

RIs as knowledge-sparking environment among the Ecosystems of Territorial Cohesion strategy: a study case about the social impact of the ITINERIS Project

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The way RIs can enhance their fruitful impacts on local communities from both social and economic perspectives, cannot be measured by scientific publications, while rather on the concrete implications achieved on territorial stakeholders through improving their policies and procedures focused on fulfilling peoples' real needs (Russo, 2025a).

One of these policies in the framework of the *Ecosystems of Territorial Cohesion* strategy effectively involved in promoting virtuous social and economic impact is tackling educational poverties in marginal areas today's facing demographic and cultural desertification (Russo, 2025b).

The objective of this research has been therefore observing how by opening RIs to new user categories mobilized by the Third Sector in collaboration with schools and municipalities can result in maximizing RIs societal value (Loperte et al., 2025).

The research experience is based on a training-intervention implemented at the ITINERIS' RIs, Lifewatch (<https://www.lifewatchitaly.eu/>) and Actris (<https://www.actris.eu/>), involving minors in educational poverty from southern Salento. A total of n. 34 students between 9 and 14 years old have been mobilized to live a special learning daily activity powered by the *Ecosystems of Territorial Cohesion* strategy at work (Russo, 2025c). They had a special chance to personally and actively operate in laboratory experiences titled "Hidden Biodiversity" at Lifewatch (University of Salento and CNR-IRET) and "Sky Discovering" at Actris (CNR-IMAA). The consistent emphasis on how science is delivered, rather than solely on the content, has been a key element. Those experiences highlight students' "inquisitive nature" and their confidence in answering questions without fear. This indicates that for kids in educational poverty conditions, engagement stems less from curriculum coverage and more from fostering intrinsic motivation through direct experience, curiosity, and a supportive, non-judgmental environment. One additional interesting elements for the students is to see such excellence in science in their own territory in South of Italy.

Despite the demonstrated effectiveness of these interventions, their implementation, particularly in contexts of educational poverty, faces significant challenges rooted in resource limitations and pervasive systemic barriers. Without addressing these fundamental infrastructural barriers, the effectiveness and scalability of programs will be inherently limited. This implies that policy decisions aimed at fostering educational equity must extend beyond curriculum development and teacher training to include substantial investments in community-level infrastructure that directly supports learning and holistic child development. Crucially, programs should conduct thorough community needs assessments to ensure that the interventions offered are genuinely valuable and relevant to the specific community. This involves co-creating programs with community stakeholders, fostering a sense of shared ownership and ensuring that the initiatives are perceived as a service to the community rather than an imposition.

Evaluation of the interventions in the framework of the *Ecosystems of Territorial Cohesion* strategy tackling educational poverties in marginal areas should extend beyond traditional academic metrics to assess outcomes related to STEM attitudes,

interest, identity, and self-efficacy, as these are fundamental for long-term STEM persistence and engagement. While individual student outcomes are vital, the call for community impact assessments and consideration of sociopolitical contexts suggests a need to measure impact at a systemic level. If interventions are truly addressing educational poverty, their evaluation should also capture broader changes in community engagement, access to resources, and the diversification of the STEM pipeline, moving towards a more complex, ecological evaluation model that captures ripple effects and contributes to understanding how interventions drive broader societal equity.

While challenges related to resource limitations lack of territorial capacity building and the complexities of family engagement persist, the insights gleaned from successful models such as Lifewatch and Actris offer interesting pathways forward. Sustained investment, cross-sectoral collaboration and innovative policies that address fundamental inequities in education, when powered by open Research Infrastructures, are clearly helpful to ensure that all youth, regardless of their socioeconomic background, have equitable opportunities to engage with and contribute to the world of science while achieving concrete social mobilization results.

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