

# Integrated Action Plan for a circular transition of the city of Granada



# INTEGRATED ACTION PLAN GRANADA



*We are firmly and decisively committed to implementing a city model based on sustainability and commitment to the Sustainable Development Goals at a global level and to the citizens of Granada, who deserve a better future.*

Marifrán Carazo Villalonga, Mayor of Granada

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## INTRODUCTION

In 2023, the city of Granada was selected to be part of two of the 30 planning networks in the new call of the URBACT Program (EU Funds). Specifically, the City Council of the capital is involved in the "Cities At Heart" and "**LET'S GO CIRCULAR!!**" projects, which address topics such as the revitalization of the urban center and promotion of the circular economy, respectively. On a local level, the City Council works with the University of Granada, professional associations, businesses, and citizens to design integrated urban policies.



**URBACT is a European program** for learning and exchange between cities that promotes sustainable urban development, empowering municipalities to develop joint solutions to current urban challenges and reaffirming the key role cities play in response to social changes. Projects are structured in active planning networks, working both locally with key stakeholders in each area of influence and internationally by showcasing best practices from each of the ten involved cities.

The comprehensive promotion of circular economy will be the focus of LET'S GO CIRCULAR!, led by **Munich** (Germany), a network that will collaborate with Cluj (Romania), Corfu (Greece), Malmö (Sweden), Riga (Latvia), Oulu (Finland), Tirana (Albania), Guimaraes, and Lisbon (Portugal). The goal will be to develop an **integrated action plan** to achieve a solid transition towards a circular city model, continuing initiatives already undertaken at the local level, such as the URGE Project promoting Circular Economy in the construction sector, or the Circular Economy Plan.

For the implementation of this project, this integrated action plan has been done according to URBACT methodology. The city's needs will be addressed to analyze the problems and opportunities that can be identified with the other collaborating countries in the program, ultimately proposing sustainable solutions.

This is the result of the URBACT Local Group (ULG) process, which is a fundamental building block of the URBACT program. Each URBACT partner is required to set up a Local Group gathering key local stakeholders in order to co-produce city strategies and action plans.

An URBACT Integrated Action Plan (IAP) is a key element of the URBACT methodology. It consists of a city-level output that defines actions to be implemented within the city in order to respond to a specific urban policy challenge, reflecting the lessons learned from local stakeholders, transnational partners and the testing of actions on local level. The IAP is first and foremost a clear and useful tool for the city to tackle an existing challenge. In URBACT, the IAP is the output of the URBACT Local Group participative process. The process starts with building a road map and then drafting a detailed plan (including time-frame and funding information) for the city to deliver solutions to the urban challenge addressed in each URBACT network.

## PART I: City context and definition of the policy challenge

### 1. Local context and policy challenge

#### 1.1 Local context

Granada, a historic city in southern Spain, serves as the capital of the province of Granada within the autonomous community of Andalusia. Located at the foot of the Sierra Nevada and near the Mediterranean coast, it is internationally recognized for its **UNESCO World Heritage sites**, including the Alhambra, Generalife, and Albaicín.

With a **population of 232,717 (2024)**, Granada has been experiencing a population **decline of -0.4%** annually over the past decade, with a sudden **growth in recent years of 0.92% annually**. The city serves as the economic, administrative, and educational hub of a **metropolitan area** covering 34 towns and over 541,465 inhabitants.

The economic structure is dominated by the **service sector (72%)**, with smaller contributions from **industry (12%)**, **construction (11%)**, and **agriculture (5%)**, with emerging sectors in technology and innovation. The GDP per capita is €21,784 per year. Urban expansion is limited, as the new urban master plan maintains the city's current spatial boundaries.

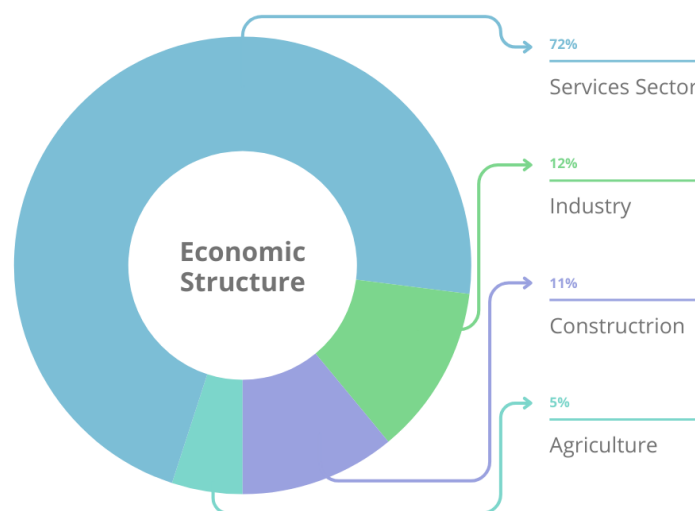


FIGURE 1.- ECONOMIC STRUCTURE OF GRANADA

Granada faces several challenges that hinder the transition toward a circular economy (CE). The city needs to transition from a linear consumption model to a circular one, emphasizing waste reduction, resource reuse, and sustainable practices. The main challenges include managing high volumes of waste generated by tourism, integrating circular practices in traditional sectors (e.g., construction and hospitality), and fostering community awareness and participation in circular initiatives.

- **Waste collection and recycling inefficiencies:** Urban waste recycling is still deficient, with limited waste separation at the source. Despite the presence of waste collection services, there is a need to improve waste sorting infrastructures, expand door-to-door collection systems, and promote citizen engagement in recycling practices. Current recycling facilities operate below optimal capacity, and public awareness campaigns must be strengthened to increase recycling rates.

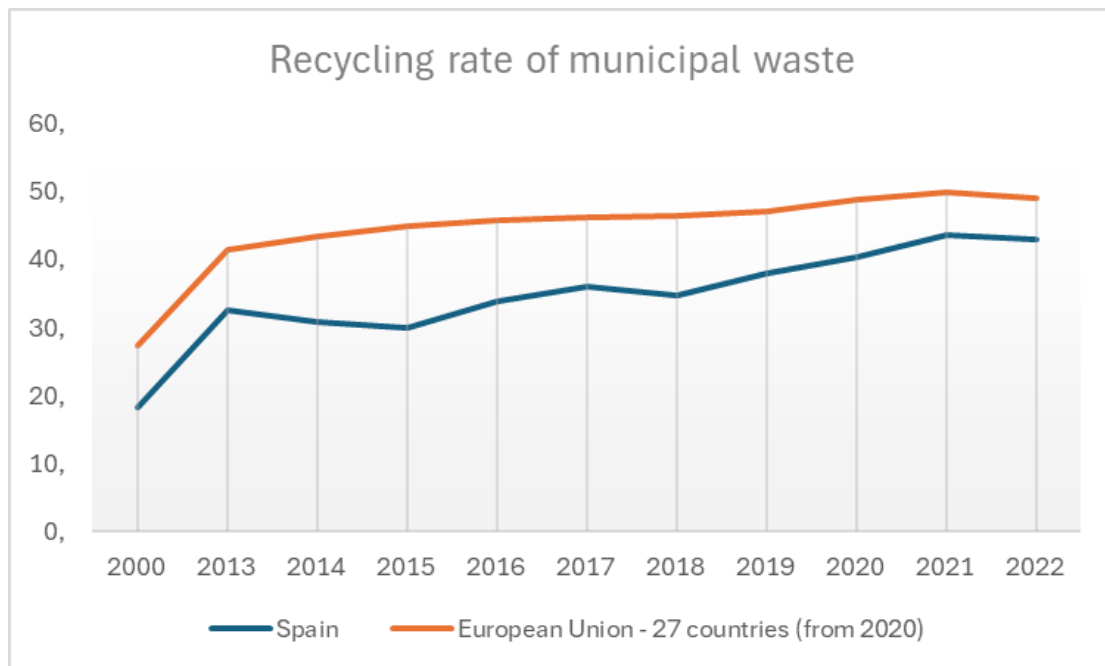


FIGURE 2.- RECYCLING RATE OF MUNICIPAL WASTE IN SPAIN

- **Resource recovery limitations:** Limited capacity to collect and process secondary raw materials. Existing facilities focus primarily on basic waste management rather than advanced resource recovery techniques, leading to a loss of valuable materials that could be reintroduced into the production cycle.
- **Air pollution and mobility issues:** Air pollution levels place Granada among the most polluted cities in Spain, trailing only Madrid and Barcelona in terms of poor air quality, mainly due to heavy traffic congestion in the metropolitan area. The city requires integrated solutions that promote sustainable mobility, reduce emissions, and enhance air quality through green infrastructure and cleaner public transportation options
- **Lack of circularity mindset:** Both citizens and businesses need stronger incentives and knowledge to integrate CE practices. Educational programs, incentive schemes, and collaborative initiatives with the private sector could help shift perceptions towards a more sustainable, circular economy.
- **Need for improved monitoring and measurement:** Data collection on waste flows and circularity indicators is still underdeveloped. Implementing digital tools and platforms for real-time data tracking and analysis would enable better decision-making and progress evaluation.

At the strategic level, Granada has made strides in aligning with national and regional frameworks that promote sustainability. Granada has integrated CE into various local and regional strategies:

- **Urban Agenda of Granada:** Defines a vision for a greener and more resilient city.
- **City Council Plan for Circular Economy (2023-2030):** Aims to enhance CE within the city's competencies, establishing a strategic vision for transitioning toward a green, resilient urban model.
- **Circular Economy Plan (2023-2030):** Sets specific actions to integrate circular practices within municipal competencies.

- **Regional Legislation:** At the regional level, Andalusia's Circular Economy Law (Ley 3/2023) provides an overarching legislative framework that supports local initiatives and supports CE initiatives.
- **PERTE de Economía Circular:** A national strategy promoting economic recovery through circularity.
- **URBACT-URGE Project (2019-2022):** Focused on circular economy in construction.

Institutionally, the City Council of Granada leads CE efforts, supported by regional and national policies. A newly created Department for Sustainability, Urban Agenda, and European Funds facilitates interdepartmental and external collaborations. Key stakeholders include:

- **Emasagra:** Water cycle management local public company
- **FCC:** Responsible for waste management and recycling services.
- **EMUCESA:** Provides public services contributing to circular initiatives.
- **University of Granada:** Offers research and innovation support, particularly in resource efficiency and waste management.
- **Ecoembes:** Engages in recycling and environmental awareness initiatives.
- **Civil Society and Business Chambers:** Play an essential role in promoting circular economy practices and community engagement.

This comprehensive approach ensures that all relevant actors contribute to a successful transition towards a circular economy in Granada.

## 1.2 The policy challenge

Granada's journey toward adopting Circular Economy (CE) principles began with the **URBACT-URGE Project (2019-2022)**, which focused primarily on integrating circular practices into the construction sector. The city recognized the potential of CE to enhance sustainability, reduce waste, and create economic opportunities. The success of this initiative prompted Granada to broaden its CE approach through the **City Council Plan for Circular Economy (2023-2030)**, which aligns local strategies with regional and national policies, such as the **Andalusian Circular Economy Law (Ley 3/2023)** and the **PERTE de Economía Circular**.

