



SETTING UP A GREEN COMB: **SET OF CANVASES**







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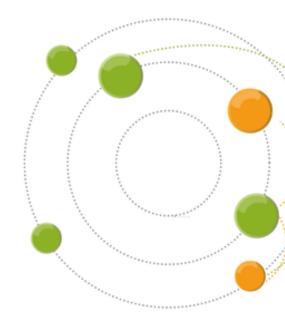
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Introduction

A systemic change towards sustainability is both a global necessity and a shared responsibility¹. As sustainability challenges are created by complex adaptive systems, shaped by the continuous choices, actions, and interactions among multiple stakeholders operating across numerous networks, a systems approach is imperative.



This publication is part of a broader initiative aimed to introduce **a systems approach to sustainability education**: the "Green Hive" project, a cooperative partnership co-funded by the European Union under the Erasmus+ Programme. The project, presented in Chapter 1, aims to build a *European Ecosystem for Sustainability Education* (the *Green Hive*), composed of localised hubs for sustainability education established within Vocational Education and Training (VET) providers, namely the **Green Combs**. Hence, by introducing and piloting a more holistic and network-based approach, as well as a new value model to align multiple and relevant stakeholders across the system, the Green Hive will connect VET providers, learners and local communities across Europe, enabling knowledge exchanges at the local and transnational level, anticipating skills needs and, ultimately, empowering individuals and organisations to cooperate to innovate and co-create value.

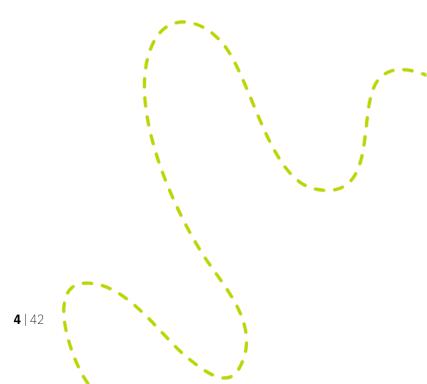
¹ Bianchi, G., Pisiotis, U., Cabrera Giraldez, M. (2022). *GreenComp – The European sustainability competence framework*. Bacigalupo, M., Punie, Y. (editors), EUR 30955 EN, Publications Office of the European Union, Luxembourg; ISBN 978-92-76-46485-3, doi:10.2760/13286, JRC128040.

The canvases presented in this publication are a component of the "Toolkit for the setup and management of Green Combs" developed by the project consortium with VET providers in Greece, Ireland, Italy, Romania and Spain. The Toolkit also includes a how-to guide and a Massive Open Online Course (MOOC) to support education and training entities in setting up, managing and growing their hubs for sustainability education.

This collection of canvases is structured around the five domains identified as fundamental to setting up a Green Comb:

- 1. Governance & Organisation
- 2. Community
- 3. Activities
- 4. Tools
- 5. Relationships with the Hive

Each canvas facilitates the visualisation of complex processes, enabling stakeholders to collaboratively explore and address sustainability challenges within their respective domains. By harnessing the power of visual thinking, these canvases offer a strategic approach to developing and sustaining Green Combs.



1. The Green Hive Project

Green Hive is a Cooperation partnership in the Vocational Education and Training (VET) field co-funded by the Erasmus+ Programme of the European Union. Implemented by a consortium of five entities, such as the *Technological University of the Shannon: Midlands Midwest* (Ireland), the companies *Lascò* (Italy) and *Femxa* (Spain), and the non-profit and non-governmental organisations *KEAN* (Greece) and *Team 4 Excellence* (Romania), the project aims to increase the capacity of VET providers to prepare learners for the green transition by developing a **European platform-based ecosystem for sustainability education** called the "Green Hive".

The Green Hive will consist of localised hubs for sustainability education, namely the "Green Combs," established within VET providers. While the Hive will be an open and cross-sectoral long-term cooperation network dedicated to innovation, continuous improvement and co-creation in sustainability education, the Combs will make VET providers the managing centre of networks of local stakeholders (i.e., companies, representatives of universities, civil society organisations and professional associations) for learning, networking and cooperating on sustainability challenges.

Hence, the project promotes the establishment of permanent VET co-creation structures where students will be enabled to think in systems, understand the interconnectedness of the economy, society and environment, and ultimately develop their systemic and critical thinking competencies by collaborating with other students and external stakeholders. Main results of the project:

