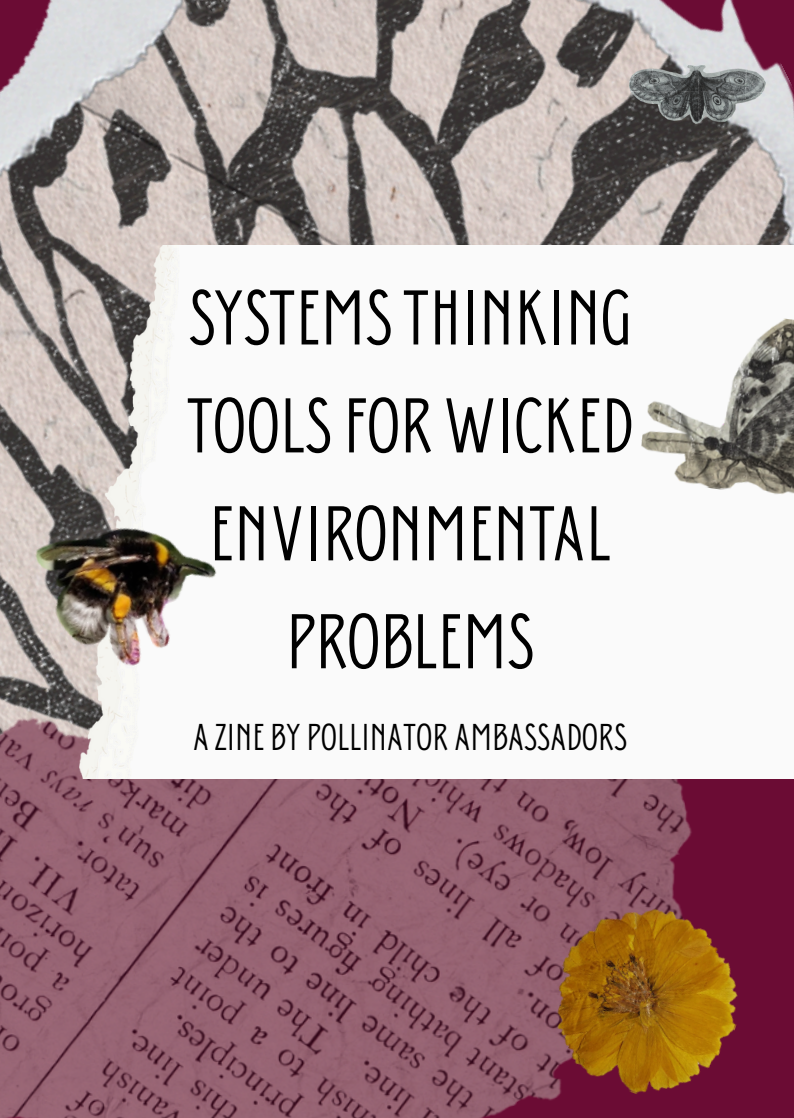




SYSTEMS THINKING TOOLS FOR WICKED ENVIRONMENTAL PROBLEMS

A ZINE BY POLLINATOR AMBASSADORS

WHAT'S IN THIS ZINE?

This zine gives a quick guide to using **Systems Thinking** for wicked environmental problems.