CE is a priority for Granada due to its reliance on tourism and services, which generate significant waste and resource consumption. Embracing circular practices is critical to balancing economic growth with environmental sustainability and social well-being.

The city's ambitions include:

- **Transitioning towards a circular economic, environmental, and social model.**
- **Promoting circularity in consumption, production, and waste management.**
- **Increasing waste separation at the source, particularly for biological waste, to reduce landfill dependency.**
- **Expanding circular economy initiatives beyond municipal competencies to a metropolitan level.**

However, several barriers currently hinder this transition. One of the key obstacles is the **lack of comprehensive data and monitoring mechanisms**. Waste management, a crucial component of circularity, falls under regional jurisdiction, making it difficult for the municipality to track and measure material flows effectively. Additionally, while the City Council has shown commitment to advancing circular policies, collaboration with provincial and metropolitan authorities remains



limited, preventing a cohesive and large-scale approach. Without stronger inter-institutional cooperation, efforts to implement circular economy solutions risk being fragmented and inefficient.

Another significant challenge is the **limited infrastructure for waste management and resource recovery**. Although there has been progress in implementing waste separation at the source, the city still lacks sufficient **eco-points** and public space to facilitate comprehensive recycling initiatives. In densely populated areas, placing additional waste collection points is difficult, increasing reliance on inadequate disposal methods. Moreover, the **absence of a metropolitan governing body** means that environmental and economic problems affecting Granada's urban area are not addressed through coordinated policies, despite their regional scale.

Beyond infrastructure, **public awareness and engagement** pose another hurdle. While the concept of a circular economy is gaining traction at the institutional level, it remains relatively abstract for many citizens and businesses. Changing consumption habits and business models requires a cultural shift toward resource efficiency, reduction, and reuse. Currently, many small and medium-sized enterprises (SMEs) lack the knowledge and incentives to integrate circularity into their operations, and municipal initiatives to support them are still in their early stages.

To overcome these barriers, Granada needs:

- **Better data collection and monitoring:** A digital **territorial sustainability observatory** could centralize and analyze CE data.
- **Institutional cooperation:** Strengthening partnerships with provincial and regional authorities to align policies and funding.
- **Expansion of waste management infrastructure:** New **eco-points** and improved waste separation logistics.
- **Citizen and business engagement programs:** Education, incentives, and regulations to drive behavioral change.
- **Integration of CE in procurement:** A **Circular Procurement Guidebook** to align contracts with CE principles.

Addressing these challenges requires a comprehensive, multi-stakeholder approach. The establishment of the ULG has provided a framework for integrating circularity across governance levels and economic sectors, fostering dialogue between policymakers, businesses, academia, and civil society. However, stronger institutional commitment and resource allocation are essential to scale up circular initiatives. Improving data collection and monitoring mechanisms, expanding waste management infrastructure, fostering metropolitan cooperation, and launching targeted public engagement campaigns are all necessary steps to ensure that circular economy principles become an integral part of Granada's urban transformation.

As the city moves forward, the focus will be on translating policy ambitions into concrete, measurable actions that can drive long-term change. By tackling existing barriers and leveraging both local and European resources, Granada has the potential to position itself as a leader in circular urban development, creating a more sustainable, resilient, and livable city for future generations.



## 2. Vision

Granada envisions a future where circular economy principles are deeply embedded in the city's fabric, guiding a transition towards a healthier, more liveable, and resilient urban environment. The city's ambition is to create a regenerative system where resources are utilized efficiently, waste is minimized, and economic prosperity goes hand in hand with environmental stewardship. By adopting a circular mindset, Granada aims to transform challenges into opportunities, fostering innovation and building a sustainable legacy for future generations.

The city's journey towards circularity involves a holistic transformation of its **economic and environmental model**, prioritizing resource efficiency and promoting a **regenerative approach** to urban development. Granada seeks to mainstream circular economy practices across all sectors, ensuring that businesses, institutions, and citizens alike incorporate **circular thinking into their daily activities**, from production and consumption to waste management and resource recovery.

A key aspiration for Granada is to significantly enhance **waste separation and resource recovery systems**, optimizing waste collection processes and promoting reuse and recycling practices. By increasing sorting at the source and establishing robust infrastructure for material recovery, the city aims to close the loop in local resource cycles, reducing landfill dependency and contributing to broader environmental goals.

Addressing **environmental impact** is also a priority. Granada is committed to improving **air quality and reducing urban congestion** through sustainable mobility initiatives and the development of urban green infrastructure. These actions will not only lower pollution levels but also contribute to the city's climate resilience and enhance the quality of public spaces.

Granada recognizes the importance of **citizen engagement** in achieving these ambitious goals. By fostering a culture of participation and shared responsibility, the city will empower residents to become active contributors to its circular economy vision. Educational programs, awareness campaigns, and community-driven initiatives will play a pivotal role in cultivating a **circular mindset** within the local population.

Achieving systemic change requires robust **governance and collaboration**. The city is committed to strengthening coordination between the **municipality, regional authorities, businesses, and academic institutions**, ensuring alignment of policies and initiatives that support circularity. Furthermore, Granada aims to leverage **innovation and digitalization**, implementing **smart city solutions** to monitor, measure, and optimize circular economy practices effectively.

That lead us to the following **Vision Statement**:

**"The Circular Economy as a tool for a healthier and more liveable city"**

Granada's vision encapsulates the transformative power of the circular economy, positioning it as a key instrument to enhance the well-being of its citizens, boost economic vitality, and safeguard the environment. This vision will guide the city's Integrated Action Plan, driving forward initiatives that make Granada a **model of sustainability and circular innovation** in Andalusia and beyond.

### 3. Short reference to the methodological framework

The development of Granada's **Integrated Action Plan (IAP)** follows a structured, participatory, and evidence-based approach. The methodology is aligned with **URBACT principles**, ensuring a **multi-stakeholder, cross-sectoral, and iterative process**.

#### 1) Establishment of the URBACT Local Group (ULG)

A fundamental step in the development of the IAP was the establishment of the ULG, designed to act as a dynamic platform for co-creation and cross-sectoral collaboration. The ULG was formed following the core principles of integration, ensuring that all relevant voices and perspectives were represented. This inclusivity was achieved by bringing together stakeholders from diverse sectors, including key municipal departments, the private sector, academia, and civil society organizations.

The municipal departments involved included representatives from Sustainability, Urban Agenda, European Funds, Waste Management, and Tourism. Their involvement was crucial for aligning the IAP with existing municipal strategies and ensuring coherence with broader urban policies. The private sector also played a significant role, particularly through the participation of small and medium-sized enterprises (SMEs) and representatives from the tourism industry. Their insights helped ground the plan in economic realities and identify opportunities for circular economy initiatives within local businesses.

Collaboration with the University of Granada added an academic and research-driven perspective to the ULG. Researchers contributed evidence-based insights and supported the design of innovative solutions. Additionally, the participation of citizens and non-governmental organizations (NGOs) that focus on sustainability and waste management infused the process with grassroots perspectives and promoted a sense of community ownership.

Together, these stakeholders created a robust co-creation platform that facilitated the alignment of sectoral policies and fostered cross-level governance. The ULG's regular meetings, workshops, and brainstorming sessions ensured that the IAP development remained transparent, inclusive, and responsive to local needs.

#### 2) Self-Assessment on Integration & Peer Review of the IAP

To build a strong foundation for the IAP, Granada conducted a thorough self-assessment to evaluate the city's level of integration across multiple dimensions. This assessment considered horizontal integration (coherence across municipal departments), vertical integration (alignment with regional and national policies), territorial integration (considering the geographic and spatial impacts), and stakeholder engagement (ensuring meaningful participation from diverse groups).

The self-assessment process involved a detailed review of existing strategies, policies, and initiatives related to the circular economy and sustainability. It identified gaps, opportunities, and areas for improvement, providing a clear picture of the city's readiness to implement an integrated approach.



To complement this internal evaluation, Granada engaged in a peer review process with other cities participating in the URBACT program. These sessions offered an invaluable opportunity for external validation, allowing experts and peers from other municipalities to assess Granada's approach critically. The exchange of best practices, insights, and constructive feedback helped refine the IAP, incorporating lessons learned from other European cities that had successfully implemented circular economy initiatives.

This dual approach of self-assessment and peer review not only enhanced the quality of the IAP but also strengthened Granada's network within the URBACT community, opening doors for future collaborations and knowledge sharing.

### 3) Local-Level Steps Towards the IAP Development

The final and most intensive phase of the IAP development focused on local-level actions, which were carefully structured into three sub-phases: problem analysis, ideation and action description, and pilot actions to test the intervention logic model.

#### a) Problem Analysis Phase:

The **problem analysis phase** began with a comprehensive baseline study aimed at identifying the primary challenges and barriers to achieving circularity in Granada. This study combined quantitative data analysis with qualitative insights gathered through consultations with ULG members and external experts. The findings were synthesized into a problem tree analysis, a strategic tool that mapped the root causes of existing issues and their broader effects on the city's sustainability objectives. This visual representation helped prioritize challenges that needed to be addressed and guided the design of targeted interventions.

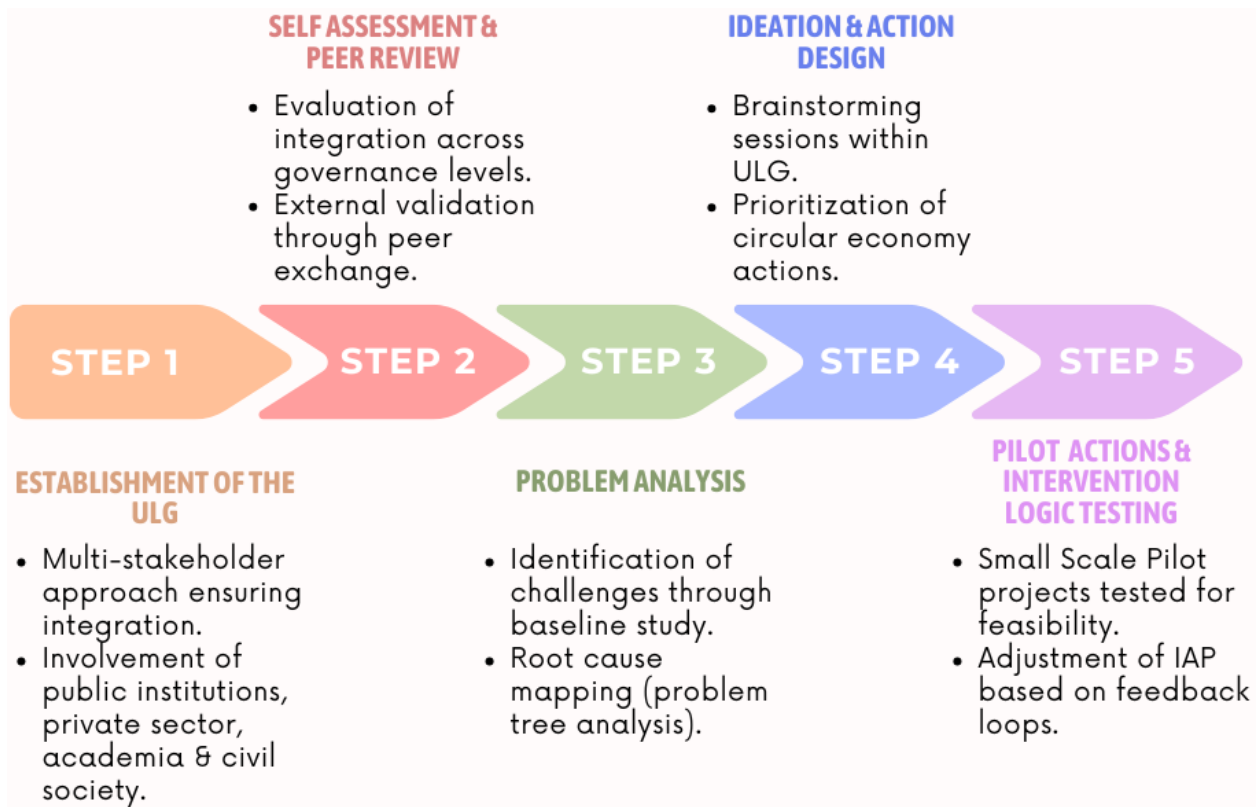
#### b) Ideation & Action Description Phase:

Building on this groundwork, the project moved into the **ideation and action description phase**, characterized by collaborative brainstorming sessions and workshops with ULG members. These sessions provided a platform for creative thinking and the generation of innovative ideas. Through guided discussions and structured activities, the group identified key intervention areas where the circular economy principles could have the greatest impact. Priority actions were then developed, each accompanied by a clear rationale and intended outcomes, ensuring that the IAP maintained a strategic focus throughout its development.

