



THE STATE OF ZERO WASTE MUNICIPALITIES REPORT 2021



Contents



Foreword	3
Introduction	5
The Zero Waste Cities Programme in 2021	6
The Mission Zero Academy	7
Zero Waste Cities Certification	8
Why should my municipality become Certified?	9
Zero Waste Cities from around the world	11
Global Level	12
Asia Pacific	13
Latin America	14
US/Canada	15
Africa	16
Country-specific focus	17
Italy	18
Slovenia	19
Croatia	20
Romania	23
Spain	25
Germany	27
Ukraine	29
Bulgaria	31
Northern Ireland	33
Belgium	34
Cyprus	35
Portugal	36
Greece	37
Montenegro	38
Zero Waste Best Practices -	
Spotlight on organics collection and management	39
Hernani, Basque region, Spain	40
Bitetto, Southern Italy	42
Wales	44
Milan, Italy	46
Pontevedra, Spain	47
What's Next	48
Emerging Themes for the Future of Waste Management in Europe	49
Conclusion	50

BIKE SWAP

BOTTLE DEPOSIT SYSTEM



Foreword

Paul Connett,
World-renowned author and activist

It was not by accident that the subtitle of my book, “The Zero Waste Solution”, is *Untrashing the Planet One Community at a Time*. The attraction of this movement is that it puts a planetary solution into everyone’s hands, yielding a truly win-win solution at the community level - namely, a solution that reduces the effects of climate change with virtually every action, whilst also creating jobs and small businesses for the local community. This may sound like pie-in-the-sky, but it is not. This report gives a voice and a platform to those leaders and communities who are putting this vision into practice across Europe and the world.

On a practical level, we talk about the Ten Steps to Zero Waste:

- 1) Source Separation;
- 2) Door-to-door collection;
- 3) Composting;
- 4) Recycling;
- 5) Community Reuse and Repair Centers;
- 6) Zero Waste Research;
- 7) Pay-As-You-Throw for Residuals;
- 8) Banning Single-Use Plastics;
- 9) Residual Separation and Stabilization Facility; and
- 10) Transition to Landfill.

Like many other activists, my journey towards zero waste began with a battle against a local waste incineration proposal. In my case, this began in 1985 in St Lawrence County in Northern New York. It took us five and half years to beat the rush to burn our trash (and our children’s future). In the process, as a professor of chemistry, I was in demand as a speaker who could explain the dangers posed by incineration. Somewhere along this journey, something happened to me that happens to many others. As you ponder on the complexities of controlling things like dioxins and nanoparticles, you suddenly realise that “even if you made incineration safe, you would never make it sensible!”

“It simply does not make sense to spend so much money destroying resources we should be sharing with the future. At this point, the psychology changes from the politics of “no” to the politics of “yes.”

Foreword

My first engagement with the concept of zero waste came in 1998, when I was invited to attend a conference organised by the California Resource Recovery Association in San Francisco. I was able to interview many of the leading exponents of zero waste as well as many practitioners of key components of this strategy in the San Francisco area. The final video was entitled “Zero Waste: Idealistic Dream or Realistic Goal?” (you can access this video [on our website](#)). Clearly, I decided it was the latter because I have been promoting it ever since!

One of the first places we used the video as an organising tool was in Italy. In the hands of Rossano Ercolini, a primary school teacher from Capannori in Tuscany, it provided the pivot from Italy’s anti-incineration movement to its zero waste movement, which has truly inspired the world. Its influence echoes through this report. Today, Italy supports over 320 communities that have declared zero waste as their vision, and over 1.000 communities are achieving over 80% diversion (separate collection) from disposal.

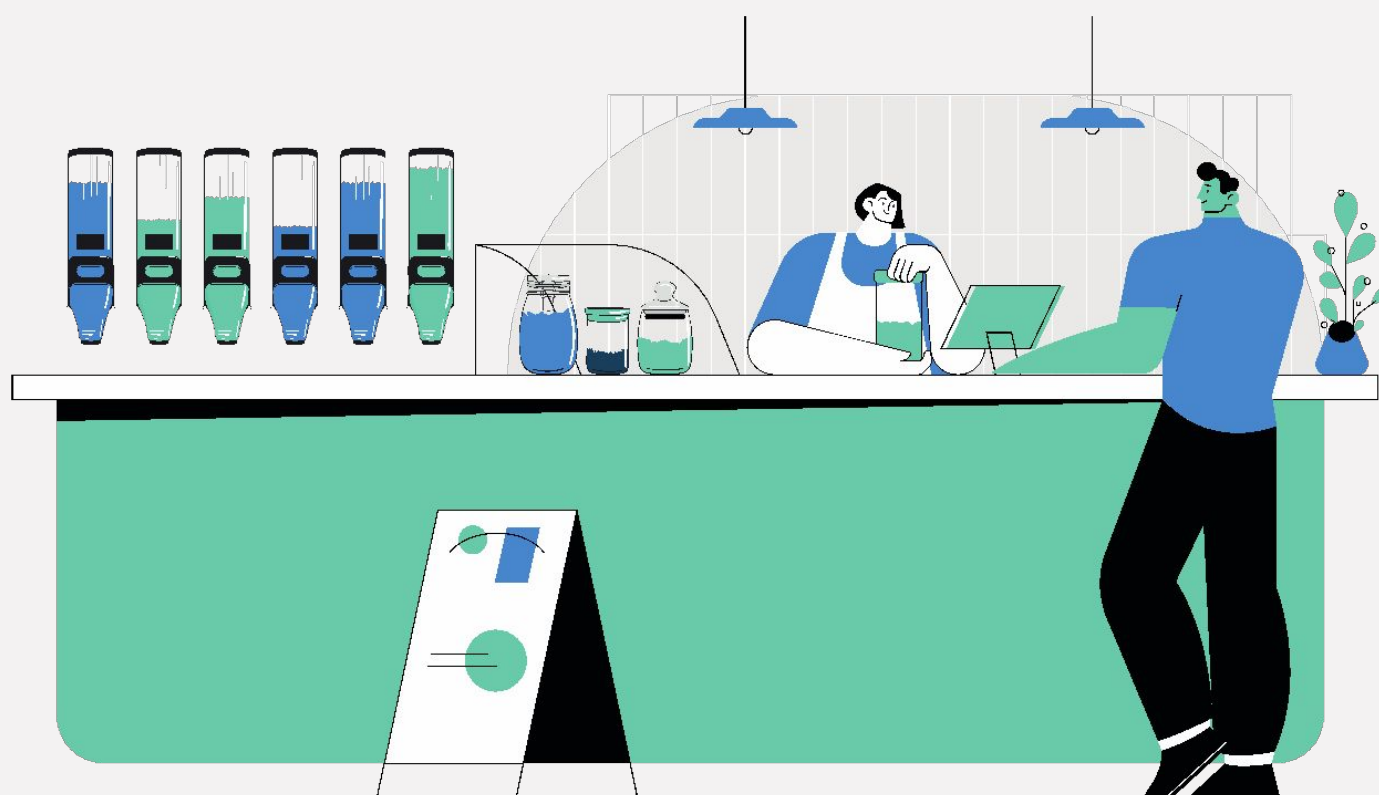
The following sentences reflect the larger message in zero waste: **“If the community can’t reuse it, recycle it, or compost it, the industry shouldn’t be making it. We need better industrial design for the 21st Century.”** Unlike incineration, which attempts to make the residuals disappear, zero wasters want to make them very visible. The residuals are the evidence we are doing something wrong. In short, zero waste introduces the 4th R: Redesign. This is critical if we are to achieve sustainability in the future. It is not by accident that Capannori developed the first Zero Waste Research Centre in the world.

Finally, zero waste is not just about recovering material resources, it is about recovering human resources. People need jobs and they need respect - zero waste provides both.

Which brings us back to the notion of community.

Countries don’t recycle, communities do. Central governments can generate regulations and tax incentives which can encourage cities to embark on various components of a zero waste programme, like kerbside recycling, but it is a sense of community building and community pride that can get people excited about this local effort to save the planet. Community reuse and repair centres offer us a perfect example of this. You might go in looking for a bargain but you can come away with a lifelong friendship and connection. Zero Waste Cities, when creatively constructed by locals, can offer us all a chance to belong to – and even shape – our community.

We need 4 C’s to prop up the 4 R’s – Common Sense, Community, Creativity, and Children.





Introduction

Welcome to the 2021 edition of the State of Zero Waste Municipalities Report.

This is the second version of the report and it still shares the same goals as the first - to celebrate the stories of Europe's Zero Waste Cities; to showcase the leaders behind these successes; and to inspire others to follow down the same path. We know that stories have the power to change the world, and the State of Zero Waste Municipalities Report is where we tell the story of Europe's pioneering Zero Waste Cities.

Given the events of the past 18-24 months, the 2021 edition of the State of Zero Waste Municipalities Report has been specifically designed with the aim of providing a source of hope and inspiration. The community-centred philosophy that sits at the heart of our Zero Waste Cities model, which we are seeing being implemented across the continent - from Portugal to Ukraine and from Northern Germany to Southern Cyprus - ensures that a Zero Waste City is not only taking meaningful steps towards reducing its waste generation, but also meaningful steps towards build a more cohesive and connected local community.

The COVID-19 pandemic continues to challenge our traditional and long entrenched ways of working, living, and communicating with one another. For those working in the fields of waste management and the circular economy, the pandemic has provided both significant challenges and yet real opportunities for improvements. As this year has shown, our Zero Waste Cities model, however, continues to provide an answer to the challenges facing local authorities in terms of how to sustainably manage, reduce and ultimately prevent waste.

It is hoped that, by reading this report and seeing the expansion of Zero Waste Cities across Europe, you are not only more informed about what effective waste reduction policies look like in practical terms across a diverse range of contexts, but also that you are filled with a sense of inspiration and hope for the future of your community and our planet as a whole.

The Zero Waste Cities Programme in 2021



Throughout 2021, we have continued to see an exciting increase in not only the awareness and recognition of the importance of zero waste cities, but importantly also in the number of municipalities implementing their own local zero waste strategies.

The programme's vision remains to accelerate the transition towards zero waste at the city level, with the implementation of the latest EU legislation and zero waste strategies based on citizen-centered models, leading to a substantial decrease in waste generation and with no waste illegally being exported outside of the EU's borders.

Through Zero Waste Europe's 'One community at a time' project, we have been able to provide resources and extra capacity to scale up our work across Europe. But we have also seen growth and interest outside of this project throughout the entire Zero Waste Europe membership network. **At the current time of writing, we are actively working with local municipalities across the Zero Waste Europe network to help them adopt zero waste city strategies in 17 European countries.** These include Belgium, Bulgaria, Croatia, Cyprus, Germany, Greece, Italy, Ireland, Latvia, Montenegro, Northern Ireland [UK], Portugal, Romania, Spain, Slovenia, Switzerland, and Ukraine.

During the past year, the number of cities within the programme has expanded to almost 450. This is based on our traditional model where cities sign a commitment letter/charter to ZWE, but the daily monitoring of progress is led by local groups on the ground, as most successfully seen through the work of Zero Waste Italy who support over 310 municipalities and is home to most of Europe's best performing zero waste cities.

Yet our success in 2021 goes beyond, and is deeper than, just commitments from municipalities. In order to achieve our vision of a zero waste society in Europe, there needs to be a widely spread network of experts and actors who are guiding the implementation of effective zero waste policies at the local level across the continent. In 2021, we have been fortunate enough to train our first groups of Zero Waste Ambassadors and Trainers, as part of our multi-partner project, 'Building a European Zero Waste Academy'.

We are in the process of developing two educational curricula and have conducted two 5-day training workshops this year for two different categories of individuals. The first is for Ambassadors, those who play the most active role in supporting municipalities to implement their own zero waste strategies. The second is for Zero Waste Trainers, those who play an active role in educating others on how to implement zero waste locally. With more Ambassadors providing guidance for more municipalities, and with more Trainers helping to train more ambassadors, through this project we are excitingly widening our ability, both in terms of scale and impact, to be able to rapidly accelerate Europe's transition to zero waste at the local level.

2021 marked another important and exciting milestone in the development of our zero waste cities work. Recognising the need to evolve the zero waste cities model into something more robust and professional - something which was more robust and capable of really supporting European municipalities through the design, implementation, and optimisation of their zero waste plans - we decided to take a new leap into the unknown by creating the Mission Zero Academy.

The Mission Zero Academy (MiZA)

We are living through unprecedented times, due to the speed and scale of change we are witnessing across our societies today. This has only been exacerbated in the past 2 years due to the COVID-19 pandemic, which has accelerated change that was already starting to happen, whilst further deepening existing faultlines and inequalities.

As the world is changing, we are changing with it...

Already a few years ago, it was seen that there is a big gap in municipalities' understanding of what zero waste means and what strategies there are to get there. In addition, there was the need to harmonise and professionalise the multitude of good practices done with the cities over the past years within the Zero Waste Cities Programme, thus gaining efficiency and credibility to continue to create great transformations in the way cities manage their resources and waste.

To answer those needs, the [Mission Zero Academy \(MiZA\)](#) was launched in March 2021 as a capacity-building hub to accelerate the implementation of zero waste strategies in cities and businesses in Europe. It aims to be a one-stop-shop for different zero waste services, such as training, consultancy, strategy building workshops, and a host of data-driven services to ensure that decision-makers in municipalities have the knowledge and courage to create impactful zero waste policies.

The first service, launched at the same time as MiZA itself, was the Zero Waste Cities Certification. Immediately after the time of the launch, the first cities were already publishing their commitments to become certified and the pace has accelerated since. Encouragingly - and to prove the suitability and attractiveness of the certification for the cities - there are several municipalities in countries without any existing zero waste cities currently either finalising or already approving their commitments and plans to certify their zero waste journeys. Another great development is that there are several bigger cities, and even capital cities, making their zero waste strategies according to the certification criteria.

The climate crisis has been making headlines throughout the year. To answer that, and to showcase the existing links between the climate and waste crises, MiZA and the Zero Waste Cities programme have jointly developed a calculator which allows municipalities to assess the climate impacts of different zero waste policies before they are made, or to measure their impacts after they are implemented. This enables municipalities to make more data-driven decisions to help ensure the desired impact of such decisions, as well as to help better communicate the positive impacts of their zero waste work to local stakeholders.