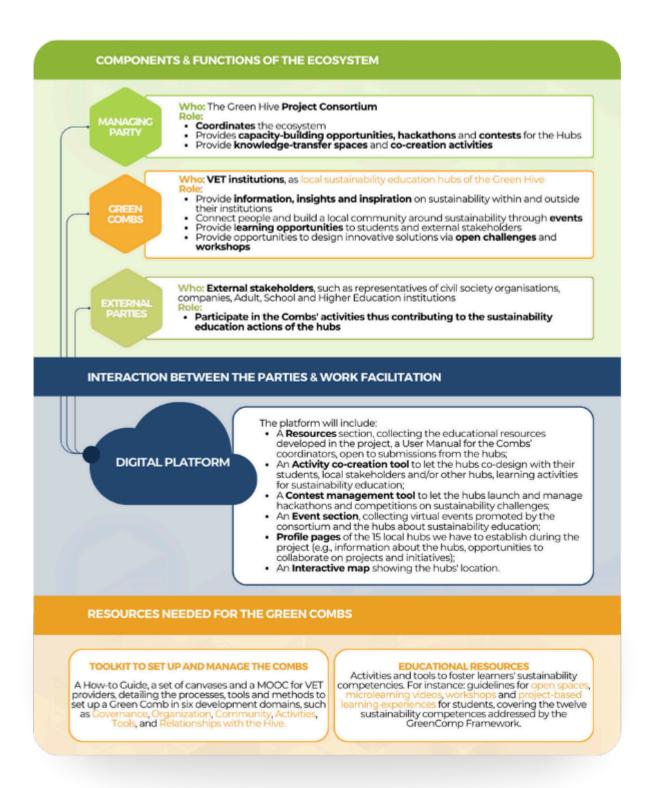
- a "Methodological Framework" for developing a VET sustainability education ecosystem and localised hubs to facilitate the transfer of local experience, knowledge and innovation in the field of the implementation of the European Sustainability Competence Framework "GreenComp", and encourage collective actions of VET providers, learners and external stakeholders to co-create solutions for sustainability;
- a "Toolkit for the setup and management of Green Combs", including this how-to guide and canvases to support VET providers in setting up, managing and growing internal hubs for sustainability education;
- "Educational resources for Green Combs", including guidelines to implement open spaces for discussion around learner-generated topics among members of localised hubs, micro-learning videos, workshop scenarios and project-based learning experiences in the four competence areas of the GreenComp;
- the **"Green Hive" platform**, connecting the hubs through the Internet and providing capacity-building opportunities and digital tools for VET institutions, knowledge-transfer spaces, and co-creation activities for its members. By the end of 2025, the Green Hive is expected to host and connect at least 15 localised hubs and 200 VET learners in 5 countries.

Learn more at greenhiveproject.eu

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The following figure provides a visual representation of the overall Methodological Framework behind Green Hive.



2. The Green Combs

Green Combs are at the core of the European Ecosystem for Sustainability Education. While the Green Hive is designed as an open and cross-sectoral long-term cooperation network dedicated to innovation, continuous improvement and co-creation in sustainability education, the Combs intend to make VET providers the managing centre of networks of local stakeholders (i.e., companies, representatives of universities, civil society organisations and professional associations) for learning, networking and cooperating on sustainability challenges.

Green Combs provide information, insights, and inspiration on sustainability challenges. Through events, they connect people and build a local community around sustainability. They can offer learning experiences to students and external stakeholders and also provide opportunities to design innovative solutions through open challenges and workshops.

The Green Hive project promotes the establishment of these permanent co-creation structures where students can be enabled to think in systems, understand the interconnectedness of the economy, society and environment, and ultimately develop their systemic and critical thinking competencies by collaborating with other students and external stakeholders.

3. Canvas Development Process

This collection of canvases represents the culmination of a collaborative effort involving **five international working group**s composed of VET experts from Ireland, Greece, Spain, Italy, and Romania.

These working groups co-created the content for the developmental domains essential for establishing a Green Comb. They defined the Comb's governance and organisation requirements, community development actions, activities, tools, and strategies for managing the relationship with the Hive, shaping the foundational content for the "Setting Up a Green Comb: How-to Guide" publication.

The development process began with an online international Co-Creation Lab held on January 30th, 2024. Participants, divided into mixed groups, collaborated to conceptualise the building blocks for the canvases in each of the five development domains. Facilitators from partner organisations supported the process using virtual collaboration tools.

Participants were organised into groups through a random selection process. Each partner organisation facilitated discussions within a specific developmental domain, ensuring continuity and coherence in its evolution. This approach leveraged the expertise and insights accumulated during the previous working groups (WGs), with each partner organisation leading the discussion within their assigned domain.

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During the Co-Creation Lab, groups used template canvases representing one of the five developmental domains relevant to setting up a Green Comb. These canvases served as structured frameworks to guide discussions and capture essential elements within each domain. Before filling out the canvases, participants received a brief description of the domain from the lead partner organisation in their group, providing context and clarity on the focus areas and objectives.

Participants then engaged in collaborative brainstorming sessions to populate the canvases with necessary questions, steps and key considerations for managers of a Green Comb. This process synthesised collective knowledge and expertise, identifying key components and strategies crucial for success within each domain. The structured approach facilitated comprehensive exploration and documentation of critical factors needed for the establishment of Green Combs, empowering VET experts with valuable insights and guidance.

The results of the working groups were analysed, collaboratively reviewed, and finalised by the partners' education and training experts. The canvases produced from this collaborative initiative serve as a visual representation of the integration of knowledge and efforts of these international experts, providing a framework for setting up and nurturing Green Combs.



4. Set of canvases

The following sections collect the canvases for each of the domains identified as fundamental to setting up a Green Comb, as summarised in the figure below.



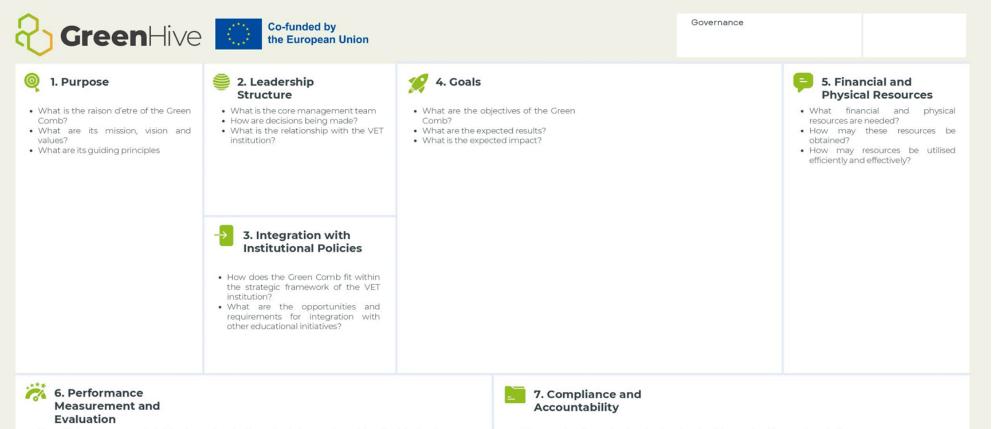
4.1 Governance

Governance is the heart of every Green Comb and represents the decision-making structures guiding the Green Combs, ensuring integrity, transparency, and accountability. On the other hand, organisation refers to this domain because of its operational aspects, such as role definitions, responsibilities, and relationships, to achieve goals efficiently.