#### c) Pilot Actions & Testing the Intervention Logic Model:

To validate the proposed actions and refine the strategy further, the city implemented preliminary pilot actions as part of the testing phase of the intervention logic model. These pilot initiatives served as practical experiments to assess the feasibility and effectiveness of proposed measures. For example, a Circular Procurement Guidebook was developed to support local businesses and municipal departments in adopting sustainable purchasing practices. Additionally, initial steps were taken to craft a Circular Tourism strategy, exploring ways to minimize waste and promote resource efficiency within the tourism sector.

The pilot actions incorporated iterative feedback loops, involving continuous monitoring, stakeholder input, and performance evaluation. This approach ensured that the interventions remained adaptable and responsive to emerging challenges and opportunities. By testing the intervention logic model in a real-world setting, Granada strengthened the robustness of its IAP and built confidence among stakeholders about the plan's potential to drive meaningful change.





## PART II: Overall logic and integrated approach

### 3. Strategic objectives of the IAP

The city of Granada has defined **three strategic objectives** within the *LET'S GO CIRCULAR!!* project to strengthen its commitment to the Circular Economy and progress towards a more sustainable, resilient, and inclusive urban model. These objectives are aligned with the European Green Deal and the Spanish Urban Agenda, while also responding directly to the specific needs and challenges identified in our city. They aim to generate real and lasting impact on Granada's urban and social fabric, ensuring that the transition towards circularity is both locally relevant and globally connected.

- **Raising awareness about Circular Economy as a lever for environmental and health improvement - SO1**

When we spoke with citizens, we realized something important: nothing resonates more strongly than health. Cleaner air, safer food systems, greener spaces— these are the elements that have a tangible impact on people's daily life. That is why our first priority is to frame the Circular Economy not as an abstract concept, but as a tool to protect what matters most: our health and the health of our families. By connecting sustainable practices with tangible improvements in well-being, we aim to build a deep sense of ownership and engagement among our residents, turning awareness into everyday action.

- **Promoting the Circular Economy in events and tourism (general and MICE) - SO2**

Granada, a city propelled by tourism, welcomes millions of visitors annually. In 2024 alone, the city welcomed 6.7 million visitors, marking a 4.4% increase from the previous year. Beyond overnight stays, Granada hosts a rich tapestry of events—from award galas and film festivals to military parades, political summits, and major sporting events. This constant flow of activity makes the city pulse with energy—but also amplifies its environmental footprint.

On average, tourists in Spain generate 50% more waste than local residents and consume approximately 900 liters of water per day, compared to the 250 liters per day used by locals. This resource intensity—especially pronounced during short stays—places significant pressure on Granada's infrastructure, environmental systems, and city services.

This dynamism is a source of pride and prosperity, but it also leaves behind a heavy footprint: increased waste, pressure on infrastructure, and high resource consumption, often by people who are here only briefly.

For us, the challenge is clear. If we want Granada to remain a world-class destination, we must ensure that growth does not come at the expense of sustainability. By applying circular principles to both tourism and events we can transform this challenge into an opportunity. Circular tourism and circular events are not only about minimizing impacts; they are about ensuring that the economic vitality of Granada today does not compromise the resources of tomorrow.



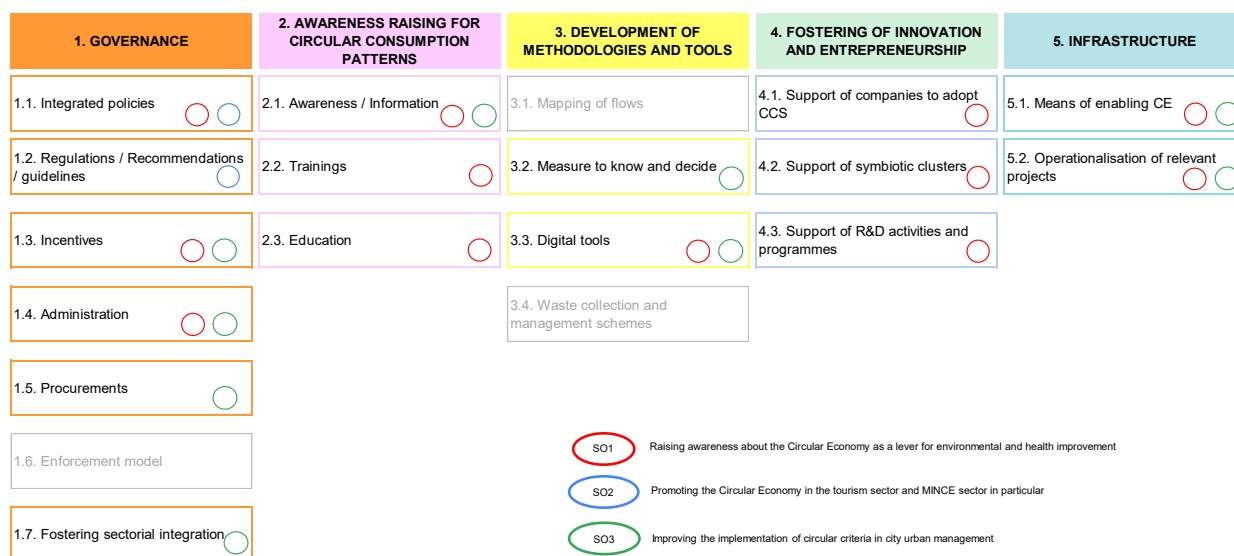
## ■ Improving the implementation of circular criteria in city urban management - SO3

Lasting change begins with institutions. If Granada is to inspire its citizens and businesses to embrace circularity, the municipality itself must lead by example. This means integrating circular principles into every aspect of urban management: from how we design and procure public projects, to how we manage waste, water, and energy, to how we plan and build our city.

We see this not as an administrative exercise, but as a cultural shift in governance. By showing that circular practices can work at the heart of city operations, we set a standard for the wider community. When institutions drive the change, society follows.

## 4. Themes and lines of intervention of focus

The actions pursued with the Integrated Action Plan are focusing on enhancing the well-being of its citizens, boosting economic vitality and safeguarding the environment in order to fulfil the strategic objectives highlighted in chapter section 3. In the context of the particular focus on the highlighted intervention lines, the LET'S GO CIRCULAR!! baseline study and roadmap, the measures and focus areas were assigned to the intervention lines.



### 4.1 Specific (operational objectives)

Each strategic objective of the IAP is complemented by specific operational objectives, which provide a framework for monitoring progress and ensuring accountability. These operational objectives are linked to concrete indicators that capture environmental, social, and economic impacts, making it possible to evaluate how Granada advances towards a circular model in practice. The following operational objectives correspond to the three strategic objectives of the plan.

- **SOB 1: Raising awareness about Circular Economy as a lever for environmental and health improvement.**

#### 1.1. Number of awareness events held per year and participants reached

Organising regular awareness events is essential to bring the circular economy closer to citizens. Tracking the number of events and participants reached will help assess the effectiveness and scope of these initiatives.

#### 1.2. Number of visits to the Circular Map

The Circular Map will serve as a digital reference point for sustainable services and practices. Monitoring visits will provide insight into its adoption and usefulness for citizens.

#### 1.3. Number of volunteering activities organized and volunteers engaged

Citizen involvement in volunteering initiatives demonstrates community ownership of circular practices. Measuring both the number of activities and engaged volunteers reflects the level of social mobilisation achieved.

#### 1.4. Annual survey results on citizens' perception of the circular economy

Annual surveys will capture how citizens understand and value the circular economy, offering key insights to adapt strategies and strengthen behavioural change.

- **SOB 2: Promoting the Circular Economy in events and tourism (general and MICE)**

#### 2.1. Number of sports and cultural events held without single-use plastics

The share of events organised without disposable items reflects how circular principles are being embedded in the management of major gatherings across the city.

#### 2.2. Number of sector companies accredited with the Granada Circular Seal

The Granada Circular Seal highlights companies' commitment to sustainability. Monitoring accredited companies shows progress in scaling circular practices in the tourism and events sector.

#### 2.3. Volume of municipal incentives or bonuses granted

Tracking the financial support allocated by the municipality illustrates the extent to which public policy is incentivising businesses and organisers to adopt circular measures.

#### 2.4. Annual volume of plastic used in events

Measuring plastic consumption at events provides a concrete indicator of progress in reducing waste at source.

#### 2.5. Annual volume of food surplus managed

Monitoring food surplus recovery and redistribution demonstrates the contribution of circular practices to both sustainability and social benefit.

- **SOB 3: Improving the implementation of circular criteria in city urban management.**

### 3.1. Volumes of waste managed by ECO-PARQUE Norte and the Mobile Ecopoint

Tracking the amounts processed through these facilities will indicate improvements in local waste management capacity and citizen participation.

### 3.2. Progress in the PAYT rate (Pay-As-You-Throw)

Progress in implementing PAYT demonstrates both institutional commitment and behavioural change in households and businesses.

### 3.3. Number of building permits benefiting from fee reductions

Monitoring the uptake of fee reductions linked to circular practices in construction highlights the sector's adoption of sustainable materials and methods.