Looking into the future, the Zero Waste Cities programme will continue to support MiZA to develop expert tools that are specifically designed to help local authorities implement better zero waste strategies. With more tools and services available, supplemented by a stronger and better equipped network of zero waste groups working at the local level, we believe we are putting the right foundations in place to foster a quicker transition towards a zero waste society in Europe. At the heart of this is the creation of the most robust framework for measuring what a Zero Waste City is...



[Want to calculate the exact climate benefits available to your local municipality through both waste treatment and prevention measures? Check out the groundbreaking Carbon Calculator tool to help you do just this.](#)



BIKE SWAP

BOTTLE DEPOSIT SYSTEM

The Zero Waste Cities Certification

In 2021, the Mission Zero Academy launched the world's first Zero Waste Cities Certification. The Certification is an exciting evolution of the work done and expertise captured within Zero Waste Europe's Zero Waste Cities programme over the last ten years. It provides a robust framework for municipalities to follow in order to ensure their policies are effective and have their desired impact, whilst also creating a tool to encourage and celebrate Europe's best performers.

For EU Member States, the framework for collection and recycling targets has been set for the next fifteen years through the 2018 amendments to the Waste Framework Directive. Municipalities within the EU therefore know that they must separately collect certain waste streams, and that a **minimum** of 55% of municipal solid waste must be recycled by 2025, increasing incrementally to 65% by 2035.

Whilst ambitious and a positive step in the right direction of course, these targets are not sufficient as a standalone policy to solve our waste crisis. For those wanting to go beyond just recycling, to have a truly meaningful impact, this is what the Certification has been designed for.

The Certification is a 2-step process based upon a scorecard system that provides minimum standards for municipalities to meet, whilst also rewarding the best performing local authorities.

The first step is based upon the commitment a municipality makes, meeting the minimum criteria needed in order to become a Zero Waste Candidate City.

The second step for municipalities to become a Zero Waste Certified City is based on a scorecard system that includes both mandatory and points-based criteria that municipalities are measured against:

- Mandatory criteria form the minimum requirements of a zero waste city;
- Points-based criteria will be scored depending on the ambition and impact of each policy. The combination of these points together will define the municipality's level of certification (and its subsequent number of stars, with 1 star being the minimum and 5 stars the highest).

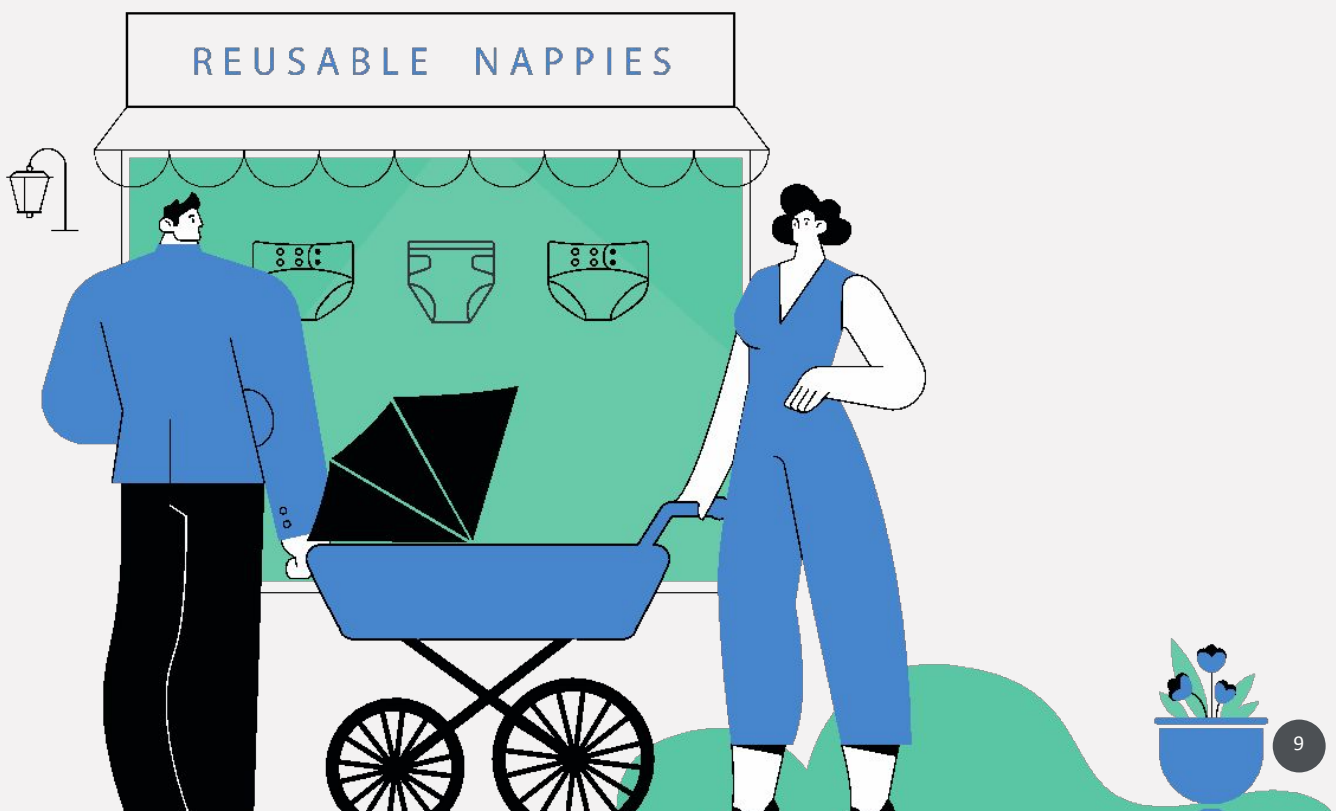
There are certain fees that are requested from municipalities who become Certified with MiZA. Fees are calculated using two key indicators - the purchasing power of the country where the municipality is located, and the municipality's population size. With the payment of the small fee, municipalities will gain privileged access to the data-driven services of MiZA and a set number of mentoring hours provided by a local zero waste expert.

Why should my municipality become Certified?

There are several benefits that make the Certification worthwhile for local authorities, based upon our proven methodology that has shown, on hundreds of occasions and, in a wide variety of contexts, that it can deliver impactful results in a short space of time.

To begin with, there are the obvious **environmental and health benefits** for the local community if less waste is generated. With less waste landfilled or incinerated, there is a dramatic reduction in the risk of both humans and the local environment suffering from the negative impacts of toxic pollution - be it via land, air, or water exposure. By also having less single-use packaging in circulation, citizens reduce their exposure to harmful chemicals found in many forms of packaging. If this packaging is neither sitting in landfills nor being burnt, these harmful chemicals will not leak into the environment and cause potential harm.

Zero waste is increasingly seen as an important tool to help tackle climate change through the reduction of greenhouse gas (GhG) emissions during the entire lifecycle of a material. Looking at the end-of-life situation first, huge quantities of both carbon dioxide and methane can be prevented through a reduction in residual waste either landfilled or incinerated, achieved by both better recycling and prevention measures. Two simple examples showcase this. First, separately collecting organic waste, for example - often the biggest waste fraction left in the non-recyclable bin - and composting or digesting it for biogas will result in a vast reduction in methane emissions from landfill sites. Secondly, a reduction in plastics found in the residual waste, which is then subsequently incinerated, will vastly reduce a city's carbon dioxide emissions as well. Emissions can also be greatly reduced by simply ensuring that a product or material doesn't become waste in the first place. Reuse and repair strategies have the biggest climate potential impact, reducing the need for energy and resources in the extraction and manufacturing phases of their lifecycle.



Secondly, **there are the economic benefits** available to municipalities who adopt a zero waste strategy backed by the Certification. There are direct savings for municipalities, by paying less disposal fees and by subsequently utilising more optimised collection rounds. This is complemented by an increase in potential revenue for municipalities stemming from the sales of higher quality and more quantity of recyclable materials which could be sold onto the secondary material market. Therefore, and whilst introducing the necessary infrastructure to implement zero waste requires initial investment, within the space of a couple of years we have seen that municipal budgets are able to dramatically reduce their operational costs, whilst also receiving more income as an outcome of the efficiency of the separate collection system in place.

“The island of Krk has been a top performer in separate waste collection and sustainable waste management in Croatia for years, despite facing considerable challenges posed by significant tourism seasonality. Becoming a ‘Zero Waste Candidate’ is the next logical step. We are fully committed to achieving Zero Waste goals because this brings benefits both for the environment and our citizens.”

- **Ivica Plišić, Director of Ponikve eko otok Krk, the waste management company for the island of Krk (Croatia)**

Example of the economic benefits of zero waste - Pontevedra’s community composting

Introducing a local composting system in Pontevedra (Spain) is saving the region thousands of euros each year, as it costs 2-3 times less to manage organic waste than resorting to incineration:

- Incineration costs: 235,5€/t (32.6% of which is associated with treatment, 67.4% with collection)
- Individual composting: 95€/t
- Community composting: 110€/t
- Local composting plant: 140€/t

The health, environmental, and economic benefits are only available to municipalities adopting a zero waste strategy if such strategies are effective and impactful. This is where the Certification is unique and offers the greatest value for local authorities. By taking the first step of becoming a Zero Waste Candidate City, **municipalities will be able to unlock access to Europe’s leading hub of zero waste expertise and support.** Each Candidate City will be provided a set number of mentoring hours, meaning they will be supported by trained and verified local experts to help ensure their local zero waste strategy is tailored to the local context, ensuring maximum effectiveness and performance throughout the entire Certification process for many years.



Zero Waste Cities Around the World

The Zero Waste Cities model is not something that is limited to Europe's borders. [Via the GAIA global network](#), there are an expanding number of cities across Asia, Africa, Latin America, and the US/Canada region which are designing and implementing their own local zero waste strategies.

In this section, the leading coordinators in each region share the latest updates, challenges, and victories from their zero waste cities work over the past year.



Global Level

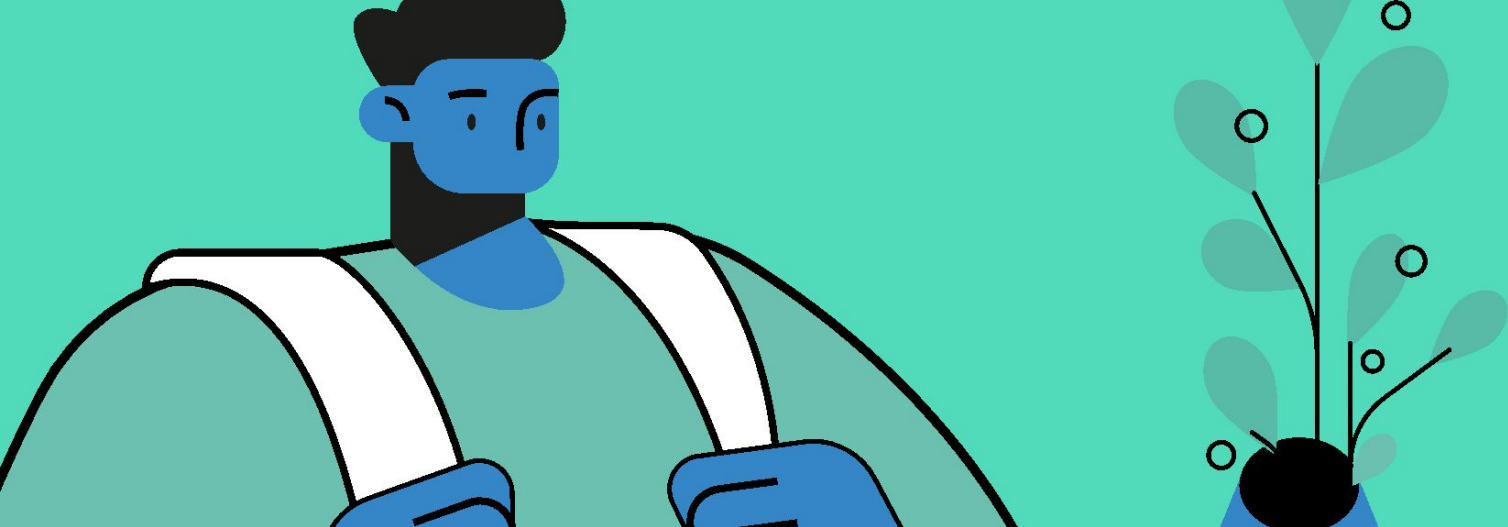
Written by Cecilia Allen,
Global Projects Advisor,
GAIA



Climate action plans were at the center of the global agenda in 2021. After reviewing the Nationally Determined Contributions (NDCs) submitted by countries, the UNFCCC (the UN's Secretariat for work on climate change) concluded that while there is some progress, nations must urgently redouble their climate efforts to prevent global temperature rise beyond the Paris Agreement goal.

GAIA's own analysis of 99 NDCs updated since 2020 in relation to waste policies suggests that there is a lot of work to do for national governments to realise the climate potential of zero waste strategies. While most NDCs (92) acknowledge the waste sector to some extent, only 71 have concrete plans to address waste-related emissions. And though 50 NDCs propose zero waste oriented strategies for reducing waste-related emissions, such as improving separate collection, recycling, and composting, 39 of them also include waste-to-energy systems in their plans, openly contradicting the zero waste strategy.

Waste management is one of the three sectors with the greatest potential to reduce temperature rise in the next 10-20 years. While conventional estimates for the waste sector account for 3-5% of global GHG emissions, implementing zero waste strategy creates a ripple effect that reaches the entire materials economy. Considering that 45% of global GHG emissions come from the way we make and use products and food, the climate potential of zero waste is huge and we at GAIA will continue to make sure local and national governments act on this.



Asia-Pacific

Written by Felicia Dayritt,
Zero Waste Cities Program Associate,
GAIA
Number of Zero Waste Cities: 27

Over the last year, countries in the Asia Pacific region have been significantly affected by the multiple surges of COVID-19 infections. This has consequently affected the implementation of ongoing Zero Waste Cities projects in the Philippines, Indonesia, Vietnam, India, Nepal, and Bangladesh, where COVID-19 response and recovery actions were prioritised over initial commitments to invest in, and improve, waste management systems.

