

**CoopCities: Learning from urban cities sustainable solutions to deal with the
global challenges faced due to COVID pandemic**

Case Studies

CYPRUS-STANDO

National Case Study 1 CYPRUS

The Holistic Waste Management Program – Municipality of Aglantzia

Introduction

The Holistic Waste Management Program is an effective waste management strategy that aims to connect waste generation and billing. To put it another way, the European Polluter Pays Directive must be implemented. The program expands the public's recycling options by significantly increasing the amount of waste that can now be separated and recycled.

Objective

The Holistic Waste Management Program is aiming to achieve waste transformation into valuable raw materials with the implementation of the new "Holistic Waste Management" program, as the majority of waste is recycled. Concurrently, the fixed, annual waste collection fee currently levied on every citizen is eliminated, and a variable payment method Pay As You Throw is introduced. The charge is relative only on to the amount of mixed waste that is not diverted to recycle streams. The implementation of the Limit – Reuse – Recycle – Save philosophy can significantly reduce the cost of waste that citizens have been paying for.

Target Group

System is mandatory for every establishment. With the implementation of Pay as you Throw (PAYT), the Municipality stops sending charges for the garbage. Therefore, the cost of garbage must be recovered from the Municipality. Participation in the Program is therefore an option, but an obligation of all citizens. Aglantzia residents, as well as Aglantzia Municipality, are the program's final beneficiaries.

Method

The Municipality's services have been instructed to collect ONLY the purple bags that have paid for their collection. The use of any other bag means that the citizen does not pay the cost of collecting and managing his waste because the garbage fee will not be charged on an annual basis. As a result, other shaped bags will not be collected. People who use the wrong bags will receive recommendations, and if they are used in a systematic manner, the Municipality will be forced to issue an out-of-court fine. The number of purple bags required by each household has been calculated by the municipality. According to the discounts each vulnerable group received, a number of purple bags will be provided free of charge. And this presupposes that all citizens will participate in the program. If a household needs more bags than those given for free, they should buy them. Citizens can obtain the bags from the Municipality of Aglantzia's central offices, as well as from selected points of sale listed on the System's website and app. The Municipality's Holistic Waste Management Program consists of seven Steps as follows:

Composting: The home composting bin is provided free of charge by the Municipality to any citizen who has a garden and is interested.

- PMD: The special PMD transparent bag is available in many outlets (supermarket kiosks, etc.) and its costs are similar to conventional waste bags.)
- Paper Recycling: The special brown bag is available in many outlets (supermarket kiosks, etc.) and its cost is similar to conventional garbage bags.
- Glass Recycling:
- Bulky items: use of the “Green Point” by citizens which is free of charge.
- Green Recycling: Citizens can buy the special paper bags for €1.50 at the defined points of sales.
- Residual Waste: The Municipality now charges the collection of waste only through the charge of this bag.

Validation

Aglantzia Municipality was able to achieve a %30 reduction in household waste in 2021 as a result of the program's implementation.

Impact

Programme helped Municipality to improve culture of Citizens in reuse and recycling. After the positive results of this initiative, Ministry of Environment has approved the implementation of the project (Pay as you throw) on a nationwide basis during the programming period 2021-2027.

Innovation

The municipality and citizens communicate through an innovative mobile app and the program's website. These innovative tools allow the municipality to make an announcement, schedule pick-up days, and receive citizen complaints in order to

tackle the issue highlighted by citizens.

National Case Study 2 CYPRUS

TIGANOKINISI: turning domestic used cooking oil into biofuel

Introduction

Tiganokinisi is an environmental education program that focuses on collecting and recycling used cooking oil. Students learn how to turn used oil into biodiesel, and schools gain resources for environmental education and support of their environmental infrastructure, all to the benefit of students across Cyprus! At the same time, the program promotes green jobs and helps young, unemployed scientists find work.