### 3.4. Number of public tenders including circular criteria

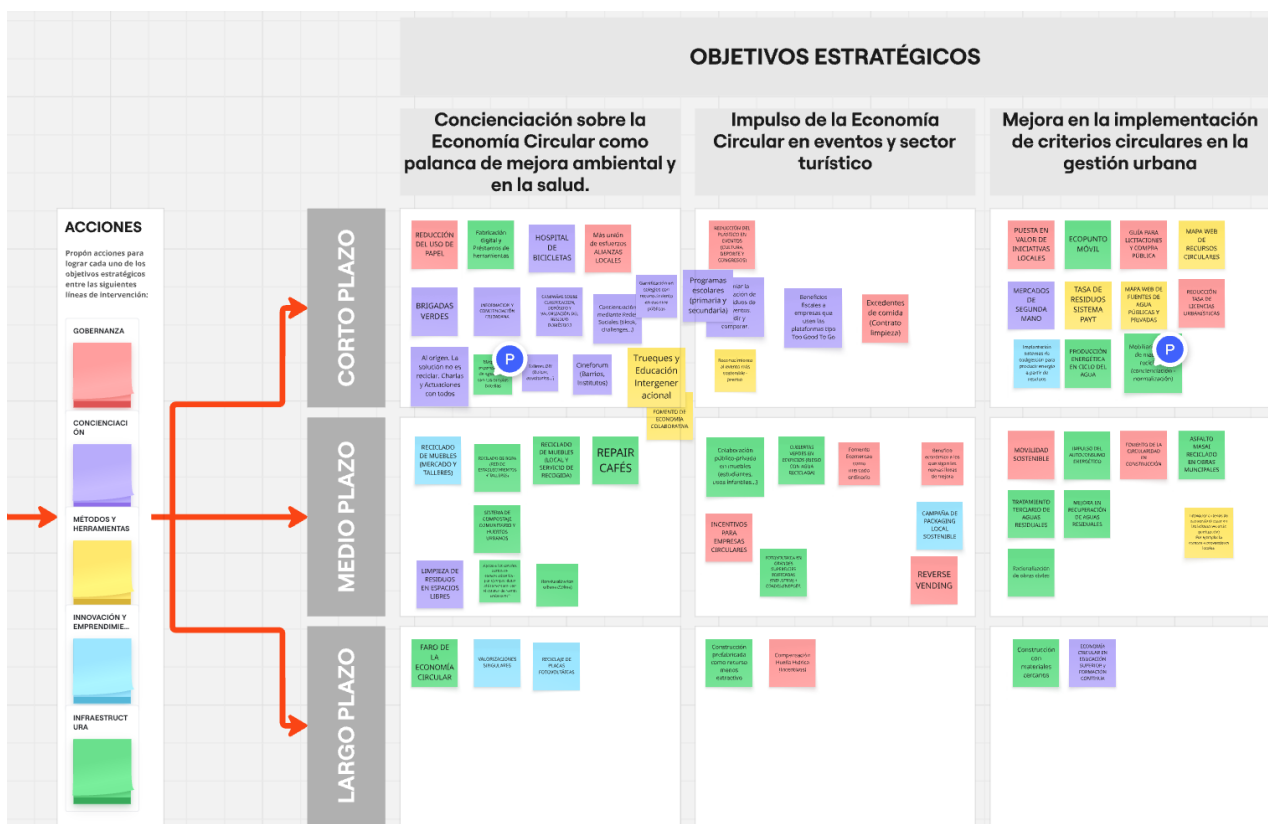
The integration of circular requirements into procurement demonstrates how the municipality embeds sustainability in its core governance tools.

### 3.5. Annual volume of reclaimed water

The volume of reclaimed water used reflects the city's ability to reduce reliance on potable water and advance sustainable resource management.

### 3.6. Annual volume of secondary raw materials used in municipal works and landscaping

Tracking the use of recycled and secondary materials in public projects highlights Granada's commitment to closing material loops and reducing extraction pressures.



## 5. Summary of actions

Here below is a summary table that gives an overview of the 28 actions.

Specific objective 1: Raising awareness about Circular Economy as a lever for environmental and health improvement					
Action N°	Action	Action Lead	Key partners	Resources	Timeframe
1.1.	<u>Enhanced value of local initiatives</u> Disseminate local best practices and enhance the value of initiatives focused on sustainable development, such as water cycle management, local product promotion, and research	Municipality Granada	Chamber of Commerce University of Granada	Own resources, FCC, Emasagra	Midterm
1.2.	<u>Incentives for circular businesses</u> Transition of local enterprises towards circular economy models by providing a package of fiscal, technical, and promotional incentives	Municipality Granada	Chamber of Commerce Business Confederation	Own resources	Midterm
1.3.	<u>Bicycle Hospital</u> Student-led repair of Local Police depot bicycles for reuse in the BikeSharing app, combining sustainable mobility with circular economy and practical training.	IES Hermenegildo Lanz	Municipality Granada	Own resources, External funding (Agenda 2030, Regional)	Short-term
1.4.	<u>Information and citizen awareness</u> Awareness-raising campaigns and workshops to promote circular economy, its health and environmental benefits, and sustainable consumption habits.	Municipality Granada	La Huella Verde Chamber of Commerce Colina	Own resources, Chamber of Commerce, Regional	Short-term
1.5.	<u>Citizen participation and engagement in environmental initiatives</u> Creation of community "Green Brigades" to organize clean-up actions, plogging and awareness activities on waste and environmental sustainability.	Municipality Granada	La Huella Verde Colina Associations Businesses	Own resources, External funding (Agenda 2030, Regional)	Short-term
1.6.	<u>Second-hand markets and furniture recycling</u> Promotion of circular consumption through second-hand markets, digital resale platforms, upcycling workshops and improved furniture collection to boost reuse and local entrepreneurship.	Municipality Granada	Retailers' Associations Chamber of Commerce Cleaning concessionaire New businesses	Own resources, Chamber of Commerce, Retailers' Association.	Midterm
1.7.	<u>Circular economy in higher education and continuing education</u> Integration of circular economy content into design, architecture and engineering studies and professional training to prepare future practitioners for sustainable, circular solutions.	University of Granada Chamber of Commerce	Municipality Granada ESADA COAG COAATG	Own resources and regional funds	Long-term
1.8.	<u>App for promoting the collaborative economy</u> Development of a digital platform to centralise bike-sharing, workshops, time banks and coworking, promoting resource sharing, community participation and circular practices.	Municipality Granada	Associations Businesses	Own resources, External (Regional, Metro)	Midterm
1.9.	<u>Sustainable local packaging campaign</u> Promotion of locally sourced, reusable packaging (bags, wrappers, doggy bags) using traditional Granada materials to cut waste, support local producers and enhance the circular economy.	Municipality Granada	Retail associations Chamber of Commerce University of Granada Design schools	Own resources and Cohesion ERDF (EDIL)	Midterm



1.10.	<u>Recycling of photovoltaic panels</u> Development of processes to reuse and recycle end-of-life photovoltaic panels, recovering materials and promoting circularity in the renewable energy sector.	University of Granada	Municipality of Granada, Greening	External funds (H2020)	Long-term
1.11.	<u>Unique reevaluations</u> R&D on the valorisation of oils, wipes, plastics and tyres to create new uses, foster industrial symbiosis and strengthen the local circular economy.	Emasagra	Municipality Granada University of Granada Professional associations	Own resources, External funds (H2020)	Midterm
1.12.	<u>Tertiary wastewater treatment</u> Implementation of advanced tertiary wastewater treatment to recycle water for irrigation and flushing, reducing potable water use and improving resource efficiency.	Emasagra	Municipality Granada	Regional funds	Long-term
1.13.	<u>Promoting energy self-consumption</u> Promotion of energy self-consumption through advice, incentives, energy communities and tools (solar map, home guides) to boost local renewable generation and savings.	Municipality Granada	Chamber of Commerce	Own resources, external funds (Interreg, Regional, National)	Midterm
1.14.	<u>Repair cafés and Fablab   Tool Library</u> Creation of a network of repair cafés, fab labs and tool libraries to enable community repair, DIY projects, upcycling and resource sharing.	Municipality Granada	Chamber of Commerce Ecoparque Norte University of Granada ESADA	Own resources, external funds (Cohesion ERDF, Regional)	Midterm
1.15.	<u>Clothing recycling (network of establishments and workshops)</u> Creation of local clothing repair/reuse workshops and a sustainable fashion show to cut textile waste and promote circular, responsible fashion in Granada.	Municipality Granada	Madre Coraje Association ESADA EASD Val del Omar Chamber of Commerce	Own resources, external funds (Cohesion ERDF, Regional)	Midterm

**STRATEGIC OBJECTIVE SO 2: Promoting the Circular Economy in events and tourism (general and MICE)**

Action N°	Action	Action Lead	Key partners	Resources needs	Timeframe
2.1.	<u>Reduction of Single-Use Items in Events and Tourism</u> Elimination of single-use items in events and tourism, promoting reusable alternatives and digital solutions (e-receipts, online catalogues) to reduce waste and paper use.	Municipality Granada	Event Promoters GEGSA Chamber of Commerce Convention Bureau Retailers' Association	Own resources, private (promoters, Chamber of Commerce)	Midterm

**STRATEGIC OBJECTIVE SO 3: Improving the implementation of circular criteria in city urban management**

Action N°	Action	Action Lead	Key partners	Resources needs	Timeframe
3.1.	<u>Reduction in urban license fee</u> Reduction of urban license fees for construction projects that use secondary raw materials, incentivising circular, low-waste building practices.	Municipality Granada	Professional associations (Architects and Technical Architects)	Own resources	Midterm

3.2.	<u>Reverse vending</u> Implementation of reverse vending machines in supermarkets that reward bottle and can returns to boost recycling and reduce packaging waste.	Retailers' Associations	Municipality Granada Chamber of Commerce	Own resources and regional funds	Midterm
3.3.	<u>Reduction of emissions</u> Integrated mobility measures (LEZ, Safe School Routes, pedestrian areas, mobility app and better public transport) to cut traffic, emissions and improve urban accessibility.	Municipality Granada	Regional Government Retailers Association Public Parkings	Own resources and NextGenEU	Long-term
3.4.	<u>Guide for public tenders and procurement</u> Integration of circular economy criteria into municipal procurement through a tendering guide to prioritise sustainable, resource-efficient and low-impact contracting.	Municipality Granada	-	Own resources and Agenda 2030	Midterm
3.5.	<u>Promoting circularity in construction</u> Promotion of recycled and sustainable construction materials through outreach, research and networking to drive circular practices in the building sector.	Municipality Granada	University of Granada Professional associations (Architects and Technical Architects)	Own resources, External funds (H2020)	Long-term
3.6.	<u>Waste Rate PAYT System</u> Implementation of a Pay-As-You-Throw system with variable waste fees to incentivise reduction and recycling through fair, usage-based tariffs.	Municipality Granada	Local Waste management company (FCC)	Own resources and regional funds	Midterm
3.7.	<u>Digitalization and Transparency</u> Development of a geolocated digital map of circular economy services and water fountains, with a "Granada Circular" badge to highlight committed businesses.	Municipality Granada	Chamber of Commerce Emasagra	Own resources and regional funds	Midterm
3.8.	<u>Circular economy beacon</u> Creation of a Circular Economy Demonstration Center at the North Ecopark to showcase best practices, educate visitors and inspire wider adoption of circular solutions.	Ecoparque Norte	Municipality Granada	Own resources, External funds (H2020, Fundación Biodiversidad)	Long-term
3.9.	<u>Improvement in wastewater recovery</u> Advanced wastewater treatment to recover water, energy and nutrients, turning wastewater into a resource within a circular urban water cycle.	Emasagra	Municipality Granada	Own resources and regional funds	Long-term
3.10.	<u>Energy production in the water cycle</u> Harnessing energy from the urban water cycle (hydropower, biogas, cogeneration) to boost self-sufficiency and circular, renewable energy use.	Emasagra	Municipality Granada	Own resources	Long-term
3.11.	<u>Community composting system</u> Implementation of selective organic waste collection and local composting for urban gardens and green areas, supported by citizen education to cut landfill waste.	Publica schools	Local Waste management company (FCC) Urban gardens	Own resources and regional funds	Midterm