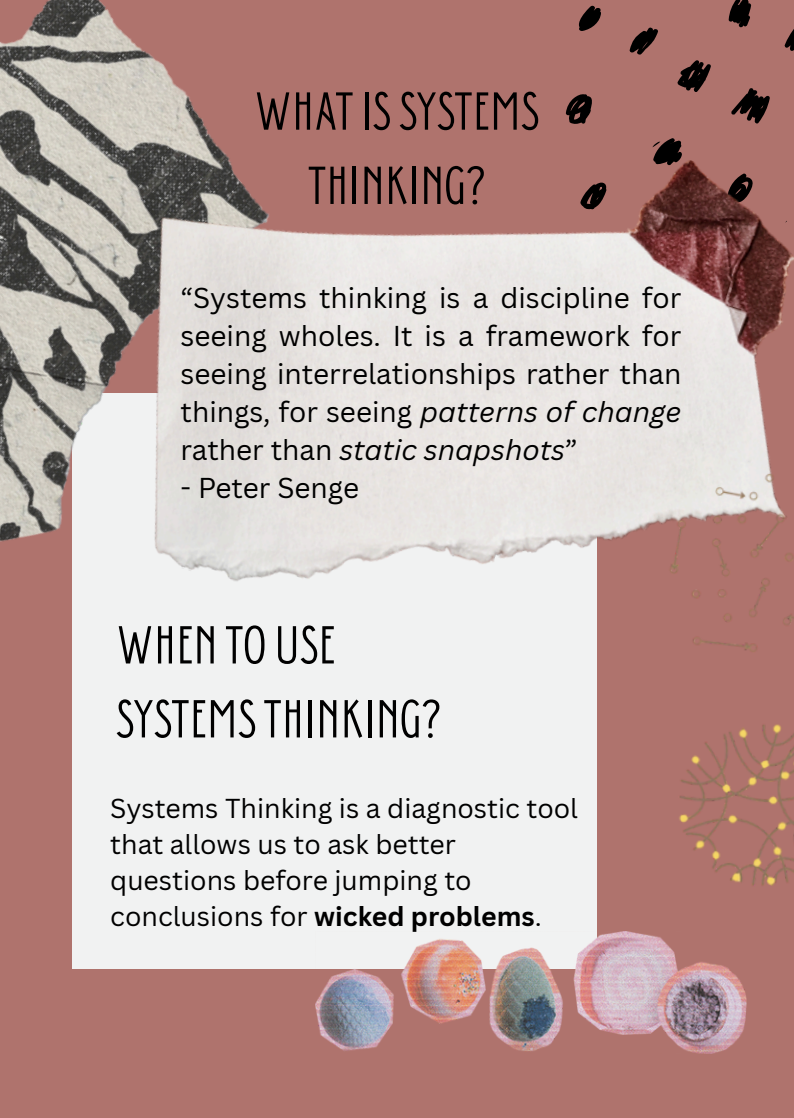
It covers:

- What is Systems Thinking?
- The Iceberg Model
- Nature Futures Framework & Visioning
- Making your own zine

WHO IS THIS ZINE FOR?

This zine is for anyone who wants a quick guide to applying Systems Thinking tools.

Use these tools to work together with others to understand problems and envision **solutions for a better future.**



WHAT IS SYSTEMS THINKING?

“Systems thinking is a discipline for seeing wholes. It is a framework for seeing interrelationships rather than things, for seeing *patterns of change* rather than *static snapshots*”

- Peter Senge

WHEN TO USE SYSTEMS THINKING?

Systems Thinking is a diagnostic tool that allows us to ask better questions before jumping to conclusions for **wicked problems**.

WICKED PROBLEMS

Wicked problems are...

- Complex and highly interconnected
- Familiar and has a known history.
- Chronic and unresolved
- Difficult to define
- Resistant to straightforward solutions

An example of a wicked problem is **pollinator decline**.

**In the EU, 1 in 3
bee, butterfly and hoverfly
species is in decline**

Climate Change

Pesticides

Land use change

Habitat Loss

Invasive
Species

Light Pollution

“For every complex problem there is an answer that is clear, simple, and wrong.”

H.L. Mencken

THE ICEBERG MODEL



The Iceberg Model is one of many Systems Thinking tools.

The next pages show you how to apply it to any wicked problem.



WHAT IS IT?

Like an iceberg, only small parts of a wicked problem are visible immediately. Problems are made up of different drivers, and the Iceberg Model categorises them into levels.

