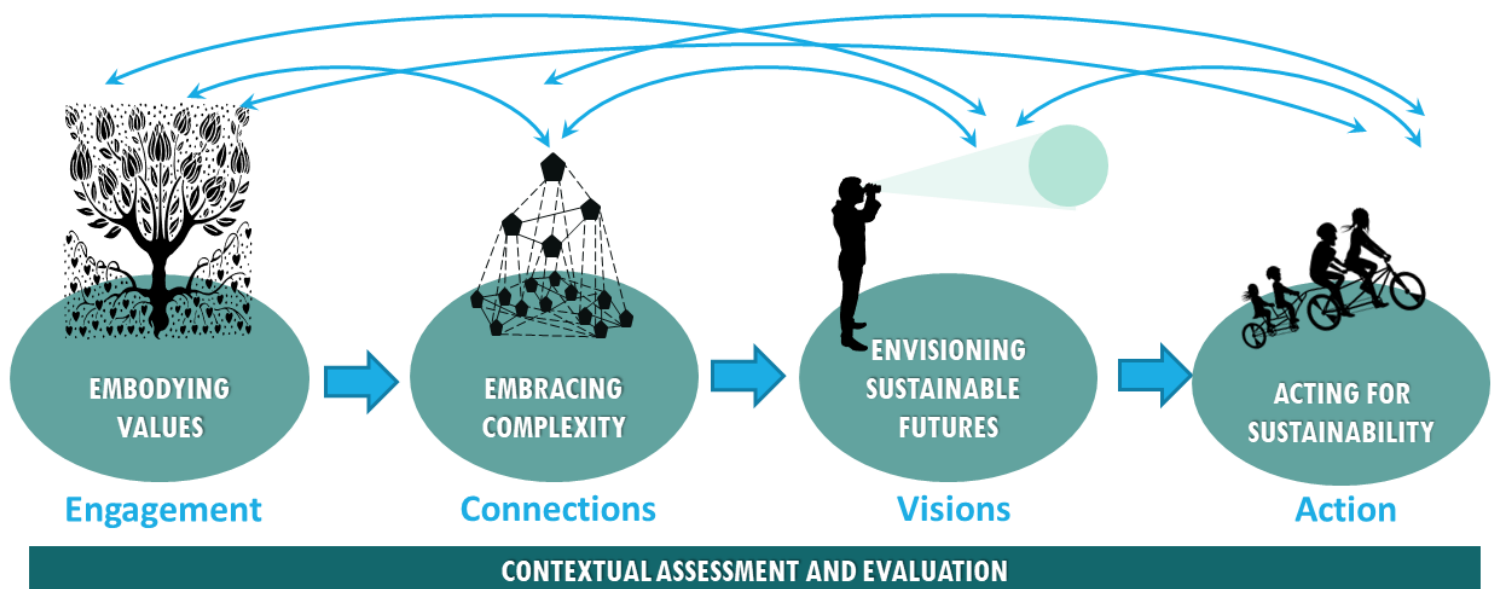


Roadmap for sustainability education



This is a summary of the initial ECF that describes the essential individual and collective competences and enablers and constraints of promoting environmental performance of educational institutions. The roadmap draws from the results of the ECF4CLIM crowdsourcing results, document analysis, and literature review. It is based on and further develops the sustainability competences outlined in GreenComp - the European sustainability competence framework, developed by the Joint Research Center of the European Commission (Bianchi & al. 2022). This ECF is structured as a roadmap and aims to provide tools for different stakeholders to map and foster the enablers and overcome the constraints of sustainability in various educational contexts. The roadmap comprises four steps.

The first step aims at engaging people in promoting sustainability. It includes strengthening their understanding of sustainability and human dependence on wellbeing of ecosystems. It strives to foster a collective will-formation process that considers different stakeholders' needs, values, and perspectives.

The second step aims at deepening people's understanding of the complexity of sustainability. It strives to help the educational community to ask the pertinent sustainability questions and allow them to create effective strategies for promoting sustainability. Successful promotion of sustainability requires an understanding of the given organisational context and mapping the relevant actors and learning contents in different disciplines. Systemic understanding of the state of the environment and connections to global sustainability issues are also important. It is essential to acknowledge the impact that cultural backgrounds and different worldviews have on problem framing and possible solutions. It is important to ask what kind of knowledge we have, and how the knowledge base, interests, and principles vary among people and in different disciplines.

