Turning the vision of
Circular Economy
into reality with

THE ZERO WASTE MASTERPLAN

Startup Toolkit

**for European city planners,
policy-makers & community leaders.**


Your journey starts here. Welcome.

FOREWORD

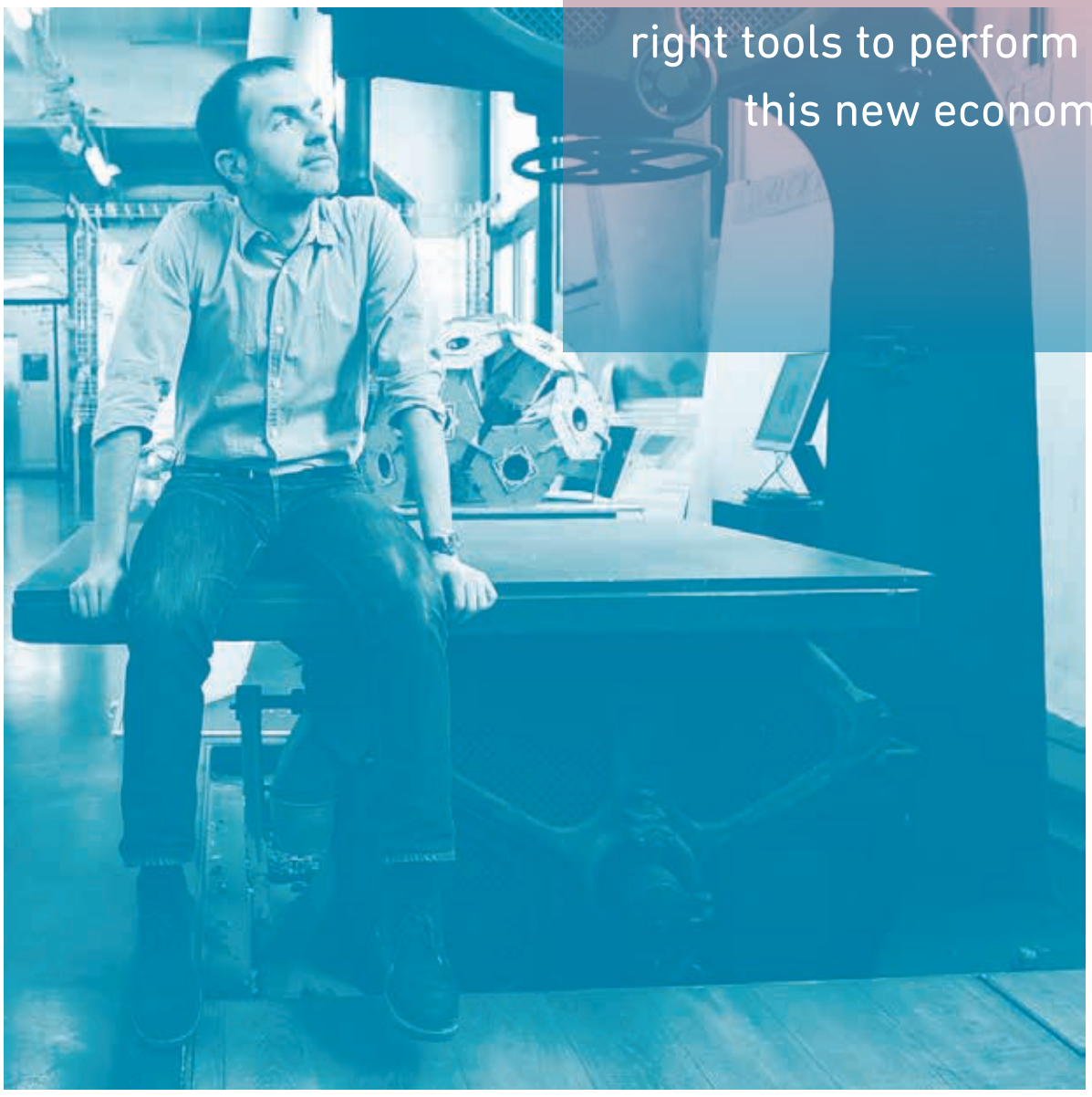
Pressure on cities keeps increasing every year. Local governments have to manage systems under stress and this tension has now become very clear to many. I see major shifts happening in various industries and sectors and city planners are constantly faced with the challenge of adapting to this fast-changing-world. Europe is finally moving away from waste management and industry and policy-makers now understand the urgent need for a new approach: Resource management. The shift "from waste to resources" has become a critical issue for cities as it impacts economic, social and environmental agendas simultaneously. In rural areas, the need to preserve agricultural systems, local jobs and community resilience is greater than ever. Our communities' future is clearly at stake.

"It is often said that, like all politics, all development is ultimately local. As the world strives for a more sustainable path in the years ahead, particularly beyond 2015, local voices and local action will be crucial elements in our quest."

UN Secretary General Ban Ki-moon

While gloom is dominating the media, I see positive change happening everywhere. Technological, societal and economic drivers are opening perspectives for communities to truly perform in a fast-changing world. The pace of innovation is so quick that it can easily disrupt public services and regulations. The sharing economy is building "social fabric" in our neighborhoods. Awareness of our environmental impact has now become mainstream and people are ready to seize opportunities to move towards smarter and healthier lifestyles.

More than ever, leaders will be successful if they give their community a sense of purpose, a vision to follow and the right tools to perform in this new economy.



Joan Marc Simon, Executive Director, Zero Waste Europe

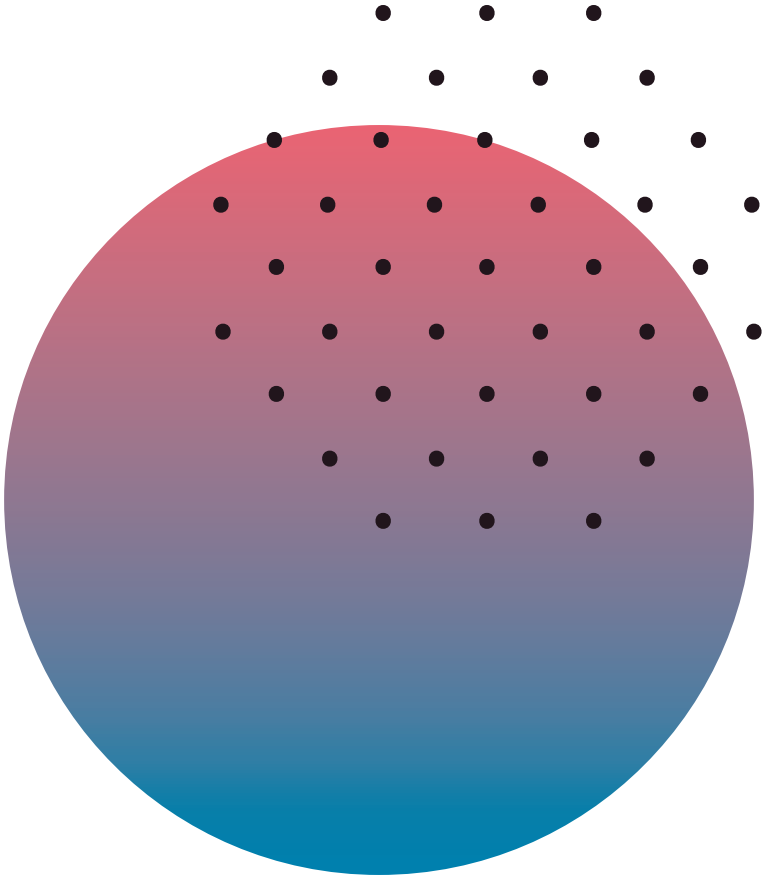
At the EU level, both the public and private sectors are regrouping around the concept of "a transition towards a Circular Economy" - an economy that does not waste and pollute, an economy that keeps products & materials in use and rebuilds the natural capital of our ecosystems. The term is now on everybody's lips and we all seem to agree on the true potential of a "Resource Efficient Europe". The vision of decoupling growth from resource use has now become mainstream in Brussels. Yet, the challenge continues to be how to implement this vision at local level.

We are very proud to release the Zero Waste Masterplan: A set of roadmaps, tools and strategies that have shown to be the foundation of all European success stories to date. It provides concrete action steps to make your city more liveable, more efficient and more vibrant.

You are holding in your hands the Startup Toolkit. We have designed it as a modular kit that you can update and customise moving forward. We hope you will find this resource helpful. You are welcome to contact our team to get assistance in establishing a project plan.

