CONNECTIONS

EMBRACING COMPLEXITY IN SUSTAINABILITY

FROM ENGAGEMENT TO CONNECTIONS:
LET'S LEARN HOW TO FRAME THE PROBLEM!

In the previous flipbook, we explored what engagement means—how our values, participation, and connection to nature shape our everyday lives, our communities, and the planet. We discovered that sustainability becomes real when we reflect together, act on shared values, and empower each other to make a difference.

We asked:

- **How do our values guide our choices?**
- **How can we work together for a fairer, greener future?**

Now, it's time to move from "who" and "why" to "how everything is linked"—through Connections. How can we embrace complexity in sustainability?

WHAT YOU'LL LEARN IN THIS FLIPBOOK

By the end of this guide, you will be able to:

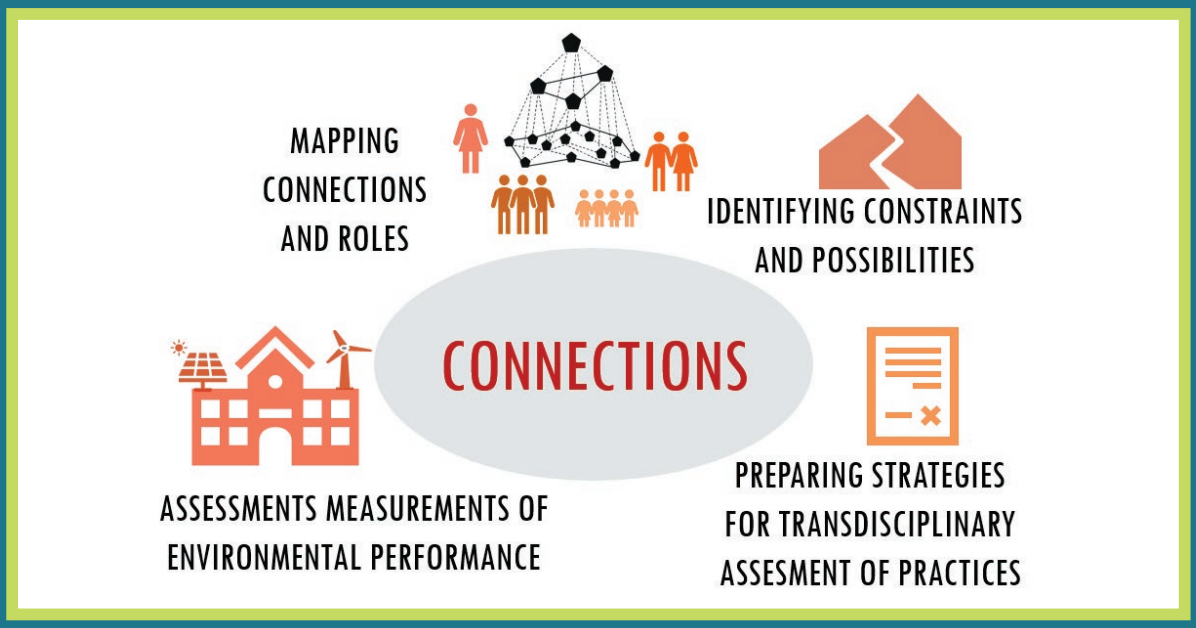
- Use systems thinking to understand the complexity and roots of sustainability challenges.
- Identify how local actions connect to global impacts, and recognise the ripple effects of unsustainable practices.
- Frame sustainability problems from multiple perspectives, questioning assumptions and critically reflecting on narratives and biases.
- Connect your learning across disciplines, communities, and real-world contexts to co-create smarter, fairer, and more sustainable solutions.

The Connections area of the ECF4CLIM Roadmap encourages you to see the bigger picture—how daily activities, disciplines, and global challenges are interlinked. By broadening your understanding and embracing multidisciplinary approaches, you'll be ready to tackle sustainability with creativity and critical thinking.

SO... READY TO EXPLORE THE WEB OF SUSTAINABILITY?
LET'S DIVE INTO CONNECTIONS AND LEARN HOW EVERYTHING IS LINKED.

WHY CONNECTIONS MATTER?

Sustainability challenges are rarely isolated. They are complex, interconnected, and often rooted in systems that span across time, space, and disciplines. In schools and universities, we often treat subjects and problems separately. But to truly understand and act on sustainability, we need to see the bigger picture.