The governance domain ensures that Green Combs operates ethically and aligns with the institution's sustainability goals. It encompasses the mission, vision, and values guiding daily activities, emphasising sustainability subject in education, student empowerment, and collaboration with local businesses and communities. During the focus groups, the discussion pointed out the importance of the following components:

- 1. **Governance purpose and principles** establish a clear strategic direction to integrate sustainability into the VET curriculum and promote ethical operations.
- 2. **Leadership structure** helps define the core management team and its role in making informed and inclusive decisions.
- 3. **Integration with institutional policies** aligns Green Combs' activities with the broader mission and policies of the VET institution, ensuring consistency and fostering effective communication and engagement.
- 4. **Goals and objectives** focus on the estimated results and the expected impact, such as integrating sustainability principles into VET programs and establishing partnerships.
- 5. **Financial and physical resources** ensure adequate funding through various sources and responsible management of these resources.
- 6. **Performance measurement and evaluation** define performance metrics and create a monitoring framework to assess the impact of sustainability initiatives, celebrating successes and making informed adjustments.

7. **Compliance and accountability** ensure adherence to local, national, and international regulations and establish regular reporting mechanisms to maintain accountability and transparency.



- How will the govrnance stakeholders know that the Green Comb is on track to achieve its objectives?
- What are the targets to be achived?
- How do you evaluate the sustainability of the education programs?

• What are the relevant local, regional, national and international laws and regulations?

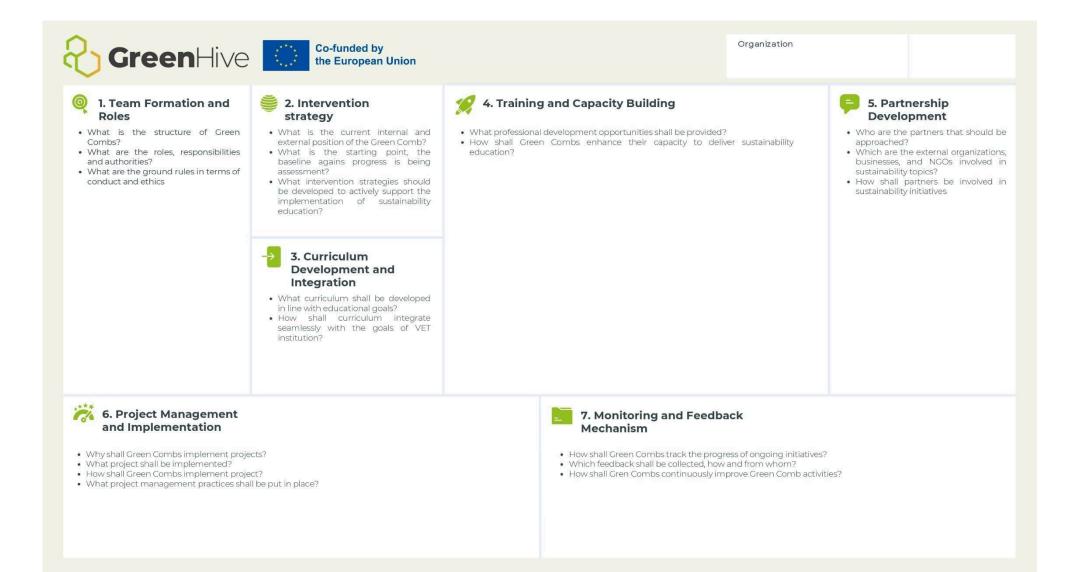
What external reporting is needed by whom, in order to ensure stakeholders' support?

4.2 Organisation

The *Organisation* canvas focuses on efficient planning, implementation, and sustainability of Combs' initiatives. It defines roles, responsibilities, and relationships among team members to ensure systematic achievement of Combs' objectives.

The canvas covers the following components:

- 1. **Team formation and roles** support in organising Green Comb's internal structure to ensure collaboration of each member.
- 2. **The intervention strategy** employs a dual analysis of the internal strengths and weakness
- 3. **Curriculum development** and integration considers also external factors like sustainability trends and stakeholder engagement
- 4. **Training and capacity building** highlight the importance of continuous professional development for Green Comps members.
- 5. **Project management and implementation** ensure the timely execution of initiatives.
- 6. **Monitoring and feedback mechanisms** are essential to track the progress and effectiveness of initiatives and collect feedback from stakeholders.
- 7. **Partnership development promotes** the research of strategic partnerships with organisations to bring expertise, resources, and collaborative opportunities.



4.3 Community Management

Community management is an important aspect of a Green Comb's life. Green Combs should support the development of a sense of belonging among members to ensure active participation and collaboration. As the environment we intend to recreate, this kind of management should be dynamic and responsive.