Joan Marc Simon,

Executive Director,
Zero Waste Europe



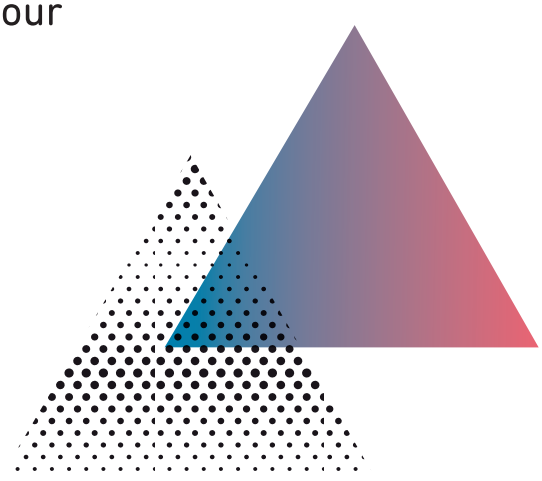
INDEX

MAP & UNDERSTAND

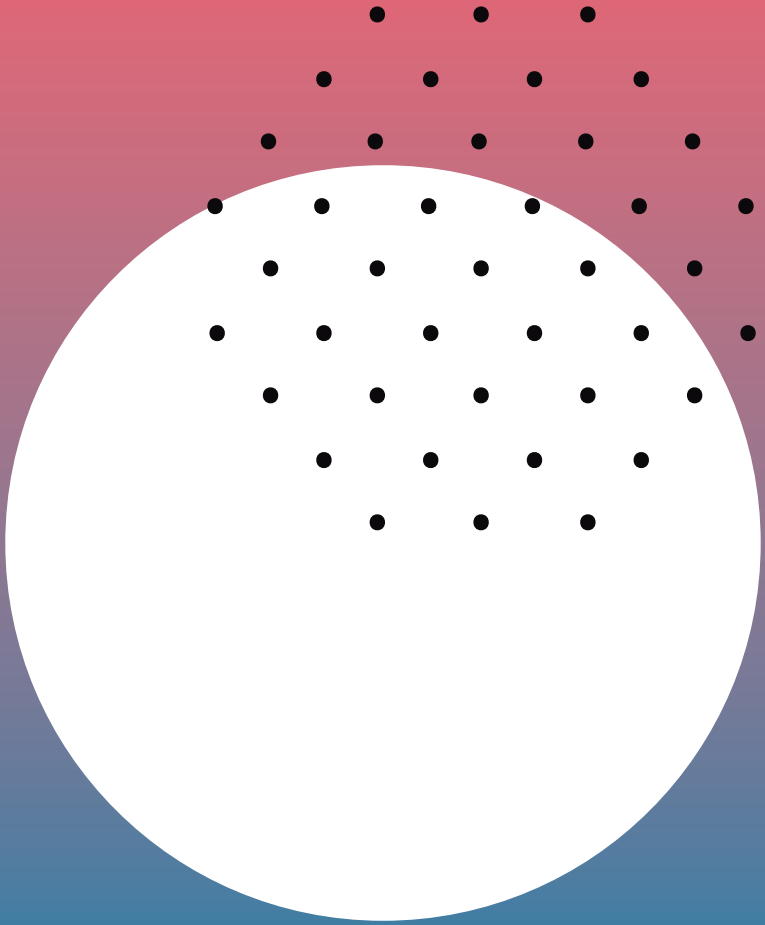
LEARN

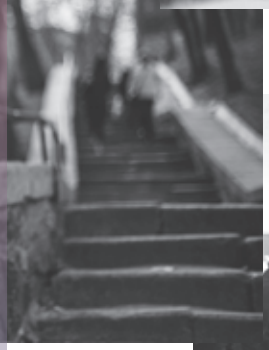
SET THE STAGE

TO DIG DEEPER



THE ZERO WASTE MASTER PLAN





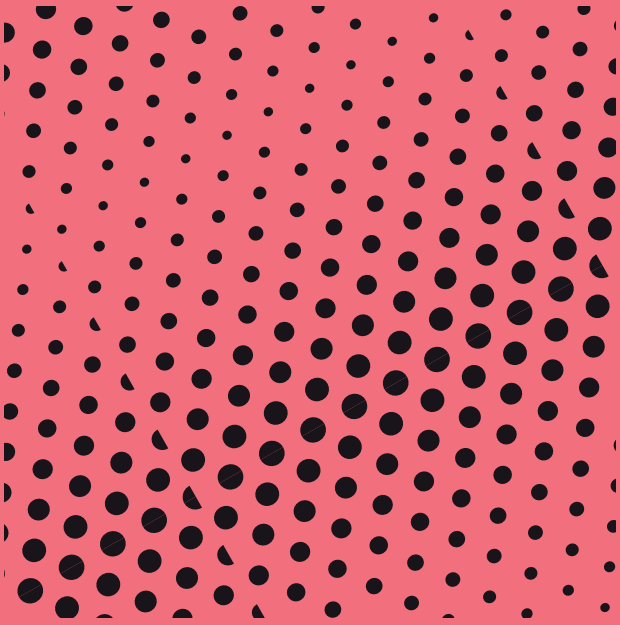
WHO IS THIS TOOLKIT FOR?

This startup toolkit is designed for community leaders, policy-makers and city planners seeking to drive an ambitious transition in their city on one - or several - of the following themes:

- ☐ Solving a waste crisis,
- ☐ Creating viable alternatives to landfills and incinerators,
- ☐ Investing in their community,
- ☐ Creating opportunities for entrepreneurship and local businesses to flourish
- ☐ Mainstreaming smart and healthy lifestyles,
- ☐ Phasing out toxics and emissions from products, services and infrastructure,
- ☐ Supporting sustainable agriculture,
- ☐ Building resilient neighborhoods and strong communities, helping citizens reconnect with each other.

Whether you are already "in-office", preparing a local campaign or building a movement, this startup toolkit offers building blocks that can truly help solidify your programme.

Note: The Zero Waste Masterplan integrates perfectly with other projects and roadmaps that are in line with the UN Sustainable Development Goals.



ZOOM IN ON "WASTE"

Some context

What we commonly call "waste" has been at the centre of many debates in European cities and around the world. The topic has become highly emotional for many because of the crises most cities have faced at some point in their history: collection strikes leading to waste in the street, a dioxin crisis, citizen opposition to landfill or incinerator projects.

Many European cities have faced a waste crisis at some point in their history

Note: This toolkit does not focus on waste crises and the problems created by landfills and incinerators. However, multiple resources are available on www.zerowasteeurope.eu

Currently:

Cities in Europe are responsible for implementation of EU law. Currently the EU is asking Member States to recycle 50% of the waste they produce by 2020 and to implement the waste hierarchy; giving priority to prevention and reuse before recycling, incineration with energy recovery or landfill. Member States are also obliged to produce waste prevention plans.

The waste hierarchy as commonly presented at the EU level until 2017.

Prevention
1 Maximimum conservation of resources

Reuse
2 Reusing materials

Recycle
3 Recycling & reprocessing materials

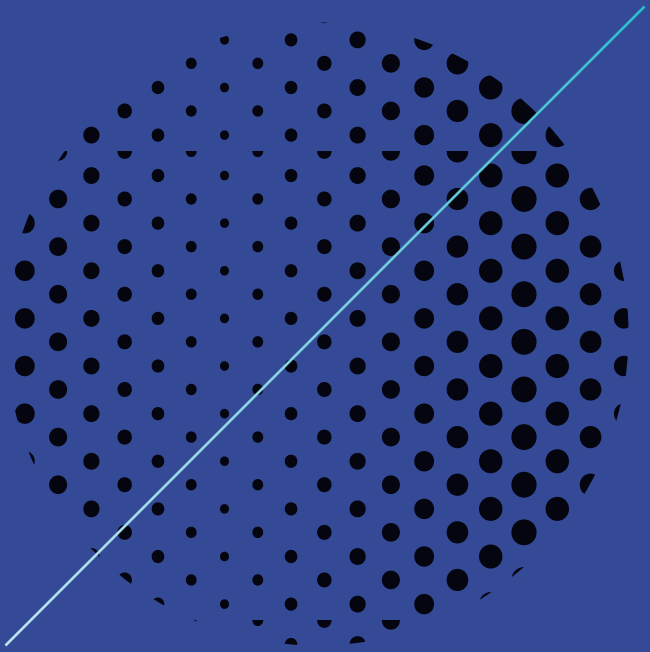
Other Recovery
4 Including energy recovery only if highly efficient