THIS FLIPBOOK FOCUSES ON THE SECOND AREA OF THE ECF4CLIM ROADMAP: CONNECTIONS—AND IS GROUNDED IN THE GREENCOMP COMPETENCE AREA "EMBRACING COMPLEXITY IN SUSTAINABILITY."

LET´S GET STARTED!

Mapping the Web of Impact

Task: Choose a common school activity (e.g., lunch, commuting, printing handouts).

Explore:
- What are the environmental, social, and economic impacts?
- Who is involved or affected?
- What assumptions are behind how this activity is done?

Goal: Draw a simple system map showing the connections. Discuss with your class how small changes could lead to big impacts.
- What happens when we only look at one part of a problem?
- How do your values influence how you see sustainability?
- Can you think of a time when a solution created new problems?

READY TO DIVE IN?

LET'S EXPLORE HOW EVERYTHING IS CONNECTED—AND HOW UNDERSTANDING COMPLEXITY CAN HELP US CREATE SMARTER, FAIRER, AND MORE SUSTAINABLE SOLUTIONS.

SEEING THE BIGGER PICTURE
SYSTEMS THINKING IN ACTION

When we talk about sustainability, we are not just talking about isolated problems. We're talking about systems—interconnected webs of people, places, policies, and practices. Understanding these connections is key to making smart, lasting changes.

This chapter is all about **systems thinking**—a powerful way to understand how things are linked and how our actions ripple through the world.

Systems thinking means looking at the whole picture, not just the parts. It's about asking:

- **How do different elements interact?**
- **What are the causes and effects?**
- **Where can we intervene to make a difference?**

Instead of asking "What is wrong?", we ask:

- **"What is connected?"**
- **"What is influencing what?"**
- **"What happens if we change one part?"**

Without systems thinking, we risk:

- **Oversimplifying complex problems**
- **Missing root causes**
- **Creating solutions that cause new problems**

With systems thinking, we can:

- **Understand the real impact of our actions**
- **Spot patterns and feedback loops**
- **Make smarter decisions for long-term change**

WHERE ARE WE CURRENTLY?

Systems are interconnected with each other and each system is composed of other systems. Therefore decisions that affect one system can have unforeseen and uncertain impacts on other systems.

PLAY VIDEO

THE IMPACT OF HUMAN

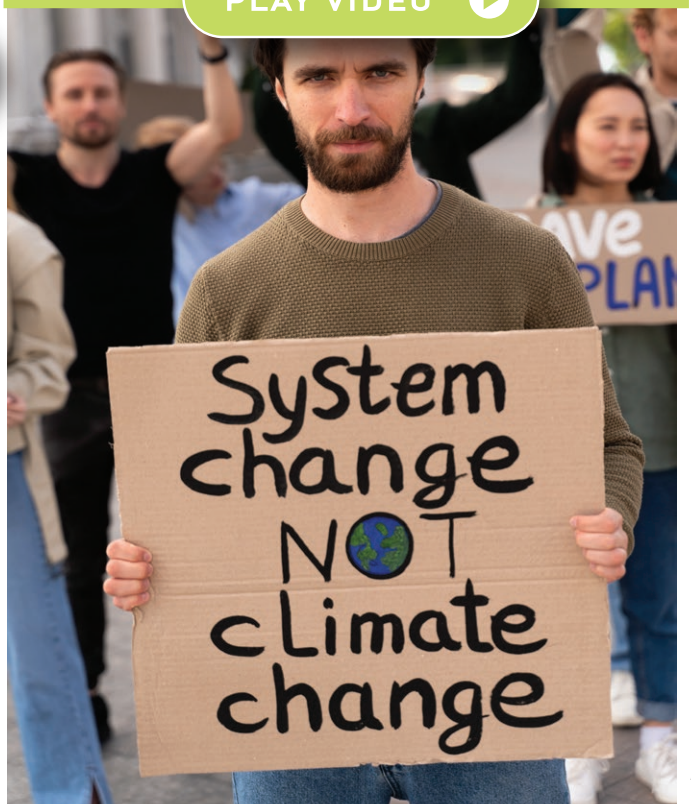
Every human action has a ripple effect—across time, space, and systems. These effects can be:

- **Environmental:** Fossil fuel use leads to pollution and climate change. But recycling and conserving energy can reduce harm.
- **Social:** Technology connects us but also deepens inequality. Globalisation brings cultures together but can widen income gaps.
- **Cultural:** Media spreads ideas but may erode local traditions and identities.
- **Economic:** Trade can boost growth but also cause job loss and inequality.

