ZERO WASTE BASICS

Opening questions for the reader before reading:

- What do you think zero waste is?
- What is for sure not zero waste?
- What are the most common zero waste examples that you know of?
- What could be the guiding principles of zero waste?
- Why is zero waste important?

Zero waste can mean many things to different people but the key connection is that zero waste is a goal that is pragmatic and visionary, local and global, at the same time. Inspired by nature, the zero waste philosophy works in an ecosystemic way to maximise what is available in the community alongside building local resilience and increasing the natural capital available for future generations.

How would you define zero waste? How do you usually explain it to people?

Can you guess the missing words in the most used definition of zero waste?

"Zero waste is the _____ of all resources by means of _____ production, consumption, reuse and _____ of products, packaging and _____ without burning, and with no _____ to land, water or air that threaten the environment or _____."

Make your guesses, read on and see if you can get some hints in the text before reading the full definition on the bottom of the page.

Zero waste aims at rethinking the way we produce and consume in order to preserve the value and energy embedded in our planet's resources whilst enabling civilization to flourish and prosper. While waste management aims at turning waste into resources, zero waste is about **keeping resources from becoming waste**.

It's also about designing waste – and the toxics and inefficiencies associated with it – out of the system. In a zero waste system, the value of materials and products is kept within the community where they are used over and over again. Any technology that doesn't allow for materials to be taken back to circulation is deemed as unacceptable and phased out (e.g. incineration which does not support the zero waste thinking). Meanwhile, recycling is important to close the loop on a smaller scale and it should be seen as an end-of-pipe solution because we cannot recycle our way out of a wasteful society.

Why is recycling not enough for zero waste (vision)?

If you are not sure of the answer, see if you can find it from the rest of the chapter.

And here is the full zero waste definition:[1]

Zero waste is the conservation of all resources by means of responsible production, consumption, reuse and recovery of products, packaging and materials without burning, and with no discharges to land, water or air that threaten the environment or human health.

[1] Zero Waste Definition, Zero Waste International Alliance (2018)

What is the difference between your wording and the official one?
Would you be able to explain all its elements?
For example: what is the difference between recycling and recovery?

The main waste terminology in the EU is defined in the Waste Framework Directive.[2] This is the legal basis everyone working with waste in the EU has to follow:

Recovery – any waste management operation which results in waste serving a useful purpose by replacing other materials which would otherwise have been used. Recovery operations are listed as R-codes R1 to R 13 for legal purposes.
It's important to note that under recovery we can distinguish:

- **Material recovery** – any process of obtaining materials from waste that still have useful physical or chemical properties and can be reused or recycled for some purpose.
- **Energy or thermal recovery** – conversion of waste into usable heat, electricity, or fuel. Examples are incineration, pyrolysis and gasification.
- **Chemical recovery** – decomposition of mainly mixed plastic waste to new polymers. It converts pyrolysis oil or gasification gas into feedstock for production of new plastic materials.

Disposal – any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Disposal operations are listed as D-codes D1 to D 15. Landfilling is a disposal method.

Treatment – recovery or disposal operations, including preparation prior to recovery or disposal.

Recycling – any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material. It does not include energy recovery or landfilling.