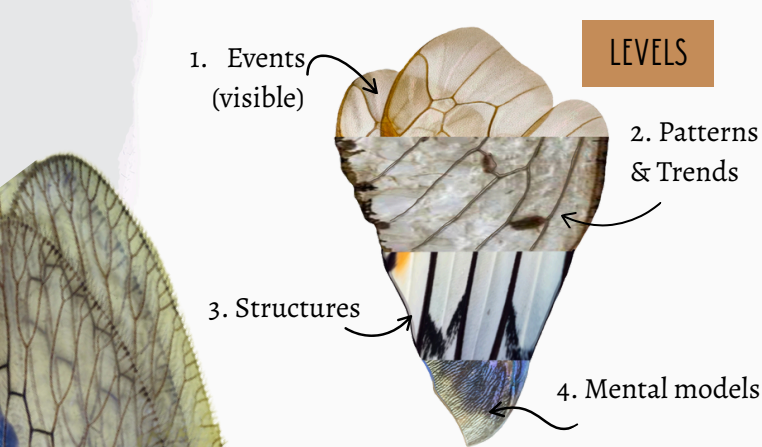
VISIBLE



ICEBERG

INVISIBLE





PREPARE YOUR SESSION

Gather your "swarm": Fill out the template in a group! You don't need to be experts on the subject.

Sketch a simple iceberg or use the template.

Come up with a Guiding Question together:

Grab pens and spend 10–15 minutes on each level. Don't stress if some ideas overlap—using sticky notes lets you easily move them around.

Example Guiding Question:

Why are pollinators declining?

LEVEL 1

Events

On the first level, we ask

“What is happening to pollinators?”

The event level is the level at which we typically perceive the world. It shows symptoms, and materializes as news articles, or happenings.

Write down all events you see, the words you hear and the immediate changes around you. Those can be news headlines related to the topic, such as “Local bee gone extinct,” or your friend’s panicky reaction when a bee visits her plate. Also write down that really dry spring you remember or the new building where you used to see a patch of wildflowers.

Once you know the Events Level, your possible action is **reaction**.

Humans are drawn to event levels. Only 10% of the Iceberg is visible...



LEVEL 2

Patterns & Trends

... but what is happening below the surface?

If we look just below the event level, we often notice patterns. Similar events have been taking place over time.

Guiding Question

*“Do you see a pattern in these events?
What has been happening over time?”*

Once you’ve explored the Patterns Level, your possible action is **participation**.



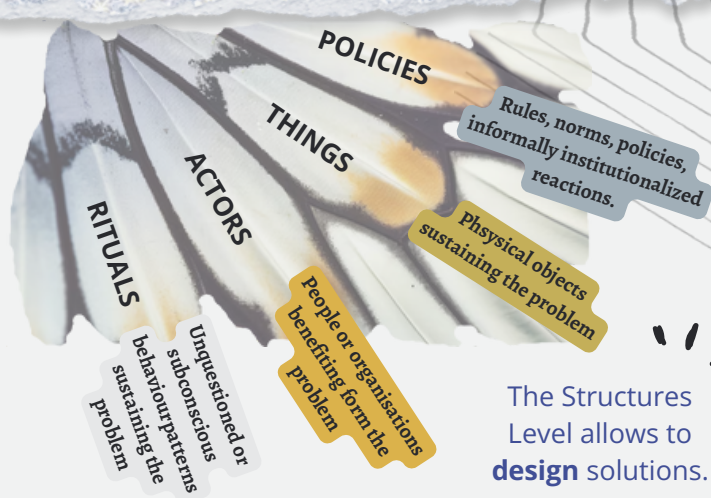
LEVEL 3

Structures

Guiding Question

What is enabling the pattern we are observing?

The structure creates the patterns we see in events. Structures can be understood as the “rules of the game.” They can be written or unwritten; physical and visible or invisible. Structures can be categorized into...



LEVEL 4

Mental Models

"LET'S LEAVE THIS
PATCH WILD"

Culture, tradition and education drive the way we design society and our individual actions.

"ALL BEES ARE
BEAUTIFUL"

Notice what many people say about pollinators. On the mental level you will find what is important to people and what they hold to be true.

OR...

Guiding Question

Which attitudes, beliefs, morals, expectations, and values affect the underlying structures?

"MOWN LAWNS ARE BEAUTIFUL."

"ANNOYING!"

"SCARY!"

REACHING UNDERSTANDING

You've learned that wicked problems start with the Mental Models, for example: *"Grass lawns look neat."*

They manifest on the Structural Level, as Actors turn on their robot mowers (Things) unconsciously (Ritual) because the tenement owner demands them to keep the grass "tidy" (Policy).