Think of a recent decision you made (e.g., what to eat, how to travel). What were its environmental, social, cultural, and economic impacts?

Human activities—such as land use, water use, and deforestation—often have negative impacts on the environment. These impacts worsen as the human population grows and consumes more resources. Science can help identify ways to reduce our impacts, but it is ultimately up to us to take actionportfolio of rewilding landscapes where they operate, contributing to climate change mitigation and adaptation on a local level..

PLAY VIDEO




S.O.S
MAKE THE CLIMATE GREAT AGAIN

WHO FEELS THE IMPACT?

Climate change affects everyone—but not equally.

- **Children & Youth:** 2.2 billion kids live in areas at high risk from climate change.
- **Women:** Often face greater food insecurity and water scarcity.
- **Marginalised Communities:** Indigenous and rural groups are hit hardest, yet often excluded from solutions.
- **People in Poverty:** Have fewer resources to recover from climate disasters.

Is it fair that those who contribute least to climate change suffer the most?

DID YOU KNOW ?

In **Portugal**, a school community used surveys to identify sustainability priorities.
The result?

- Solar panels were installed with help from local authorities.
- A recycling contest engaged students and families.
- Workshops connected learning with real-world action.

This wasn't just about one solution—it was about understanding the system: energy, behaviour, education, and community.

Some scientists believe we've entered a new geological era: the **Anthropocene—the age of humans.** Our impact on the planet is so profound that it will be visible in the Earth's layers for millions of years.

Positive, Neutral, and Negative Outcomes

Human actions can lead to:
Positive: Investing in education, healthcare, or renewable energy.
Neutral: Some lifestyle choices may have little impact.
Negative: Overconsumption, pollution, and deforestation.

HOW TO SAVE ?

How to Save Our Planet?
Sir David Attenborough explains how humans can take charge of our future and save our planet.

PLAY VIDEO

WHAT KIND OF LEGACY DO YOU WANT TO LEAVE BEHIND?

Is important to note that the effects of human actions can be felt across time and space—sometimes long after the action has taken place.

This underscores the importance of considering the potential long-term consequences of our actions and making choices that promote sustainability, equity, and well-being for all.

Systems thinking helps us recognise these ripple effects. Whether it is choosing what we eat, how we travel, or how we use energy, our decisions shape the world—not just today, but for future generations.

Ready to go deeper?

In the next chapter, we'll explore how to think critically about sustainability—questioning assumptions, spotting greenwashing, and making informed decisions. Let's keep connecting the dots.

THINKING CLEARLY
CRITICAL THINKING FOR SUSTAINABILITY

In a world full of information, opinions, and marketing, how do we know what's true? How do we make decisions that are fair, informed, and sustainable?

That is where critical thinking comes in.

Critical thinking helps us question assumptions, evaluate evidence, and make better choices. It's a key skill for navigating the complexity of sustainability—and for challenging the status quo.

Critical Thinking encompasses six vital skills: problem solving, analysis, creative thinking, interpretation, evaluation, and reasoning

PLAY VIDEO

DID YOU KNOW

Critical thinking skills are also essential for designing and improving sustainability initiatives in schools and educational communities, such as these in Spain and Portugal.

WHY CRITICAL THINKING MATTERS

Sustainability is not a fixed idea. It's a dynamic, evolving concept shaped by science, society, and culture. As our understanding of climate change, inequality, and human rights grows, so does our understanding of what sustainability means.

But our thinking is not always neutral. It's shaped by:

- **Confirmation bias** – Seeking only what supports our beliefs
- **Availability bias** – Trusting what's easiest to remember
- **Groupthink** – Going along with the crowd
- **Political bias** – Seeing issues through ideological lenses
- **Framing bias** – Being influenced by how information is presented

HAVE YOU EVER CHANGED YOUR MIND ABOUT A SUSTAINABILITY ISSUE? WHAT MADE YOU RECONSIDER?