Objective

It's an innovative approach to environmental education that includes practical activities and teaching, practice-based learning, and the adoption of environmentally friendly practices. The program's goal is to raise public awareness and participation through a creative problem-solving approach that includes active citizen participation and an educational component. The project aims to raise awareness about biofuels and alternative energy sources among the general public in Cyprus, particularly children, young people, and local governments, as well as to improve knowledge and change perceptions among a wide range of key stakeholders. The long-term objective of program is to encourage local governments, communities,

and businesses to promote material reuse in order to transition to a greener economy.

In addition, to encourage the use of biofuels and other alternative energy sources.

Target Group

Main stakeholders involved in the action's planning and implementation, such as NGO (s), SME (s), Sectoral agencies, Local Public Authorities, National Public Authorities, higher education and research institutions

Method

The viability of the program and the schools is dependent on the used cooking oil: The used cooking oil is recycled, and the profits are used to implement green technologies in order to achieve the sustainable school principle. Local governments and businesses participate in the program by donating used oil to schools as part of their corporate social responsibility programs. Students are also encouraged to try new things, develop their own digital or physical applications, products, or processes, and put their ideas to the test.

Validation

More than 400 schools have participated in the program.

Impact

Tiganokinisi began as a pilot program in ten schools in the municipality of Aglantzia in 2011, and it has been implemented nationwide since September 2013. More than 400 schools have signed up for the program so far, and over 600000kg of used oil has been collected.

Innovation

It's an innovative eco - friendly approach education that incorporates practical experience operations and training, as well as practice-based understanding.

International Case Study 1 (Bremen)

Car Sharing Action Plan for Bremen

Introduction

A growing number of cars is encroaching more and more of our urban space in many European cities. Car sharing has proved its ability to help better organize mobility, recapture street space, and achieve better the quality of urban life. `Car Sharing Action Plan for Bremen` has been supporting since 2009. Car sharing has proved its ability to help better organize mobility and recapture street space. It makes an important contribution to cleaner air, reduced noise, and environmental protection and achieve better the quality of urban life.

Objectives

Bremen aims to address issues such as traffic congestion, pollution, noise, and lack of space. The 'Bremen 2020' master plan aims to transform the city into an attractive and innovative economic zone with lively districts that provide a high quality of life. The city intends to reduce the number of cars on the road by 6,000 through 2020 by implementing multimodal alternatives. One car-sharing vehicle replaces 15 private cars. Car-sharing enables us to recapture public street space for

people while also saving the community money on the construction of expensive new parking garages. It would have cost around 70-100 million euros to build garages for private cars, not to mention the fact that it would have taken up valuable space.

Savings like these benefit the private real estate industry as well. A car-sharing station can help save money by reducing the number of parking spaces that need to be constructed, which can be considered for 15% of housing construction costs. As a result, car sharing is an important but often underestimated factor supporting low-cost housing construction and low-cost rents. Car sharing can help reduce traffic congestion in cities. It will result in a reduction of 200 to 290 kg of CO2 emissions per user and also help to regain public spaces consumed by parking garages.

Target Group

This good practice will benefit all city residents, as well as temporary settlers who use the city for a limited time. All Bremen residents are involved in the Bremen Action Plan.

Method

The Car Sharing Action Plan is based on Bremen's Sustainable Urban Mobility Plan (SUMP) 2025, which the municipality developed together with its citizens. Bremen aims to develop links with the public transportation system as part of the plan, as well as raise public awareness of these options. Bremen's car-sharing mascot, Udo, whose name stands for "Use it. Don't own it" is being used to raise awareness. Bremen currently has three car-sharing companies named Cambio, PMC (Personal Mobility Center Nordwest) and Flinkster. Over 20,000 users now have access to around 400 carsharing cars located at over 125 stations throughout Bremen.

All three providers collaborate with other cities to ensure that vehicles are available in many other cities.

Validation

About a third of Bremen's 20,000 car-sharing users have sold their car or decided not to buy one as a result of using the service. Citizens were able to save up to 30 kilometres of street space as a result of this.