Disposal of waste
5 Zero conservation of resources

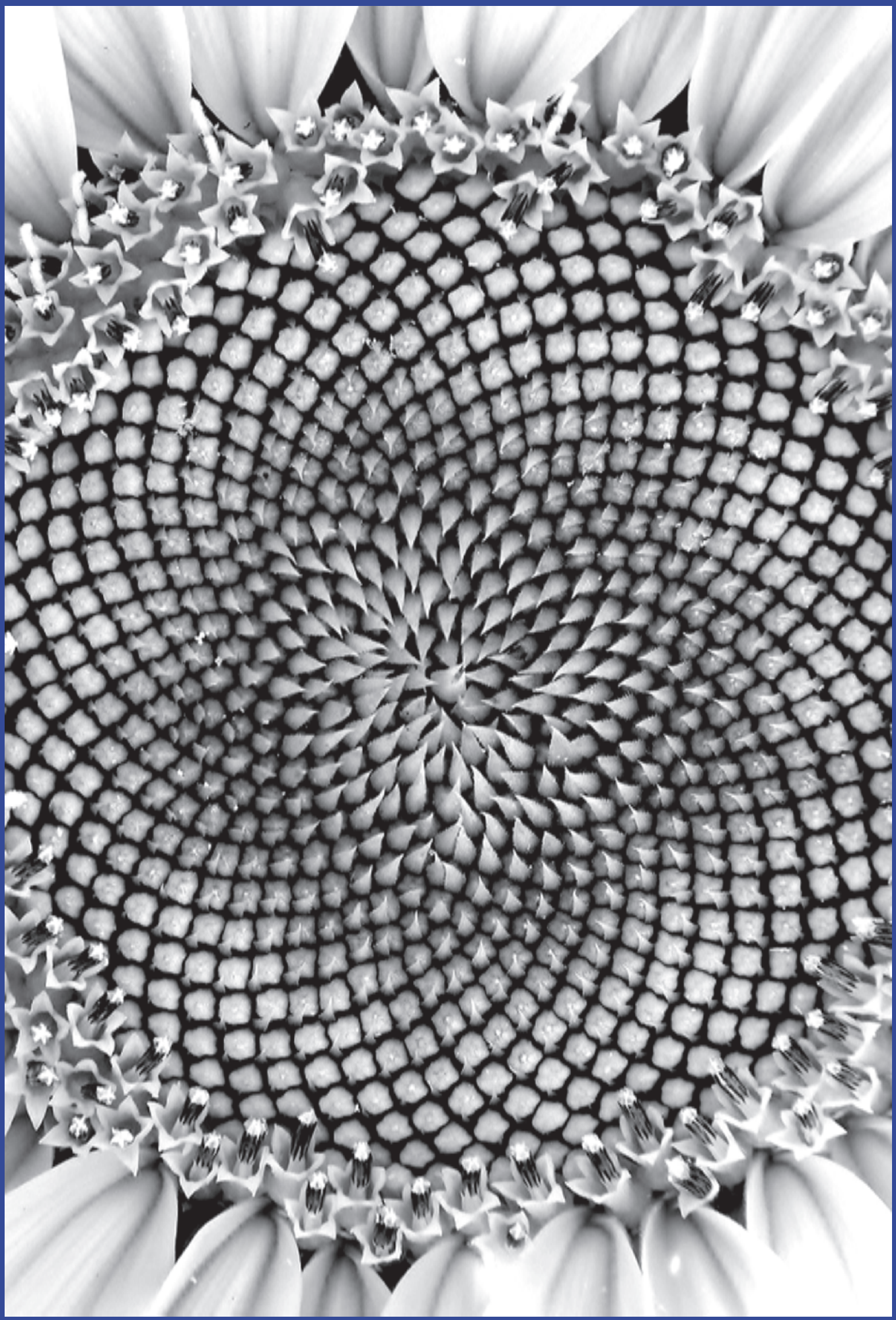
The Communication on Waste to Energy published by the European Commission in early 2017 asks member states to invest in separate collection and recycling and to beware of locking themselves into long-term contracts with incineration facilities. Furthermore there are Extended Producer Responsibility (EPR) schemes currently covering packaging, waste oils, Waste Electrical and Electronic Equipment (WEEE), tyres, batteries and end of life-vehicles. The EU has also set reduction targets for single-use carrier bags.

What's to come:

In order to establish the Circular Economy across the continent, EU policy is raising the level of ambition and already requires higher levels of recycling for waste and packaging waste, compulsory separate collection for bio-waste and is encouraging higher reuse rates. Economic and legal incentives are also being created to promote product redesign and reduce waste generation.



ZOOM IN ON "WASTE"



How it all started

Our Planet has always followed all Zero Waste principles; thousands of years of evolution resulted in ecosystems where the waste from one process is an input to another one.

What nature has done through evolution, humankind needs to do by design. We have now come to realise we need to rethink the way we produce and consume in order to create these ecosystemic relations. They preserve the value and energy embedded in the resources whilst enabling civilisation to flourish and prosper.

Zero Waste is not only about decoupling economic activity from environmental destruction, it is above all about building resilience and natural capital for future generations.

From "Waste Management" to "Resource Management"

In the 20th century the purpose of Waste Management was to minimise the immediate environmental damage through collecting waste and disposing of it. Most materials would end up in expensive and polluting facilities such as incinerators or landfills, while some would eventually get recycled. Zero Waste brings us into the 21st century by putting the focus on Resource Management. Zero Waste is 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 and recycling is used as end-of-pipe solution for everything which cannot be prevented or reused.

And on one fine 21st Century day...
Zero Waste met City Planning

Back in 2008 Capannori* (Italy) was the 1st European town to declare it would pursue the zero waste goal. The project was initiated by Rossano Ercolini, then leader of a local group - and now Chairman of Zero Waste Europe. The city has been paving the way for an international movement that has continued to expand ever since. Hundreds of lessons learned, strategies and tactics were aggregated and compiled and structured to give birth to the Zero Waste Masterplan, thanks to the work of several pioneering cities and their local groups.

Rossano Ercolini receiving the 2013 Goldman Environmental Prize for his achievements with Zero Waste in Italy.

*You can download the full case study of the City of Capannori on www.zerowasteeurope.eu

Today more than 400 cities in Europe have joined the network and are following the Zero Waste Masterplan. Local governments from around the world also expressed interest in the European best practices that put the interests of the community first.

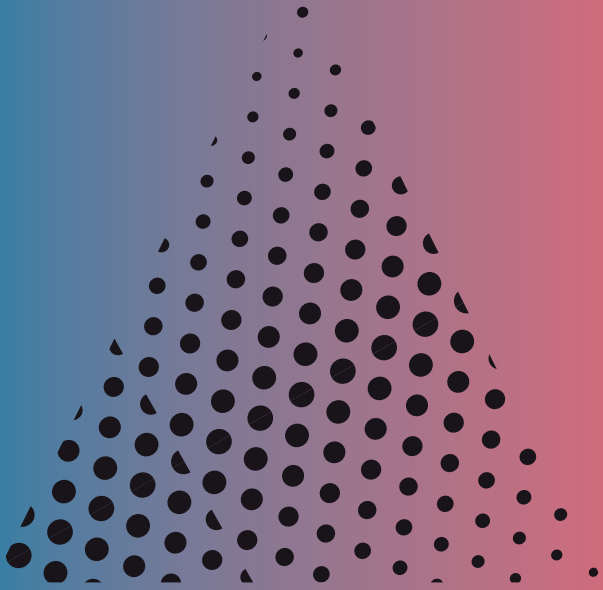
Zero Waste is a one of the main trends in today's city planning agenda and a fundamental part of enabling sustainable cities.

"Good waste management needs good will and good organisation: Zero Waste is completely possible."

Janez Potocnik
Former EU Commissioner for the Environment

"Zero Waste communities are living examples of the Circular Economy, its viability and its environmental, economic, and occupational benefits."

Karmenu Vella,
EU Commissioner for the Environment, Maritime Affairs and Fisheries



ZERO WASTE

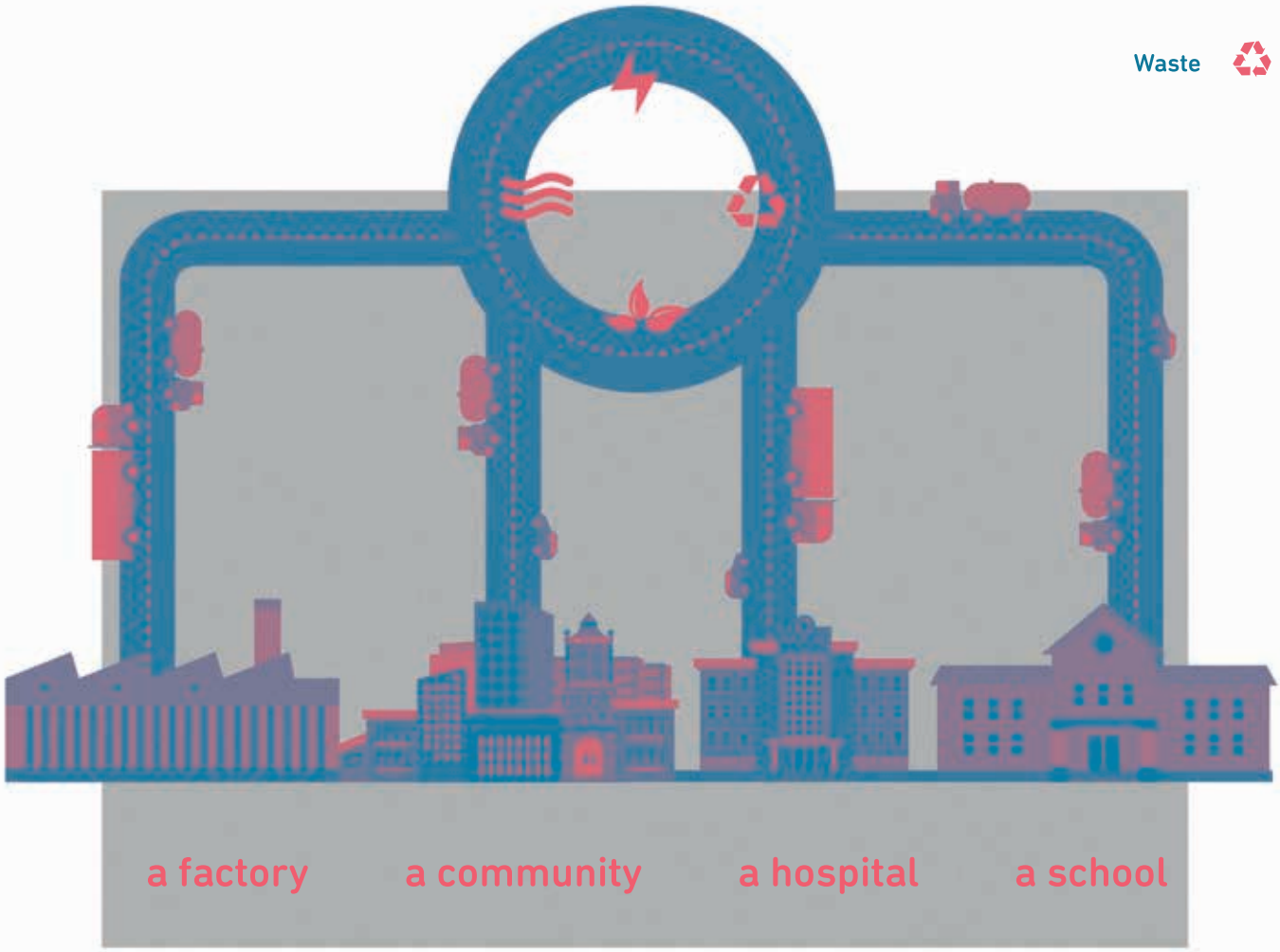
& OTHER CITY PLANNING TRENDS

First,
the big picture.