ACTIVITY: Spot the Bias

Task: Find two articles or ads about the same sustainability topic (e.g., electric cars, fast fashion, plant-based diets).

Explore:
- What claims are made?
- What evidence is provided?
- Are there signs of bias or greenwashing?

Goal: Compare the sources. Which one is more trustworthy? Why?

DID YOU KNOW

Finland

At an upper secondary school in Finland, students created a sustainability team. They didn't just accept the way things were—they questioned school practices and launched campaigns on:

- **Recycling**
- **Food waste**
- **Fast fashion**

Their efforts led to stronger student-teacher collaboration and improved environmental awareness across the school.

PLAY VIDEO

GREENWASHING
WHEN SUSTAINABILITY IS JUST A LABEL

Some companies use sustainability as a marketing tool—without making real changes. This is called greenwashing.

Examples include:

- Vague claims like "eco-friendly" without proof
- Misleading labels or imagery
- Highlighting one green feature while ignoring bigger harms

Have you ever bought something because it "looked green"? What would you check next time?

HOW TO AVOID GREENWASHING

✓Do your research: Look up the company's practices
✓Read labels carefully: Look for specific, measurable claims
✓Check for third-party certifications
✓Support transparent companies
✓Be sceptical of ads—look for independent sources

NARRATIVES SHAPE OUR THINKING

The stories we hear influence how we define sustainability problems.
•A narrative focused on economic growth may ignore environmental harm.
•A narrative focused on environmental protection may overlook social justice.

CHALLENGING THE STATUS QUO

Real change means questioning what's "normal."

- Why do we drive everywhere?
- Why is fast fashion so cheap?
- Why do some communities lack clean water?

Challenging unsustainable patterns requires:

- Personal action (e.g., biking, reducing waste)
- Collective action (e.g., school campaigns, policy change)
- Organisational change (e.g., greener practices, accountability)

By applying personal reasoning to address criticism and arguments on sustainability, you can evaluate evidence, consider alternative perspectives, and communicate effectively.

This helps you become an informed, empowered citizen—ready to shape a more sustainable world.

Some companies like American Airlines and H&M have made promises to become more environmentally friendly to attract positive press and increase business. They've frequently used buzzwords like 'sustainable', 'carbon neutral' or 'eco-conscious.' But if they fall short of their goals, who holds them accountable?

PLAY VIDEO

What sustainability stories do you hear most often? Who tells them? What might be missing?

In this environmental video essay, we take a brief look at greenwashing, using Fiji Water's marketing campaign as a case study. We explore why green products are not always as environmentally friendly as their packaging might suggest.

PLAY VIDEO

USE THE TOOLS: ECF4CLIM RESOURCES FOR CRITICAL THINKERS

Critical thinking isn't just about asking questions—it's about using the right tools to find answers.

That's why the ECF4CLIM platform offers a suite of digital tools designed to help students, teachers, and schools make informed, evidence-based decisions for sustainability:

ENVIRONMENTAL FOOTPRINT CALCULATOR

Track your school's or personal impact on the environment. Calculate your carbon and water footprint and see how your choices affect the planet.

RETROFITTING TOOLKIT

Want to improve your school building? This tool helps you explore energy-saving upgrades like insulation, lighting, and heating—just like in the Ghost Mall game.

SUSTAINABILITY INTERVENTIONS EVALUATION TOOL

Evaluate how sustainable your school really is across seven key areas: energy, water, waste, transport, green spaces, procurement, and air quality.

SERIOUS GAME

Apply your knowledge in interactive mini-games that simulate real-world sustainability challenges. Can you transform an abandoned mall into a thriving green community?

Critical thinking is your superpower. It helps you:

- See through greenwashing
- Challenge outdated practices
- Make informed, fair, and sustainable choices

And with the ECF4CLIM tools, you do not have to do it alone. You have everything you need to investigate, evaluate, and act.

Activity Box: Try a Tool!

Task: Choose one ECF4CLIM tool

Explore:
- What does the tool measure or simulate?
- What did you learn about your habits or your school?
- What changes could you make based on the results?

Goal:
Present your findings to your class. What surprised you? What would you recommend?