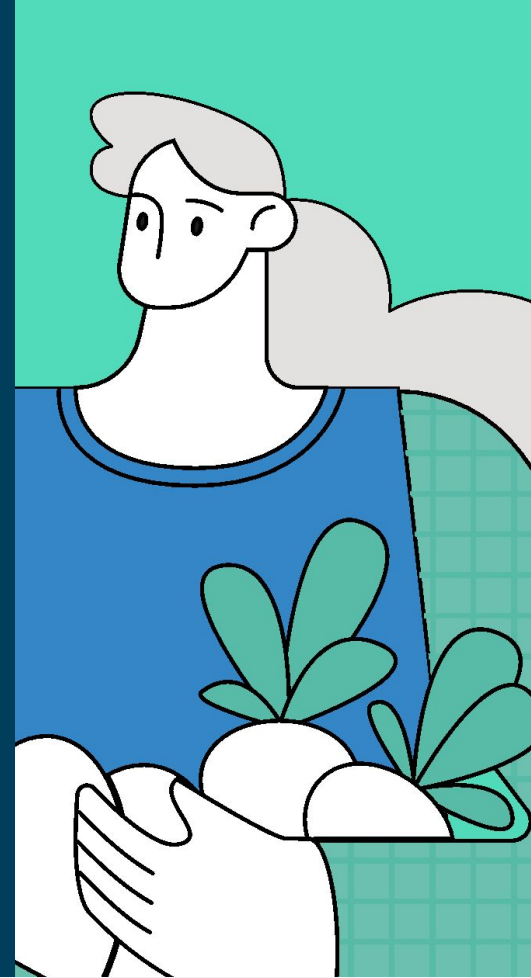
Nonetheless, GAIA members in our region continued their efforts to maintain their gains by ensuring the safety of their waste workers and waste-pickers on the ground, so that waste collection systems can properly function, diminishing the threat of contamination from infected waste. Such efforts include the provision of Personal Protective Equipment (PPEs) to frontline workers, medicines and vitamins, and basic necessities such as personal hygiene kits and food packs for their families. More than ensuring that waste is still properly managed, providing additional support to the waste workers and waste-pickers that hold up the waste management system was - and is - a deliberate decision to highlight their importance. This is not just about stressing that they perform an important function to ensure our surroundings remain clean, but also to show how they are front-liners that protect the environment and the health of the community during this time of uncertainty and isolation, and deserve to be respected and compensated as such.

GAIA members themselves have expressed support for waste workers and waste-pickers by advocating for better social protection; their formal integration within the waste management system; their recognition as front-liners to be prioritised for vaccination; and the provision of hazard pay.

The Zero Waste programs in the cities of San Fernando, Pampanga in the Philippines, Bandung in Indonesia, and Bengaluru in India were also featured in an article by the global digital broadcasting company VICE. While the management of pandemic-related trash in several cities in the Philippines was highlighted in an article by Philippine media company ABS-CBN. Both articles highlighted the way zero waste systems are able to address our waste and plastic crises.

Latin America

Written by Alejandra del Carmen Parra Muñoz, Magdalena Donoso & Cecilia Allen, GAIA



In Latin America and the Caribbean, new efforts are added each year to the challenge of implementing zero waste, with different intensities and levels of commitment from municipalities and citizens. This is a short summary of some best practices we see across our region.

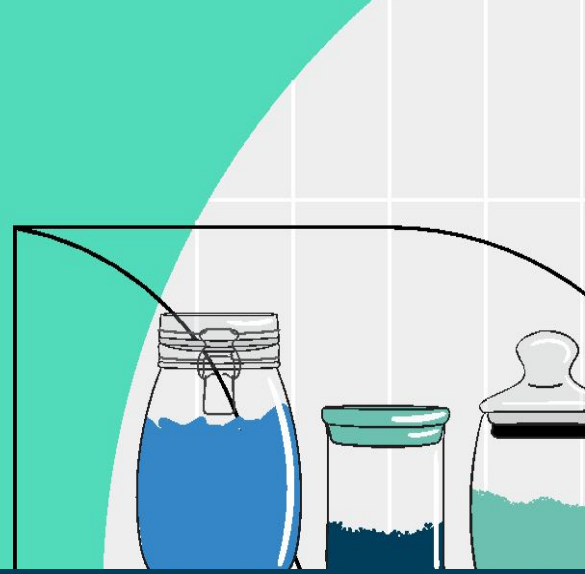
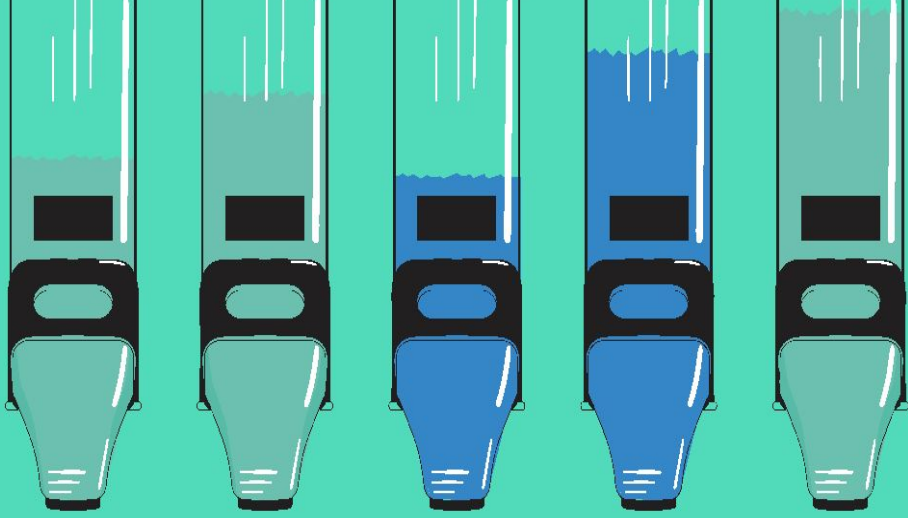
In Argentina, the city of Buenos Aires is a leader when it comes to the recognition of grassroots recycling organisations, and Rosario is in the process of developing local practices and policies that prohibit the use of single-use plastics as well as the overwrapping of food, and promoting the use of reusable containers instead.

In Chile, La Pintana has collected and treated compostable materials separately since 2005, **reducing the municipal expenses from USD\$13 per ton sent to landfill to less than USD\$1 per ton processed in their composting and vermicomposting plant.** This is particularly relevant in one of the lowest income cities in Chile, where the municipal budget is much needed for other requirements. Futaleufú and Santa Juana have implemented separated door-to-door collection of compostables, recyclables, and residual waste, whilst simultaneously building the proper municipal infrastructure for the treatment of these materials and subsequently reducing the landfilling of waste.

In Guatemala, San Pedro Laguna has been leading the country in establishing prohibitions of plastic products since 2016, recovering traditional costumes of the population, most of them from the Tzutujil people, and using their vegetable fiber for the local transport of food.

In Brazil, Londrina is one of several cities where grassroots recyclers have greater responsibility and power within the waste system, through seven door-to-door collection cooperatives, serving an urban population of 600,000 people. As a result, the city has diminished the amount of waste that goes to landfill since 2014, which is a very different trend from the growing number of tons of waste disposed of in the region.

All throughout our region, recognition of grassroots recyclers is growing as they strengthen their organisations and become the main promoters of recycling. Citizens make stronger calls every day for the implementation of zero waste systems, where actions and legislation towards reduction are considered key for a future without waste.



US/Canada

Written by Aditi Varshneya,
U.S./Canada Membership Coordinator,
GAIA

This year, the US is entering a new political landscape with the start of the new president's term. Furthermore, the US and Canada - countries with a vaccine surplus - are slowly recovering from COVID-19. However, the pandemic caused municipal budget cuts in the waste industry and exacerbated an already growing labor shortage largely driven by the industry's low wages and poor benefits. Frontline member leaders in our region are actively pushing for environmental and economic justice in the models of zero waste they advocate for.

Members in Minneapolis and Long Beach (USA) are working to develop community-driven plans for their cities, and a member group in British Columbia (Canada) recently developed [a zero waste plan](#) for the province. Detroit and [Baltimore](#) (USA) are already beginning to implement such plans. Meanwhile, groups in Newark are fighting both an aging incinerator and proposed legislation that would perpetuate so-called chemical recycling in their area.

Organics management is a fast growing opportunity in the region. Organizations in Detroit and elsewhere are initiating city-level composting programs, while more are drafting or advocating for plans of action. Members in Ocean City (USA) and other municipalities have also been building community-scale compost solutions that divert waste and influence larger scale change. GAIA recently hosted a webinar on creating systems-level organics policy partially aimed at organizers engaged in community-scale work, and we will be beginning a members' organics working group to facilitate peer learning and collaboration. The webinar was part of a series designed to build capacity within frontline groups to lead zero waste alliances in their cities, long-term work which we will continue on into next year.

This year, GAIA [also published a report in collaboration with member groups](#) which found that 64% of plastic collected in five major US cities is not recyclable, data which members are using to assert the zero waste hierarchy and advocate for zero waste systems.

Cities in this region have a long way to go in terms of setting true zero waste goals and actually meeting the goals they set. However, [GAIA members continue organizing to build zero waste systems at the community scale](#) while working with local officials to advocate for their cities to build a just transition to zero waste.

Africa

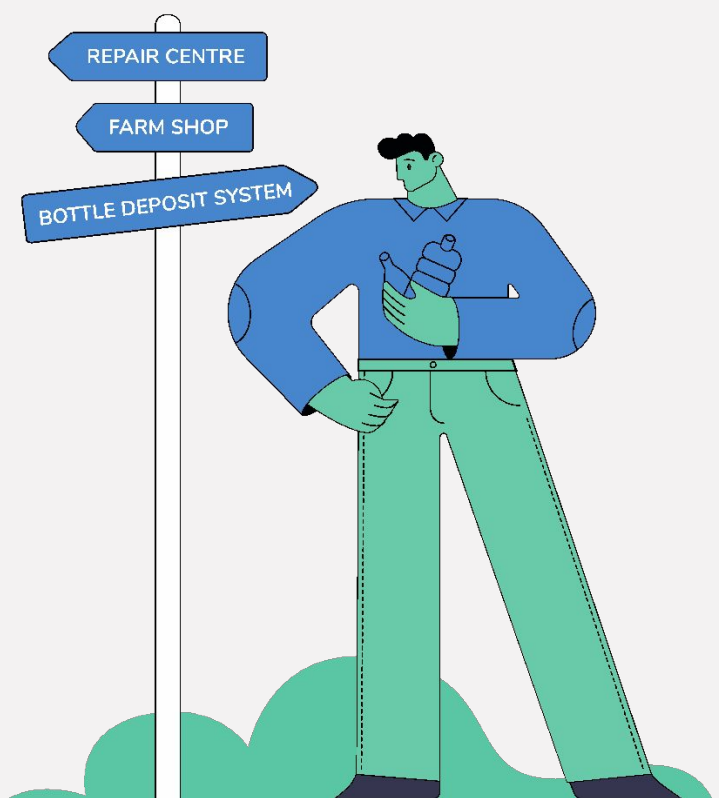
Written by Desmond
Alugnoa, Africa Programmes
Coordinator GAIA Africa

Our zero waste activities in Africa continue to grow and become more visible in three specific program areas:

- The struggle for recognition and inclusivity of waste pickers. Our activities include campaigns to mobilise and integrate waste pickers into local & national systems
- The contribution to national policies by GAIA members in the region, which includes regular engagement in policy dialogue with decision-makers and anti-incineration campaigns
- The implementation of community-led zero waste projects. In Ghana, Zambia, South Africa and Tanzania, several waste picker organisations have been mobilized and unionized in the last two years and this has improved upon the efficiency of waste collection in major cities.

GAIA members are increasingly pushing for system change towards zero waste solutions. For example, in Nigeria and Ghana, members have developed specific guides for mainstreaming zero waste into national development strategies. This includes for the Parliament in Oyo state in Nigeria and the creation of a Zero Waste Strategy in Accra, Ghana.

Lastly, over eight countries are currently implementing zero waste projects to increase proper and safe waste management. The likes of Green Africa Youth Organization, Nipe Fagio and Zero Zbel are helping waste pickers and communities generate income from waste and work towards replacing single use plastics with sustainable alternatives.



Country-specific Focus

To delve deeper into the story of European Zero Waste Cities over the past year, we have again invited leaders from the ZWE network to directly share their experiences of working at the local level.

This chapter presents highlights from countries where we have Zero Waste Cities, as well as those where commitments from municipalities are expected very soon.

Each country-section has been written by one of Zero Waste Europe's member organisations who are leading the day-to-day work of supporting their municipalities to become zero waste.





Italy

Written by Laura Lo Presti,
Zero Waste Italy
Number of Zero Waste Cities: 325

The keyword of our work is **awareness**, both for us and for our zero waste municipalities. This period, during the COVID-19 pandemic, has pushed us with greater force towards the task of studying how to maintain high standards of health protection whilst avoiding an increase in the creation of disposable waste.

The emergency brings the illusion that, in order to better guarantee health and safety, disposable items are better. For this reason, we followed and studied the release of each new official provision and prepared education campaigns regarding mandatory personal protective equipment (PPE) items such as masks and gloves, as well as crockery and packaging (for example, crockery used in canteens and containers for takeaway shopping). Our constant presence within these legislative and public discussions was fundamental to restore clarity, avoid waste, and train other people who in turn could be zero waste spokespersons.

This year also marked the start of our showcase of zero waste products. This is a website and a constantly updated catalogue to help producers of alternative ecological products and services to emerge, as well as to help our Zero Waste Municipalities be more aware of the market for sustainable products. One specific noteworthy example is new compostable litter options for pets.

Our network of Italian Zero Waste Municipalities has increased throughout 2021 despite the broader challenges posed by the pandemic. Every day, Zero Waste Italy works to respond to messages from those municipalities who are already part of the network, and to all enquiries we get from those who would like to join it. One of the next challenges will be to build regional pilot projects - as we have already started for Tuscany - to connect all the mayors and local associations in order to affect regional waste management policies.