Members of a Green Comb can be:

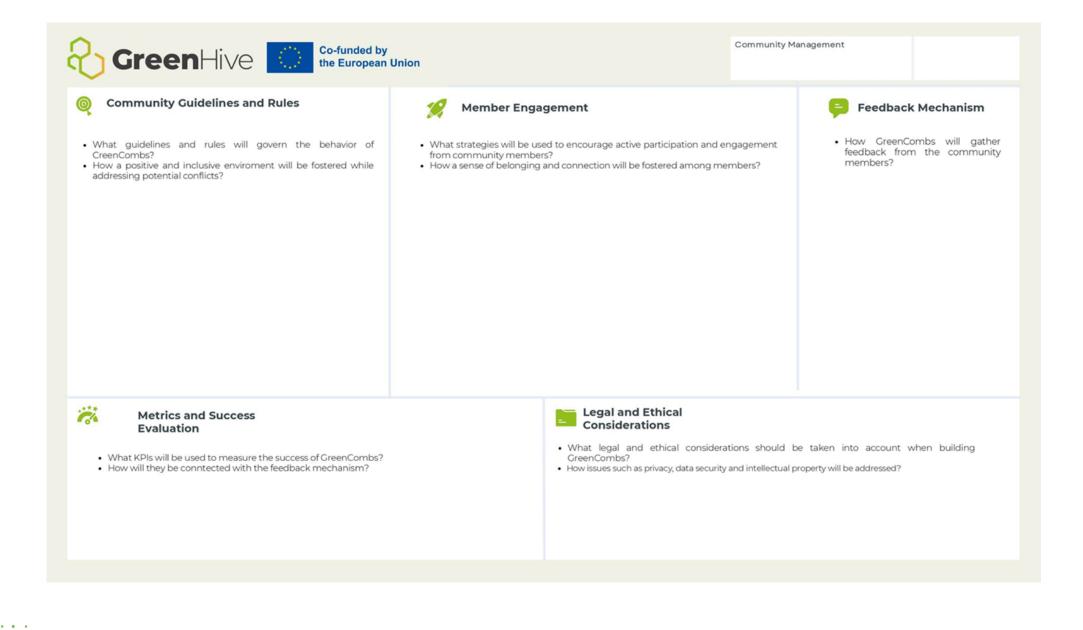
- **Internal stakeholders**, including trainers, experts and the core management team of the Comb;
- **External stakeholders**, like NGOs, local businesses, academia, environmental organisations and community groups;

Defining **member eligibility** criteria is crucial to attract individuals who align with its goals and values.

Building and maintaining long-lasting partnerships is an ongoing process that requires dedication, open communication, and a commitment to shared goals: achieve successful initiatives and maintain open communication through workshops, training sessions, and an online platform to foster a thriving community dedicated to sustainability.



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4.4 Activities

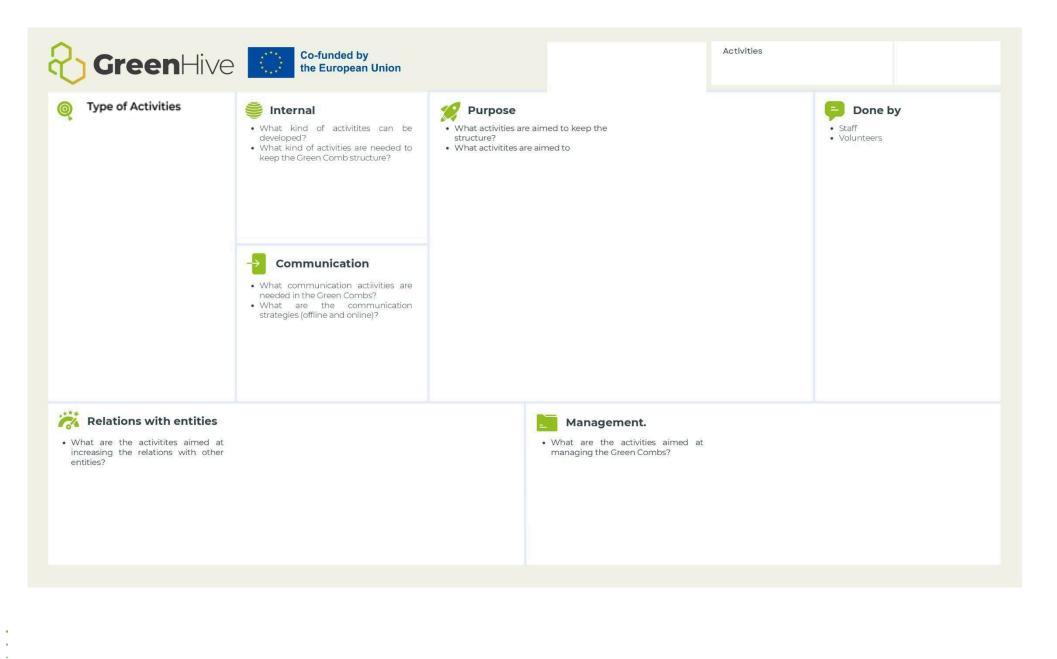
Green Combs' activities play a crucial role in promoting sustainability, community engagement and positive impact, thus supporting the Combs to achieve their objectives.

The activities suggested by the international working groups include both **internal and external activities**. While internal activities focus on operations and communication within the Comb's organisational structure, external activities involve participants through indoor and outdoor initiatives focused on sustainability, sustainability education, community involvement and engagement.

The following pages present the canvases conceptualised during the co-creation lab.