FRAMING THE CHALLENGE
HOW WE DEFINE PROBLEMS SHAPES THE SOLUTION

Before we can solve a problem, we need to understand what it really is. That is what problem framing is all about.

In sustainability, how we define a problem—who it affects, where it happens, and why it matters—can completely change the solutions we come up with.

To design in Design Thinking is to translate learner/community insights into a clear, actionable problem statement.

PLAY VIDEO

WHY FRAMING MATTERS

Sustainability problems can be:
Simple: These are issues with clear causes and straightforward solutions. For example, a leaking faucet wasting water can be fixed by replacing a washer or installing a sensor tap.

Complex: These involve multiple, interconnected causes and effects. Climate change, for instance, is driven by fossil fuel use, deforestation, agriculture, and more—and affects everything from weather to food security.

The more complex the problem, the more we need to:

- Look at root causes
- Understand interconnections
- Involve multiple stakeholders

Have you ever tried to fix something, only to realise the real problem was something else?

The way we frame reality affects how we act. Prof Andy Stirling, STEPS co-director, explains how the STEPS Centre understands framing and what this means for sustainability.

PLAY VIDEO

In Romania a school faced high energy costs and limited awareness about renewable energy. Instead of just cutting usage, they reframed the problem: "How can we become energy producers and educators?"

Their solution:
•Switched from solar thermal to photovoltaic panels
•Connected to the public grid
•Created educational materials for students and staff

By framing the issue as both an energy and education challenge, they created a solution that was technical, social, and educational.

PLAY VIDEO

Activity Box: Frame It Differently

Task: Choose a sustainability issue (e.g., plastic waste, food waste, school heating).

Explore:
• Who is affected?
• What are the causes?
• How could this be framed as an environmental, social, or economic issue?

Goal: Write 2–3 different ways to frame the same problem. How does each framing change the possible solutions?

WHAT MAKES SUSTAINABILITY PROBLEMS COMPLEX?

Interconnectedness: Problems like water scarcity, deforestation, and pollution are linked. Solving one may affect the others—for better or worse.

Multiple causes: Economic inequality, cultural habits, and political decisions all shape sustainability challenges.

Feedback loops: Some actions create chain reactions. For example, more cars → more emissions → more heat → more air conditioning →more energy use.

Many stakeholders: Students, teachers, families, businesses, and governments all have different views and priorities.

Limited resources: Time, money, and materials are finite. We must choose where to focus our efforts.

DID YOU KNOW ?

In Spain, a primary school did far more than simply plant trees. They reframed the initiative as an opportunity to:

- Promote biodiversity
- Capture carbon dioxide (CO_2)
- Educate students about climate action

The outcome? A total of 44 native trees and shrubs were planted, 225 students actively participated and, the school achieved a measurable environmental impact.

PLAY VIDEO

In Portugal, a school's river care project did far more than simply clean up a waterway. The initiative was reframed as an opportunity to:

- Restore local aquatic ecosystems
- Foster environmental stewardship among students
- Raise awareness about water conservation and pollution

The outcome? Students and teachers collaborated to monitor water quality, remove litter, and plant native vegetation along the riverbanks, resulting in improved biodiversity and a healthier river environment

PLAY VIDEO

FRAMING CURRENT AND FUTURE CHALLENGES

Sustainability problems evolve. New technologies, economic shifts, or environmental changes can create new issues—or make old ones worse.

That is why we must:
- **Revisit** how we define problems
- **Adapt** our strategies
- **Stay** open to new perspectives

FRAMING WITH EMPATHY

To frame problems well, we need to:
- **Listen** to different perspectives
- **Ask** questions to understand others' experiences
- **Acknowledge** that people may see the same issue differently
- **Collaborate** to find common ground

Framing is not just about defining problems—it is about opening up new ways to solve them. When we ask better questions, we find better answers.

ARE YOU READY TO REFRAME THE WAY YOU SEE THE WORLD?
WHAT ASSUMPTIONS DO YOU HOLD ABOUT SUSTAINABILITY?
WHERE DID THEY COME FROM?

EXAMPLE PROCESS OF CONNECTIONS

Framing sustainability problems effectively often begins with a structured process.