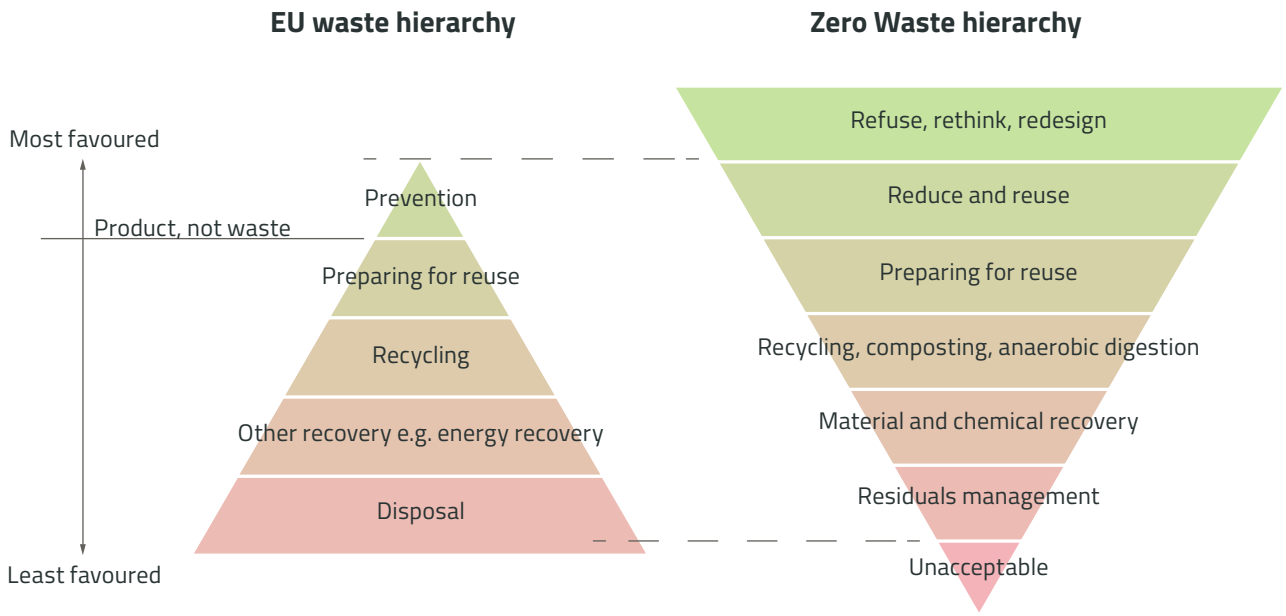
Reuse – any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.

Waste treatment methods can be listed in hierarchies, where they generally lay down a priority order of what constitutes the best overall environmental option in waste legislation and policy. In addition to EU waste hierarchy defined by the EU Waste Framework Directive there is also Zero Waste hierarchy.

The fact that recycling is not the first solution towards zero waste, is described within the Zero Waste hierarchy.[3] Take a look at the Zero Waste hierarchy together with EU waste hierarchy.

[2] Waste Framework Directive 2008/98/EC (amended with Directive 2018/851)
[3] The Zero Waste Masterplan, Zero Waste Europe (2020)