Impact

More than 400 car-sharing cars are available in Bremen, Germany, with over 125 car-sharing stations. Emissions and noise pollution are reduced as a result of the car-sharing principle, with a variety of low-emission cars. Bremen has a population of about 557,000 people, with over 20,000 people using car-sharing services. This frees up space in the city, which is scarce, particularly for parking. More than 6,000 private cars have been removed from Bremen's public streets with the help of car-sharing.

Innovation

Bremen has recently updated its Sustainable Urban Mobility Plan (VEP Verkehrsentwicklungsplan 2025) and won the European SUMP Award – not only for the ambition in terms of sustainable transport but as well for its innovative participation concept. Technology and integrated digital platforms such as keyless entry and real-time parking options on mobile apps are tools which being used by car sharing operators.

International Case Study 2 (Bikfaya-LEBANON)

Digital Solution for Sustainable Waste Management in Bikfaya Municipality

Introduction

Effective waste management is very crucial because it protects the environment from the toxic effects of waste's inorganic and biodegradable elements. Besides environmental effects, waste management has a financial impact as well. Recycling the materials that businesses produce can help to save money. Bikfaya municipality in Lebanon, had no central government support and was unable to provide successful waste management solutions. This lack of support encouraged residents in the area to propose community initiatives. Recycling and sorting at the source were promoted by a group of volunteers. This case, which began with technical assistance from a local environmental NGO, has since evolved into a best practice. The Bikfaya municipality built a 2.000 square meter waste sorting facility named **BiClean** in March 2016 with a daily capacity of 10–15 tons of solid waste. Major challenges hampered progress after 5 years of operations, including incorrect waste sorting at source due to a lack of continuous education as well as a lack of monitoring and verification of sorting quality. To deal with this challenge, the municipality collaborated with **Nadeera** to promote sorting-at-source and maximize material recovery. Nadeera is a social enterprise that promotes sorting-at-source and maximizes material recovery through SWM technologies.

Objectives

The primary objective of this collaboration was to divert as much waste as possible from landfills and incinerators, lowering waste management costs, recovering value from waste, and, the more importantly, reducing the health and environmental consequences of waste mismanagement. The partnership with Nadeera resulted in a resident focused and **digitalized** waste management solution that makes use of technology while satisfying all involved stakeholders for environmental stewardship.

Target Group

This good practice will benefit all city residents, as well as temporary settlers who use the city for a limited time.

Method

A baseline study was performed just before to the implementation of Nadeera's services to identify current system gaps. Nadeera's intervention was grounded on the baseline data and included details on technical requirements, operating model, and resource requirements. Intervention includes:

Waste composition evaluation and inspection activity, conducting interviews with local government officials to discuss the deployment of a small pilot study, in collaboration with a behavioural science research team from Yale University and the University of Gothenburg, KAB (Knowledge, Attitude, and Behavioural) survey was distributed. The survey's outcomes revealed information about the sorting

performance, Mobilising shops and businesses to join Nadeera Marketplace, which allows residents to take advantage of discounts and special offers at local businesses in exchange for Nadeera points, which they can earn by properly sorting waste, Conducting a second round of manual sorting by the municipality in its facility 'BiClean', using conveyors designed by a local team followed by compression of separated waste

Validation

Bikfayas waste sorting quality increased. All residents participating in the program's activities with Nadeera are sorting their waste, which represents a %45 increase since the program's beginnings. The waste sorting quality has significantly improved over the last 3 months, with the average waste sorting score for recyclables increasing from 2.5 to 4.8.

Impact

The amount of waste contamination has decreased. The facility's recycle rates have improved. The amount of waste diverted from dumpsites, mostly organic wastes, has more than doubled in some cases, according to records from the BiClean facility. And the average processing time for incoming loads has been reduced. The Bikfaya Municipality's financial and environmental sustainability has been aided by a partnership between Nadeera and the BiClean facility.

Innovation

Mobile application was introduced during the process. Waste sorting was made more interactive, inclusive, and gamified with the **Nadeera app**.

Furthermore, accountability was assisted by monitoring and verification via a waste inspection system, as well as moral (sorting score) and financial (points and discounts) benefits to residents, all of which helped to drive the necessary behavioural change.

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