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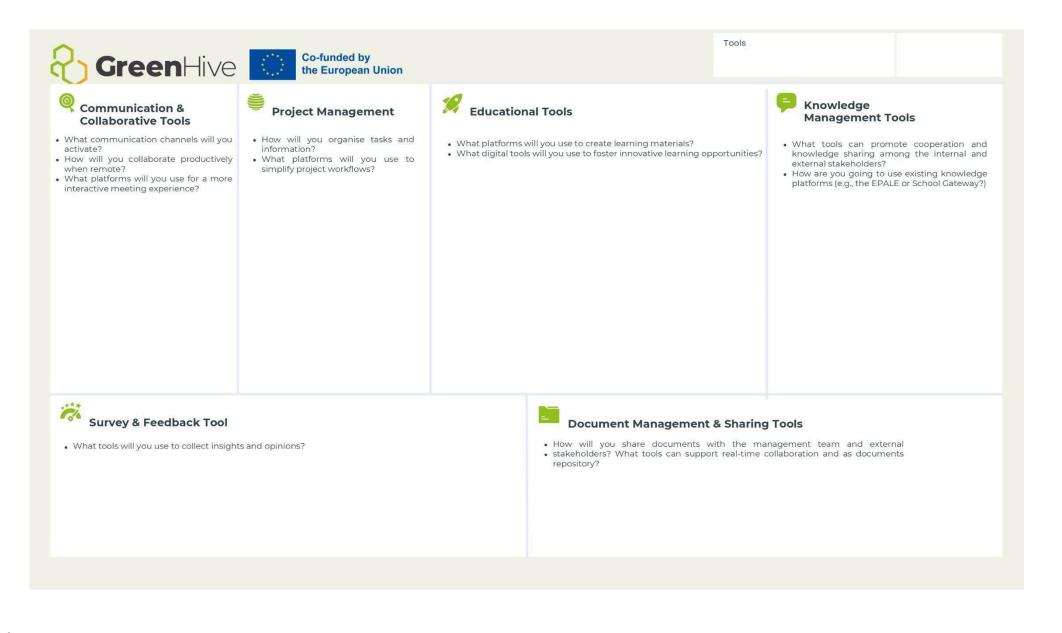
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4.5 Tools

This section presents a collection of tools that Green Combs can use to support their work and educational initiatives. Two main categories of tools may be necessary:

- 1. **Digital Tools**: These are digital resources designed to enhance communication, collaboration and knowledge sharing among Green Combs members and other relevant stakeholders. While detailed descriptions of these tools are provided in the *How-to Guide* developed by the project consortium, the canvases presented in the following pages offer a framework for identifying the necessary tools to support various operations, activities, and workflows. They also aim to guide Combs' managers in effectively planning for the integration and management of these digital tools.
- 2. **Thinking Tools**: These include thinking instruments, frameworks, and models that expand perspectives on problems and solutions. They are intended to enhance understanding of interconnectedness within ecosystems, promoting a holistic view rather than a narrow focus on individual components. These tools encourage comprehensive problem-solving and strategic planning, essential for the sustainable development of Green Combs.





Governance

- Who will be responsible for making key decisions regarding the selection, implementation and management of the tools?
- What processes will be put in place to ensure accountability and transparency in the management and use of these tools?

Security

- · What security protocols and measures will be implemented to protect against unauthorized access, data breaches, and other cyber threats?
- . How will the Combs ensure that tool providers adhere to security standards?
- **Competence Needs**
- What skills and competencies do trainers and learners need to effectively use and integrate the digital tools into their teaching?
- How will the Comb provide ongoing training and professional development to meet these competence needs?



What support channels (e.g., helpdesk, online resources, peer support) will be available to educators and learners for troubleshooting and guidance on the digital tools?

Evaluation of the tools effectiveness CA

- What metrics will be used to assess the effectiveness of digital tools in enhancing the Combs' work?
- . How will feedback from teachers, students and other stakeholders be incorporated into the evaluation process to ensure continuous improvement?

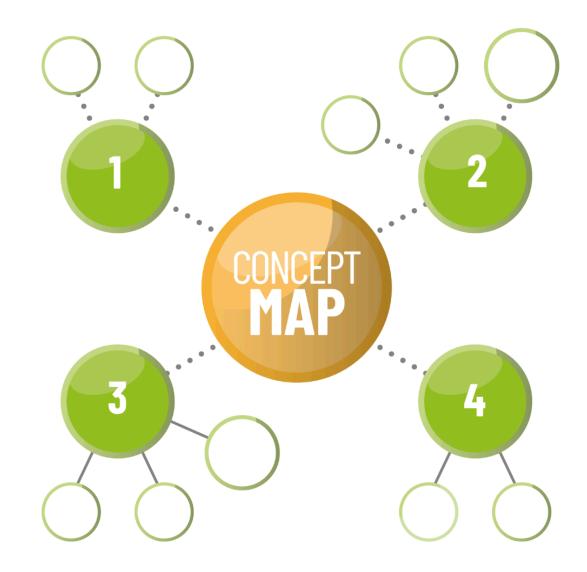
- **Ethics & GDPR Compliance**
- · What measures will be in place to ensure that the digital tools comply with GDPR and protect the privacy and data of all users?

Tools

. How will the Comb address ethical concerns related to digital equity and access to ensure all students have equal opportunities to benefit from the tools?