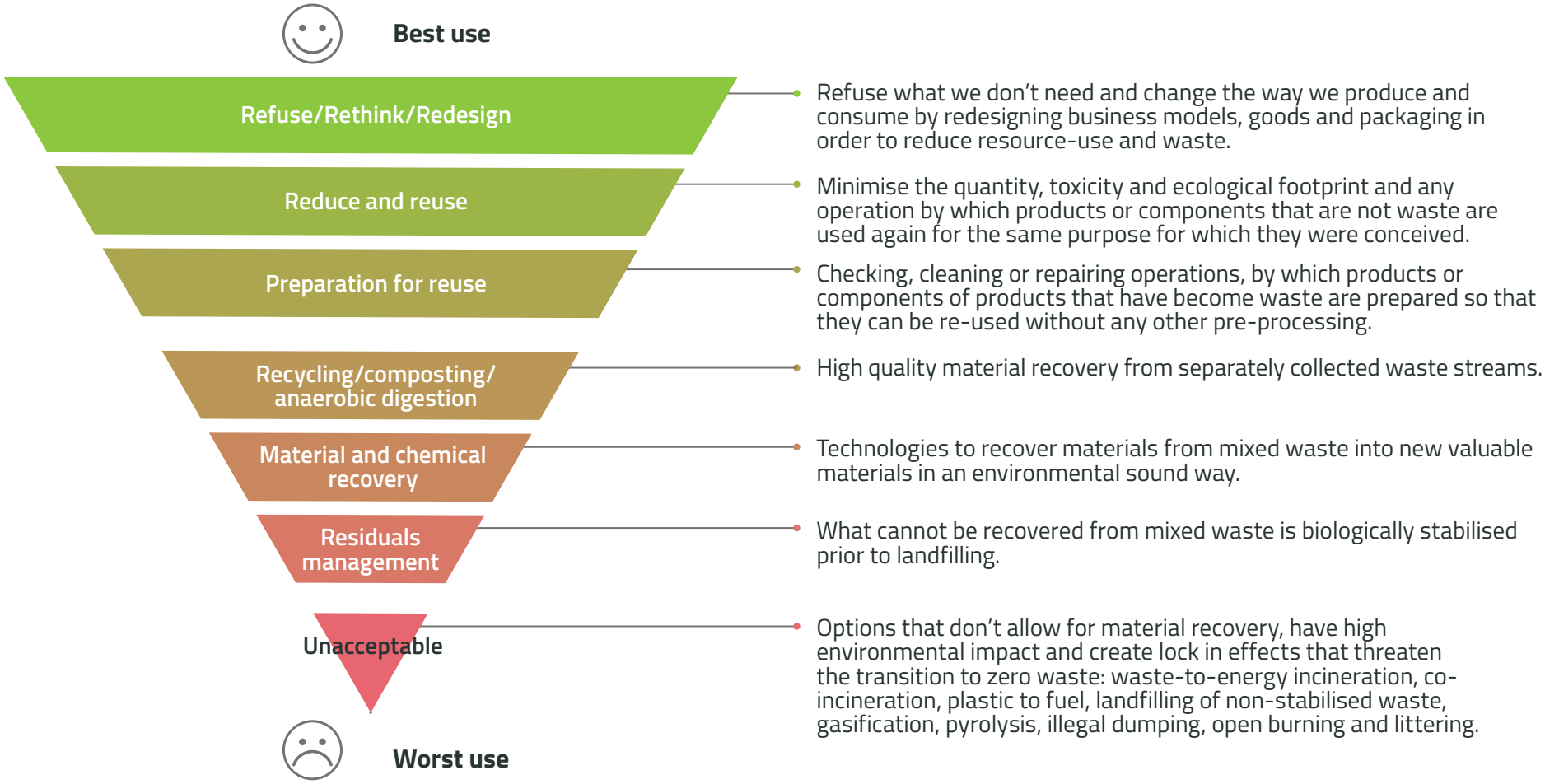
What are their differences and similarities? What could be the reasons for the differences?



It is important to note that while we prefer to use the Zero Waste hierarchy, the EU waste hierarchy is the one officially in use in the EU and it's the one that decision makers and waste management sector mostly refer to. So as Zero Waste Ambassadors we need to be ready to clarify and explain their differences and reasons for it.

Besides the most obvious visual difference in the direction of the pyramid, the EU waste hierarchy has two steps less and is less circular. The Zero Waste hierarchy gives more importance to the preservation of high quality products and materials, plus optimizing residual (mixed) waste treatment before opting for disposal. And the reason why the pyramids are presented in opposite directions is also a form of prioritising – in zero waste we want to show the focus on prevention, and minimisation of disposal. On the next page you can see a more detailed overview of the Zero Waste hierarchy.

Zero Waste Hierarchy



Zero Waste Hierarchy has been developed together with Zero Waste International Alliance[4]

[4] A Zero Waste Hierarchy for Europe, Zero Waste Europe (2019)

ZERO WASTE PRIORITIES: PREVENTION, REDUCTION AND REUSE

The best waste is the waste that is not produced in the first place. Hence intervention at the design stage is key to prevent having to manage waste that shouldn't exist. For example, food waste can be reduced with the right training, incentives and procurement policies in canteens, restaurants, hotels, hospitals and homes. Packaging-free shops and local markets can prevent packaging and food waste whilst providing fresh food. Most single-use packaging is superfluous and can be easily replaced with the right intervention at the city level. Coffee cups to go, containers for take-away food, throw-away water bottles or single-use straws are just a few examples of items that can be replaced with solutions that don't generate waste.

City authorities can also play a key role in facilitating the roll-out of refillable systems for beverages and reuse systems for nappies, as well as guaranteering availability to alternative waste-free sanitary items within local shops. For durable goods such as electronics, furniture or clothes, it is key to encourage repair and reuse operations in the form of second-hand shops or reuse activities and platforms both offline and online. Using the purchasing power of public procurement to change the market, promoting paperless offices, establishing material banks and libraries for tools are other ways to prevent waste from being generated at local level.