The old way

"Centralised" Resource Management.

Over recent decades, infrastructure development has been leaning towards highly-centralised systems for resource extraction & management.



These systems consume resources such as energy and water, and produce waste and carbon emissions.

For each ´system´(a factory, a city, a hospital, a school...), the resources are produced (or disposed of) far from the consumption source.

Centralised systems mean centralised power structures and high carbon emissions from transporting the resources, which are produced or managed far from the consumption source.

Now trending

"Distributed" Resource Management.

Thanks to technological enablers, societal and economic drivers as well as an increased focus on building system efficiencies and resilience, we are witnessing major shifts in the the way we produce and deliver energy, food, water and other fundamental resources.

Local material flows are prioritised, the community plays an active role in the resource management system.

A number of practices have gained significant exposure in the field of City Planning. Below we share a number of themes that are interesting to consider and explore in parallel to the Zero Waste Masterplan, because they integrate core values and vision elements that are in line with our roadmaps. This consolidated approach can help your political program stand out and communicate a true vision for your city.

The "Smart" City / Smart Homes & Buildings

Most of the visible narratives promoted by industry are very tech-centric. They define smart cities as an urban development vision that integrates large information technology & communication systems as well as Internet of Things (IoT) technology to manage cities' assets. Recent developments in this area show a much more people-centric approach and emphasise the fact that technology should serve a community purpose and simply be used as an "enabler of social progress". As Zero Waste focuses on people first, we usually express reservations on smart technologies for waste management but recognise the benefits of digital platforms & devices to create efficiencies and cut carbon emissions (for optimising waste collection routes for trucks for instance). The beauty of Zero Waste systems is that they can reach excellent results with or without smart technologies.

Green & Smart Mobility

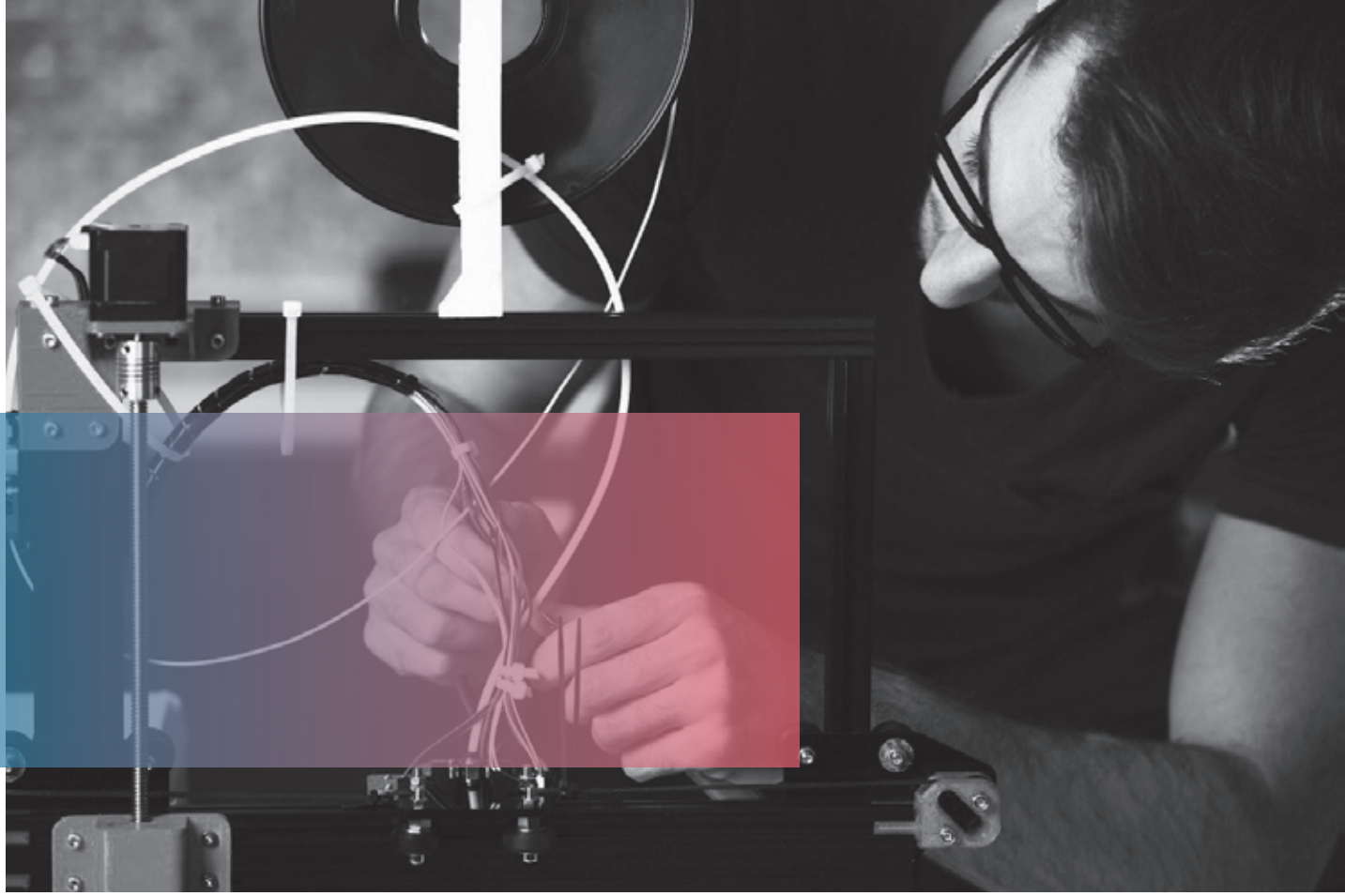
We support ambitious mobility agendas for cities. This means promoting transportation systems for people and goods that are optimised and - wherever possible - minimised. Smart mobility does not necessarily mean electric cars and heavy public transportation infrastructure. It is primarily the way the city develops and the way that the movement of people and goods is "engineered" that contributes to carbon emission reductions. Do people have to travel far to go to work? Do they shop in their community or far from the city centre?

Urban/Community Resilience

Urban Resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience. With more and more events approaching (massive migration waves, natural disasters, terrorism...) the concept of resilience has become fundamental in city planning. Insurance and re-insurance companies also support it, because there is a financial rationale behind the idea of resilient city assets in the 21st century.

Circular Economy

A
Circular Economy is a
regenerative system in which
resource input and waste, emissions, and
energy leakage are minimised by slowing,
closing, and narrowing material and energy loops.
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 thinking perfectly integrates
the Circular Economy narrative and the Zero
Waste Masterplan is probably the most
relevant tool for cities to start applying
Circular Economy principles.



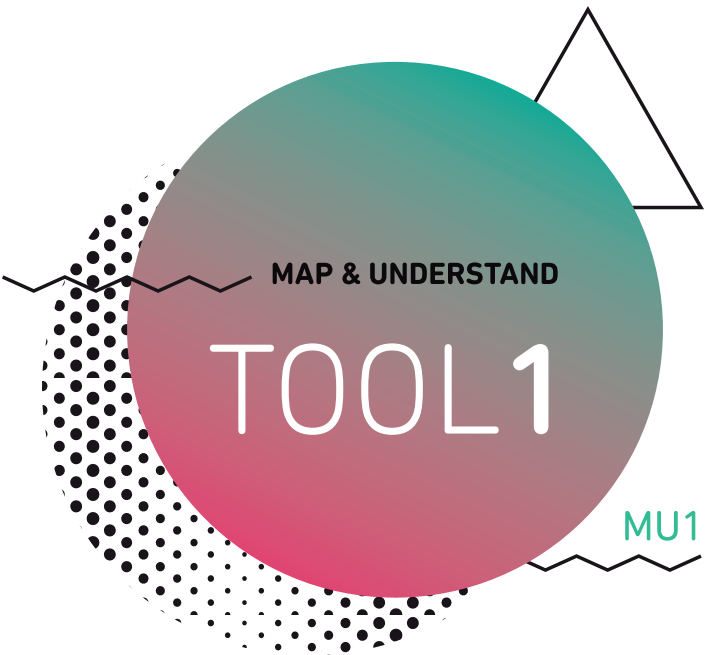
Fab Labs & the “Makers” movement

A Fab Lab (fabrication laboratory) is a small-scale workshop offering (personal) digital fabrication. A Fab Lab is typically equipped with an array of flexible computer-controlled tools that cover several different length scales and various materials, with the aim to make "almost anything". This includes technology-enabled products generally perceived as limited to mass-production.