Slovenia

Written by Jaka Kranjc,
Ekologi brez meja

Number of Zero Waste Cities: 15

In Slovenia, 2021 has still been a markedly ‘pandemic’ year with unpredictable limitations delaying municipal decision-making processes, implementation of measures, and stealing attention from other urgent issues, such as fighting climate change and fixing our waste system. However, despite these setbacks, the interest in zero waste cities grew and, by the end of the year, the network will have had its largest expansion to date. **Almost a quarter of the population of Slovenia will be covered by local zero waste plans.**

Two clusters, comprising seven municipalities in total, have set up their zero waste advisory boards and, through a process of co-creation, prepared ten year strategies to guide them towards a society without waste. Another town, Hrastnik, is well underway in its own process of joining the movement. The two clusters are managed by the same waste management companies, so we expect intercity synergies as seen in existing members of the network.

More importantly the latest expansion will create a larger, contiguous, zero waste region, opening new possibilities for cooperation. It spans from Gorje and Bled almost to Ljubljana, with the newcomer - the third biggest Slovenian city, Kranj - in between, surrounded by Naklo, Preddvor, Šenčur, then Jezersko to the north bordering Austria, and Škofja Loka with Železniki to the south. In addition to these successes, Vrhnika, Borovnica, and Log - Dragomer prepared an updated zero waste strategy with goals for the next decade, although it has yet to pass its vote in the municipal councils.

With the introduction of the Zero Waste Cities Certification scheme in March, a tentative process of transition has been started for existing members of the Slovenian network and the programme in general. All in all, 2021 has been a prolific year for Slovenian zero waste cities and our joint network, despite ongoing struggles at the national level. This year was marked by growth, so 2022 is bound to be more focused on implementation and further fine tuning.



Croatia

Written by Marko Kosak,
Zero Waste Cities Coordinator,
Zelena Akcija
Number of Zero Waste Cities: 15

In the past year, we have continued our work with the first of our 12 Croatian zero waste municipalities (Prelog, Belica, Donja Dubrava, Donji Vidovec, Sveta Marija, Goričan, Donji Kraljevec, Kotoriba, Dekanovec, Domašinec, Martijanec, Podturen), who are all operated by the waste management company PRE-KOM. This year, Zelena Akcija has met with these cities to discuss their targets, new investments, and the new Zero Waste Cities Certification criteria established by MiZA. We have also worked together with these municipalities to help ensure new national legislation on waste management is ambitious and reflects the waste hierarchy, as well as new legislation on plastics.

In the past year, these municipalities have achieved new impressive results and improvements of their system based on our recommendations. They are the best performers nationally in separate waste collection, **with the average rate 65.23% across the twelve municipalities (preliminary data for 2020), which is a significant increase in comparison to 57.25% in 2019.**

All of these municipalities have achieved the national goals that were set in Croatia for 2020. It's important to highlight that the biggest city, Prelog, is close to 70% separate collection of MSW and the municipality of Belica has already achieved an 80% rate, which is impressive and also exceeds the target they have set for 2025. This is in stark comparison to the rates that existed in 2015, when we first started cooperation and the average separate collection rate within the first seven municipalities operated by PRE-KOM **was only 22%**. This shows the great improvements done in just five years. Good results can be seen also in waste prevention - across PREKOM's 12 municipalities, there is an average of **just 70kg per capita of mixed municipal waste generated per inhabitant in 2020**, and some municipalities already have an even lower amount than that.

Results in these municipalities are also far better than the national average of 41% of separate waste collection and 245kg per capita of mixed municipal waste in 2020 (preliminary data of the Ministry). In the past year, PRE-KOM has also continued with many good practices related to composting, reuse and Pay-As-You-Throw (PAYT), and they also made some new investments in local waste infrastructure. For example, they started building a recycling facility for construction and demolition waste, as well as beginning the modernisation process of existing sites, which includes increasing the capacity of the local compost plant. This will all contribute to even better results in the coming years. **Their goals for the next few years include achieving 75% of separate waste collection and 50kg of residuals per capita, both by 2025.**

Separate Waste Collection 2017- 2020

	2017	2018	2019	2020
Prelog	55,88%	62,79%	66,69%	68,98%
Belica	51,17%	68,86%	66,16%	79,97%
Goričan	52,68%	53,44%	61,09%	64,67%
Domašinec	18,84%	55,01%	59,84%	62,50%
Podturen	18,00%	34,92%	52,27%	62,88%
Sv. Marija	46,10%	55,88%	56,61%	59,92%
D. Dubrava	53,92%	58,31%	56,88%	58,21%
Martijanec	1,01%	34,81%	56,35%	61,02%
Dekanovec	38,45%	54,60%	56,19%	65,34%
D. Kraljevec	52,21%	47,34%	54,34%	60,26%
Kotoriba	41,48%	48,32%	50,89%	55,52%
D. Vidovec	41,93%	47,99%	49,70%	59,28%



[Read more about PRE-KOM's system and results in our case study.](#)



The island of Krk

Most of our activities with cities in the past year were within the project “Transitioning to a zero waste Europe, one community at a time” and focused on the seven municipalities (Krk, Omišalj, Vrbnik, Baška, Dobrinj, Punat, Malinska - Dubašnica) that are situated on the island of Krk, all of which are have waste management activities operated by the waste management company PONIKVE.

We have had many meetings with officials, conducted an analysis of their current waste system, and provided a set of recommendations for improvements towards the zero waste goals they want to achieve in the coming years. In May 2021, we organised a press conference with PONIKVE and municipal officials to present their commitments to the media. The Krk municipalities also signed their zero waste declaration and, thus, became Croatia’s first Zero Waste Candidate Cities. Since then, they have started implementing the proposed zero waste measures in cooperation with us, including the first-step analysis of the composition of mixed municipal waste.

Despite the very high tourist seasonality, they are already among the top performers nationally when it comes to separate waste collection, **with an average rate of 53%** (preliminary data for 2020) and all the abovementioned municipalities have achieved goals that Croatia had set for 2020 - including 50% of MSW being separately collected for recycling. The achievement on the island of Krk is a result of a well-established door-to-door collection system. Yet PONIKVE wants to go beyond that and are planning to introduce greater efforts in waste prevention and reuse.

Their ambitious goals for the next years include 70% of separate waste collection and 150kg of residual waste generated per capita, in comparison to 235kg in 2019 and includes waste created as a consequence of tourism high seasons - both by 2025. To achieve these goals, PONIKVE will improve separate waste collection, implement a PAYT system, promote home composting, open a reuse centre, and introduce various other initiatives for reducing the volume of waste generated on the island of Krk. All proposed measures and goals are realistic and it is expected that, in the next few years, they will achieve the criteria to become Croatia’s first Zero Waste Certified City.

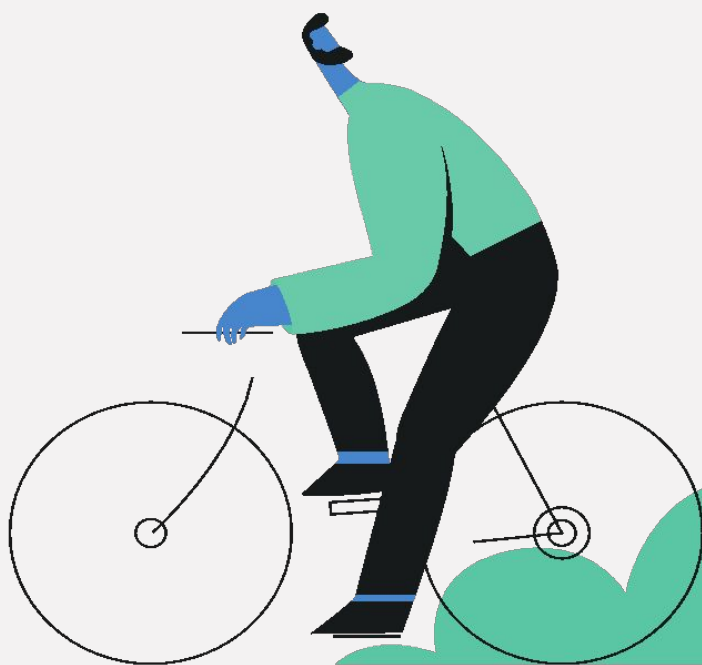


[Read more about the waste company PONIKVE and the new strategy which Krk will use to become one of Europe’s first zero Waste Certified Cities.](#)

National legislation

In July 2021, the Croatian parliament passed a new law on waste management to align with the EU’s relevant waste and plastic directives. Unfortunately, the law doesn’t bring enough ambition and effective measures to move Croatia from the bottom of the European league in terms of waste management performance. Waste incineration projects plans are set to continue, and this stops many municipalities from being more ambitious. Due to this lack of ambition in the new law, a new decade of slow and insufficient progress is likely to be in front of us, including a failure to nationally meet the goals of reducing, reusing, and recycling waste; as well as the likely increase in the price of bills throughout Croatian cities and municipalities.

Fortunately, there are zero waste municipalities in Croatia showcasing that a better way is possible, and we will work with even more progressive municipalities in the coming years who don’t want to burn waste, but rather reduce, reuse and recycle it.





Romania

Written by Elena Rastei,
Coordinator of Zero Waste Romania
Number of Zero Waste Cities: 12

In a country challenged by infringements on waste management, with some of the lowest recycling rates among European countries, Zero Waste Romania has succeeded in convincing and collaborating with twelve municipalities and two communities covering a population of almost **800,000 people** — **4.1% of the entire Romanian population**. The biggest municipality in the Zero Waste City network is Iași, with a population of over 300,000.

All Romanian zero waste cities have set future targets for waste reduction and recycling, whilst also committing to implement the separate collection of waste including bio-waste and a Pay-As-You-Throw system. The more advanced enrolled municipalities have implemented the five fraction door-to-door separate collection and waste prevention measures, such as urban mining centers and single-use plastic funeral decorations ban, as well as support for reuse and repair centers and initiatives. During this process, some mayors have importantly rejected so-called “solutions” such as the building of new incinerators. Key ingredients of progress towards zero waste have been identified to be the will and motivation of mayors, who have sometimes been driven by the fear of the high penalties from a lack of action and maintaining the status quo.

However, in some cases, one of the main challenges encountered during the process was the citizens' resistance to change. Most notably, in Făgăraș, a medium Romanian city, citizens rebelled against the introduction of a system that was originally implemented in Hernani (Spain) - the household ‘hook’ model for door-to-door collection. Reconciliation occurred after the intervention of Zero Waste Romania, who assisted the city hall in its public communications. Despite the initial resistance, the local Mayor managed to succeed in moving forward; **and the resource recovery rate registered in the first four weeks after the implementation of the pilot project increased by 183%** in comparison to how it was before door-to-door collection began. The system will be replicated in an improved version across the entire city from next year.

Most citizens get actively involved when given the proper infrastructure, which contradicts a common narrative in Romania that citizens are not ready yet for the separate collection system. Models brought by the twelve zero waste communities break a pessimistic country pattern and show to the world that with the right ingredients - such as political will, efficient infrastructure, prevention measures, education, sanctions, and bonuses - Romanians can become part of highly efficient waste management systems.

Their example is replicable and hopefully will spread country wide and become the much needed norm. The holistic approach of our zero waste city certification process, involving all major stakeholders, from mayors and waste operators to waste experts and citizens who are now proud to live in these communities, can ensure achieving the ambitious targets for the years to come.

The highlight of 2021 is the city of Bucharest - the capital with almost 2,000,000 inhabitants and only a 3% recycling rate. Under the new mayor, the city considered our recommendations and eliminated the high-capacity incinerator we had been campaigning against since 2015.

National Context

According to [Eurostat](#), Romanian municipal waste was 280kg per capita in 2019, a difference of nearly 200kg less compared to the EU average. Eurostat also calculated Romania's national recycling rate in 2019 to be 11.5%, down from 14% in 2017, but up from just around 1% back in 2009. There are no high-capacity Waste-To-Energy incinerators within the country, with about 5% of municipal waste being sent to cement kilns and the rest of the non-recovered waste sent to landfills.

Romania

Municipality	Year of Zero Waste Commitment	Total MSW generated per capita (2020)	Reduction in MSW generation since zero waste commitment	Separate collection % (2020)	Future targets
Salacea	2018	77	55%	70% (2021 recycling rate of 53.04%)	90% landfill diversion 0% incineration 40 kg residual/cap
Tg Lăpuș	2014	80	20%	75%	90% landfill diversion 0% incineration 70 kg residual/cap
Valea lui Mihai	2020	89	20%	50% (2021 recycling rate of 44.06%)	90% landfill diversion 0% incineration 40 kg residual/cap
Cociuba Mare	2019	70	30%	60% (2021 recycling rate of 49.82%)	90% landfill diversion 0% incineration 40 kg residual/cap
Mizil	2017	110	35%	35%	90% landfill diversion 0% incineration 70 kg residual/cap
Brănești	2020	252	TBD	17%	90% landfill diversion 0% incineration 100 kg residual/cap
Iași	2017	310	TBD	17%	90% landfill diversion 0% incineration 100 kg residual/cap
Oradea	2017	390	TBD	15%	90% landfill diversion 0% incineration 100 kg residual/cap
Comănești	2020	225	TBD	11%	90% landfill diversion 0% incineration 70 kg residual/cap
Roman	2019	350	TBD	11%	90% landfill diversion 0% incineration 100 kg residual/cap
Tulcea	2021	360	TBD	10%	90% landfill diversion 0% incineration 100 kg residual/cap
Făgăraș	2021	305	TBD	15%	90% landfill diversion 0% incineration 100 kg residual/cap
Colina Nouă	2020	-	-	-	90% landfill diversion 0% incineration 30 kg residual/cap
Giulia Ecovillage	2021	-	-	-	90% landfill diversion 0% incineration 30 kg residual/cap



Spain

Written by Daisee Aguilera,
Coordinator for the Alianza Residuo
Cero
Number of Zero Waste Cities: 90

Spain is a diverse country constituted by different regions spread out across the Iberian Peninsula, two Archipelagos - the Balearic and the Canary Islands, Ceuta & Melilla. The country shares territories with different languages and political scenarios of diverse entities. Over the past 15 years, the Zero Waste Cities programme in Spain has focused on engaging with municipalities from selected regions - these being Catalonia, the Balearics Islands, Comunidad de Madrid, and the Basque Country.