3.12.	<u>Improvement of Specific Waste Fractions Collection</u> Deployment of Mobile Ecopoints to bring recycling services closer to neighbourhoods, boosting collection of recyclables and reducing landfill waste.	Local Waste management company (FCC)	Municipality Granada Ecoparque Norte	Own resources and Cohesion funds (EDIL)	Midterm
3.13.	<u>MASAI Recycled Asphalt</u> Use of low-temperature recycled asphalt (with tyres and reclaimed material) to cut emissions and embed circularity in road construction.	University of Granada	Municipality Granada	Own resources and Research programs funds	Midterm

Each of those actions is described in the action tables below:

## STRATEGIC OBJECTIVE SO 1: Raising awareness about Circular Economy as a lever for environmental and health improvement

Title of action #1.1	<b>Enhanced value of local initiatives</b>
Themes of focus	1. Governance
Lines of intervention	1.1. Integrated policies
Objective	Dissemination of local best practices (water cycle, local products, local research, local projects) and institutional recognition
Short description	This action aims to disseminate local best practices and enhance the value of initiatives focused on sustainable development, such as water cycle management, local product promotion, and research. Through institutional recognition and wide dissemination of successful local projects, the initiative seeks to strengthen governance structures and promote collaboration between key stakeholders, including the municipality, Chamber of Commerce, and local universities. By highlighting these best practices, the action intends to inspire further adoption of sustainable and circular solutions across the community.
Impact	Boosts the adoption of circular practices by spreading local success stories and strengthening multi-stakeholder collaboration and encourages replication of sustainable initiatives and improves local governance through shared learning
Timescale	Midterm
Rough cost estimation	7.000 €/year
Indicator	Number of activities conducted
Estimated impact on sustainability	Medium – This action contributes to long-term sustainable practices by sharing local best practices and encouraging broader adoption of circular economy models.
Cross-cutting topics addressed	Sustainable Development, Local Innovation, Governance, Education.
Status of the action	New action
Rough risk estimation	Low – The risks are associated with limited participation and resistance to changing traditional practices.
Action owner	Municipality / Chamber of Commerce / University



Title of action #1.2	<b>Incentives for circular businesses</b>
Themes of focus	1. Governance
Lines of intervention	1.3. Incentives
Objective	Support businesses that implement circular economy practices, such as the use of recycled materials or sustainable production processes, with advice and incentives. Tax breaks, Advisory Office, Business Networking, Seal of Quality (CIRCULAR GRANADA)
Short description	This action promotes the transition of local enterprises towards circular economy models by providing a package of fiscal, technical, and promotional incentives. It will establish an Advisory Office for Circular Business to guide companies in adopting sustainable production processes, including the use of recycled materials, eco-design principles, and waste reduction strategies. Eligible businesses will benefit from tax breaks, access to dedicated networking events, and eligibility for a municipal Seal of Quality – Circular Granada to enhance market visibility. The initiative aims to stimulate innovation, strengthen local value chains, and position Granada as a reference for sustainable and circular business practices.
Impact	Accelerate the shift of local enterprises toward circular business models, reducing waste and resource consumption while stimulating innovation. It will strengthen local value chains and improve the competitiveness and visibility of Granada's sustainable businesses.
Timescale	Midterm
Rough cost estimation	15.000 €/year
Indicator	Number of companies/ Volume of incentives/ Number of events
Estimated impact on sustainability	High – Encouraging businesses to adopt circular practices has significant potential to reduce waste and carbon emissions, fostering a circular economy.
Cross-cutting topics addressed	Business Innovation, Resource Efficiency, Sustainability in Business.
Status of the action	New action
Rough risk estimation	Medium – The risk lies in businesses' reluctance to adopt circular practices without sufficient incentives or support.
Action owner	Municipality / Chamber of Commerce / Business Confederation



Title of action #1.3	<b>Bicycle Hospital</b>
Themes of focus	2. Awareness raising for circular consumption patterns
Lines of intervention	2.2. Trainings
Objective	Repair of bicycles from the Local Police depot for later use using the BikeSharing app, also conducted by students.
Short description	This action focuses on repairing bicycles from the Local Police depot for reuse through the <i>BikeSharing</i> app, with the work carried out by students. The initiative aims to support the local community's sustainable mobility options by providing a regular maintenance and repair cycle for bicycles. By involving students in the repair process, the program serves both as an educational tool and a practical solution for improving urban mobility infrastructure. It also helps extend the lifespan of bikes, promoting circular consumption practices within the city.
Impact	Extend the lifespan of unused bicycles and reduce waste, while providing students with hands-on training in sustainable mobility. It also increases access to affordable transport through the BikeSharing system, supporting circular consumption in the city.
Timescale	Short-term
Rough cost estimation	2.000 €/year
Indicator	Number of bicycles repaired per year
Estimated impact on sustainability	Medium – Extending the life of bicycles and promoting their reuse supports sustainable transportation and reduces waste.
Cross-cutting topics addressed	Sustainable Mobility, Education, Community Engagement.
Status of the action	Ongoing
Rough risk estimation	Low – Risks may include limited funding or lack of engagement from students or local authorities.
Action owner	IES Hermenegildo Lanz



Title of action #1.4	<b>Information and citizen awareness</b>
Themes of focus	2. Awareness raising for circular consumption patterns
Lines of intervention	2.1. Awareness / Information
Objective	Campaigns, workshops, and activities focused on raising awareness about the circular model and its health and environmental benefits.
Short description	This action aims to raise awareness about the circular economy model and its health and environmental benefits through campaigns, workshops, and various activities. By engaging citizens with hands-on learning experiences and informative sessions, it seeks to foster a broader understanding of sustainability principles and encourage the adoption of circular consumption patterns. The initiative will help build a more informed and environmentally conscious community that is motivated to integrate sustainability into their daily lives.
Impact	Increase public understanding of circular economy principles and encourage more sustainable consumption behaviours across the community. It will help build a more informed and engaged population, strengthening support for environmental and circular initiatives in Granada.
Timescale	Short-term
Rough cost estimation	6.000 €/year
Indicator	Number of activities per year
Estimated impact on sustainability	High – Raising awareness about the circular economy will lead to broader changes in consumer behaviour, fostering more sustainable practices in the community.
Cross-cutting topics addressed	Education, Public Engagement, Health and Environment.
Status of the action	Ongoing
Rough risk estimation	Low – The main risk is ensuring wide participation and reaching diverse community groups effectively.
Action owner	La Huella Verde/ COLINA / City Hall

Title of action #1.5	<b>Citizen participation and engagement in environmental initiatives</b>
Themes of focus	2. Awareness raising for circular consumption patterns
Lines of intervention	2.1. Awareness / Information
Objective	Promoting environmental associations for cleanup, awareness, and outreach activities. Community clean-up actions in open spaces, rural areas, riverbanks, and plogging. Awareness-raising about the collected waste (Exhibition at Fuente de las Batallas, Plaza del Carmen). Community collection activities in open spaces, rural areas, riverbanks, and plogging. Raising awareness of collected waste (Exhibition at Fuente de las Batallas, Plaza del Carmen)
Short description	This action focuses on promoting community-based environmental initiatives through the establishment of Green Brigades—local environmental associations dedicated to organizing clean-up and awareness-raising activities. These brigades will engage in community-driven clean-up actions in open spaces, rural areas, riverbanks, and through plogging (jogging while picking up litter). The initiative will raise awareness about the waste collected, with an exhibition at public spaces such as Fuente de las Batallas and Plaza del Carmen to educate citizens about waste management and environmental sustainability. By fostering collaboration between local associations, businesses, and the municipality, this action will actively contribute to cleaner public spaces and enhanced community involvement in sustainability efforts.
Impact	Contribute to cleaner public spaces and increased waste reduction through regular community-led clean-up activities. It will also strengthen local environmental stewardship by boosting citizen participation and collaboration among associations, businesses and the municipality.
Timescale	Short-term
Rough cost estimation	300 €/session
Indicator	Number of members/ Number of activities Volume of waste collected
Estimated impact on sustainability	High – Promoting waste clean-up and environmental awareness directly impacts waste reduction and community engagement.
Cross-cutting topics addressed	Community Participation, Waste Management, Education.
Status of the action	Ongoing
Rough risk estimation	Medium – Potential challenges include ensuring long-term volunteer engagement and coordination of activities.
Action owner	La Huela Verde/ HILL / City Hall /Municipality/ Associations / Businesses



Title of action #1.6	<b>Second-hand markets and furniture recycling</b>
Themes of focus	2. Awareness raising for circular consumption patterns 4. Fostering innovation and entrepreneurship 5. Infrastructure
Lines of intervention	2.1. Awareness / Information 4.2. Support of symbiotic clusters 5.1. Means of enabling CE
Objective	Promote fairs or digital platforms for the purchase and sale of used products, such as clothing, books, furniture, and appliances. Promotion of upcycling through the development of establishments such as workshops and training programs. Improvement of the current local furniture collection service, both in terms of transport and the condition of the collected materials. Promoting "Upcycling," both through establishment development and training and workshops Improved current service, both in transportation and in the condition of the collected materials
Short description	This action seeks to promote circular consumption by supporting the creation of second-hand markets and digital platforms for the buying and selling of used products, including furniture. It aims to foster the <i>upcycling</i> movement through the establishment of workshops, training programs, and collaborative spaces. Additionally, the initiative seeks to improve the current local furniture collection service, enhancing both the transportation and the condition of collected materials. By developing new establishments and supporting symbiotic clusters, this action will promote the reuse of materials, reduce waste, and create new opportunities for local entrepreneurship, contributing to the circular economy in both practical and innovative ways.
Impact	Reduce waste by increasing the reuse of furniture and second-hand items, while strengthening local circular markets. It will also stimulate local entrepreneurship and social innovation through new business models, workshops, and collaborative reuse spaces.
Timescale	Midterm
Rough cost estimation	5.000 €/year
Indicator	Number of transactions, type of product, etc. Number of establishments   Number of organized activities Number of reused furniture
Estimated impact on sustainability	High – Encouraging the reuse of furniture and second-hand items significantly reduces waste and promotes a circular economy.
Cross-cutting topics addressed	Resource Efficiency, Waste Reduction, Social Innovation.
Status of the action	New action
Rough risk estimation	Medium – Risks include low adoption rates or logistical challenges in organizing collection services.
Action owner	Municipality / Retailers' Associations/ Chamber of Commerce/ Cleaning concessionaire/ New businesses/ Cleaning dealership