The Zero Waste Masterplan builds on the potential of Fab Labs and the “Makers” movement because it is based on localised production and it opens up opportunities for the repair of goods within the community. At scale, fab labs can drive significant carbon emission reductions and empower communities to reclaim their role in the design & local production of consumer goods.

Smart Lifestyle
Zero Waste & Local first!

With megatrends emerging - such as the Circular Economy and Smart City development - different visions are being put forward for our production & consumption systems. In line with the UN as well as more grassroots and radical communities, Zero Waste Europe supports a vision for society where production systems and material flows are as local as possible. This vision translates into local economic development opportunities, more local jobs, lower carbon emissions, and more leverage for cities. It has also become "trendy" to live a life that produces no waste because people are constantly seeking to reduce their costs, optimise their daily lives and have healthier lifestyles.


MAP & UNDERSTAND
TOOL1
MU1

10
QUESTIONS TO GET STARTED

Below, we list questions that Zero Waste experts typically ask at the beginning of the journey. It's good to bear these in mind in order to understand the different parameters of a Zero Waste program. The Masterplan is designed to address any kind of scenario and these questions are often a good starting point to develop your strategy.

You can start answering them with the information you have access to today to set the stage for a fact-finding workshop with Zero Waste experts.

1. How much waste is generated in your city (in total and in kg/inhabitants/year)? _ _ _ _ _ _ _ _ _ _ _ _ _

2. Do you have the competency for waste collection at the city level? YES ◯ NO ◯

3. Do you collect organic waste separately? -if so what is the level of contamination (% of impurities in the organic waste stream)? YES ◯ NO ◯

4. What is your separate collection rate (in %)? _ _ _ _ _ _ _ _ _ _

5. What happens to the waste that is not separately collected?

   _

   _

6. Do you have a long-term contract with a waste treatment facility/operator? YES ◯ NO ◯

7. How much is the gate fee for mixed waste (in EUR)? _ _ _ _ _ _ _

8. What is the waste management cost per capita (in EUR/inhabitants/year)? _ _ _ _ _ _ _ _ _ _ _ _ _

9. Do you have incineration and/or landfill taxes? YES ◯ NO ◯

10. Do you have a waste prevention plan? YES ◯ NO ◯

ANY DOUBT?

Do you need any additional information on those questions?

Contact our team at cities@zerowasteeurope.eu

MAP & UNDERSTAND

TOOL2

MU2

STARTING POINT FOR YOUR ROADMAP

The purpose of this tool is to:

1. Identify which scenario best describes the situation in your city,

2. Give you an overview of what a typical roadmap looks like for this specific scenario.

Scenario 1: "My city is starting from scratch"

· We do not have separate collection in place yet
· Citizens and businesses do not have any economic incentives to generate less waste or to separate materials
· We do not have any infrastructure in place for materials collection and processing.

Please refer to the profile page named **"Scenario 1" hereafter**

Scenario 2: "We have already taken the first steps"

· We have separate collection in place – but results are still disappointing, with comparatively low separate collection rates and/or high levels of contamination of materials in each stream
· Citizens and businesses do not have any economic incentives to generate less waste or to separate materials
· We have some infrastructure in place but it is inadequate.

Please refer to the profile page named **"Scenario 2" hereafter**

Scenario 3: "We are probably in the European average but our city has barely improved in recent years"

- We have separate collection in place but it is not optimised
– We have a separate collection rate between 40% and 60%
- Citizens and businesses do not have any economic incentives to generate less waste or to separate materials
- Our disposal cost is above 50eur/tonne
- We do not have a waste prevention plan or it is badly implemented.

Please refer to the profile page named **"Scenario 3" hereafter**

Scenario 4: "We are meeting the EU recycling targets but we want to go beyond that"

· Our separate collection rate is above 60% and it includes separate collection of organics.
· The separate collection scheme is optimised
· Our waste disposal costs are above 70eur/tonne
· Our municipal residual waste production is below 100kg/person/year
· We have a waste prevention plan in place.

Please refer to the profile page named **"Scenario 4" hereafter**

Scenario 5: "We are a holiday or tourist destination"

· Our city is in one of the previous scenarios but our challenge is the fluctuation of population because it is a seasonal destination

· Our city is in one of the previous scenarios but our challenge is the influx of tourists.

Please refer to the profile page named **"Scenario 5" hereafter**

Scenario 6: "We are located in a remote rural area or on an island"

Our town is in one of the scenarios 1 to 5 but with the added challenge of being relatively or completely isolated from land or populated areas.

Please refer to the profile page named **"Scenario 6" hereafter**

Scenario 1

Scenario 1: "My city is starting from scratch"

Where we are

So far my city has been taking care of removing waste from the streets but the only recycling in town has been done by the informal sector for those items which have market value. We are very far from meeting the EU recycling targets and we are wondering where to start.

The opportunity

However, since we are just getting started we have the chance and the will to do things right from the beginning and learn from the experiences of others in order to leapfrog to a new scenario. We want to have a good waste plan for the next decade and roll out separate collection and prevention measures to achieve good results within the next 3 years.

The challenges we need to overcome

"We just don't know how to start"
This is what this Masterplan is for. This guide is to help you identify where you are and what are the key challenges ahead. Building on our years of experience and learning lessons from the most successful European cities we are best placed to help you start out in the right direction.

"The costs of disposal are so low that there is little incentive for my city to spend money on collection or recycling."
Low costs of disposal are a real issue, however they look set to rise in coming years as the European legislation is implemented and landfills fill up. Zero Waste is an opportunity to anticipate the future and leapfrog to the most modern waste management system.

"We don't have the money to invest in separate collection."

It is true that going for Zero Waste requires an initial investment, just like any other change you will want to implement in your city. However, other cities have demonstrated that this initial investment pays off in little time. After the first 1 or 2 years the operational costs of running waste management in the city go down. We can provide you with references and case studies on this point at cities@zerowasteeurope.eu

"We are lacking the political will/vision to implement such a plan"

Without political drive the change will not happen. Ideally a Zero Waste vision needs to be shared by the City Hall and/or civil society. If this is not the case it is important to organise it. Based on the experiences of other cities, the Masterplan includes strategies to help create the right political pressure and make changes possible.

"What to include in a Zero Waste plan"

At this stage you want to make sure that the plan includes both short-term and long-term milestones. Those milestones cover work packages such as organising separate collection, prevention strategies, infrastructure planning and ensuring a smooth transition towards the progressive decline of residual waste generation (avoiding potential lock-in situations).

"The recycling in my town is done by informal recyclers, what will happen to them?"

Informal recyclers have a very valuable experience which should be an asset for the new Zero Waste plan. The Zero Waste plan will involve them and turn a potential problem into a strength for the model.

Ljubljana, the capital of Slovenia

From straggler to EU Green Capital in 10 years. When Slovenia joined the EU in 2004 most cities were starting from scratch. In its capital Ljubljana -population 440,000- most of its waste was being sent directly to landfill. Thanks to the commitment of the public waste company Snaga, the monitoring from civil society and the determination of local authorities, they started to roll out separate collection instead of investing in big expensive infrastructure. Ten years later Ljubljana became the best performing European capital and European Green Capital partially thanks to the good waste management plan.

Going further in your diagnosis

Every city is different! **We can help you analyse your situation further and define the key steps** that you will need to take to develop your Zero Waste plan.
Please make contact at **cities@zerowasteeurope.eu**

Scenario 2

Where we are

We have installed roadside containers and we have run a couple of unsuccessful communication campaigns but people don't collaborate, it looks like we are not going to meet the EU recycling targets and we don't know how to proceed. Recycling is low and most waste is buried or burnt.

The opportunity

With the ZW Masterplan we will unblock the situation and devise a plan to roll-out effective separate collection and substantially reduce dependence on disposal operations and implement actions to reduce waste generation. At the end we plan to see an increase in citizen participation and a reduction in the costs of waste management and environmental impact.

The challenges to overcome

"Finding the political support to start a change"
Without political will and/or political pressure nothing will move. It is important to have someone in the administration wanting to lead the transition or build a strong civil society movement to push the administration to commit to adopting a zero waste plan.

"Creating a zero waste plan for the city"
The elaboration of a zero waste plan is the best way to bring civil society and policy makers together to take ownership on the process.
This plan includes short term and long term milestones which deal with organising separate collection, prevention strategies, infrastructure planning and ensuring a smooth transition towards the progressive decline in the generation of residual waste avoiding potential lock-in situations.