This year, thanks to the new Zero Waste Cities Certification scheme by MiZA, the Alianza Residuo Cero has created a baseline structure for a National Certification Strategy for the coming years. The work has been to divide the country into different areas and assign these to entities within the Alianza. As of today, Alianza members, such as Rezero, work in Catalonia, the Balearics, and the Basque Country; whilst, for example, Amigos de la Tierra (Friends of the Earth Spain) work mainly in Madrid, Galicia, and other regions across Spain. Little by little, the objective is to associate each region to entities who are members of the Alianza to support municipalities across the whole of Spain. It is crucial that the Alianza works at different levels in Spain, and we have been extremely active in pushing for ambitious national and regional zero waste legal policies. At the same time, at the municipal level, Alianza entities have also been busy pushing for local, community-led change in key locations, ranging from Barcelona to Cadiz.

The Alianza has also supported ZWE and MIZA to adapt and translate all Certification documentation, such as Criteria and User Guides, into the 4 languages which are spoken across Spain - Spanish, Catalan, Galician, and Basque. Having the materials available in the local languages will help to engage more closely with new municipalities for zero waste commitments.

Most recently, the Alianza, led by the relevant local groups Rezero and Amigos de la Tierra, has supported the following towns in becoming Zero Waste Candidates: Formentera (the smallest island in the Balearics), El Boalo in Madrid, and Vilasantar in Galicia. Many more have expressed interest in becoming zero waste, and in the coming months and years we will be working across Spain to help these communities start their zero waste journey.

Given the ongoing challenges brought by the COVID-19 pandemic, one of our main 2021 activities has been the promotion of the ZWE Cities & Communities programme and of the MIZA Certification through a series of webinars. For instance, back in February 2021, Alianza Residuo Cero organised [the Ciudades y Pueblos Residuo Cero webinar](#) - Zero Waste Cities and Towns.

The goal of the webinar was to present the Certification to municipalities from all across the country, which was achieved as we had over 150 participants join. Large cities such as Barcelona were invited to share their recent zero waste actions, such as the district of Sarria's organic waste door-to-door collection. Also, small towns from new zero waste regions in Spain presented their work, showcasing how and why implementing local zero waste strategies is so important and beneficial. These include:

- The municipality of El Boalo, Cerceda and Mataelpino belonging to the Community of Madrid, which already in 2017 was recognised by ZWE for its actions to promote zero waste, such as door-to-door separate collection, home and community composting, and reuse service, among others;
- A number of Galician municipalities working on creating a network of decentralised composting sites;
- Esporles, in the island of Mallorca, which was the first municipality in the Balearics (with a strong tourism-based economy) to carry out organic waste door-to-door collection,
- Decentralized waste management initiatives and other practices in the Basque Country.
- The Latin American town of Providencia, in Chile, showcasing how similar waste management challenges exist at municipal levels in other parts of the world

The conclusion of the webinar was that municipalities hold the key to creating change, which is the case globally but is particularly relevant for Spain, given that Spanish municipalities are responsible for implementing waste collection innovative schemes and, therefore, are key to unlock the country's transition towards a more zero waste society in the near future.

You can find the latest information and translated resources for municipalities on the newly created Alianza website: <https://www.alianzaresiduozero.org/>. We hope to create a healthy and competitive baseline structure to attract more and more municipalities to commit to becoming certified in the near future.



Germany

Written by Marc Delaperriere,
Zero Waste Germany
Number of Zero Waste Cities: 1



In Germany, numerous local zero-waste initiatives and groups have emerged in the last five years, which themselves have since gone on to create dedicated zero waste non-profit associations. Creating an alliance on a national level to strengthen the exchange between the local zero waste associations, as well as with other European countries, was therefore a logical step.

On 29 March 2021, Zero Waste Germany e.V. was officially founded with eleven founding members:

- Rehab republic e.V. from Munich;
- Zero Waste Itzehoe e.V.;
- Zero Waste Münster e.V.;
- Zero Waste Köln e.V.;
- Zero Waste e.V. from Berlin;
- Forum Plastikfreies Augsburg;
- Transition Town Donauwörth e.V.;
- ZeroWasteNürnberg Gruppe von Bluepingu e.V.;
- Küste gegen Plastik e.V. from Niebüll;
- Zero Waste Hamburg e.V.;
- Zero Waste Kiel e.V.

Timeline of Zero Waste Germany

March 2019:

First meeting of interested associations at the conference “Kiel, a milestone for Zero Waste Cities in Germany.”

March 2021:

Official creation of the ZW Germany alliance as non profit environmental association.

May 2021:

Official statement on the new version of the national German packaging and packaging waste law.

Sept 2021:

The alliance became a consortium partner with the Wuppertal Institute for the definition of the Zero waste strategy of Köln.

Kiel becomes one of Europe's first Zero Waste Candidate Cities

By developing its own zero waste strategy as a roadmap to becoming a Zero Waste City, the state capital Kiel aims to significantly reduce the amount of waste generated in the city, preserve resources, and protect the climate through lower CO₂ emissions. On 20 November 2021, [the 270-page Zero Waste Strategy](#), written with the Wuppertal institute and supported by the local association Zero Waste Kiel e.V., was passed by a unanimous vote at the city's municipal council.

This milestone meant a concrete commitment of Kiel to realise the described measures of the Zero Waste Strategy. The next step for Kiel, in early 2021, was to cooperate as a Pilot City to test the new Zero Waste Cities Certification proposed by MiZA. In May 2021, Kiel officially applied to the certification programme and became the first German Zero Waste Candidate City, creating a path for other cities in Germany to follow - which many are beginning to do!

The following cities have made either public or municipal commitments to become a Zero Waste City on the following dates:

- Regensburg - 04 February 2020
- Munich - 02 July 2020
- Köln - 05 June 2021
- Laatzen - 17 July 2021
- Düsseldorf - 04 October 2021
- Leipzig - 13 October 2021

Zero Waste Cities in Germany: a wise approach

The model of Kiel has attracted other municipalities across Germany who now see the benefits and recognise the importance of becoming zero waste. It has to be said that the way Kiel proceeded - establishing its strategy after a first municipal council vote and then committing through a second vote of the municipality to realise the defined measures - is seen as a wise and replicable approach. Some other German cities have followed, including Munich, Leipzig, Regensburg and Düsseldorf, who have already taken the first step. Many other municipalities, both big and small, ranging from 10,000 to 1,000,000 inhabitants, have since shown their interest and started the initial steps to become Germany's next Zero Waste City.

Zero Waste Munich

On 2nd July 2020 – six months after a city council hearing on its Circular Economy plan – the municipal committee of the Munich City Council made the important decision to pass its “**Circular Munich – Circular Economy for a Sustainable Munich**” draft resolution.

In order to achieve this significant milestone, the City Council commissioned its waste management company, Abfallwirtschaftsbetrieb München ([AWM](#)) to develop the first steps of the city's Zero Waste and Circular Economy Strategy. In particular, the zero waste concept is to be developed in close cooperation with all municipal departments, institutions, organisations, and civil society. [The Wuppertal Institute](#), together with [Rehab Republic](#), [Stakeholder Reporting](#) and [Prognos](#), are developing Munich's zero waste concept on behalf of AWM. The action plan, which should be finished by Spring 2022, will include best practice examples and innovative ideas on zero waste.

An initial *status quo* analysis established a baseline for Munich to start its efforts towards becoming a Zero Waste City. For example, in 2019, the amount of municipal solid waste (MSW) in Munich was 719,477 tonnes, or 454 kg per capita. Residual waste makes up the largest amount of MSW (42%), followed by household recyclables with 35%. Munich's total recycling rate for 2019 was 53%, below the Bavarian total of 67.3%, [according to the calculation method used in Bavaria](#). Furthermore, Munich carried out residual waste analyses in 2007 and 2016, with results showing that over 70% of its residual waste consisted of recyclable materials, with organic waste the largest fraction, in terms of volume.

Munich's Zero Waste Concept should be finalised by May 2022, and subsequently presented to the City Council for a vote. If this passes, it will then start the process of becoming a Zero Waste Candidate City with the Mission Zero Academy.

The interest of many cities is a success for Zero Waste Germany and the zero waste movement across Europe in general. The development of the certification system, the translation of MiZa documents into German, and the creation of the ZW Germany alliance all offer us an infrastructure to answer these demands and accompany the growing movement.

Ukraine

Written by Iryna Myronova,
Zero Waste Cities Coordinator,
Zero Waste Alliance Ukraine
Number of Zero Waste Cities: 2



Following the announcement of our country's very first Zero Waste City, Lviv, this year brought us an exciting landmark as we saw Ukraine's second Zero Waste City, Luibotyn, make its own local commitment. Therefore, the Zero Waste Alliance Ukraine has focused a lot of efforts over the past 12 months in these two cities, helping turn ambitious commitments into concrete actions.

Lviv

Back in July 2020 Lviv opened the first ever site in Ukraine for municipal organic waste composting. The site accepts locally generated green (garden) waste and kitchen waste from both residents and retail/food processing companies. During 2021, we have been helping to encourage more citizens and businesses to separate their organic waste, and thus helping reduce the total volume of residual waste and increasing the volume of compost material.

To help facilitate this, Lviv city introduced a 100% discount for residents and a 50% discount for businesses and municipal companies in charge of green areas. In practical terms, this means that the waste collection companies do not charge local citizens (via the waste collection companies). For organics collected from businesses, the municipal composting company charges 50% of the total cost, which for composting is 644 UAH (approximately 20 EUR) per ton of organics.

The municipal company "Zelene misto", which operates the composting site, was the first one who, in cooperation with national authorities, pushed for developing a national standard for compost from municipal separately collected organic waste. The first 50-ton batch of compost was publicly auctioned and sold for 10 EUR per ton. Residents can also buy the compost by the kilogram.

Data on the Lviv composting facility from Zelene Misto (figures start from the beginning of operation in July 2020 until 1 November 2021):

- ➔ Lviv city council has invested 38,000,000 UAH (approximately 1.2 million EUR) into building the composting facility;
- ➔ The composting site processed 7,843 tons of organics (2,598 tons of green waste from companies; 2,365 tons of green waste from residents; 1,463 tons of food waste from companies; 1,417 tons of kitchen waste from residents).
- ➔ 97% of the residents' waste collection points provided separate containers for organics.
- ➔ There are a total of 1262 containers for organic waste separate collection within the city (734 are 120L and 528 are 240L).

Organics are collected currently without any bags, but rather straight into containers, as compostable bags are not yet widely available in Lviv. However, a lot of people started putting their organics into containers within plastic bags this summer. This is the key challenge for us to solve in the future, as well as calculating separate organic transportation costs for waste collection companies.

Furthermore, in April 2021, the 'Zero Cup' scheme was launched in Lviv, offering a local deposit refund scheme for reusable coffee cups on the go. So far, 17 local coffee shops participate in the system and positive feedback has been received from both businesses and consumers. To further encourage effective use of the system, a chatbot for the mobile app Telegram was developed for users. To further help prevent waste generation, a number of [large festivals](#) have recently begun using only reusable cups/glasses, whilst the Lviv municipal water treatment company [has started to install public drinking fountains in the city](#).

In July 2021, the first Zero Waste City conference was organized in Lviv for Ukrainian municipalities. The Zero Waste City Certification system and criteria were presented there for the first time, and the second day included a study tour of key local waste management sites (decentralised composting and reuse centres) to help attendees understand how good zero waste practices can be implemented locally.

Liubotyn

In February 2021, the city of Liubotyn made its commitment to become a Zero Waste City, and an official working group of local stakeholders has been working on the design of their Zero Waste City plan as of October 2021. Throughout this year, several awareness-raising campaigns on zero waste were held in Liubotyn - ranging from our Plastic Free July activities and a Break Free From Plastic Brand audit to the topic of decentralised composting. A subsequent decentralised composting pilot has since then started.

The Kharkiv Zero Waste team has also established the country's first Zero Waste Academy. The Academy is a training and practical course in waste management for municipal, regional, and waste company representatives. It aims to help prepare key officials to adopt more circular solutions at the local level. With a total duration of six months, selected Academy participants attended several online lectures and were supported by mentors to develop a roadmap for their own local zero waste plans.

In addition, the Kharkiv Zero Waste team has also developed "Ecohub" in Kharkiv, a community centre that provides citizens with a space to recycle and reuse items, as well as donate unwanted food which would have otherwise become waste.





Bulgaria

Written by Evgenia Tasheva,
Zero Waste Coordinator,
Za Zemiata
Number of Zero Waste Cities: 1

Within the conditions of a global pandemic, our activities over the past year have had to adapt to be effective online. This has resulted in us organising a series of online trainings and webinars for Bulgarian municipalities, helping to raise awareness and increase key decision-makers' practical knowledge on how to implement zero waste policies locally

For example, Pay-As-You-Throw (PAYT) waste charging is one of the main focus areas of our current capacity-building efforts, since this process is stipulated in Bulgarian law and municipalities will need to implement it during the next couple of years. Two online trainings were delivered in order to help bring Bulgarian municipalities up to speed with best practices from across Europe:

- Jaka Kranjc of Ecologists Without Borders Association (Slovenia) spoke during the Annual General Assembly of the Bulgarian Association of Municipal Environmental Experts (BAMEE) on how PAYT is stipulated in Slovenian legislation, and the positive impact this has had on waste reduction.
- [The transition to PAYT and a door-to-door separate waste collection system in Parma \(Italy\) was presented by former vice-mayor Gabriele Folli.](#)

Both trainings were rated very highly by most of the participants and had very good attendance, with 120 participants joining from 70 Bulgarian municipalities. Furthermore, Za Zemiata organised an online live video event to raise awareness about the downsides of one of the worst waste management practices - incineration - and its alternative, real solutions.

Together with the ReLoop Platform, we also hosted a couple of online presentations on how Deposit Return Systems (DRS) and Extended Producer Responsibility (EPR) schemes can perform better, in terms of waste prevention, social cohesion and the local municipal budget.

During the past year we have guided our Zero Waste Candidate Cities, Svilengrad and Gabrovo, through the new Zero Waste Cities Certification process by MiZA, and they are now ready for the next steps to get their official Zero Waste City status. Field visits to both towns have been key for building trust, involving more stakeholders in the process, and improving our understanding of the existing local waste management systems.