Title of action #1.7	<b>Circular economy in higher education and continuing education</b>
Themes of focus	2. Awareness raising for circular consumption patterns
Lines of intervention	2.3. Education
Objective	Introduction of CE topics in the curricula of degree programs in product design, architecture, and engineering, as well as in professional associations
Short description	This action aims to integrate circular economy (CE) topics into the curricula of degree programs in product design, architecture, and engineering. It will also extend to professional associations, ensuring that future professionals and practitioners are equipped with the knowledge and skills to design and implement circular economy solutions. By introducing CE into academic programs, the initiative seeks to prepare students to tackle sustainability challenges in their respective fields, fostering innovation and promoting a broader understanding of circular consumption patterns. This action will not only influence educational practices but also create a long-term impact by ensuring that future industry leaders prioritize sustainability in their work.
Impact	Create long-term societal impact by equipping future professionals with the skills to design and implement circular solutions across multiple sectors and strengthen the integration of sustainability principles in industry and public decision-making, accelerating Granada's transition toward a circular economy.
Timescale	Long-term
Rough cost estimation	200.000 €
Indicator	Number of credits dedicated to CE
Estimated impact on sustainability	High – Educating future professionals on circular economy principles ensures long-term societal change towards sustainable practices.
Cross-cutting topics addressed	Education, Innovation, Workforce Development.
Status of the action	New action
Rough risk estimation	High – Risks involve institutional resistance and the challenge of integrating new curricula in established programs.
Action owner	University of Granada (UGR) / ESADA/ COAG/ COATG

Title of action #1.8	<b>App for promoting the collaborative economy</b>
Themes of focus	3. Development of methodologies and tools
Lines of intervention	3.3. Digital tools
Objective	BikeSharing, workshops, time bank, coworking
Short description	This action focuses on the development of a digital platform aimed at promoting the collaborative economy by facilitating access to services such as bike-sharing, workshops, time banks, and coworking spaces. The app will serve as a central hub for users to share resources, exchange skills, and participate in community-driven initiatives. By providing an integrated solution for various collaborative activities, the initiative aims to foster a sense of community, support sustainable mobility, and encourage the sharing of knowledge and services. This digital tool will help build a more resilient and cooperative local economy by enhancing access to sustainable services and promoting circular practices.
Impact	Strengthen collaborative practices in the community by making it easier for citizens to share resources, skills and mobility services through a digital platform. It will promote more efficient use of local assets and support a more connected, resilient and circular local economy.
Timescale	Midterm
Rough cost estimation	60.000 €
Indicator	Number of sources / Number of website visits
Estimated impact on sustainability	Medium – Facilitating resource-sharing and collaborative activities through an app promotes a more sustainable and connected community.
Cross-cutting topics addressed	Digital Tools, Collaboration, Sustainable Mobility.
Status of the action	New action
Rough risk estimation	Medium – Risks include user adoption rates and technological limitations.
Action owner	Municipality/ Associations / Businesses



Title of action #1.9	<b>Sustainable local packaging campaign</b>
Themes of focus	4. Fostering innovation and entrepreneurship
Lines of intervention	4.1. Support of companies to adopt CCS
Objective	Local packaging lines (reusable bags, wrappers, doggy bags, etc.) with its own identity for Granada businesses. Possible use of local materials (wicker, esparto grass, local paper, etc.). Economies of scale and local identity.
Short description	This initiative seeks to foster the adoption of sustainable and locally sourced packaging solutions for Granada's businesses. It includes the creation of reusable bags, wrappers, and doggy bags, each designed to reflect the city's unique identity. The project promotes the use of traditional materials such as wicker, esparto grass, and local paper, emphasizing both environmental benefits and local craftsmanship. By leveraging economies of scale and highlighting Granada's cultural heritage, this action intends to minimize packaging waste, support local production, and enhance the circular economy within the region.
Impact	Reduce single-use packaging and promote environmentally friendly alternatives, lowering waste generation across the local retail sector. It will also strengthen local craftsmanship and economic activity by encouraging the use of locally produced packaging materials.
Timescale	Midterm
Rough cost estimation	150.000 €
Indicator	Number of units used.
Estimated impact on sustainability	High – Reducing single-use packaging and promoting local alternatives has significant environmental benefits.
Cross-cutting topics addressed	Waste Reduction, Local Economic Development, Resource Efficiency.
Status of the action	New action
Rough risk estimation	Medium – Risks include resistance from local businesses and the complexity of scaling sustainable packaging solutions.
Action owner	Retail associations/ Chamber of Commerce/ University of Granada (UGR)/ Design schools.



Title of action #1.10	<b>Recycling of photovoltaic panels</b>
Themes of focus	4. Fostering innovation and entrepreneurship
Lines of intervention	4.3. Support of R&D activities and programs
Objective	Reuse of all photovoltaic panel components at the end of their useful life.
Short description	This action focuses on the development of processes for the reuse and recycling of photovoltaic panel components once they reach the end of their useful life. By promoting research into efficient methods for recovering valuable materials, such as glass, metals, and semiconductors, this initiative supports the transition toward a more sustainable circular economy in the renewable energy sector. The goal is to ensure that photovoltaic panels do not contribute to waste but instead become valuable sources for new materials, furthering innovation in recycling technologies and strengthening environmental sustainability.
Impact	Reduce waste in the renewable energy sector by recovering valuable materials from end-of-life photovoltaic panels and reintegrating them into new production cycles. It will also drive technological innovation and support the development of a truly circular photovoltaic value chain.
Timescale	Long-term
Rough cost estimation	High costs (R+D+i and infrastructure)
Indicator	Volume of reused material
Estimated impact on sustainability	High – Recycling photovoltaic panels closes the loop in the renewable energy sector, promoting a truly sustainable energy cycle.
Cross-cutting topics addressed	Renewable Energy, Innovation, Resource Recovery.
Status of the action	New action
Rough risk estimation	High – Technical challenges in developing efficient recycling technologies and scaling them across regions.
Action owner	University of Granada (UGR) / Greening

Title of action #1.11	<b>Unique reevaluations</b>
Themes of focus	4. Fostering innovation and entrepreneurship
Lines of intervention	4.3. Support of R&D activities and programs
Objective	Research on the valorization of specific materials (oil, wipes, construction, agricultural plastic, tires, etc.) for their specific uses and the promotion of local industrial symbiosis
Short description	This initiative explores the potential of reusing specific waste materials, such as oil, wipes, construction plastics, agricultural plastics, and tires, by researching their valorization for targeted uses. The action aims to advance innovation in material recovery and foster the development of local industrial symbiosis, where different industries collaborate to optimize resource use and reduce waste. Through focused R&D activities, the project seeks to discover new ways to transform waste into valuable resources, strengthening sustainable practices within local industries and contributing to a circular economy.
Impact	Reduce industrial waste by identifying new ways to valorize specific waste materials and transform them into useful resources. It will also strengthen local industrial symbiosis by fostering collaboration between sectors and driving innovation in material recovery.
Timescale	Midterm
Rough cost estimation	High costs (R+D+i and infrastructure)
Indicator	Number of research projects
Estimated impact on sustainability	High – Research into the valorization of specific waste materials can lead to significant reductions in industrial waste and foster innovative resource use.
Cross-cutting topics addressed	Innovation, Waste Valorization, Industrial Symbiosis.
Status of the action	New action
Rough risk estimation	High – Risks include the potential failure to identify feasible revaluation methods and market uptake of recovered materials.
Action owner	University of Granada (UGR) / Professional associations / Emasagra



Title of action #1.12	<b>Tertiary wastewater treatment</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.2. Operationalisation of relevant projects
Objective	Tertiary treatment of wastewater for irrigation and flushing.
Short description	This action aims to implement advanced tertiary treatment processes for wastewater to enable its reuse in irrigation and flushing systems. By refining wastewater treatment, the project seeks to reduce the demand for potable water in non-consumptive applications, promoting a more sustainable use of water resources. This initiative will improve water management efficiency, reduce environmental impact, and contribute to the circular economy by treating and repurposing wastewater for essential services. It focuses on enhancing infrastructure and operational processes to maximize the benefits of wastewater recycling.
Impact	Reduce significantly the demand for potable water by enabling the reuse of treated wastewater for irrigation and flushing, improving overall water efficiency. It will also strengthen environmental sustainability by reducing freshwater extraction and promoting circular water management practices.
Timescale	Long-term
Rough cost estimation	>6M € (infrastructure and maintenance)
Indicator	Volume of tertiary water generated.
Estimated impact on sustainability	High – The reuse of wastewater for irrigation and flushing reduces the demand for potable water, promoting efficient water management and environmental sustainability.
Cross-cutting topics addressed	Water Management, Resource Efficiency, Circular Economy.
Status of the action	New action
Rough risk estimation	High – Implementation of advanced treatment technologies is complex and expensive, with potential technical and regulatory hurdles.
Action owner	Emasagra

Title of action #1.13	<b>Promoting energy self-consumption</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.2. Operationalisation of relevant projects
Objective	Dissemination and advice on energy savings and self-consumption through awareness-raising activities, rebates, the promotion of energy communities, a solar map, and home-use guides.
Short description	This action promotes energy self-consumption by offering guidance and incentives to residents and businesses on energy savings. The initiative includes raising awareness through campaigns, providing rebates, and encouraging the formation of energy communities. It also introduces tools like a solar map and home-use guides to facilitate the adoption of renewable energy solutions, particularly photovoltaic systems. By fostering local energy production, the project aims to reduce dependence on external energy sources, lower carbon footprints, and empower citizens to actively contribute to sustainable energy practices.
Impact	Reduce dependence on external energy sources by increasing local renewable energy production through self-consumption initiatives. It will also lower carbon emissions and empower citizens and businesses to adopt more sustainable and energy-efficient practices.
Timescale	Midterm
Rough cost estimation	300.000 €
Indicator	Installed photovoltaic capacity
Estimated impact on sustainability	Medium – Promoting energy self-consumption reduces dependence on external sources and supports renewable energy, but its impact will grow over time as more participants adopt energy-saving solutions.
Cross-cutting topics addressed	Renewable Energy, Community Engagement, Energy Efficiency.
Status of the action	Ongoing
Rough risk estimation	Medium – Risks include low participation, technological barriers, and ensuring the availability of sufficient rebates and incentives.
Action owner	Municipality

Title of action #1.14	<b>Repair cafés and Fablab   Tool Library</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.1. Means of enabling CE
Objective	Network of establishments dedicated to promoting and practicing home and technology repairs. Network of machine rental establishments for creation and repair
Short description	A network of repair cafés and fab labs will be established to support the community in repairing household goods and technology, promoting a culture of sustainability and reuse. These centers will provide access to tools, machines, and expert assistance for both repair and creative manufacturing projects. Additionally, the initiative will feature a network of tool rental services, encouraging individuals to engage in DIY repairs and upcycling. By fostering a collaborative space for the local community, the project aims to reduce waste, enhance the circular economy, and encourage the sharing of resources and skills.
Impact	Reduce waste by extending the lifespan of household goods through community repair services and tool-sharing. It will also strengthen local skills, promote collaboration, and support a culture of reuse and resource efficiency within the community.
Timescale	Midterm
Rough cost estimation	180.000 €
Indicator	Number of centers   Number of users
Estimated impact on sustainability	High – This initiative directly reduces waste by encouraging repair and upcycling, thus promoting a circular economy and fostering a more sustainable local community.
Cross-cutting topics addressed	Waste Reduction, Community Engagement, Resource Sharing.
Status of the action	New action
Rough risk estimation	Medium – Challenges include ensuring consistent participation, securing enough resources for tool rental, and maintaining the centers' long-term viability.
Action owner	City Hall/ Chamber of Commerce / Ecoparque Norte / University of Granada (UGR)/ ESADA