Here's a four-step approach that schools and communities can use to deepen their understanding and develop meaningful solutions:

1.Promote a deeper understanding of complexity
Start by exploring how sustainability problems are interconnected. Encourage students to look beyond surface-level symptoms and investigate root causes. For example, is food waste in the cafeteria just about leftovers—or also about purchasing policies, awareness, and cultural habits?

2.Assess how values and context shape knowledge
Help learners reflect on how their own values, cultural background, and social context influence how they understand sustainability. What seems like a "solution" in one place might not work—or even be fair—in another.

3.Map the current state of sustainability issues
Use tools like the ECF4CLIM Environmental Footprint Calculator to assess your school's energy use, waste generation, or water consumption. This helps identify where the biggest impacts—and opportunities—are.

4.Frame the problem to create effective solutions
Once you understand the issue, define it clearly. Who is affected? What are the constraints? What would success look like? This step helps turn vague concerns into actionable plans.

IDENTIFYING A (SUSTAINABILITY) PROBLEM
FOLLOW THE STEPS

SETP1 PLAY VIDEO SETP2 PLAY VIDEO

CONSTRAINTS AND ENABLERS

Framing sustainability problems often reveals tensions between values and reality. These tensions can be frustrating—but they are also where change begins.

INDIVIDUAL COMPETENCES

Constraints:
- Oversimplified or fragmented views of environmental problems
- Lack of education on ecosystems, systems thinking, and interconnections
- Overreliance on technology as a "quick fix" without considering broader impacts
- Limited skills in critical reflection on personal and cultural assumptions

Enablers:
- Understanding of complex, intertwined systems and feedback loops
- Skills to critically assess personal, cultural, and disciplinary assumptions
- A positive, curious attitude toward problem framing and openness to new perspectives
- Willingness to revisit and adapt solutions as contexts change

COLLECTIVE COMPETENCES

Constraints:
- School administrations that do not collaborate across departments or with external actors
- Regulations or institutional structures that make it hard to prioritise sustainability
- Lack of urgency—sustainability is not seen as a top priority
- Fragmented curricula and inconsistent engagement across the community

Enablers:
- Tools and processes to map all relevant stakeholders and their roles
- Clear understanding of local rules, norms, and cultural context
- Open dialogue about cultural assumptions and values, fostering inclusive participation
- Regular assessments of environmental, social, and economic systems to inform action
- Participatory approaches that bring together diverse perspectives for problem-solving

TECHNICAL-MATERIAL COMPETENCES

Constraints:
- Lack of systemic understanding of sustainability and its interconnected dimensions
- Uncertainty about which technical or infrastructural actions are most effective
- Wasting resources on irrelevant or low-impact measurements or upgrades
- Poor integration of technical solutions with educational and organisational practices

Enablers:
- Knowledge of local actors, procurement systems, and infrastructure
- Critical thinking about what's possible, what matters most, and how systems interact
- Tools and skills to assess the current state of practice (e.g., environmental audits, KPIs, digital monitoring)
- Use of data and feedback to guide continuous improvement and adaptive strategies
- Accessible, user-friendly, and well-maintained technical solutions that support learning and sustainability

DID YOU KNOW

In **Finland**, students formed a sustainability team and organised events like an exchange market. Their success came from involving the whole school community and aligning their actions with shared values.
See their testimony

PLAY VIDEO

ACTIVITY: Audit Your School

Task: Use the ECF4CLIM tools to assess your school's sustainability performance.

Explore:
•What are your school's biggest environmental impacts?
•What's already being done—and what's missing?
•Who needs to be involved to make a change?

Goal: Frame a sustainability challenge based on your findings. Present it to your class or school board.

Framing sustainability problems is not just a technical task—it's a social and emotional one. It requires empathy, curiosity, and courage. But when we frame problems well, we unlock the power to create real, lasting change.

FINAL THOUGHT

Understanding sustainability through the lens of **connections** empowers us to see beyond isolated problems and embrace the complexity of real-world challenges. By recognising how environmental, social, cultural, and economic systems interact, we become better equipped to design solutions that are inclusive, resilient, and future-focused.

Whether mapping ripple effects, questioning assumptions, or reframing problems, embracing complexity helps us move from fragmented actions to integrated strategies. As you continue your sustainability journey, remember: by thinking in connections, you can help shape a more just and sustainable world.

"EVERY CHOICE IS PART OF A LARGER SYSTEM"

Ecf4clim

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