The third step concentrates on envisioning alternative futures, mapping possible paths towards sustainability and promoting adaptability for changes and action. Given the current challenges, such as climate change and biodiversity loss, what is the future likely to hold for us, and what kind of future do we want? Additionally, the focus should be on the changes and acts needed for realisation of preferable sustainable futures. It demands a lot of courage and adaptability to take action towards a more sustainable future, although we cannot be certain about the outcomes. The contradiction between the current, likely and preferable futures needs to be considered. It is also important to remember that emotions have an impact on our cognitive and psychological adaptability. Therefore, a collective, supportive atmosphere with an active approach to sustainability is essential to promote a sense of hope, active coping, and an awareness how future is in our hands. Transformation towards sustainability requires us to change our perspective, question our assumptions and beliefs, foster transdisciplinary thinking, and unleash our creative potential in order to create new solutions. How can we act and live together in a sustainable way that might not yet exist?

In the fourth step the values and principles, the systemic understanding of sustainability, and the envisioned sustainable futures will contribute to designing strategies for action. The core question to consider is: who are the people and communities promoting sustainability, how, and where? The available resources and structures where the change can happen, need to be considered. Promoting sustainability requires multiple resources: people, time and space, money for procurement, pedagogical models and materials, collaboration and networking, as well as cultivating and utilising individual and collective human potential. The focus of action can be on gaining better resources, fostering relationships, as well as influencing attitudes and ways of talking and acting.

The road to promoting sustainability is not simple. Many aspects, interconnected issues, questions, and related details need to be considered in promoting concrete sustainability action in different contexts. The central purpose of the roadmap is to facilitate a participatory process that results in clarified visions and a purposeful strategy on how to proceed in promoting sustainability in each context and how to evaluate it.

Step 1 ENGAGEMENT: Why and how to promote sustainability?

GreenComp: Embodying sustainability values

Valuing sustainability

To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values.

Supporting fairness

To support equity and justice for current and future generations and learn from previous generations for sustainability.

Promoting nature

To acknowledge that humans are part of nature; and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems.

Engagement through a participatory approach

How to motivate and engage wider audiences in promoting sustainability as individuals and as communities is the essential issue in education and in general advocacy of transformations to sustainability.

Sustainability knowledge as a common ground for discussion

To establish the common ground for value reflection it is good to introduce some facts about sustainability, planetary boundaries, and how we are dependent on nature. This may help to direct the focus on the ecological foundations of life and help people to understand all the interconnecting dimensions of sustainability. The core task is to emphasize the vital understanding of the interrelatedness of human wellbeing with the wellbeing of the whole biosphere.

Inclusive value reflection and dialogue

The principles of multivocal and deliberative discussions not aiming at consensus but pluralism, are essential in engaging and motivating people with multiple cultural backgrounds with versatile value perspectives and hierarchies. Reflection on varying perspectives and meanings of sustainability and clarifying the collective value basis can motivate people to participate and work together. Considering different stakeholders' varying needs and value hierarchies also helps in collectively defining the relevant concrete changes in the organization to foster transformations towards sustainability. It is essential to acknowledge that advancing sustainability can serve several goals and values and how the different dimensions of sustainability social/cultural ecological and economic are interconnected. Thus, this step is in close relation to the systems understanding of interconnectedness in Step 2.

Examples of questions for reflection:

- What kind of knowledge and understanding do the students need to understand the relevance and importance of sustainability in this context?
- How the values of the field or organisation relate to sustainability?
- How to engage students in discussion and reflection on values in this context?

Step 2. CONNECTIONS: How to frame the problem?

Embracing complexity in sustainability in GreenComp

Systems thinking

To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values.

Critical thinking

To assess information and arguments, identify assumptions, challenge the status quo, and reflect on how personal, social and cultural backgrounds influence thinking and conclusions.

Problem framing

To formulate current or potential challenges as a sustainability problem in terms of difficulty, people involved, time and geographical scope, in order to identify suitable approaches to anticipating and preventing problems, and to mitigating and adapting to already existing problems.

Complexity and root causes of environmental impact

All the fields and our life are somehow connected to sustainability issues. Our relationships with other stakeholders, factors and systems can drive us towards unsustainable actions and constrain our ability to promote sustainability. Thus, the changing individual or collective activities to more sustainable ones is not simple.