Title of action #1.15	<b>Clothing recycling (network of establishments and workshops)</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.1. Means of enabling CE
Objective	To promote the repair and reuse of clothing in Granada through a network of local workshops, promoting responsible consumption, reducing textile waste, and empowering citizens. Sustainable fashion show
Short description	A network of local workshops dedicated to the repair and reuse of clothing will be established to promote responsible consumption and reduce textile waste in Granada. This initiative encourages citizens to repair, upcycle, and recycle their garments, contributing to sustainable fashion practices. In addition to these workshops, a sustainable fashion show will be organized to highlight the creative potential of repurposed clothing. By empowering local communities to take action on textile waste, the initiative fosters a circular approach to fashion while also raising awareness about the environmental impact of the fashion industry.
Impact	Reduce textile waste by supporting the repair, upcycling, and reuse of clothing through community workshops. It will also encourage more responsible fashion consumption by raising awareness of the environmental impacts of the textile sector and showcasing sustainable alternatives.
Timescale	Midterm
Rough cost estimation	240.000 €
Indicator	Number of establishments   Number of organized activities
Estimated impact on sustainability	High – By promoting the repair and reuse of clothing, this action reduces textile waste and promotes more sustainable consumption in the fashion industry.
Cross-cutting topics addressed	Waste Reduction, Sustainable Fashion, Consumer Behavior.
Status of the action	New action
Rough risk estimation	Medium – Risks include ensuring participation from citizens and businesses, as well as logistical challenges in setting up workshops and the fashion show.
Action owner	"Madre Coraje" Association / ESADA /EASD Val del Omar / Chamber of Commerce

**STRATEGIC OBJETIVE SO 2: Promoting the Circular Economy in events and tourism (general and MICE)**

Title of action #2.1	<b>Reduction of Single-Use Items in Events and Tourism</b>
Objective	Elimination of single-use items. Possibility of single-use cases with customizable designs, through municipal mandates for organized events or voluntary in external cases. Reduce paper and ink consumption in various areas (governments, institutions, retail, advertising). Send purchase receipts by email. Promote digital product catalogs
Themes of focus	1. Governance
Lines of intervention	1.2. Regulations / Recommendations / guidelines
Short description	This initiative aims to eliminate the use of single-use items at events and within the tourism sector, encouraging more sustainable practices. The focus will be on replacing disposable items with reusable alternatives, including the possibility of designing customizable single-use products for specific cases, subject to municipal mandates for organized events or voluntary participation for external cases. Additionally, efforts will be made to reduce paper and ink consumption by promoting digital solutions, such as sending purchase receipts by email and supporting digital product catalogs for retail and advertising. This action seeks to reduce waste, enhance sustainability, and drive systemic change in event management and tourism practices.
Impact	Reduce waste generation in events and tourism by replacing disposable items with reusable alternatives and expanding digital solutions. It will also promote more sustainable practices across the sector, encouraging systemic change in how events are organised and managed.
Timescale	Midterm
Rough cost estimation	30.000 €
Indicator	Volume of paper avoided/ Number of plastic cups wasted
Estimated impact on sustainability	High – Reducing single-use items in events and tourism will significantly decrease waste production and foster more sustainable practices in the tourism sector.
Cross-cutting topics addressed	Waste Reduction, Sustainable Tourism, Event Management.
Status of the action	New action
Rough risk estimation	Medium – Risks include low compliance and challenges with transitioning to reusable alternatives.
Action owner	Municipality/ Event Promoters/ GEGSA/ Chamber of Commerce/ Convention Center/ Retailers

**STRATEGIC OBJECTIVE SO 3: Improving the implementation of circular criteria in city urban management**

Title of action #3.1	<b>Reduction in urban license fee</b>
Themes of focus	1. Governance
Lines of intervention	1.3. Incentives
Objective	Reduction in fee for construction permits using secondary raw materials
Short description	To encourage the integration of sustainable practices in construction, this initiative offers a reduction in the urban license fee for projects that utilize secondary raw materials. By providing this financial incentive, the city seeks to motivate construction projects to adopt circular economy principles, minimize waste, and make use of recycled materials. The goal is to foster an environment where sustainability is prioritized, contributing to the broader vision of sustainable urban development and resource efficiency.
Impact	Encourage the construction sector to adopt recycled and secondary materials by reducing permit fees, helping to decrease resource consumption and construction waste. It will also support more sustainable urban development by incentivizing circular practices in new building projects.
Timescale	Midterm
Rough cost estimation	No costs
Indicator	Number of projects completed with recycled materials
Estimated impact on sustainability	Medium – While encouraging the use of recycled materials, the action may not lead to large-scale changes without other incentives.
Cross-cutting topics addressed	Sustainable Urban Development, Resource Efficiency.
Status of the action	Ongoing
Rough risk estimation	Low – Risks are low, but success depends on broad adoption by the construction industry.
Action owner	Municipality

Title of action #3.2	<b>Reverse vending</b>
Themes of focus	1. Governance
Lines of intervention	1.3. Incentives
Objective	Financial compensation or reward for returning containers to supermarket vending machines for carrying plastic bottles or cans.
Short description	This initiative introduces a reverse vending system in supermarkets, offering financial compensation or rewards for customers who return plastic bottles or cans to designated vending machines. By incentivizing the return of containers, the action promotes recycling, reduces littering, and encourages sustainable consumption practices. The system aims to increase the recycling rate of plastic and metal containers, supporting the city's goals of reducing waste and enhancing circular economy efforts in everyday consumer behaviour.
Impact	Increase recycling rates by incentivizing citizens to return plastic and metal containers, directly reducing littering and waste. It will also encourage more sustainable consumer behaviours by integrating circular practices into everyday shopping routines.
Timescale	Midterm
Rough cost estimation	90.000 €
Indicator	Number of containers collected per day/week/month
Estimated impact on sustainability	High – This system will directly improve recycling rates and reduce littering, promoting sustainable consumption.
Cross-cutting topics addressed	Waste Management, Consumer Behaviour, Recycling.
Status of the action	New action
Rough risk estimation	Medium – Challenges include ensuring widespread installation and use of reverse vending machines.
Action owner	Retailers' Associations



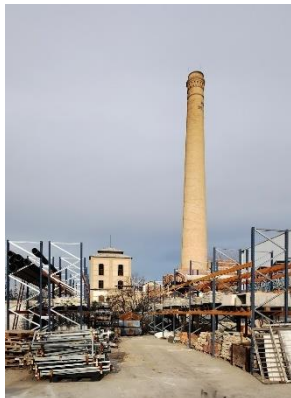
Title of action #3.3	<b>Reduction of emissions</b>
Themes of focus	1. Governance
Lines of intervention	1.4. Administration
Objective	Traffic reduction through various strategies (Low Emission Zone, Safe School Routes, Pedestrianization, Mobility App, Improved Public Transport, etc.)
Short description	This action aims to reduce urban traffic congestion through a combination of strategies designed to promote sustainable mobility. Key initiatives include the establishment of a Low Emission Zone, the creation of Safe School Routes, expanded pedestrian areas, a dedicated Mobility App, and improvements to the public transport system. By implementing these measures, the initiative seeks to enhance air quality, reduce carbon emissions, and make urban spaces more accessible and pedestrian-friendly. Ultimately, the action supports a shift towards cleaner, more efficient transportation methods and aims to foster a sustainable, well-connected city.
Impact	Reduce urban emissions by limiting traffic and promoting cleaner, more efficient mobility options. It will also improve air quality, enhance public health, and contribute to a more accessible and pedestrian-friendly city.
Timescale	Long-term
Rough cost estimation	>4M € (infrastructure, software, dissemination and activities)
Indicator	Incoming traffic capacity/ Internal congestion
Estimated impact on sustainability	High – Reducing traffic and improving mobility options will significantly lower emissions and improve air quality.
Cross-cutting topics addressed	Air Quality, Urban Mobility, Public Health.
Status of the action	Ongoing
Rough risk estimation	High – Risks involve high costs, logistical challenges, and resistance from car-centric infrastructure.
Action owner	Municipality / Andalusian Regional Government / Public Parking



Title of action #3.4	<b>Guide for public tenders and procurement</b>
Themes of focus	1. Governance
Lines of intervention	1.5. Procurements
Objective	Introducing circular criteria in municipal contracting and procurement procedures.
Short description	This indicative focuses on integrating circular economy principles into municipal contracting and procurement processes. By developing and implementing a comprehensive guide for public tenders, it pretends to introduce circular criteria that prioritize sustainability, resource efficiency, and the reduction of environmental impact in procurement decisions. The goal is to ensure that public contracts support the transition to a circular economy by selecting vendors and solutions that align with environmental and social sustainability goals, thereby promoting responsible consumption and production practices within municipal operations.
Impact	Increase the sustainability of municipal spending by integrating circular economy criteria into public procurement, prioritising resource efficiency and lower environmental impact. It will also stimulate the local market for sustainable products and services by encouraging suppliers to align with circular principles.
Timescale	Midterm
Rough cost estimation	15.000 €
Indicator	Number of annual procedures conducted using circular criteria
Estimated impact on sustainability	Medium – While this will encourage sustainability in public procurement, its full impact will depend on the extent of its adoption.
Cross-cutting topics addressed	Governance, Public Procurement, Circular Economy.
Status of the action	New action
Rough risk estimation	Low – Risks are relatively low but depend on the successful integration of circular criteria in procurement practices.
Action owner	Municipality



Title of action #3.5	<b>Promoting circularity in construction</b>
Themes of focus	1. Governance
Lines of intervention	1.7. Fostering sectorial integration
Objective	Local outreach, research, and networking activities to promote the use of sustainable and recycled materials in construction, as the main consumer of extractive resources.
Short description	To address the environmental impact of the construction sector, this initiative focuses on promoting the use of recycled and sustainable materials in building projects. Through local outreach, research, and networking, the initiative encourages industry professionals to adopt circular economy practices, reducing reliance on virgin materials. By connecting key stakeholders, such as universities, professional associations, and construction companies, the project supports the transition to a more sustainable construction model that minimizes resource extraction and waste.
Impact	Reduce waste and reliance on virgin materials by promoting the use of sustainable and recycled products in the construction sector. It will also strengthen industry-wide adoption of circular practices through collaboration, training, and knowledge exchange among key stakeholders.
Timescale	Long-term
Rough cost estimation	6.000 €/year
Indicator	Number of activities held
Estimated impact on sustainability	High – Promoting sustainable materials in construction will significantly reduce waste and encourage industry-wide circular economy practices.
Cross-cutting topics addressed	Resource Efficiency, Construction Industry, Waste Management.
Status of the action	Ongoing
Rough risk estimation	Medium – Risks include industry reluctance to change and the initial cost of adopting new materials.
Action owner	University of Granada (UGR) / Colegios profesionales



