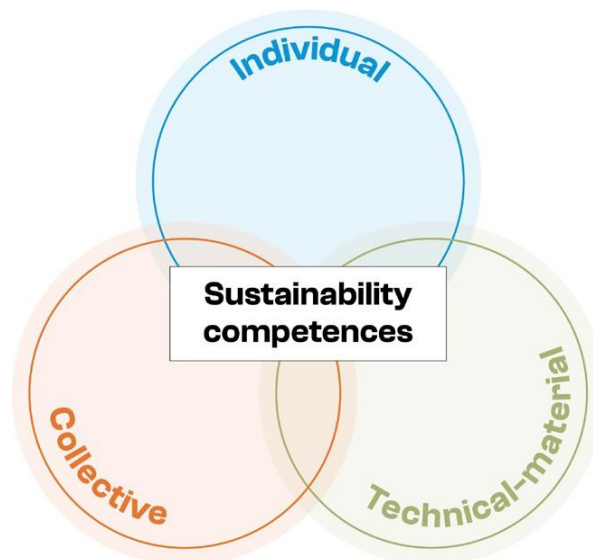


The ECF4CLIM conceptual framework

Traditionally, the concept of competences, and more specifically, sustainability competences, has been considered from an individual perspective. However, during the ECF4CLIM project, it became evident that the entire community's ability to act in building a sustainable future is essential, and that material and technical conditions play a significant role as either constraints or enablers of sustainability. **Therefore, we expand the concept of sustainability competences to encompass not only individual competences, but also collective and technical-material competences.**



By **individual competences**, we mean the development of a combination of personal qualities and qualifications, i.e., the knowledge, skills and attitudes that individuals need in order to achieve certain goals through their actions and activities. In our case, these goals are promoting sustainability and planetary wellbeing.

Individual sustainability competences are not only essential for students but also for teachers, administrators and other stakeholders in educational settings. This understanding aligns with the lifelong learning approach: no one is ever fully 'ready' or completely competent in sustainability because contexts evolve and new phenomena emerge. Furthermore, individual competences are always context-specific; they are developed and exercised within specific social, cultural and material contexts. This

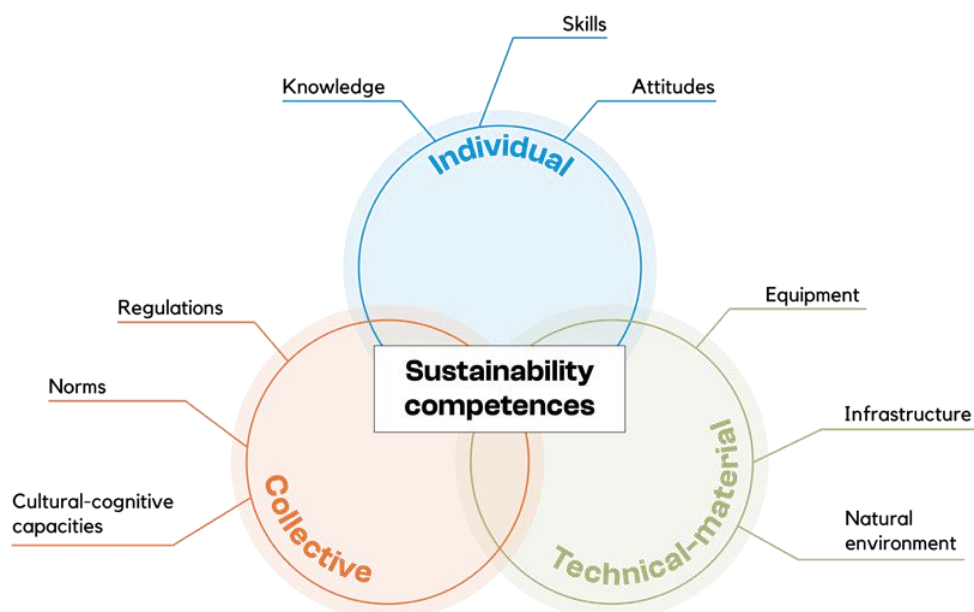
means that individual sustainability competences are deeply intertwined with collective and technical-material competences.

By **collective competences**, we refer to the capacity of an organisation to act coherently and purposefully for sustainability. An organisation's ability to act is shaped by more than just the competences of its individual members or leaders. It emerges from collective dynamics that transcend the sum of individual competences and efforts. Thus, collective sustainability competences comprise:

- ◀ **Regulative competences** (external to the organisation): Derive from written rules (laws, regulations) that stipulate how sustainable development is to be considered and promoted and by whom.
- ◀ **Normative competences** (internal to the organisation): Norms and values reflected and institutionalised in the organisation's own strategies, programmes of action, plans, guidelines, result agreements with authorities at different levels of governance, etc.
- ◀ **Cultural-cognitive competences**: the internalisation of regulative and normative competences as taken-for-granted social norms of normal and acceptable behaviours; the translation of regulative and normative competences into the organisation's operating culture, daily routines, habits and practices.

By **technical-material competences**, we refer to the role of tools, infrastructures, technologies and physical environments in enabling (or constraining) sustainability action. Change (like sustainability action) depends not only on people's intentions but also on how materials and infrastructures enable or constrain those intentions. Material conditions are not neutral backgrounds, but active components of what people and communities are able to do and become. Competence, in this view, is not only a matter of human or collective abilities, but also of material conditions and capabilities.

The three spheres of sustainability competences – individual, collective, and technical-material – are not isolated or hierarchical, but deeply intertwined and interdependent, overlapping like a trio of coloured spotlights illuminating the same phenomenon. Competences in educational practices rarely emerge from one of these domains alone, rather they are generated through their dynamic interaction.



Individual sustainability competences, i.e. knowledge, skills and attitudes concerning sustainability, are required when developing collective competences, or when the operational culture of a school or university evolves towards sustainability. Conversely, collective sustainability competences, such as regulations, curricula and cultures that promote sustainability, guide individuals in making sustainable personal choices and adopting sustainable behaviours. Both individual and collective sustainability competences are prerequisites for improving technical-material sustainability competences. This is because individuals and communities need to understand how technical-material conditions must be improved for sustainability, but also because collective norms, regulations, cultures and resources are needed to support the implementation of new solutions. Similarly, individuals and communities cannot act sustainably without considering the laws of nature and the technical and material environment. If technical-material conditions are poor, it becomes difficult for individuals or communities to make meaningful choices for sustainability. For instance, without the necessary infrastructure to enable sustainable choices, individual awareness alone cannot minimise environmental impact. Similarly, even if regulations exist, without adequate equipment to measure environmental impact, organisations will struggle to identify the most effective ways to change their practices.

In short, what makes this framework unique is that it broadens sustainability competences beyond the individual, incorporating collective and technical- material dimensions and emphasising their deep interdependence in enabling meaningful and effective sustainability action.



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