Underlying assumptions

Immediate sources of environmental impacts can be rather easily traced. However, some root causes are less readily observable, such as personal and collective assumptions, attitudes and cultural conventions that may constrain or enable sustainability.

Current state of practice

To move forward in sustainability at a school or another educational organisation, one key phase of the roadmap is to map the current state of practices. From the perspective of the environmental impact, there are both negative practices, activities that generate e.g. CO₂ emissions (footprint), and positive activities, like teaching and learning about sustainability (handprint). The mapping of both footprints and handprints helps to identify the most acute sustainability issues in the context in question and frame the problem.

Examples of questions for reflection:

- How is this context, discipline, program, or course connected to sustainability and planetary wellbeing? How to make these connections visible and understandable?
- How to promote understanding of different cultural and stakeholder perspectives?
- How to promote critical reflection on the field and its basements?

Step 3 VISIONS: What are the possible futures in our context?

Envisioning sustainable futures in sustainability in GreenComp

Futures literacy

To envision alternative sustainable futures by imagining and developing alternative scenarios and identifying the steps needed to achieve a preferred sustainable future.

Adaptability

To manage transitions and challenges in complex sustainability situations and make decisions related to the future in the face of uncertainty, ambiguity and risk. assumptions, challenge the status quo, and reflect on how personal, social and cultural backgrounds

Exploratory thinking

To adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas or methods.

Envisioning likely and preferred futures and short-term scenarios

Future orientation is crucial for motivating people for sustainable changes and actions. It is essential to compare preferred futures with likely futures, what kind of future is expected based on the current trends and trajectories and what we want to avoid and what we wish to strive for. Envisioning futures in the organizational context should build on the problem framings in the previous step of the roadmap. Visioning is important for creation of the strategy for action in the following step 4 of this roadmap.

Emotional, cognitive, and behavioural adaptability

Adaptability includes emotional, cognitive and behavioural aspects. Adaptability demands knowledge, skills and attitudes: how to cope with uncertainty and support transition towards sustainability. People living in different contexts need different kinds of tools to promote their adaptability. Collective responses can support or hinder individual adaptability.

Exploration through creative and relational knowing

Unleashing the creative potential of groups and individuals in promoting sustainability enhances adaptability and may help to identify completely new solutions. Encountering wicked sustainability challenges is essential demand complementary, relational ways of knowing. Artful approaches are valuable for promoting not only creative problem-solving, but also for strengthening personal relations and ownership of these issues.

Examples of questions for reflection:

- How does the future of the organisation, field or discipline and its role look like?
- How does this field provide competences for a sustainable future?
- How to promote futures awareness, adaptation and creative thinking?

Step 4. ACTION: How to proceed?

Acting for sustainability in GreenComp

Political agency

To navigate the political system, identify political responsibility and accountability for unsustainable behaviour, and demand effective policies for sustainability.

Collective action

To act for change in collaboration with others.

Individual initiative

To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet.

Structures for change

To have permanent changes the new ways of doing should be embedded in the everyday life. All members of the community should be invited to take part in the development process, in elaborating acceptable procedures for all. Permanent structures in the administration and working teams are essential in promoting sustainability. This step is closely connected to the step 1, where values were scrutinized from viewpoints of different kinds of stakeholders and actors, and step 2, where all the relevant stakeholders were mapped.

Action plan

Without an action plan, which strategically and proactively examines possible ways of progressing in the long term, the development of practices will remain short-sighted and reactive. Participatory and inclusive approach should be the guiding principle in designing a strategy for concrete action and evaluation. Contents of the strategy and the action plan follow on from the previous visioning sustainable possibilities (step 3).

Resources

Possibilities for change often depend on resources. How to allocate human, economic and time resources? How to unleash and use individuals' various skills, abilities and characters in a best possible way? Resistance towards sustainability can also be seen as valuable in collective development process. Allocation of resources and prioritisation reflect the values prevailing in the organisation. Some resources could be acquired through reallocating existing resources or through projects.

Examples of questions for reflection:

- How to promote sustainability understanding and action in practice in this context?
- How to find place for promoting sustainability among all the other substances and goals?
- How to promote in practice active agency of the field and among the students in societal transformations to sustainability?