Concept Map

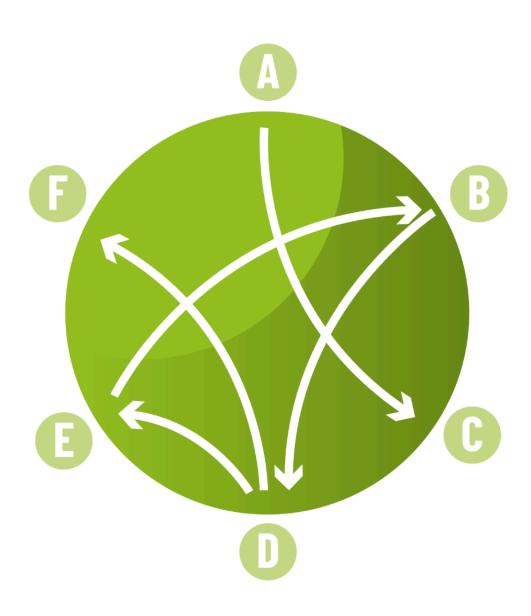
Concept mapping is a useful technique for illustrating the connections between the elements of a concept or system and aiding in their visualisation and understanding.





Connection Circles

Recognize connections between things and feedback loops in systems. A tool for visualizing relationships in a system or story is a connection circle. They aid in your comprehension of complexity by illustrating the system's sources and effects.



lceberg Model

Examine hidden levels of abstraction to identify the underlying reasons of occurrences. It's not always enough to just deal with problems at the event level. Most of the time, the real reasons are hard to see.

The iceberg model is a way to change your point of view and look past the instant events that everyone sees. For example, it helps you figure out why those things happen. That's possible if you look at the system at more abstract levels that aren't clear at first glance.



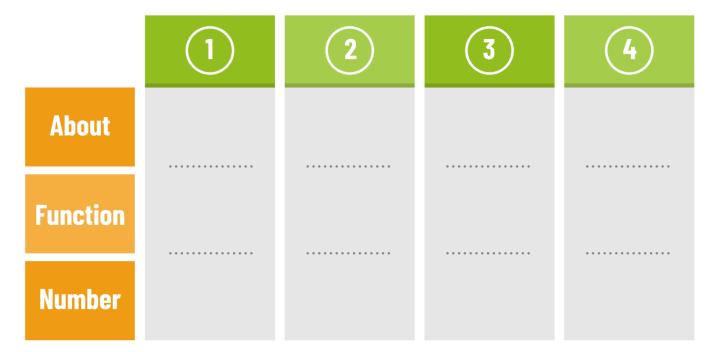
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Decision Matrix

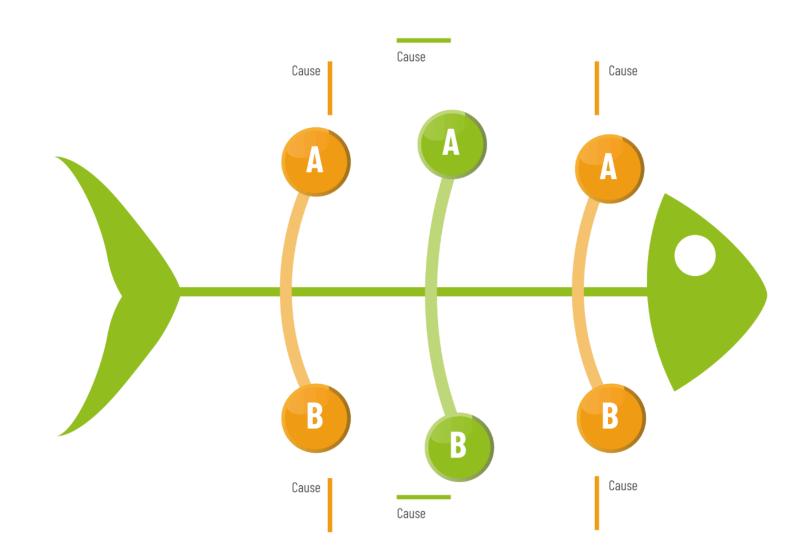
Sometimes it's hard to decide what to do. Even more so when there are more things that go into making them. The decision matrix is a tool that can help you make a choice by helping you think about all the important things. It makes the process more clear.

It works best when you have a lot of choices and need to pick one based on a lot of different factors.



lshikawa Diagram

The Ishikawa diagram is a great way to find the root reasons for problems and solve them. It was made by a Japanese professor named Kaoru Ishikawa and is also known as a cause-and-effect diagram or a fishbone diagram. It works especially well for solving hard tasks.



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Inversion

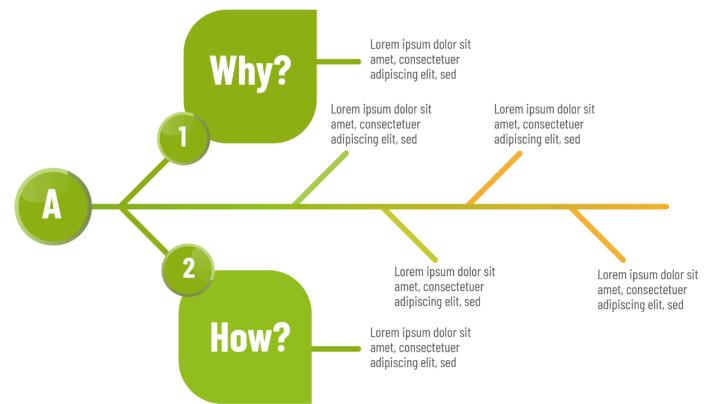
When you need to see a problem from a different point of view, inversion can help. It can help you see things from a different angle and picture the worst that could happen.





