CIVIL AND ENVIRONMENTAL ENGINEERING

Resource Corridors & critical raw materials: 2way approach to regional development & supply security

Funded By	
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Context of the research activity	Within the project GeoSciencesIR (Infrastrutture di ricerca - CUP I53C22000800006). Energy transition means green technologies and in turn means Critical Raw Materials. CRMs are key enablers to the energy transition and environmental protection. The European Commission has developed and updated every three years a list of CRMs for the EU according to their supply risks and economic importance. A CRM Act has been adopted in September 2022 to improve the security of supply to EU manufacturing industries. Starting from the experience of the EU-Africa Strategic Corridors, the project strives to understand how and to what extent Strategic Corridors are also Resources Corridors, i.e. development promotors that use mineral resources as a catalyser to create and strengthen value chains and territorial organisation, boosting economic and societal development at regional scale. On the other hand, better territorial organisation and governance in mining countries translates into enhanced security of supply for the EU.
Objectives	The main goal of the doctoral research is to develop methodologies and metrics that can support governmental bodies in charge of planning, permitting and monitoring minerals exploration and mining. In particular, the results can help understand how Resources Corridors can improve access to present and future mines of CRMs (e.g. cobalt, lithium, rare earths, etc.), mitigating the risk of supply disruptions of Critical Raw Materials for the EU. The project will explore how Copernicus data and services can provide useful information on planning and monitoring mining activities or any other activities/infrastructures that are interconnected (e.g. energy, water, roads, railways, ports, etc.) . EU-Africa strategic corridors are used as a starting point, but other geographical areas or experiences are in scope as well.
	The PhD candidate should preferably have the following knowledge and competences: - Mining, Sustainable Mining, - Mineral exploration, - Earth Observation,

Skills and competencies for the development of the activity	- Territorial Planning, - Data Analysis; A good knowledge of English is required. Good knowledge of practical attitude for the lab activities and problem-solving skills, and high motivation to learn through advanced research are appreciated. As the PhD candidate will work with two research groups on a multidisciplinary project, he/she must demonstrate adaptability in different environments, and be able to interact positively with the other group members.