As an existing Zero Waste City from ZWE's programme, Svilengrad, has confirmed its willingness to pursue the Zero Waste Cities Certification, recognising the importance and benefits of this approach. This has also been reflected in a number of new policies being introduced locally to help prevent waste. For example, the municipality has increased the scope of their door-to-door separate collection from 1,000 households to include not just packaging and residual waste, but also textiles, furniture, Waste from Electrical and Electronic Equipment (WEEE) and bio-waste.

Bulgaria

In addition, dry recyclables are now being collected door-to-door from about 180 shops in Svilengrad town and nearby villages. Expired medicine can be returned to any pharmacy in town, as well as batteries in any shop that sells them. Since Svilengrad's new composting installation has been in operation, new green and brown bins for garden and food waste have been placed in appropriate spots (restaurants, vegetable shops, sports fields, etc).

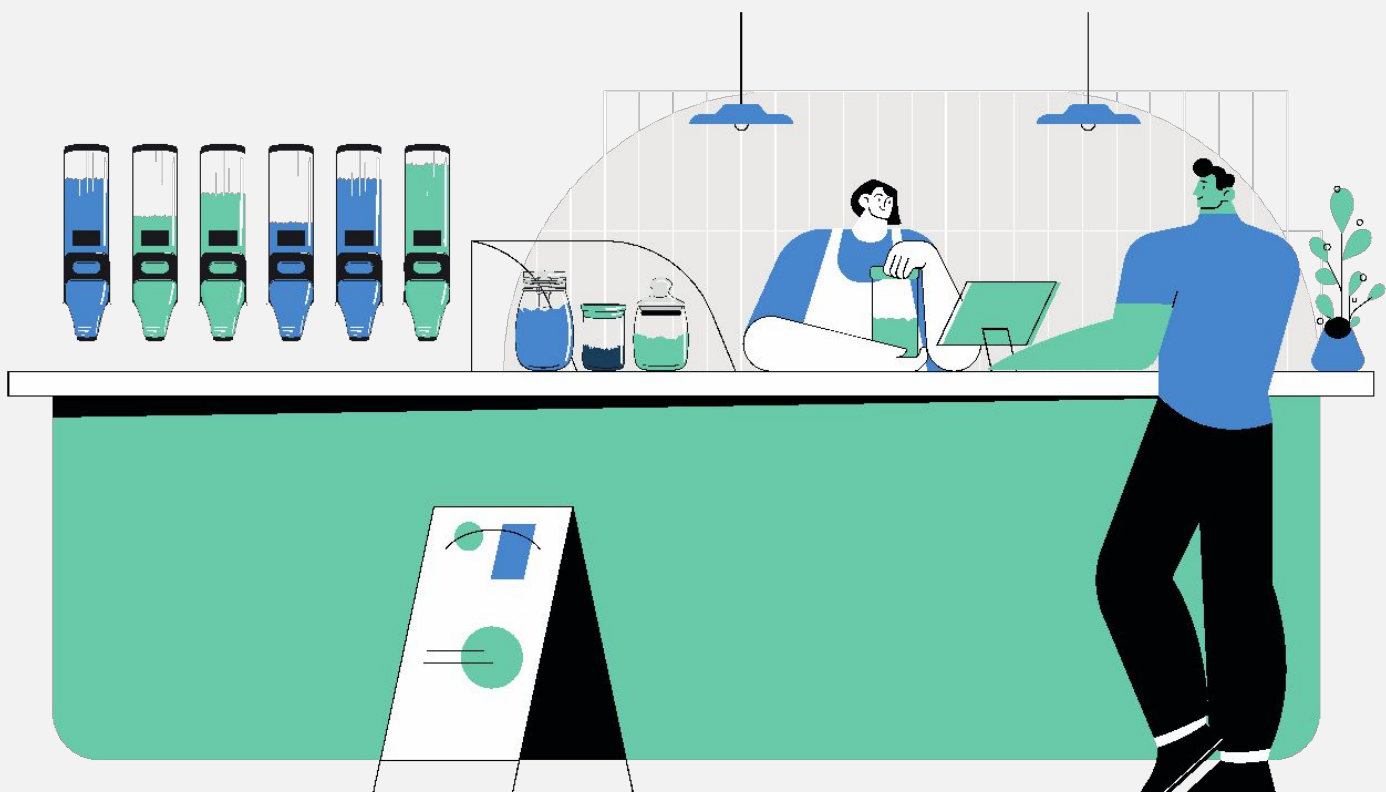
We can see several positive developments in Svilengrad over the past year compared to 2019 data, but this might be partly due to the pandemic-related measures that may have led to reduced activity in the local tourism and related sectors:

- **Decrease of annual waste generation by 2%** (in 2020 compared to 2019) and is expected to drop by over 10% by the end of 2021.
- **Landfilled waste has decreased by 23%** (in 2020 compared to 2019) and is expected to be further reduced by 6% by the end of 2021.
- **Separate collection has grown by 17%** (in 2020 compared to 2019) and is projected to increase by a further 15% by the end of 2021.

During a previous face-to-face meeting, Gabrovo's mayor has also confirmed the city's zero waste commitment, which is about to be put to a vote in the local parliament before the end of 2021. We look forward to hopefully welcoming Gabrovo as Bulgaria's second Zero Waste Candidate City very soon.

However, despite good progress, challenges and significant barriers due to ongoing Covid-19 prevention measures remain. For example, on the one hand, communication is less direct; while on the other hand, municipal officials are more busy now organising new measures, leaving less time for zero waste-related activities. Nevertheless, the culture and increased use of online communications has improved enormously in the past year, making it possible to hold effective digital meetings with municipalities.

In the next months we are going to put more effort into increasing both municipalities' capacity by organizing webinars and online training, getting useful Zero Waste Cities related information translated and, hopefully, some field visits. Both Svilengrad and Gabrovo are starting to look towards informing and involving local inhabitants to get public support on the road to zero waste, and Za Zemiata will be actively helping them.



Northern Ireland

Written by Jim Keys,
Zero Waste North West
Number of Zero Waste Cities: 1



On 20th November 2020 in Northern Ireland, Derry City and Strabane District Council (DCSDC) became **the first city region in the UK or Ireland** publicly committed to embarking on an externally verified journey to become zero waste. The declaration was an act of faith in the calibre of our people and in the Council's intention to play its part in leading **the culture-shift necessary** to adequately respond to the climate emergency; and be part of a just transition to living within the earth's capacity.

Given COVID-19, we opted for a soft online launch, with a commitment to a more substantial launch at an appropriate future date. From January 2021, we established a **monthly Zero Waste City Review meeting** online. This ongoing focus on implementation resulted in some early wins:

- DCSDC's local 4R's Reuse Centre extended its **laptop upcycling scheme across the whole council region**, which was first pioneered in the city, reaching more low income families to assist with more homeschooling.
- Together with DCSDC, we **joined the Northern Ireland Resources Network**, enabling us to share or gain from best practice across Northern Ireland.
- DCSDC opted to **become a pilot city for MiZA's new Zero Waste Cities Certification accreditation process**.
- In collaboration with DCSDC, a local arts organisation, The Playhouse Derry, and Queens University Belfast submitted an application for a **3-year action research project**, using the arts to help with the transition for our city region onto zero waste.
- Current work includes a **review of progress on the 37 policies identified in the city region's Zero Waste Circular Economy Strategy** adopted in 2017; and a process of managing their implementation as well as other initiatives consistent with driving the culture shift in attitudes and behaviour to resources necessary.

Meanwhile, we pushed ahead with our own initiatives as Zero Waste North West, **achieving Charitable Status in July**, which is enabling us to widen our network of eligible funders. We also launched two additional business initiatives:

- **The Nappy Library** (April 2021) saw us employing our first part time worker to start a Cloth Nappy Library and recruit the team of volunteers that will manage the Library once its 6-month funding ends.
- **The Bike Rescue Project Pilot** (May 2021), the first part of a larger project which will harness the many aspects of cycling consistent with zero waste. Established by one of our newest members, the Pilot rescues, repairs, and safety checks bikes that are then sold on at low cost through local outlets and charity shops

Finally, as this goes to press, **we have just secured premises for our City Centre Zero Waste Hub**.



Belgium

Written by Marc Sautelet, Zero Waste Belgium

Number of Zero Waste Cities: 1

Since the breach of the COVID-19 crisis, the zero waste approach in Belgium suffered a decline of interest as the authorities were largely focused on dealing with the sanitary crisis. This relates in the figures as well. In 2020, the amount of solid waste in Belgian municipalities has slightly increased due to the fact that people stayed more often at home. This situation has brought the zero waste efforts to a status quo moment, with many activities or projects also being canceled and therefore not much progress has been made.

In 2021, Zero Waste Belgium's main focus was to implement the zero waste cities approach with a select group of municipalities, helping to grow the network of zero waste municipalities nationally with the perspective of having a few municipalities join the programme in 2022. In the next year, Zero Waste Belgium is going to focus on both finding zero waste champions - those cities who have already achieved great results and could use the publicity and recognition of the zero waste certification - as well as Belgian municipalities who are currently not performing as well but that might benefit from that experience, and have the political will to implement new changes regarding their waste management.

This is one of the reasons [why the city/region of Brussels has decided to join the Zero Waste Cities programme](#), and declare itself not only the first Zero Waste City in Belgium, but the first Zero Waste Capital City in Northern Europe. [The City/region's zero waste strategy](#) includes a commitment to reduce waste by 20% per capita by 2030 (and 5% by 2023). For several years now, Brussels has been actively promoting its zero waste strategy with citizens, with a yearly [Zero Waste Challenge](#) and an [open call for projects](#) from all community stakeholders interested in implementing their own zero waste initiatives.

The region also has an interesting citizen-based community compost system in place. The network of those community composts, close to 200 units dispatched within the territory, is supported by the administration through a local NGO. They are also in charge of training Master Composters (MCs) for volunteers. Those MCs share their knowledge within the community compost but also towards any citizen who would have a question about composting, in order to increase participation in the initiative.

The Wallonia region is also fertile ground for zero waste projects. Lots of local initiatives have received regional support in recent years. Between 2017 and 2019, [20 municipalities have joined a zero waste programme to reduce their waste on a communal level](#). Those municipalities still have strong zero waste programmes in place and already achieved excellent results. We believe they will be the champions we need to expand the good practices on a national level.



Cyprus

Written by Efrosyni Antoniou,
Project Coordinator,
Friends of the Earth Cyprus

According to the latest Eurostat data on municipal waste generated in 2019 in Cyprus, every Cypriot produces an average of 642 kg of waste a year, way above the EU average of 502 kg. The data on recycling shows that Cyprus recycles only 16% of its municipal waste, compared to an EU-wide average of 46%.

After the closure of all the landfills nationwide in February 2019, municipal waste in Cyprus now ends up in 'Integrated Waste Management Facilities' for further separation and treatment. However, high moisture content (deriving from the fact that a high content of the collected waste is organic waste) makes the waste difficult to manage, with facilities regularly malfunctioning. Door-to-door separate collection is currently widespread, but in some cases citizens have to individually transfer certain recyclable materials to civic 'green points'. Bulky waste (like furniture), electrical and electronic equipment waste, oils, textiles, garden waste, and light bulbs (among others) are all able to be dropped off at these green points facilities for further management. Nevertheless, these green points also often malfunction, leading to the creation of illegal makeshift landfills in open fields and natural areas.

One private company operates in the country for the collection of recyclable materials. It carries out door-to-door collection of PMD and paper, and it installed bins for the collection of glass in certain areas. Recycling is only obligatory in the municipality of Aglantzia, which in January 2021 began implementing a Pay-As-You-Throw (PAYT) system. The national Department of Environment is currently developing and promoting legislation for the implementation of the PAYT system throughout the island.

As part of the ZWE network, Friends of the Earth Cyprus started promoting the Zero Waste Cities certification in 2021, informing municipalities and authorities about the benefits and the potential positive impact of this certification for local communities and the environment. We have since started a close collaboration with Ypsonas, a municipality which expressed a strong interest in becoming the first Zero Waste City in Cyprus - and we hope that our work will have positive results soon. An important action undertaken within this framework and with the support of Zero Waste Europe was a municipal waste audit in September, which provided valuable data. Some indicative results from the municipal waste audit in Ypsonas include the fact that 15% of the residual waste was dry recyclable materials and 47% was organic matter (with edible food waste accounting for 20%, inedible food waste for 15.5%, and garden waste for 11.5%).

More Cypriot municipalities have since expressed their strong interest in a collaboration with us to improve their organic waste management. Our goal is to make the Zero Waste Cities concept and certification widely known in all municipalities and communities in Cyprus. We hope and expect that Ypsonas will become the first, but not last, Zero Waste City in our country, championing best practices on waste management.



Portugal

Written by Paulo Lucas,
Zero Waste Cities Manager,
ZERO

Portugal is at a decisive moment in time in terms of its urban waste management. With low recycling rates - caused by an extended producer responsibility (EPR) system that is based on the under-declaration of material introduced into the market, and a collection model that relies on street collection with large capacity containers; and where the collection of bio-waste is still at a very early stage - everything that is (not) done is of huge importance in helping promote the circular economy within our country.

The zero waste approach that we're following, working with some Portuguese municipalities that want to be at the forefront of improving the urban waste management system, is thus a way of shaking off the inertia that has set in among political decision-makers. It also serves as a way to debunk the unfounded fears regarding more effective forms of collection (such as door-to-door collection), which require citizens to collaborate more actively.

Over the past 12-18 months, to get this work off the ground, we contacted 55 municipalities who we considered to be the most promising in terms of being interested in the zero waste model, with 31 meetings held. The selection criteria for the municipalities focused on the identification of investments with European funds in separate collection and/or domestic composting projects, which could indicate some willingness to move towards a zero waste commitment. The meetings were prepared to present not only the zero waste principles and the case studies, but also a state-of-play on the performance of the municipality regarding the management of its urban waste, in order to facilitate the introduction of MiZA's Zero Waste Cities Certification. In case there is an expression of interest in subscribing to the commitment, a second meeting is scheduled where the compulsory and performance criteria associated with the certification are presented, and where the municipalities are informed of the necessary access and performance rules.