Targeting the biggest waste fraction - biowaste

Food scraps and garden waste together make up between 25 and 50% of municipal solid waste in Europe. They are also the cornerstone of solid waste management; if biowaste is properly addressed through home and community composting and dedicated separate collection so that most of it is captured, the quality of the other waste streams and the economics of the system will increase exponentially. Getting it right is not rocket science but it requires commitment to make it happen.

'Put or Pay' contract or ownership of disposal infrastructure

Many cities are trapped in contracts that require them to supply XX tonnes of waste per year to incinerators, landfills or Mechanical Biological Treatment plants. A plan needs to be devised to circumvent this harmful obligation and allow the city to move towards Zero Waste.

Argentona, Catalonia, Spain

"The way of the pioneer is always rough" is a saying that fits the experience of Argentona. Up until 2004 the town of Argentona -population 12,000- was separately collecting glass, paper, lightweight packaging and mixed waste in roadside containers with little success; recycling was stable well below 20% and more than 80% of its waste went to the nearby incinerator of Mataró. Thanks to the vision of a group of committed citizens who got themselves elected on a zero waste platform, the town changed the way they managed their resources and in less than 3 years was recycling more than 70% of its waste and had more than halved the mixed waste they were sending to the incinerator. Argentona paved the way for many other Catalan towns to follow

Going further in your diagnosis

Every city is different! **We can help you analyse your situation further and define the key steps** that you will need to take to develop your Zero Waste plan.
Please make contact at **cities@zerowasteeurope.eu**

Scenario 3

Where we are

We have a functioning system of separate collection but a good amount of recyclables are still found in the mixed waste. We still send most of our waste to disposal operations and the quality of our separately collected fractions is still low. We haven't tried or haven't been successful with waste prevention policies and we have little incentive to change things due to contractual lock-ins with a disposal facility or recycling not being competitive compared to disposal.

Opportunity

We want to make sure we meet the EU targets for 2020 and need to start working towards the more ambitious goals that the EU is setting for 2030. This is the right moment to lay the foundations of a new resource management plan for our city.

Challenges to address

With the ZW Masterplan the first thing we will do is focus on optimising separate collection to radically increase the amount and quality of recyclates and prepare a good waste prevention strategy.

"Finding the political support to start a change"
Without political will and/or political pressure nothing will move. It is important to have someone in the administration wanting to lead the transition or build a strong civil society movement to push the administration to commit to adopting a zero waste plan.

"Creating a zero waste plan for the city"

The elaboration of a zero waste plan is the best way to bring civil society and policy makers together to take ownership on the process.
This plan includes short term and long term milestones which deal with organising separate collection, prevention strategies, infrastructure planning and ensuring a smooth transition towards the progressive decline
in the generation of residual waste avoiding potential lock-in situations.

Targeting the biggest waste fraction - biowaste

Food scraps and garden waste together make up between 25 and 50% of municipal solid waste in Europe. They are also the cornerstone of solid waste management; if biowaste is properly addressed through home and community composting and dedicated separate collection so that most of it is captured, the quality of the other waste streams and the economics of the system will increase exponentially. Getting it right is not rocket science but it requires commitment to make it happen.

'Put or Pay' contract or ownership of disposal infrastructure

Many cities are trapped in contracts that require them to supply XX tonnes of waste per year to incinerators, landfills or Mechanical Biological Treatment plants. A plan needs to be devised to circumvent this harmful obligation and allow the city to move towards Zero Waste.

Capannori, Italy

Nowhere is the phrase "mighty oaks from little acorns grow" truer than in the small town of Capannori, where a small but determined movement to stop the construction of an incinerator led to what was to become the 1st European city to declare the zero waste goal back in 2007. Before 2007 Capannori had an acceptable rate of separate waste collection at 30%, and high waste generation. With the adoption of the zero waste strategy recycling increased to 82% by 2014 and waste generation was reduced by 40%. This has saved money for citizens and for the city, which can now be invested in providing other services. Capannori has also seen ecoentrepreneurship flourish, in order to turn what was waste into resources.

Going further in your diagnosis

Every city is different! **We can help you analyse your situation further and define the key steps** that you will need to take to develop your Zero Waste plan.
Please make contact at **cities@zerowasteeurope.eu**

Scenario 4

Where we are

We believe that all the basic elements of a Zero Waste programme have been put in place, although there are still a few fundamental steps to take to reach top performance and get the full benefits that the Zero Waste plan can provide on a large scale.

The opportunity

With the ZW Masterplan we want to focus on reducing waste generation, optimising separate collection and proximity management of waste. Our focus will be on the reduction of residual waste, measured in kg/person per year.

The challenges ahead

Designing a plan for the next few years to constantly reduce residual waste

As our residual waste is below 200kg/person/year we need to carefully study what is still in our residual waste stream and design targeted actions to either replace the products with a different business model or find ways to collect and recycle what we have managed to recycle in the past. This plan will need to set mid-term goals of below 50kg/person/year of residual waste and will seek to almost completely phase out disposal to landfills and incinerators in the next decades.

Building synergies with civil society and local businesses to design waste out of the system

There is so much that the city can do to manage resources, because producers are currently free to sell unsustainable products and/or packaging, not yet having to care about how to manage them once they become waste. Local solutions and new business models can be found to cascade the use of resources from one activity to the other, and phase out materials and products that cannot be taken care of by the local zero waste system.

Contarina, Treviso area in Italy

The saying "Excellence is doing ordinary things extraordinarily well" fits the story of the public company Contarina, which serves the districts of Priula and Treviso in northern Italy - population 550,000. Despite being long-time frontrunners, Contarina didn't just rest on its laurels. Despite achieving recycling rates above 50% by the early 2000s, Contarina focused on reducing residual waste to a minimum. By 2015 Contarina was already separately collecting more than 85% of its waste and generating less than 60kg of annual residual waste per person whilst offering the cheapest waste management system in the whole country and generating more green jobs.
Despite being the best European performer in waste management, Contarina is setting its sights even higher. It has set itself the goal of 96% recycling and 10kg residual waste per capita by 2022, an 80% reduction from its already formidable results.

Going further in your diagnosis

Every city is different! **We can help you analyse your situation further and define the key steps** that you will need to take to develop your Zero Waste plan.
Please make contact at **cities@zerowasteeurope.eu**

Scenario 5

Where we are

My city has a high degree of seasonality because it is a holiday destination for locals or because of the strong presence of tourists for some months of the year. During low season there is more or less a functioning waste management system but when tourists come we lack a plan to address this temporary overpopulation.

The opportunity

Being "green" is not only good for the environment and for our citizens, it is also a way to add value to our tourist sector. With the ZW Masterplan we aim to develop a plan to involve seasonal visitors in preventing and separating waste even if they don't do it at home.

The challenges ahead

Regardless of what kind of waste management system the city currently has, the ZW masterplan will need to review it to design a system that is compatible with the seasonality or the big influx of tourists.

Is it worth educating tourists?

Tourists will not stay for long and communication to them should not be the same as the one for residents. Developing systems and communications that are easy to understand and even easier to execute is key. It is important to target the waste streams and spaces frequented by tourists – hotels, bars, restaurants...

Waste management to address population spikes

The routes and frequency of collection will need to match the fluctuations in waste generation. Flexibility will be key for success.

Designing a zero waste plan

The plan should include the measures to reduce waste generation and maximise separate collection. A dedicated waste prevention plan with measures to fight disposable products and packaging, offer water in public fountains, reduce food spoilage, promote local products, etc will be key to reducing waste generation.

Sardinia, Italy

This fantastic tourist destination in the Mediterranean has led the way towards a solid Zero waste program. Combining political will, civil society involvement and the application of best technical expertise, the island of Sardinia is the Italian region that has shown the fastest growth in separate collection over last decade, today reaching 60% (with point results of 80% to 90% in some municipalities) and with very low waste generation.

Going further in your diagnosis

Every city is different! **We can help you analyse your situation further and define the key steps** that you will need to take to develop your Zero Waste plan. Please make contact at **cities@zerowasteeurope.eu**

Scenario 6

Where we are

We are far away from big populated areas. This means that what works in other areas might not work or it will be a lot more expensive in our situation. Remote locations - including small closed systems as e.g. small islands - also face different challenges than most cities and specific scenarios can vary quite a bit from one situation to the other. Those communities may have to deploy truly local solutions, with highly optimised collection systems for recyclables.

The opportunity

We want to set up a system that is efficient, cost-effective, decentralised and that fits our reality.

The challenges ahead

Creating a system that is economically and environmentally sustainable

The isolation of our ccommunity means that the less waste we generate and the less it needs to be shipped the lower the costs associated. This can be done by a good policy of substitution of single-use items and packaging, local management of organic waste and a good system of collection and storage of those waste streams which cannot be treated locally.

Management of biowaste

Like everywhere else the most significant waste fraction is biowaste. Given its high density and high biological activity it cannot be stored for a long time before transfer and it doesn't make economic sense to ship it almost daily to big biowaste treatment facilities. Hence local treatment

INFOCUS

of biowaste is the most economical and environmentally sensible option. Whether this will take place via home composting, community composting, or anaerobic digestion will depend on local conditions.

Managing dry waste

If biowaste is separately collected and managed most of the other fractions can be collected a lot less frequently and stored until the volume accumulated justifies a shipment to a far away sorting facility.