This results in Patterns: The repeated mowing and pesticide use pushes away pollinators, which we notice on the Event Level: The news reads: *"Local Bee Species has gone extinct."*

EVENTS



PATTERNS



ACTORS, RITUALS,
THINGS, POLICIES

MENTAL MODELS



...but how can we move to a better future?

We can use another
Systems Thinking
tool called:

NATURE FUTURES FRAMEWORK

Nature Futures Framework, or NFF, is another way to apply **Systems Thinking**. The NFF was developed by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).



"The Nature Futures Framework (NFF) is a flexible tool designed to support the development of scenarios and models of desirable futures for people, nature and Mother Earth."

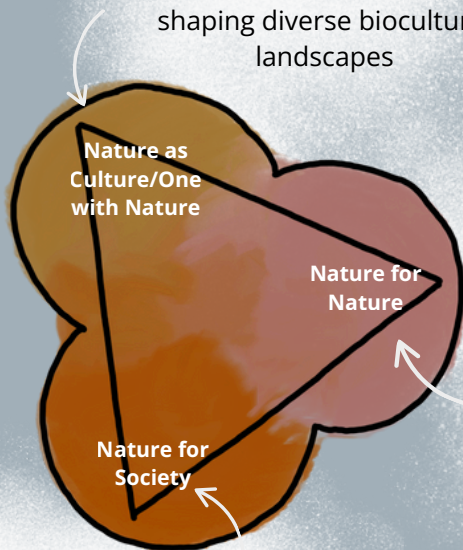
-IPBES

It allows people from different backgrounds to share how they see the world and their place in it.

Everybody sees their place in the world and their relationship with nature differently...



societies, cultures, traditions and faiths are intertwined with nature in shaping diverse biocultural landscapes



nature has intrinsic value, and value is placed on the diversity of species, habitats, ecosystems and processes that form the natural world, and on nature's ability to function autonomously

nature provides utilitarian benefits and instrumental values to people and societies

We all fit somewhere in this triangle.
...Where do you fit?

Now that we see the problem thanks to the **Iceberg Model**, and we understand each other's **different worldviews**, we can start envisioning what the future looks like. In other words, **what is our vision for the future?**

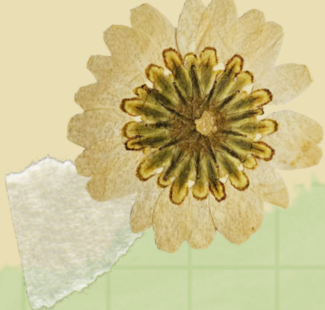
We can use

NATURE FUTURES VISIONING

to imagine futures with solutions to
problems

"A vision is a description of a desirable future state and usually depicts the explicit desires, assumptions, beliefs, and paradigms that underlie the desired future of those undertaking the visioning process.

Importantly, visions of a desired future state can form the target space for target-seeking scenarios (or an orientation for transformative change) that describe how the future unfolds towards making the visions a reality."



When facing wicked problems, it can feel paralyzing. Where do you start to solve the problem?

Planning for futures where wicked problems are tackled is often stopped from being truly imaginative, because actors involved (you and me, but also policy makers, companies, etc.) can fixate on the need for a future to be “realistic” or “plausible”. This means that it is often very limited by present and past ideas about the world.

In reality, **our imaginations and our actions are always connected**. Humans are creatures of imagination and embodiment, of relationships and desired possibilities.

We can do *Nature Futures Visioning exercises* to imagine a truly transformative future.

Tapping into imagination and creativity, sense of wonder also allows us to ask: what are your passions and talents, and where do they fit in societal change?