So far, six municipalities have expressed their willingness to move forward in the process. Of these, the municipalities of São João da Madeira (21,860 inhabitants), Guimarães (152,551 inhabitants) and Alvito (2,470 inhabitants) are currently drafting their zero waste plans, all of them already having a partial or full implementation of door-to-door collection. Three others - Coimbra (140,796 inhabitants), Tabuaço (6 025 inhabitants), and Fornos de Algodres (4,545 inhabitants) - are still at a more initial stage, and it has not yet been possible to move forward with their zero waste plan design due to changes in their focal point contacts. We also expect and hope that more municipalities will begin their journey to becoming zero waste over the next year, including Funchal (Autonomous Region of Madeira - 111,541 inhabitants), Seixal (158,269 inhabitants), Oliveira de Azeméis (66 062 inhabitants), Leiria (128,640 inhabitants), and Barrancos (1,792 inhabitants).



Greece

Written by Elena Oikonomou,
ECOREC

Waste management in Greece is in a transitional stage. The national recycling rate in 2019 was just 21% according to Eurostat, way below the EU average of 48%. Most of the residual waste generated in Greece is currently landfilled.

We have newly established legislation in Greece to transpose key EU waste related directives (2018/851 and 2018/852) into national law and this, accompanied by the recent National Waste Management Plan (September, 2020) and National Waste Prevention Programme (June, 2021), comprises the Greek national waste management legislative framework.

This framework covers separate collection and recycling targets; the development of preparation for reuse and reuse infrastructure; the extension of Extended Producer Responsibility (EPR) schemes into new product and material categories; the extension of Deposit Return Systems (DRS) to plastic bottles and metal cans; and, most importantly, the separation of organic waste and the development of Pay-As-You-Throw (PAYT) schemes. However, unfortunately the national strategy also includes the development of Waste-to-Energy and incineration facilities for residual waste. Moreover, Greece still faces long-term challenges concerning waste management and treatment infrastructure availability, especially regarding recycling and reuse facilities, municipal institutional capacities, and funding restrictions.

In this context, the adoption of the zero waste vision by Greek municipalities could both set the foundation for circularity and zero waste at the local level, whilst also determining the future national performance in reuse and recycling. This year, the COVID-19 pandemic and the impact of public health-related restrictions and lockdowns have affected municipalities' capacity to develop and/or implement new waste management strategies. However, there is a notable increase in sustainable waste management, including specific zero waste goals.

For the past year, Ecorec, in collaboration with Zero Waste Europe and the ZeroWaste Cities programme, has been working with municipalities to develop their own zero waste strategy and become part of the increasing network of Zero Waste Cities. More specifically, Ecorec has been working with three potential Zero Waste Candidate Cities to begin the process of integrating them into the Zero Waste Cities Certification. They represent different types of Greek municipalities (urban, rural, and insular), with variable characteristics such as population density, geographical area, and seasonal population fluctuations.

These first candidates, which will soon announce their commitments to become Zero Waste Cities, face a diverse range of waste management challenges which reflect the complexity of existing conditions; the different waste management practices adopted locally within Greece; and the various local capacities of each municipality - besides the uncertainty and impact related to COVID-19.

As such, the zero waste journey of these municipalities must begin with a good understanding of the potential of zero waste for their local community, so as to find solutions suitable to their needs and waste management problems. Our work in 2022 will focus on helping these municipalities develop their own tailored local strategies, drawing knowledge from the experience and best practices of the Zero Waste Cities network of municipalities across Europe.



Montenegro

Written By Emina Adrovic,
Zero Waste Cities Coordinator,
Zero Waste Montenegro

This year we began working with the municipality of Gusinje, who started their zero waste journey in February 2021. A small town in a rural setting with a population of 1.673 inhabitants and only 300 households, Gusinje's waste management system is dependent on landfill, with no waste being recycled. We have formed an active Zero Waste Advisory Board consisting of about 20 local decision-makers, business owners, teachers, local organization representatives, and farmers.

The Advisory Board has helped us to better understand the mindset of local people in order to not only plan our future awareness-raising and educational activities steps, but also to decide what models of waste management system would work best in this municipality.

A verbal survey was conducted by Zero Waste Montenegro to analyse the perception of waste, offering some interesting insights. It showed that nearly all (98.6%) of the population believes a community should strive for important goals like recycling and waste reduction. The majority of respondents (82.9%) believe that there is too much unnecessary packaging and other waste items. Asked if they would contribute to the process of their city becoming a zero waste municipality - by using their own packaging when buying food in bulk (rice, pasta, vegetables and fruits, seeds, etc.) instead of buying pre-packaged items - a strong majority (76.6%) responded positively.

Less than half of the respondents (45.8%) said they use a reusable bag, tote bag, or backpack whilst shopping, while every fourth respondent uses a reusable water bottle. The results showed that every second respondent (50.7%) is interested in buying second-hand items such as furniture, electronics, textiles etc., previously donated and repaired at the local Reuse Centre. 96.5% of respondents also said they would donate old items they no longer needed to the Centre for Reuse, showing good potential and appetite for more waste prevention policies locally.

After that, we completed a door-to-door waste analysis, where 10% of the total households' (30 out of 300) waste has been measured and separated, showing that an average household produces only 7.25 kg of waste per week. This waste analysis has been useful to show how much waste is produced per year, but also how many kilos of each material are being produced, which helped us in the creation of the local waste management plan. Five awareness-raising and educational workshops have also been successfully conducted with local community members, where the negative effects of landfills were explained, as well as the importance of reuse and not just recycling.

Gusinje already has a kerbside collection, with a plan to improve it by switching from a single-bin system to a five-bin one by the end of next year. Other than that, the goal is to create a local material recovery facility site and implement a municipal composting system, but also to distribute home composters and have a set of educational workshops on home-composting and proper waste separation.

This project - 'Montenegro and Albania towards Zero Waste' - is implemented together with the lead partner Regional Development Agency and financed by the EU through the IPA program for cross-border cooperation between Montenegro and Albania.



Zero Waste Best Practices

Spotlight on organics collection and management

In every edition of the State of Zero Waste Municipalities Report, we devote a specific chapter to delve deeper into some of the best practices existing for different components of a local zero waste programme.

Due to the upcoming mandatory requirement for all EU Member States to collect bio-waste from 1 January 2024 onwards, and due to the vast positive impacts that effective organic management systems can have for municipalities, for the 2021 edition we are going to take a deeper look and shine a spotlight on some of Europe's best organics collection and management practices.

Hernani, Basque region Spain

Hernani is a town of just over 20,000 inhabitants within the province of Gipuzkoa, in the Basque Region of Spain. Gipuzkoa has long been a zero waste frontrunner, implementing a strong separate collection system with a main priority on organics since 2011. In just four years, the recycling rate doubled in the region and residual waste generation was reduced by 32%.

The town of Hernani in particular is a zero waste best practice for its successful organics management system. The zero waste strategy is jointly coordinated by the City Council and a 100% public waste management company, Garbitania Zero Zabor, who place a key emphasis on citizen outreach and participation. Hernani's waste management system is famous for the hooks and bins it originally provided households to separate their waste. Back in 2010, the municipality distributed two small bins per household; placed hooks to hang the bins and bags at the front of houses and buildings; removed large containers from the streets; and established waste segregation as mandatory, launching its door-to-door collection system.

This system, with several improvements and optimisations over the years, is still in use today. Four fractions are collected from households - organics, light packaging, paper/cardboard, and residuals. Glass is still collected in large street containers. For each waste stream, there is clear information available online on what can and can't be included. Furthermore, Garbitania provide a clear model for other municipalities to follow to improve their door-to-door collection system, with their 9-step guide.

Hernani's system promotes home composting throughout the municipality. People can sign up for a composting class, request a home composting manual, and receive a compost bin for free if they wish. There is a phone line to get composting advice, and there are compost specialists who can visit households in need of assistance. People who sign up to compost at home receive a 25% discount on the municipal waste management fee.

In neighbouring Usurbil, which has a total separate collection rate of 86%, households composting their organic waste receive a 40% discount on their annual waste fee. The fee for businesses varies according to the collection frequency and the amount of waste produced, using Pay-As-You-Throw criteria.

Households that do not have access to green waste are supported to participate in community composting sites. To help raise awareness of how to compost and its importance, Gabitania offers the following services:

- Communication campaigns to promote home and community composting. First, potential composting families are identified, followed by a tailored communication campaign for these households to explain the process and its benefits;
- Home composting courses;
- Technical advice from composting experts.

Thanks to its door-to-door collection system, the quality of the bio-waste collected is impressively high. The latest results (2019) from the municipality of Hernani show a 0.14% contamination rate, resulting in the subsequent compost being of high value and, therefore, incredibly useful to aid local soils. Hernani is obligated to send the bio-waste it collects to a Biomethanation plant in Zubieta (Donostia), which is managed by the Consortium of Gipuzkoa (GHK).

Hernani, Spain

The resultant digestate is then sent to another composting plant nearby, after which the final compost is used to fertilize local fields.

In 2020, the following results were achieved:

- Separate collection rate of 80.6% in urban areas, reaching 88.70% in industrial areas.
- Separate bio-waste collection of 87.9 kg per inhabitant.
- 49 community composting centres in operation.
- 546 tons of bio-waste captured by community composting and home composting.
- Residual waste generation of 54.80 kg per capita from the urban (municipal) area - a large part of which is notably diapers and sanitary towels

The council of Hernani, together with Garbitania, has as its heart crucial zero waste values - community engagement; the separation of as many recyclable materials as possible; and the desire to minimise the volume of waste sent to landfill or incineration. This community-centered approach undeniably sits at the heart of Hernani's impressive results, setting an example for others across Europe to follow.



[Read more about Hernani's commitment to zero waste.](#)



Source: (<https://garbitania.eus/es/servicios/recoigida-selectiva-puerta-a-puerta/>)

Bitetto

Southern Italy

Despite Bitetto being a small municipality on the south-east coast of Italy, near Bari, consisting of approximately 12,000 inhabitants, the town has become a best practice example for separate waste collection, and how to incentivise composting, in both Italy and Europe.

In just 4 years, the separate collection rate within **Bitetto** increased from **16.67% in 2016 to 78.32% of the total municipal solid waste generated in 2020**. Furthermore, the municipality produced just **79.29 kg per inhabitant of non-recyclable (residual) waste in 2019**.

Bitetto has achieved these impressive results in such a short space of time because of two key factors - through economic incentives to produce less waste; and by ensuring citizens have a wide range of accessible information available to them to better understand the system, their waste generation, and how to reduce it.

Driven by the aim of making the local waste fee system more equitable and fair, Bitetto has helped develop an innovative 'Know-As-You-Throw' (KAYT) model for their waste separation and collection, which builds upon the existing Pay-As-You-Throw (PAYT) scheme that is implemented locally and rewards citizens who generate less waste with lower fees. The PAYT scheme is specifically designed to promote the uptake of home composting, with a vast reduction in fees available to those who use their separated bio-waste as materials for compost.

Together with key partners within the EU-funded [Re-Think Waste project](#), Bitetto introduced the KAYT model in 2019. KAYT is an innovative concept to reduce municipal waste and increase separate collection through a knowledge and persuasion-driven approach. The basis of the concept includes informing citizens in a continuous and convenient way, combining technology, gamification, one-to-one meetings with experts, and some additional economic and/or social benefits. KAYT highlights awareness-raising, accessible information, and communications with citizens as key actions to help enable better performing PAYT systems.



Compost Site, Bergamo, Italy.

Bitetto, Italy

In Bitetto, Radio Frequency Identification (RFID) technology is used to enable the KAYT model. Households are provided with separate waste containers equipped with an RFID tag that allows for personalised user identification. Bitetto's waste collectors are provided with handheld RFID readers to scan the unique code on each household collection container. All this information is then logged in a centralised database, which determines the fee for each household at the end of the year by calculating the volume of waste generated.

Furthermore, the KAYT model means that waste collection vehicles in Bitetto are also equipped with GPS tracking devices, so that citizens can see the location of each vehicle during the collection round. Any household which is seen not to be separating properly is provided with a notice on the bin that contains key information on how to avoid the same mistake next time. A free mobile app provided by the local waste company, Navita, gives citizens a wide range of important information to assist their separation of recyclable items, and to ultimately reduce their waste.

These include:

- A waste collection calendar;
- A toll-free information hotline;
- Guidelines on how to separate waste and recyclables;
- A waste dictionary explaining key terms and procedures;
- Home collection requests or other specific requests using GPS technology;
- A report on the volume of waste and recyclables collected from their household in the past month or year.

By empowering citizens with greater access to information about their waste generation and how to separate, whilst then supplementing this with further incentives for those who compost at home and therefore reduce their waste further, the example Bitetto shows how effective, community-driven zero waste models can achieve impressively high results in a short space of time.



Source: Zero Waste Italy

Wales

The country of Wales, which would rank third in the world for overall household recycling rates according to recent studies, provides an excellent example of how national and local governments can effectively work together to effectively collect and manage bio-waste as part of a broader zero waste strategy.

Wales' Collections Blueprint model lies at the heart of this system's success, which is based upon the separation of key waste streams and has helped the country achieve a 65.4% recycling rate for 2020. At a minimum, the Blueprint model ensures the collection includes organics, paper and cardboard, cans and plastic, and glass - but some vehicles can collect up to 9 different recyclable waste streams. These are all collected weekly at the household, whilst residuals are collected every other week.

Across the country, Welsh local councils provide a separate weekly food waste collection service for 99% of households. To streamline the system for optimal results, most Welsh Councils provide the same type of service, with the provision of kitchen caddies and lockable outside bins. Most also provide free caddy liners (bags) to residents to capture the food waste.

The prioritisation of food waste prevention, and the subsequent system for managing organics collected from households and businesses, is something which has been set by the national government. The Welsh Government in Cardiff has a clear guidance for local authorities that, for the management of food waste (which cannot be prevented or prepared for reuse), local authorities must collect it separately and treat it by Anaerobic Digestion (AD) to produce a 'quality protocol compliant' digestate. This is then given back to natural lands as a fertiliser, with the recovery and use of the resultant biogas to generate renewable energy or for use as a renewable fuel.



Source: Welsh Government & the Wales Recycles campaign

Local example - Merthyr Tydfil

The Welsh county of Merthyr Tydfil has been collecting food waste separately since 2006, when it became one of the first authorities to introduce the service. It now covers all 25,000 households in the county, and Merthyr Tydfil has found that this service can also lead to great economic savings for the community.

