

The ECF4CLIM Roadmap for Sustainability Competences

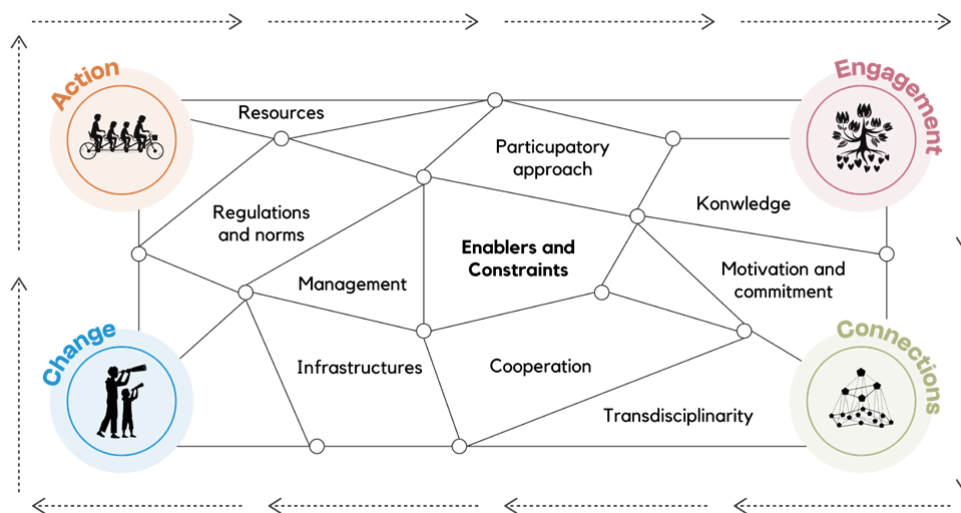
The Roadmap for Sustainability Competences developed in the ECF4CLIM project outlines the key drivers for sustainability competences in educational practice. Its goal is to empower educational communities to take action against climate change and promote sustainability.

Through a transdisciplinary and participatory process conducted in four European countries – Spain, Finland, Portugal and Romania – with the support of technical partners in Hungary and Greece, ECF4CLIM developed, tested and validated this Roadmap for Sustainability Competences through multiple phases. Initial data was collected through crowdsourcing, and the initial roadmap was tested through our innovative hybrid participatory approach in project schools and universities. Throughout its development the Roadmap was assessed both internally and externally.

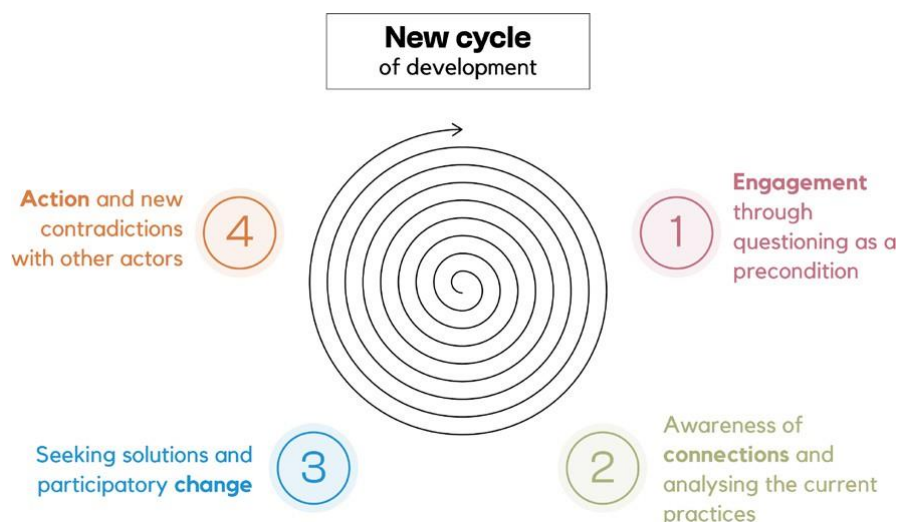
One essential starting point for this Roadmap was the European sustainability competence framework, GreenComp, which was published in the same spring that the ECF4CLIM project began. **This Roadmap expands on the ideas presented in GreenComp:** while GreenComp focuses primarily on describing individual-level knowledge, skills and attitudes, this Roadmap broadens the concept of competences from an individual perspective to the spheres of collective competences and technical-material competences. This idea is based on the theory of practice architectures, which suggests that competences are formed and enacted within practice. It is also based on sociomaterialist and capability theories, which argue that material conditions are active components of what people and communities are able to do and become, rather than neutral backgrounds. Our data confirms these theoretical underpinnings: collective and technical-material competences can be developed, and they can also support the development of individual competences.

This Roadmap has a strong practical aim: we hope that it will help schools and universities move from the conceptual level of GreenComp to practical implementation, as evidenced by intervention results from our project and our insights from demonstration sites, which have deepened our understanding of sustainability competences in practice. This approach ensures that the framework is grounded in real educational practices rather than being purely theoretical.

This Roadmap for Sustainability Competences elaborates on competences through four key focus areas that are important for promoting sustainability in educational practices: engagement, connections, change and action. We structure each area around individual, collective and technical-material competences in educational practice, and also describe their intertwinedness as we have found that all spheres and practical focus areas related to sustainability competences are deeply intertwined.



The Roadmap for Sustainability Competences demonstrates that across all areas, the main enablers of sustainability and the promotion of sustainability competences include management, participatory approaches, cooperation, resources, and the motivation and commitment of actors. Supporting infrastructures, regulations and norms, and transdisciplinary knowledge are also important. If these enablers are missing, they become the main constraints to sustainability in education. When we study these enablers or constraints, we see that they are closely related to the presence or absence of individual, collective or technical-material competences.



The Roadmap for Sustainability competences can be interpreted as a model of a development process (grey line with arrows) creating expanding cycles of growth. Alternatively, it can be used to study opportunities to promote sustainability in specific situations by analysing them through the lenses of Engagement, Connections, Change and Action, and identifying individual, collective and technical-material competences within them.

From the perspective of educational practices, **this Roadmap for Sustainability Competences has potential for scaling up.** The Roadmap is also presented on the MAPPA.fi platform in a user-friendly format, making it easy to apply in educational practice and enabling the sharing of materials and tools related to the Roadmap also in the future.

In short, the Roadmap for sustainability competences, building on the European GreenComp framework, expands sustainability competences beyond the individual to include collective and technical-material dimensions, emphasizing their interconnection in practice. Developed through a transdisciplinary and participatory process across multiple European countries, the Roadmap identifies key enablers—such as management, cooperation, resources, and commitment—and offers a structured approach around four focus areas: Engagement, Connections, Change, and Action.

EC4CLIM devoted special efforts to validating the Roadmap, through both internal and external processes. Grounded in real educational practices and made accessible via the MAPPA.fi platform, it supports both the implementation and scaling up of sustainability competences in schools and universities.



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