Additional reading:

Putting second hand first – the guidance from Zero Waste Europe outlines the key principles that every reuse strategy should prioritise, the benefits these strategies can bring for a municipality and highlights examples of how similar policies have been successfully implemented throughout Europe.

Zero waste is a vision of hope for the future.
Zero waste is an attitude.
More than a destination, zero waste is a journey, and it is open to anyone.

Cities, restaurants, hotels, events, communities, and individuals worldwide are already proving that a better world is possible by adopting the zero waste philosophy.

FREQUENTLY ASKED QUESTIONS

Before reading the answers, think to yourself: **how would you answer them?**

1. But in reality we can't get our waste production to zero, so isn't zero waste a utopia? We can't just close all our landfills…
2. What is the difference between zero waste and the circular economy? Are they the same thing?
3. Why can't we just focus on recycling?

1. But in reality we can't get our waste production to zero, so isn't zero waste a utopia? We can't just close all our landfills…

You will say zero waste is an illusion and you are right. A waste-free society is not a goal, but a journey. Zero waste should be understood as a mindset, not as a physical outcome. There is no simple transition and it does not happen overnight, but with small steps to continuously reduce waste generation and improve waste separate collection. Zero waste has been increasingly adopted throughout the world by both urban and rural communities. In Europe, over 450 municipalities have committed to this journey through implementing impactful policies, community education and participation, and other action supporting that waste generation is taken to the minimum and from the waste generated, as much as possible is put back to circulation. In some Italian cities, like Bitetto, the separate waste collection rate increased from 16% to 78% while producing just 79 kg of non-recyclable (residual) waste per inhabitant in the period of 4 years. Bitetto has achieved these impressive results in such a short time through economic incentives to produce less waste (Pay-As-You-Throw), and by ensuring that citizens have a wide range of accessible information available to them to better understand the system, their waste generation, and how to reduce it. For more best practices see The State of Zero Waste Municipalities Report.

2. What is the difference between zero waste and the circular economy? Are they the same thing?

While they both have the same goals, they are two different models which complement each other in multifaceted ways. A circular economy is one that does not waste or pollute, an economy that keeps products and materials in use and rebuilds the natural capital of our ecosystems. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling. This is in contrast to a linear economy which is a 'take, make, dispose' model of production.

Zero waste is guided by principles known as the Zero Waste hierarchy which is focused on waste prevention that encourages the redesign of resource life-cycles so that all products are reused. Zero waste is a translation of circular economy or a practical toolkit that can be meaningfully implemented on the ground. Zero waste strategies perfectly integrate the circular

economy narrative into local level solutions, providing concrete guidelines and policies that municipalities can implement within their communities to ensure a healthier environment.[5]

3. Why can't we just focus on recycling?

Although we might reach high rates of separate waste collection, do we know how much of it is actually recycled? It is true that with source separation it is possible to increase recycling rates, especially when we talk about the recycling of biowaste (composting or digestion). However, when it comes to manmade materials like single-use plastics (e.g. wrappers or straws), real recycling happens very rarely. In most cases such materials with high calorific value are incinerated due to being unwanted – or downcycled because the new material has lost purity in comparison with virgin counterparts. Plus, recycling's effectiveness depends on the material type, economic value of the output materials (is there a market for them?) and safety for the environment and people. For example aluminium and glass are theoretically infinitely recyclable into material of the same quality, while paper and cardboard only enable a handful of cycles. So in order to reduce the material and energy consumption without reducing living standards, working on waste prevention, minimisation, raising awareness, lasting product design, proper treatment, Extended Producer Responsibility, etc. is sorely needed. For more information about recycling see the *Waste treatment* chapter.

Ending questions for the reader to reflect upon:

- **What parts in this chapter were most confusing or difficult for you to understand? Why do you think it was so?**
- **In your experience what is the hardest thing to explain to people about zero waste? Why do you think it is so?**
- **What is the difference between looking at zero waste as a lifestyle and as systemic change?**
- **What good examples do you have from reuse and prevention?**
- **What do you want to take with you from this chapter?**
- **If and what next steps do you want to take in your work regarding this topic?**
- **What do you want to know more about?**

[5] Creating a methodology for zero waste municipalities, Zero Waste Europe (2020)