Addressing problematic waste streams

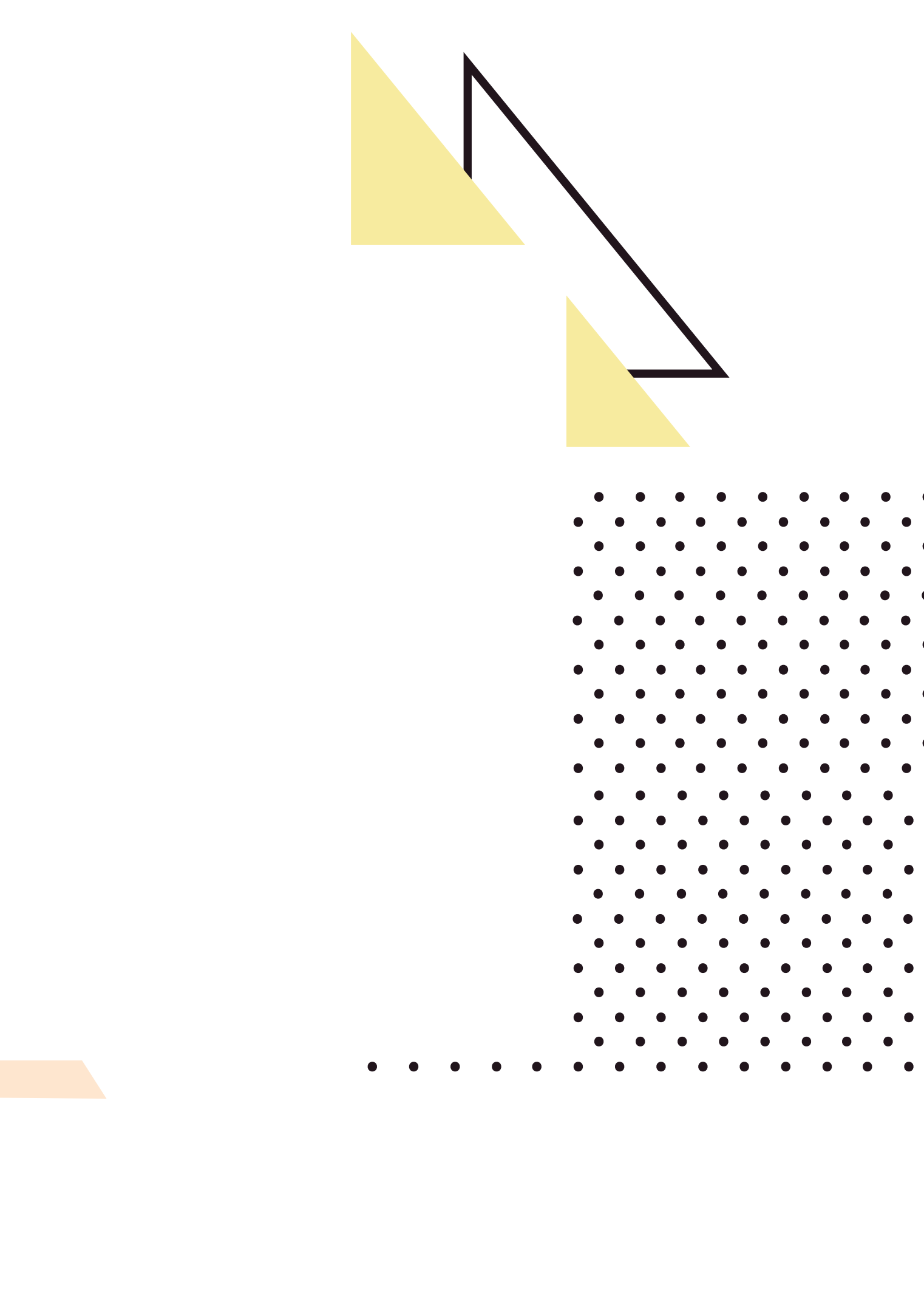
Hygiene and incontinence products are a problematic fraction that will be difficult to store at home or in the village/island due to its biological activity. Practical actions will need to be devised to prevent and manage these waste-streams which can range from replacement with reusable options to sterilisation/stabilisation prior to storage.

Sardinia, Italy

This fantastic tourist destination in the Mediterranean is also one of the best performers in terms of islands in Europe. Thanks to political will, civil society involvement and the application of best technical expertise, the island of Sardinia is the Italian region that has shown the fastest growth in separate collection over last decade today reaching 60% (with point results of 80% to 90% in some municipalities) and with very low waste generation.

Going further in your diagnosis

Every city is different! **We can help you analyse your situation further and define the key steps** that you will need to take to develop your Zero Waste plan. Please make contact at **cities@zerowasteeurope.eu**



Zero Waste vs. the old way: What the data says

During the late 20th and early 21st century, the modern waste management model in Europe was characterised by cherry-picking the valuable materials in the waste stream and sending the rest to newly built incinerators. Only 30 years ago a separate collection rate of 25% would have been deemed unachievable anywhere on the continent. As a result, big incineration capacities were built in Austria, France, Germany, The Netherlands and Scandinavia. The investment in this large-scale infrastructure has locked in the potential for improvement of a number of cities in these countries. Stagnating recycling rates and high waste generation are the dominant theme in cities such as Copenhagen, Stockholm or Vienna.

Today we know that separate collection rates can reach 90% and that separate collection of biowaste makes economic and environmental sense. Consequently one can observe a transition from the 20th century model of expensive, highly centralised and inflexible infrastructure to a zero waste model of an effective, decentralised, flexible system which allows for progress to continue as society evolves and technologies improve.

If we compare data from the old reference cities for waste management and we benchmark them against the new front-runners following the zero waste model we can see that the difference in residual waste sent for disposal is more than substantial. For instance, the city of Vienna is generating almost 3 times more residual waste than Ljubljana and 6 times more than Treviso.

Old reference cities

Source: BiPRO (2015) 'Assessment of separate collection schemes in the 28 capitals of the EU' commissioned by the European Commission

Source: BiPRO (2015) 'Assessment of separate collection schemes in the 28 capitals of the EU' commissioned by the European Commission

Source: BiPRO (2015) 'Assessment of separate collection schemes in the 28 capitals of the EU' commissioned by the European Commission

New reference cities

Treviso (2014)

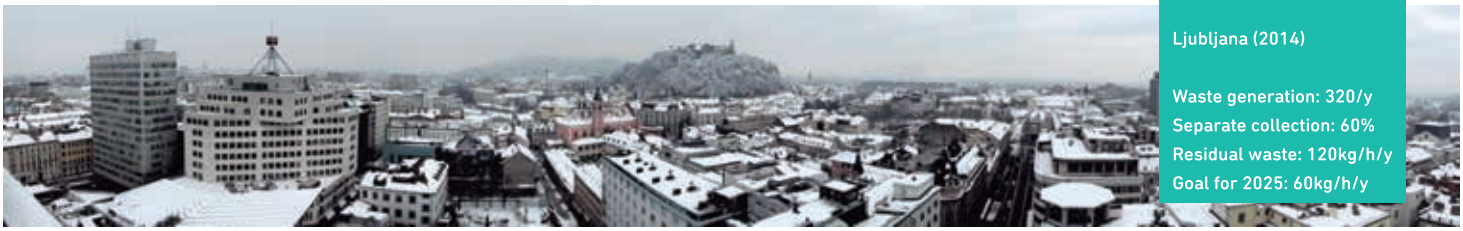
Waste generation: 353kg/y
Separate collection: 85%
Residual waste: 53kg/h/y
Target for 2022: 10kg/h/y

Source: BiPRO (2015) 'Assessment of separate collection schemes in the 28 capitals of the EU' commissioned by the European Commission

Parma (2016)

Waste generation: 497kg/h
Separate collection: 80%
Residual waste: 106kg/h/y

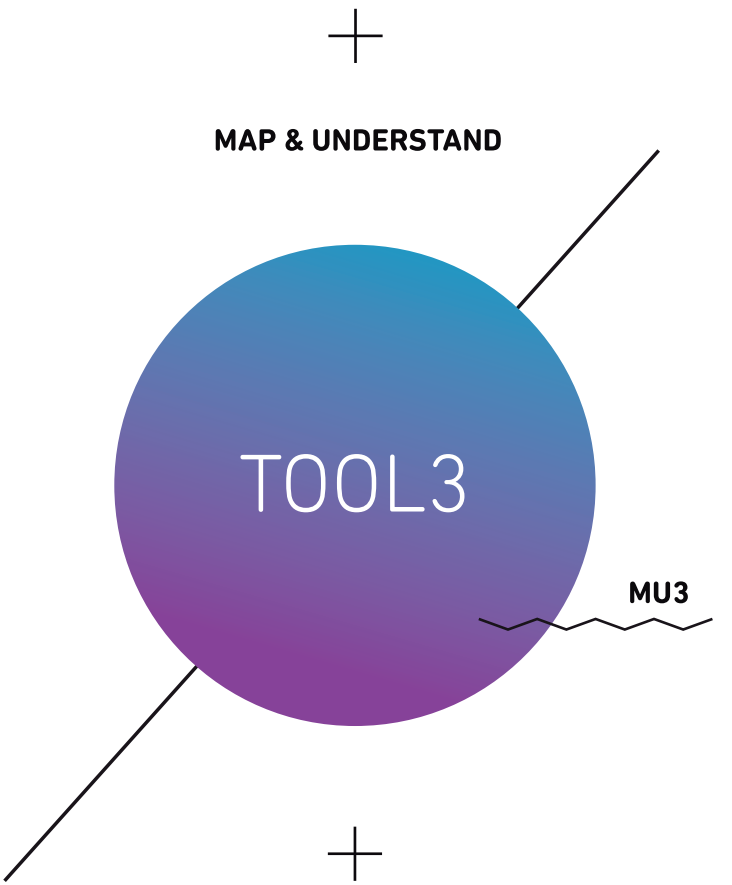
Source: BiPRO (2015) 'Assessment of separate collection schemes in the 28 capitals of the EU' commissioned by the European Commission
(Updated with performance 2016 after implementation of PAYT system)