Based on the work of Dr. Joost Vervoort, Professor of Transformative Imagination at Utrecht University



Step-by-step: how to create a vision

Alone or in a group

Step 1:

Close your eyes

Step 2:

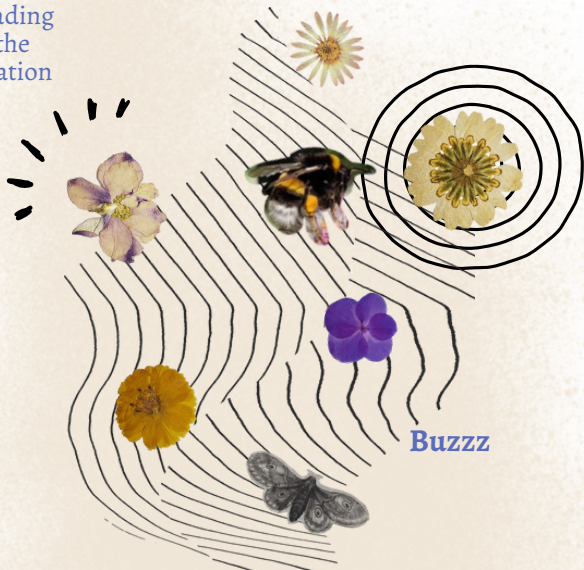
*Imagine a world
without a wicked
problem (like
pollinator decline).*

Step 3:

*Describe your
vision: what does
it look/sound/
smell/taste/feel
like?*

**Nothing is
impossible!**

Try reading
out the
meditation



Step 2: Guided Meditation



Close your eyes, take a deep breath in, and let it out slowly, feeling your body settle into a sense of calm. Allow your mind to drift to the year 2050, where pollinators are thriving, and we have managed to reverse their decline.

Now, imagine this future scene forming around you. It might begin as a soft, blurry image, words, or concepts. Don't worry about clarity yet, just allow the colours, shapes, smells, sounds, and feelings to arise naturally, like the first light of dawn.

What do you notice nearby? Are there flowers blooming around you? Do you hear the soft buzz of bees or the flutter of butterfly wings? Are there trees full of blossoms, fruits, or seeds? Imagine the vibrant colors and textures of the plants that rely on pollinators—each one blooming, strong, and healthy.

Notice the people, if any are present. Who is here with you? What do you notice about them, and what are they doing? What about animals? What does this world feel like? Reach out with your senses. What is the texture of the soil, the grass, or the petals beneath your hands? Can you smell the richness of the earth, the sweetness of flowers, the freshness of the air?

Finally, ask yourself: How do you feel in this future? Knowing that pollinators are thriving, and that this world is alive and abundant because of them, how does that affect you? Notice the feelings that arise in you. Breathe in those feelings, letting them settle within you.

When you're ready, slowly begin to bring yourself back to this room, carrying this vision with you. Breathe deeply, let your fingers and toes wiggle, and when you feel ready, gently open your eyes. Let's hold onto this vision of a thriving world as something possible, a future where all life—people, plants, pollinators, and animals—is in harmony. Let's keep this picture close, as a reminder of what we can build, together.

Step 4:
*Communicate
your vision*



**What is your
vision for the
future?**

**How could you
get there?**

*Do the visioning as a group and discuss your
visions. Are there any actions you can take together
to achieve your visions?*

One way to communicate your visions is through a **Zine** -
just like this one! We'll show you how to make one.



Zines are small, self-published booklets.
The word “zine” comes from “magazine”.
In the 1980's, publishing zines became
easy due to photocopiers being easily
accessible. Zines were used by social
movements, such as Riot Grrrl, to
challenge the status quo and for activism
against racism and sexism.



MAKING A ZINE

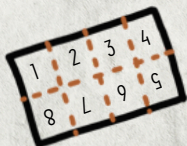


Start with an A4 sheet of paper

Then fold it into 8 equal parts: first in half, then in half again, and again.



Unfold the paper,
and label each
page



Fold the paper in
half, and make a
cut

Finally, fold it length-
wise and push the
sides in to make a
booklet



Additional resources:

- **The Iceberg Model:** <https://about.ecochallenge.org/iceberg-model/>
- **More about the NFF:** <https://www.naturefuturesframework.org/>
- **How to make a zine tutorial:** <https://www.tate.org.uk/kids/make/cut-paste/how-to-make-a-zine>
- **Pollinators in the EU:** https://environment.ec.europa.eu/topics/nature-and-biodiversity/pollinators_en



This zine was produced as an outcome of the Erasmus+ funded training:

FLOWER: FACILITATING LEARNING AND WOMENS' EMPOWERMENT IN POLLINATOR REGENERATION

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