Hypothesis Trees

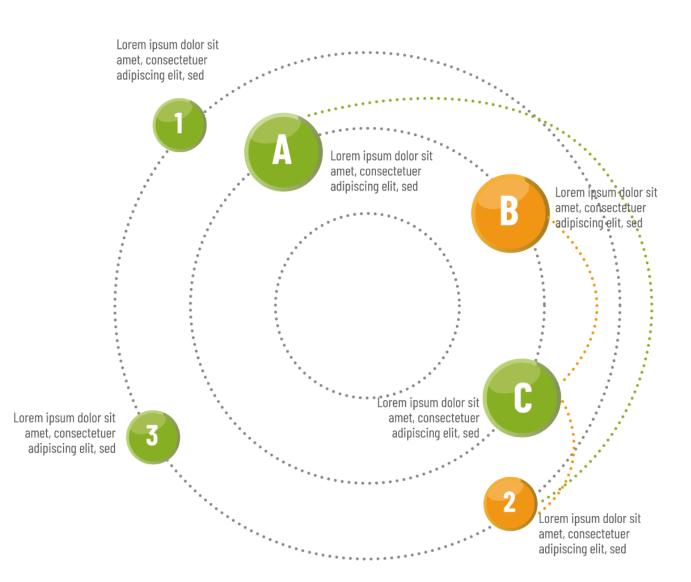
Problems are mapped out on a Hypothesis trees. They make the problem you need to solve easy to understand and plan how to solve it. They help you divide a big issue into smaller, easier-to-handle ones and decide which parts of the issue are most important. This means they can help with the "divide and conquer" plan.





Ecosystem Map

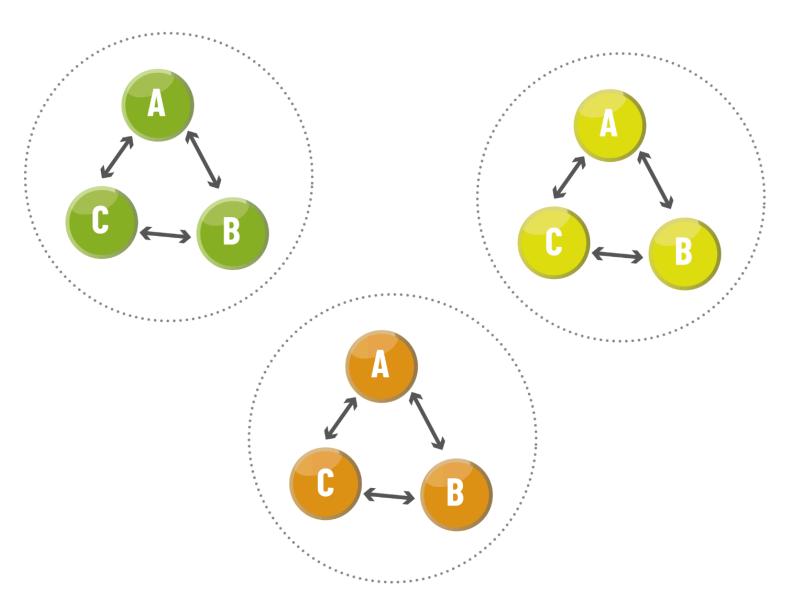
Describe all the things, flows, and connections that make up the environment that you want to analyse. It is a made-up picture of all the important jobs that affect the user, the organisation, and the service environment. To make the ecosystem map, all the groups are first shown, and then they are linked together based on the kind of value they trade.



System Scenario

Look at different scenarios and how they affect the system and try to picture how it changes or grows. A standard system or ecosystem map shows how a system works as a whole in a single artificial picture (synchronous). System scenarios, on the other hand, add a dynamic level of analysis (diachronic) by looking at things through the lens of time and showing the different things that could happen.

Using system examples is a more in-depth way to look at the system and figure out how it works and how the different parts of it interact in different situations. To make a system scenario, you have to watch how the system acts in different situations and think about the people who are responsible for those behaviours. This lets you think about what the system could be designed or changed to work better in those situations.



Impact Journey

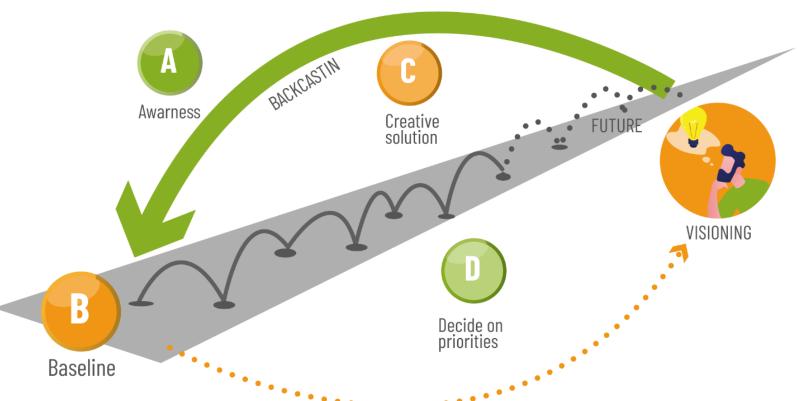
Look at the effects of a certain service experience and come up with ways to make it last longer. The effect Journey aims to bring together a step-by-step account of the user experience with an analysis of the service effect at each stage of the journey.

The effect could be studied by looking at various areas, like Environment, Society, Economy, etc., that could be affected in good or bad ways as the experience grows, depending on the types of connections, actions, and activities that happen. This study could help people come up with new ideas and make better choices during the planning or implementation phase, which could make the good things that happen because of the service delivery even better.