Merthyr Tydfil residents are provided with a blue 5-litre caddy (small bin) for the kitchen, and also a blue 23-litre lockable outdoor container to empty the food scraps into. The larger bin is collected weekly from households, alongside the collection of dry recyclables, following guidance from the national government to separate food and garden waste collection to try and make food waste more visible and therefore encourage longer-term prevention.

One of the main successes of the local programme is that participation in organic separation from households has doubled since 2015. This is down largely to the local council's decision to provide free compostable liners to households, as previously residents had been asked to either use newspaper to wrap items of food or to purchase biodegradable caddy liners from local authority buildings. A communications outreach programme, which included knocking on households directly to speak with residents, concluded that a major barrier for the public to use the food waste service had been an expectation that residents have to purchase their own caddy liners.

The collected food waste is sent to an anaerobic digestion facility just a 15-minute drive away from Merthyr Council's central recycling storage site. From here, the waste is collected and converted into both renewable energy and a bio-fertilizer. Methane produced during this process is used to power a 1.2 megawatt combined heat and power engine at the site, with the electricity then sent to the Welsh national grid and capable of powering 3,000 homes a year.

The decision to provide the compostable bags for free amounted to an initial cost of £65,000 for the first two years. However, since the distribution of the free compostable liners in 2015, the amount of residual waste has fallen by approximately 13.5%. In general, changes to the waste and recycling service locally, which included food waste collection, helped to save Merthyr £1,038,000 (1,233,000 EUR approx) in 2015 alone.

Due to the implementation of its door-to-door collection system (following the Blueprint model), Merthyr Tydfil County Council estimated that, between 2015 and 2018, it saved approximately £370,000 on its recycling and waste transport costs. Through the reduction in residual waste, driven largely by the separation of organics, the local council estimated it had saved £296,000 in 2016/17 and £290,000 in 2017/18.

Key highlights

There are a number of important themes and subsequent policy recommendations that can be learned from the Welsh experience, and which should be highlighted as key best practice models to follow elsewhere.

Prioritise communication & education

Examples from Wales include:

- Introducing stickers on each household's residual waste bin saying "no food waste" to remind residents to separate their food waste;
- The recent £1 million 'Be Mighty. Recycle' national campaign which includes a host of communication materials for local authorities to use to highlight the importance of recycling and how to do it well. The campaign specifically mentions the importance of food waste prevention with a specific emphasis placed on it not to be included in the residual waste.

Provide adequate financial support and incentives

Examples from Wales and its 'Municipal Food Waste Procurement Programme:

- A £50m capital investment programme organised through public private partnerships, with the aim of supporting local authorities to build sufficient food waste treatment capacity;
- The inclusion of seven local authority "hubs" in the procurement programme (comprising 17 out of the total 22 local authorities);
- Increased food waste treatment capacity of 141,000 tonnes per year and, via Biogas processes, production of over 7MW of renewable electricity each year.

Small changes that help embed waste reduction as the priority

Examples from Wales include:

- Reduction of the collection frequency of residual waste (now every 2 weeks or even less often), and incentivised reduction of waste generation by providing households and businesses with smaller bins or restricting the number of rubbish bags provided.
- Collection of food waste at the same time/date as other dry recyclables from the kerbside, as this helps to embed the practice of separation and collection of food waste alongside more 'recognisable' recyclable materials such as paper.



Milan Italy

Too often, critics of zero waste will say that separate collection can only be done well in rural areas, where there is more space and households are less densely populated. This is often the excuse used by many of Europe's biggest cities, whose recycling rates are stagnating and often do not meet the minimum EU targets.

However, there are a growing number of positive examples which showcase that, in fact, door-to-door separate collection can be done effectively, with high capture and low contamination rates even in Europe's most densely populated and diverse cities.

In late 2021, we published a case study on the city of Milan's organic waste management system. Back in 2011, the city started implementing an ambitious scheme to separately collect bio-waste and recycle it back into local soil or use it to make biogas. With 1.4 million inhabitants in an extremely densely populated area, Milan is now one of the leading examples in Europe of how to design and implement an effective system. After a decade of implementation, in 2019 the system collected 95 kg of bio-waste per inhabitant with a contamination rate of less than 5%, whilst the city also had a total municipal waste separate collection rate of 62%.

The success of Milan's organics system is based upon a tailored strategy for each of the three key local stakeholders - commercial entities like restaurants and canteens, households, and local markets. Communications and awareness-raising campaigns have also underpinned the system, with a dedicated website and call-in centre established to offer citizens accessible outlets to help answer their questions or concerns about how to separate organics properly.

With 1 January 2024 as a deadline for all EU Member States to be collecting bio-waste separately, the story of Milan shows how other cities across Europe can follow in their footsteps to effectively collect and manage food waste - even in the challenging circumstances that large, densely populated cities provide.



[Read more about how Milan established and operates its highly-effective organics collection system in our case study.](#)



Pontevedra

Spain

An overview of Europe's best organics management and collection practices would not be complete without mentioning the composting system enacted within the Pontevedra province of Spain. Back in 2016, the province launched the "REVITALIZA" project, which built a decentralised, community-led composting system for bio-waste. Several impressive results have been achieved by the project, not only through the increased volume of bio-waste that is being composted by local residents each year, but also in the subsequent optimisation and cost-savings felt across the province's wider waste management system.

For a reminder of what Pontevedra's composting system is and what it achieved:

- [Read our 2020 State of Zero Waste Municipalities Report, page 20.](#)
- [Read our in-depth case study on Pontevedra from 2019.](#)

Key highlights

There are a number of important themes and subsequent policy recommendations that can be learned from the model used in Pontevedra. We highlighted them as a reminder for others who wish to follow in their footsteps:

Focusing on bio-waste impacts the whole system for the better:

- By having a system in place that effectively separated organics from the residual waste, the waste company in Pontevedra was able to cut collection rounds from 5-6 days/week in urban areas, or 2-3 days/week in rural areas, to only one collection round every 2 or 3 weeks. Over the course of a year, this saves the company a huge amount of money whilst also reducing its GhG emissions.
- Furthermore, as seen in Pontevedra, if households are composting at home or in the community, then a municipality or waste company can also save costs by having to collect organics from households less often (or not at all).

Composting is much cheaper than traditional waste disposal:

- Local composting, whilst more expensive initially to get started, costs 2-3 times less than incineration:
- Incineration costs: 235,5€/t (32.6% of which is associated with treatment, and 67.4% with collection);
- Individual composting: 95€/t;
- Community composting: 110€/t / Local composting plant: 140€/t.

What's Next

The need for waste management in Europe has existed since the industrial revolution. Yet in the 21st century, traditional waste management is no longer fit to serve the needs of our modern world. Switching from waste to resource management is one of the most important challenges facing us today. Fortunately, positive change is happening all around us, and this chapter aims to track where these changes are happening and what impact they will have.

This chapter takes a look at the emerging themes and trends within the field of waste and the circular economy today. As difficult as it may be, we aim to look into the crystal ball and see what the future holds



Emerging Themes for the Future of Waste Management in Europe

Written by Joan Marc Simon,
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Guessing the future is easy, but getting it right is impossible. Yet, **there are some trends we are observing today that are guaranteed to influence the way cities will deal with waste in the future.** And, considering the speed of change these days, the future doesn't need to be that far away after all.

From the point of view of waste collection, the change to durable, repairable, and fully recyclable products and materials will mean that we can finally envisage a scenario in which a different kind of - and potentially less - waste collection is needed. Indeed, if producers have an incentive to get their products back and reuse or refurbish them (instead of letting them be mixed with other products and ending up in landfills or incinerators), what we have is an increasing number of items that will not become waste in the first place - in the legal sense of the definition - and hence will not need to be collected by the traditional waste operators. We are already seeing these moves in the recycling industry today, with producers and even retailers starting to set up their own recycling plants to guarantee their own secondary raw materials supply.

The only big waste stream that is likely to need dedicated separate collection in the very long-term is bio-waste and some sort of mixed residual waste. In an ideal situation, the latter will look very different from today. In our network of Zero Waste Cities, we have a good number of municipalities managing a high proportion of their bio-waste through decentralised processes (home and community composting). This, however, is a solution that may not be suitable for all cities, particularly those with densely populated areas - meaning that separately collecting organics will still be needed and should remain the municipality's responsibility, with central composting or anaerobic digestion plants as the priority for such circumstances.

In the broader field of separate collection, it is clear that the immediate future will be based on systems that focus on user/household individualisation, as well as those that prioritise quality collection over just quantity. As energy and material prices go up, and as the legislation surrounding the design of products demands cleaner and more recyclable materials, mixed collection systems will become more expensive due to the rising prices of landfilling and incineration, due to these systems resulting in higher contamination rates.



In terms of waste treatment, the dream of recycling is clearly over. For anyone who wants to see it, it's clear that for some materials - such as plastic - high quality recycling is just not currently possible at a reasonable or sustainable price. The quest to preserve the value of materials will inevitably lead to reuse and repair for most packaging and consumer goods. Over time, recycling will become more redundant and eventually will be seen as what it always should have been - the best disposal option to ensure that resources are not lost completely.

The EU's goal of having all European packaging being recyclable by 2030, plus the upcoming eco-design rules demanding more recyclability (among other transparency criteria for consumer products), should help to reduce the current volume of 'recyclable' materials continually found in incinerators and landfills. **Recycling as we know it today, which is mostly just simply downcycling, will have to change and become real recycling.** If we manage to make products and packaging stick around for longer, we should see less recycling in quantitative (volume) terms, but it would be of a much better quality and much closer to a meaningfully closed-loop system. To ensure materials collected for recycling are of a high enough quality, municipalities will need to adopt kerbside separation collection schemes for numerous materials.

We are seeing how waste composition in Europe is changing nowadays, together with consumer habits. For example, online shopping and e-delivery models are creating a lot more waste, both in terms of packaging but also when it comes to products themselves, as most often it is simply not possible to find a service to repair or recycle broken appliances. **I believe we are in a transition in which these changes - ones which would enable products to be hired or repaired with greater ease - need to be integrated into a wider system so that they can function in a sustainable way and at the scale we need.** In this sense, one of the main changes we are to see in the coming years is the introduction of reuse and pay-per-use systems across the board.

It takes less time and makes more sense to replace non-recyclable and hazardous materials with reusable or recyclable ones than it does to build new infrastructure to dispose of stuff which should not exist in the first place. For this reason, and also because people are fed up with the current levels of waste, we should see reusable packaging, as well as second hand and repaired/refurbished products, increase their market share in Europe in the coming years. The transition will initially be slow, almost imperceptible, because the current lack of reuse infrastructure makes it expensive and inefficient for first-movers. Yet, as soon as European legislation and EU Member States pave the road for dedicated reuse infrastructure and the economies of scale kick in, we are likely to see a shift comparable (or even faster) to the transition from the combustion engine to electric mobility, or from carbon-intensive energy sources to renewables.

At Zero Waste Europe, we are intensively working in all of these scenarios - from building the channels for reuse to operate at scale, to freeing products from toxics and supporting the economic frameworks that make doing the right thing easier and cheaper than doing the wrong thing. **As we move forward, it is becoming clearer that the future for Zero Waste Cities is to leave waste management behind and focus on resource management and community resilience.**

Instead of managing the discards of the community, Zero Waste Cities need to provide the means and the infrastructure for value to be preserved in the community. **Can you imagine a future in which 80% of the current city budget for waste management is spent on reuse infrastructure and prevention?**

Waste management is a cost; resource management is an investment. Resilient cities that live and thrive within the planetary boundaries will also show the best economics and social results. The way forward is not written in stone and it's not going to be easy, but the destination gets clearer as we walk on, and our Zero Waste Cities are the ones forging the path for us all to join.



Zero Waste Europe's Annual General Meeting, 2019.

Conclusion

The 2021 edition of the State of Zero Waste Municipalities Report is a showcase of the progress that continues to be made on Zero Waste Cities in Europe, and around the world. It is also an important opportunity to showcase and celebrate the leaders who have been the driving force behind these successes.

Despite the significant challenges that the COVID-19 pandemic continues to place on our work and our society as a whole, we can take great heart and comfort that progress is still being made towards zero waste at the local level. In the past year, we have seen more municipalities adopt zero waste commitments, whilst existing Zero Waste Cities are continuing to improve on their performance even as they navigate the disruptions caused by COVID-19.

Yet, stark challenges and barriers remain in place, preventing progress at the speed of which we need it to happen. Reluctance to change from the status quo and continued lobbying from industry means that - despite clear and increasing scientific evidence showcasing the damage traditional waste management systems do to our environment, health and budgets - too many public authorities remain committed to the outdated practices associated with the linear economy.

The direction of travel has already been set though, through increasingly ambitious legislation and public opinion in support of change. Europe's Zero Waste Cities showcase how and why local authorities should be recognising this, and deciding to act now, rather than being forced into action in the future. The environmental, economic and social benefits of adopting local zero waste strategies, showcased across a wide range of contexts found in Europe, are now becoming too hard to ignore.

In the near future, our work at Zero Waste Europe will focus on building a stronger, better resourced, and more diverse network throughout Europe, able to support any municipality who wishes to make a change and become zero waste. Through the growth of the Zero Waste Cities Certification and the Mission Zero Academy, we have a more robust and data-driven framework to both support and reward municipalities who decide to begin their zero waste journey.

2021 has seen our Zero Waste Cities network grow throughout all of Europe - from the West coast of Portugal to rural East Montenegro, from the North Sea in Germany to the Mediterranean regions in Italy and Spain. This is down to the hard work and dedication of local groups within the Zero Waste Europe network, who are working together with municipality and waste company officials who recognise the urgent need for change, and the benefits this can bring their local community. These are the stories that the State of Zero Waste Municipalities Report, year after year, will continue to highlight and champion.

We know that stories have the power to change the world for the better.

We hope that by reading ours, you are inspired to change yours.



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Zero Waste Europe is the European network of communities, local leaders, experts, and change agents working towards the elimination of waste in our society. We advocate for sustainable systems and the redesign of our relationship with resources, to accelerate a just transition towards zero waste for the benefit of people and the planet.



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