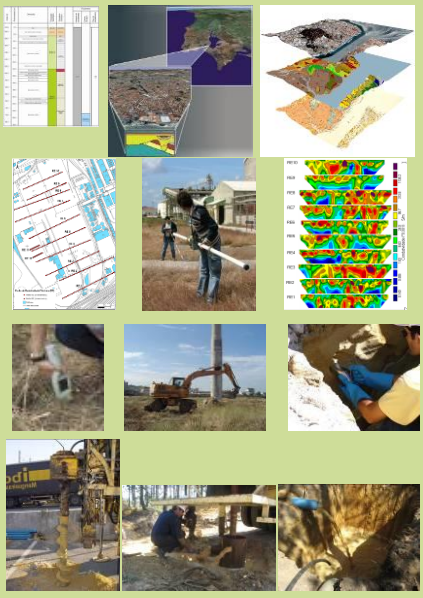

Fig.2 – Geological and contamination modelling

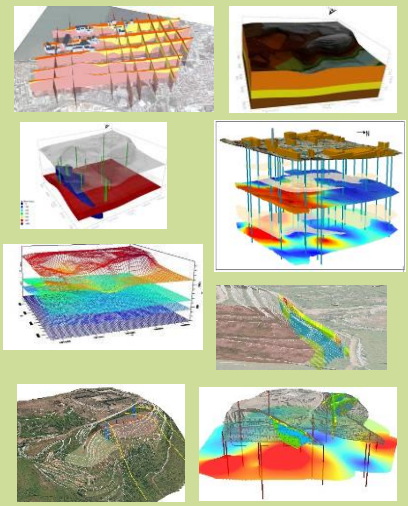

Fig.3 – Human health and ecosystem Risk analysis

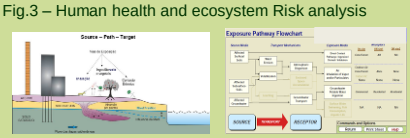

Fig.4 - Monitoring