	Awareness	Consideration	Decision	Retention
Environment				
Society	Satisfied	CO Intrigued	Indecisive	Optimistic
Economy				

Backcasting

The Backcasting can be used in workshops or group events to help people think about how the choices they make affect the future. It starts with a review of one or more possible futures and works backwards to figure out the steps that need to be taken to connect those futures to the present, which can be a person, a service, or a system. So, designers and other participants could also think about the different ways that certain groups, goods, services, or projects might grow, and pull out ideas that could affect their work right now, helping them make the future they want or stay away from the one they don't want.



Second order thinking

The Backcasting can be used in workshops or group events to help people think about how the choices they make affect the future. It starts with a review of one or more possible futures and works backwards to figure out the steps that need to be taken to connect those futures to the present, which can be a person, a service, or a system.



First principles

It's a great way to solve problems. You can come up with creative answers to problems if you can figure out what the problems are really about.

A first principle is a basic truth or principle that can't be broken down any further. When you use first-principles thought, you dig deeper into a problem until you get to its very core.

The Five Why

Socrates WHY? What do you mean by ...?" We completed the activity late WHY? "What could we assume instead?" The activity took longer than estimated Asking for proof or reasons: WHY? "Why do you think this is true?" We couldn't procure enough material Things that could happen WHY? "What effect would that have?" We didn't purchase on time Views that are different "What would be an alternative?" WHY? We didn't analyze the work schedule "What was the point of this question?"

Questioning like

The question

is a question about the original question.

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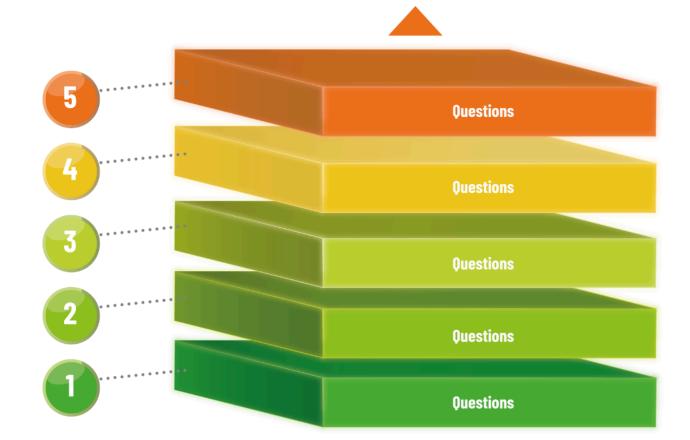


Levels of abstraction

One way to better frame problems is to use abstraction laddering. It helps you get a better idea of the problem you need to fix. It helps you go further than just stating the problem.

With this tool, you can learn how to ask the right questions to move up and down the ladder.

By moving up, you can "see the forest for the trees" and get a bigger picture. Move down to come up with real answers.



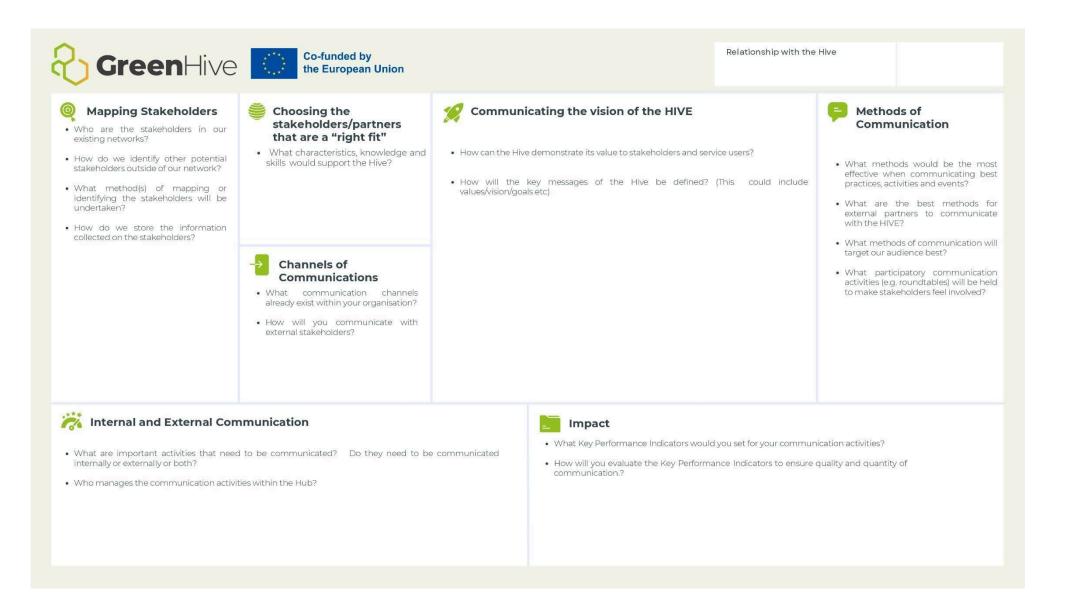
4.5 Relationship with the Hive

Green Combs are integral components of the broader Green Hive ecosystem. For this ecosystem to function effectively, it is essential to foster and nurture collaborative relationships between Green Combs and the Green Hive. This collaboration enables the exchange of knowledge and experiences with other local hubs, facilitating partnerships with peers who share similar goals.

This relationship is grounded in the principles of co-creation and participation. Effective communication, collaboration, and stakeholder engagement are critical for achieving these objectives and fostering an environmentally conscious community network.

The following canvases are designed to support Green Combs in establishing and maintaining positive relationships within the Hive.

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GreenHive