Ljubljana (2014)

Waste generation: 320/y
Separate collection: 60%
Residual waste: 120kg/h/y
Goal for 2025: 60kg/h/y

Source: BiPRO (2015) 'Assessment of separate collection schemes in the 28 capitals of the EU' commissioned by the European Commission


MAP & UNDERSTAND
TOOL3
MU3

UNDERSTANDING THE BENEFITS OF ZERO WASTE

Economic

Cities typically commit to Zero Waste because, in addition to solving a number or social and environmental issues, there are real economic arguments behind the vision.

1. Less waste to manage = lower costs. With Zero Waste the amount of waste sent to disposal is radically reduced which means that the city doesn't need to pay the costs of disposal which are typically in the order of >€100/t. This is done via better separate collection and actions to prevent waste.

2. Better separate collection means more quality resources are made available to be sold in the market, thereby helping to compensate the costs of collection.

3. When a city wants to prioritise local solutions to prevent waste it is in fact providing business opportunities to local entrepreneurs who will develop packaging-free alternatives, new business models for electrical appliances, etc which all together builds social fabric in the community and diversifies the economy making it more resilient.

4. With a waste reduction plan and the roll-out of financial incentives that are adapted to citizens and businesses, everyone saves money. Less waste to manage, less cost overall!

Social

Zero Waste primarily builds on local solutions that will benefit the community first.

1. Zero Waste is all about local solutions to manage resources. This means investing in optimising separate collection, in awareness raising and education and new business opportunities to manage the waste locally. In contrast with traditional waste management which is capital- and technology-intensive this means investing the money in creating local, non-delocalisable jobs.

2. In average, Zero Waste creates 10 times more jobs than landfilling or incineration. Why is that?

a. Landfilling and incineration are technology and capital-intensive waste treatment solutions with the lowest intensity of labour of all waste management operations.

b. Intense re-use of materials and products implies take-back systems, reuse and re-pair. Repair is labour intensive and usually handled locally. Reusing packaging such as with deposit systems means local jobs in collection and in washing and refilling sector.

c. Recycling is also labour intensive because separate collection of materials creates expectation for clean streams that require a degree of human control.

3. Not only Zero Waste creates jobs, but it creates "social jobs". The material collection and product repair markets are highly inclusive because they can integrate low-skilled workers and groups that were previously left out of mainstream society. Zero Waste cities saw the emergence of local businesses that employ, upskill and integrate workers who now get a chance to develop skills and play an important role in the community.

4. Zero Waste brings the community together. Community composting, repair cafés, cooking with food discarded by supermarkets, etc. are all activities which help bring the community together and build its resilience.

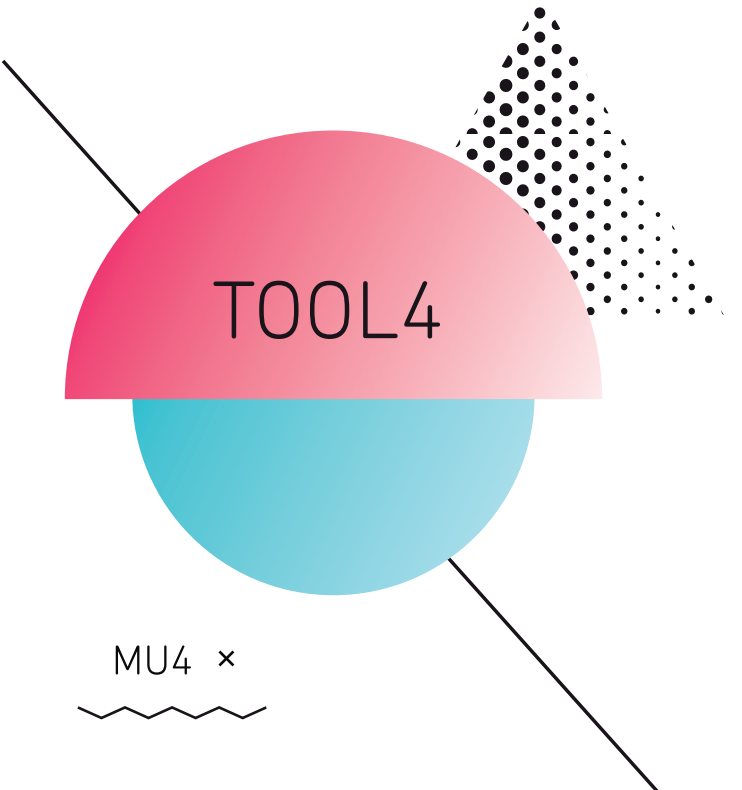
5. Zero Waste benefits the socially disadvantaged too. Reuse activities, or nappy laundry services are a way to integrate socially disadvantaged workers. By adopting the Zero Waste lifestyle families in difficulty can see their costs reduced and their health improved.

Environment

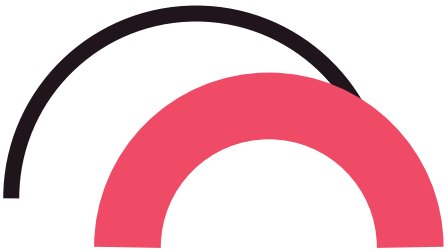
Zero Waste means less pollution and GHG emissions from landfills and incinerators
Through home and community composting programs less waste needs to be transported outside town and the compost can also be used locally
As less waste needs to be transported the traffic caused by garbage trucks and its emissions are also reduced.

By promoting the Zero Waste lifestyle we support the seasonal food produced in the community which needs less preservatives and packaging hence encouraging healthy habits in the community.

× **MAP & UNDERSTAND**



MU4 ×



NEW EUROPEAN WASTE LEGISLATION

During the late 20th and early 21st century, the modern waste management model in Europe was characterised by cherry-picking the valuable materials in the waste stream and sending the rest to newly built incinerators. Only 30 years ago a separate collection rate of 25% would have been deemed unachievable anywhere on the continent, which is why huge incineration capacity was built in Austria, France, Germany, Holland and Scandinavia. The investment in this large-scale infrastructure has locked in the potential for improvement of a number of cities in these countries. Stagnating recycling rates and high waste generation are the dominant theme in cities such as Copenhagen, Stockholm or Vienna.

Today we know that separate collection rates can reach 90% and that separate collection of biowaste makes economic and environmental sense. Consequently one can observe a transition from the 20th century model of expensive, highly centralised and inflexible infrastructure to a zero waste model of an effective, decentralised, flexible system which allows for progress to continue as society evolves and technologies improve.

If we compare data from the old reference cities for waste management and we benchmark them against the new frontrunners following the zero waste model we can see that the difference in residual waste sent for disposal is more than substantial. For instance, the city of Vienna is generating almost 3 times more residual waste than Ljubljana and 6 times more than Treviso.

Once the new Waste legislation is approved, we will publish a dedicated tool to help you understand what it entails for your city with more detailed numbers and guidelines.

We list below the main measures included in the policy package on the materials management side.

Waste hierarchy

- A food waste hierarchy within the current waste hierarchy
- Obligation for MS to implement economic instruments to drive the waste hierarhcy

Extended Producer Responsibility

- Full cost coverage[1] of waste management, including: separate collection, sorting, transport and treatment operations,
- The schemes need to set their own prevention targets
- EPR fees need to be modulated based on the end-of-life cost, the durability, repairability and content of hazardous substances of these products.

Waste prevention aspirational objectives for Member States

- Significant reduction in waste generation
- A European food waste reduction target of 30% by 2025 and 50% by 2030
- A European marine litter reduction of 30%[2] by 2025 and and 50% by 2030

Recycling targets

- 65% target by 2030,
- 3% of all MSW to be prepared for reuse

Biowaste

- Separate collection in all Member States
- Promotion of home composting
- Measures on traceability and quality of the materials collected

Packaging

Reuse

- Member States to promote reusable packaging
- Aspirational share of 5% of reusable packaging by 2025
- Aspirational share of 10% of reusable packaging by 2030
- Inclusion of Deposit Return Schemes as potential measures for MS to take.

Recycling

- A 70% recycling target by 2025 for all packaging
- 60% for plastic
- 65% for wood
- 80% for ferrous metals
- 80% for aluminium
- 80% for glass
- 90% for paper and cardboard

- A 80% recycling rate by 2030 of all packaging
- 80% for wood
- 90% for ferrous metals
- 90% for aluminium
- 90% for glass