Title of action #3.6	<b>Waste Rate PAYT System</b>
Themes of focus	3. Development of methodologies and tools
Lines of intervention	3.2. Measure to know and decide
Objective	Waste rate differentiated by sector according to household classification (PAYT System)
Short description	The implementation of a Pay-As-You-Throw (PAYT) system for waste management will introduce differentiated waste rates based on household classification, encouraging more responsible waste disposal. By aligning costs with the amount of waste generated by each sector, this system incentivizes reduction and recycling, ensuring that those who produce more waste contribute more to the overall cost. This initiative will empower citizens to take ownership of their waste habits and promote sustainability by making waste management costs more transparent and equitable.
Impact	reduce waste sent to landfill by incentivizing households and businesses to produce less waste and recycle more through a fair, usage-based fee system. It will also foster more responsible consumption behaviours by making waste management costs transparent and encouraging citizens to take ownership of their waste habits.
Timescale	Midterm
Rough cost estimation	60.000 €
Indicator	Approval of the ordinance
Estimated impact on sustainability	High – A Pay-As-You-Throw system will encourage responsible waste management and recycling, directly reducing waste sent to landfills.
Cross-cutting topics addressed	Waste Management, Consumer Behavior, Equity.
Status of the action	Ongoing
Rough risk estimation	Medium – Challenges include ensuring accurate waste classification and potential resistance from residents.
Action owner	Municipality



Title of action #3.7	<b>Digitalization and Transparency</b>
Themes of focus	3. Development of methodologies and tools
Lines of intervention	3.3. Digital tools
Objective	Digital layer for geolocating establishments, training centers, and institutions linked to the Circular Economy (repair, training, secondhand, recycling, etc.). Possibility of the GRANADA CIRCULAR badge. Reducing container use by refilling bottles throughout the city
Short description	A digital platform will be developed to create a comprehensive geolocated map of establishments, training centers, and institutions involved in the Circular Economy across the city. This interactive map will include locations dedicated to repair, second-hand goods, recycling, and other circular practices, helping citizens easily find sustainable services. Additionally, the map will feature public and private water fountains to encourage bottle refilling and reduce single-use plastic. Businesses and organizations can also receive the <i>Granada Circular</i> badge to highlight their commitment to sustainability, fostering a more connected and sustainable community.
Impact	Make circular economy services more accessible by providing a digital map that guides citizens and businesses toward repair, reuse, recycling, and refill options. It will also increase transparency and engagement, encouraging wider participation in circular practices across the city.
Timescale	Midterm
Rough cost estimation	7.000 €/year
Indicator	Number of locations included. Number of fountains / Number of website visits
Estimated impact on sustainability	Medium – This map will encourage local businesses and citizens to engage with circular economy practices, although its success depends on widespread usage.
Cross-cutting topics addressed	Digital Tools, Community Engagement, Sustainability.
Status of the action	Ongoing
Rough risk estimation	Medium – The main risks are related to user engagement and keeping the map updated.
Action owner	City Council / Chamber of Commerce / Municipality

Title of action #3.8	<b>Circular economy beacon</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.2. Operationalisation of relevant projects
Objective	Circular Economy Demonstration Center at the North Ecopark
Short description	A Circular Economy Demonstration Center will be established at the North Ecopark in order to showcase cutting-edge circular economy practices in action. This center will serve as a hub for education, innovation, and collaboration, offering visitors and businesses insights into sustainable resource management, waste reduction, and recycling. By providing a real-world example of circular economy principles, the center will inspire other sectors to adopt similar practices, fostering a culture of sustainability and environmental stewardship in the region.
Impact	Demonstrate the practical benefits of circular economy solutions through a dedicated center, inspiring businesses, institutions, and citizens to adopt similar practices. It will also strengthen regional innovation and education by serving as a hub for knowledge exchange, collaboration, and sustainable resource management.
Timescale	Long-term
Rough cost estimation	400.000 €
Indicator	Building construction
Estimated impact on sustainability	High – This demonstration center will showcase the potential of circular economy practices and set a powerful example for businesses and the public.
Cross-cutting topics addressed	Education, Innovation, Sustainability.
Status of the action	New action
Rough risk estimation	High – Risks include high upfront costs and ensuring sufficient public and private sector engagement.
Action owner	Ecoparque Norte / Municipality

Title of action #3.9	<b>Improvement in wastewater recovery</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.1. Means of enabling CE
Objective	Advanced wastewater treatment for waste recovery and valorization
Short description	This project seeks to revolutionize wastewater management by advancing treatment processes aimed at recovering valuable resources from wastewater. Through the implementation of innovative technologies, the initiative will enable the extraction of essential materials such as water, energy, and nutrients, contributing to a more efficient and sustainable water cycle. By transforming wastewater into a resource, the action promotes a circular economy, reduces environmental impact, and fosters greater resource efficiency within urban infrastructure.
Impact	Reduce environmental impact by enabling the recovery of water, energy, and nutrients from wastewater, strengthening the efficiency and sustainability of the urban water cycle. It will also support the circular economy by transforming wastewater into a valuable resource rather than a waste stream.
Timescale	Long-term
Rough cost estimation	High costs (R+D+i and infrastructure)
Indicator	Percentage of material recovery in wastewater
Estimated impact on sustainability	High – Advancing wastewater treatment processes and reusing water and nutrients will significantly reduce environmental impact.
Cross-cutting topics addressed	Water Management, Wastewater Recycling, Resource Efficiency.
Status of the action	Ongoing
Rough risk estimation	High – Risks include technological challenges and the high cost of upgrading treatment facilities.
Action owner	Emasagra



Title of action #3.10	<b>Energy production in the water cycle</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.1. Means of enabling CE
Objective	Use of the water cycle as an energy source (hydroelectric, biogas, cogeneration)
Short description	This initiative explores the potential of the water cycle as a sustainable energy source through the implementation of hydroelectric power, biogas production, and cogeneration systems. By harnessing the energy embedded in the water treatment and distribution processes, the project aims to reduce reliance on external energy sources and promote self-sufficiency. Through innovative applications of renewable energy technologies, the action contributes to the circular economy by transforming water management systems into active energy producers, enhancing both environmental sustainability and operational efficiency.
Impact	Increase renewable energy generation by harnessing the potential of the water cycle, reducing reliance on external energy sources and improving self-sufficiency. It will also enhance environmental sustainability and operational efficiency by transforming water management systems into active energy producers.
Timescale	Long-term
Rough cost estimation	>10M €
Indicator	Percentage of energy self-consumption
Estimated impact on sustainability	High – Using the water cycle as an energy source will enhance resource efficiency and promote renewable energy practices.
Cross-cutting topics addressed	Renewable Energy, Water Management, Resource Efficiency.
Status of the action	Ongoing
Rough risk estimation	High – Challenges include high initial investment and the complexity of integrating new energy systems.
Action owner	Emasagra



Title of action #3.11	<b>Community composting system</b>
Themes of focus	5. infrastructure 2. Awareness raising for circular consumption patterns
Lines of intervention	5.1. Means of enabling CE 2.1. Awareness / Information
Objective	Reduce the generation of organic waste destined for landfills through selective collection and local composting, promoting the valorization of this waste as a resource for urban agriculture and the improvement of green spaces, and fostering environmental awareness and community participation. Improved awareness of the management of each waste fraction, its proper disposal in containers, and reporting on material collected locally.
Short description	This initiative strives to minimize organic waste sent to landfills by introducing a system for selective collection and localized composting. By transforming waste into a resource for urban farming and the enhancement of green spaces, the project not only contributes to sustainable city development but also promotes community involvement. It integrates educational campaigns to raise awareness about waste sorting and proper disposal practices, aiming to equip citizens with the knowledge to manage waste more effectively. Through active participation in urban gardens, the initiative encourages a circular approach to waste, turning it into a tool for environmental restoration and community empowerment.
Impact	Reduce the amount of organic waste sent to landfill by promoting local composting and selective collection, transforming waste into a valuable resource for urban agriculture. It will also strengthen community engagement and environmental awareness by involving citizens in composting activities and urban garden initiatives.
Timescale	Midterm
Rough cost estimation	120.000 €
Indicator	Volume of organic waste composted   Number of urban gardens in operation Number of campaigns   Impact on citizens
Estimated impact on sustainability	High – Composting and urban gardening will reduce organic waste, create local food systems, and promote sustainable practices.
Cross-cutting topics addressed	Waste Management, Community Engagement, Urban Agriculture.
Status of the action	New action
Rough risk estimation	Medium – Risks include ensuring community participation and maintaining long-term interest in urban gardens.
Action owner	Municipality / Cleaning concessionaire / Associations / Urban gardens

Title of action #3.12	<b>Improvement of Specific Waste Fractions Collection</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.1. Means of enabling CE
Objective	Improving collection coverage by neighborhood (frequency, locations, capacity)
Short description	The Mobile Ecopoint initiative aims to enhance waste collection accessibility across neighborhoods by offering flexible, frequent, and strategically placed collection points. This mobile service will increase the capacity to collect recyclable materials, ensuring better coverage in areas with limited access to fixed ecopoints. By bringing waste management services closer to residents, the project fosters higher participation in recycling programs and supports the city's goal of reducing landfill waste, contributing to a more sustainable urban environment.
Impact	Increase recycling rates by improving access to waste collection services through mobile and strategically placed collection points. It will also reduce landfill waste by enabling higher participation in recycling programs, particularly in neighborhoods with limited access to fixed facilities.
Timescale	Midterm
Rough cost estimation	30.000 €
Indicator	Number of items received
Estimated impact on sustainability	Medium – This action will increase waste collection rates but will have a more modest long-term impact on overall sustainability.
Cross-cutting topics addressed	Waste Management, Accessibility, Recycling.
Status of the action	Ongoing
Rough risk estimation	Medium – Risks involve logistical challenges and the potential for underutilization in some areas.
Action owner	Municipality / North Ecopark

Title of action #3.13	<b>MASAI Recycled Asphalt</b>
Themes of focus	5. Infrastructure
Lines of intervention	5.1. Means of enabling CE
Objective	Use of MASAI Asphalt, made partially of old tires and recovered asphalt, and poured at minor temperatures (less emissions)
Short description	The MASAI Recycled Asphalt initiative introduces a more sustainable approach to road construction by utilizing a mixture that incorporates recycled materials, including old tires and recovered asphalt. This innovative asphalt is produced at lower temperatures, reducing energy consumption and minimizing emissions during production. By integrating these eco-friendly practices into urban infrastructure, the project not only enhances road durability but also contributes to a significant reduction in the environmental footprint of construction activities, promoting circular economy principles in urban development.
Impact	Reduce waste and emissions by using recycled materials and lower-temperature processes in road construction, improving both environmental and operational sustainability. It will also demonstrate innovative circular practices in urban infrastructure, enhancing road durability while reducing the construction sector's environmental footprint.
Timescale	Midterm
Rough cost estimation	High costs (R+D+i and infrastructure)
Indicator	Volumen of recycled asphalt
Estimated impact on sustainability	High – Using recycled asphalt reduces waste and emissions while improving road infrastructure sustainability.
Cross-cutting topics addressed	Waste Reduction, Infrastructure, Innovation.
Status of the action	Ongoing
Rough risk estimation	Medium – Risks include technical challenges in large-scale adoption and ensuring quality control for recycled asphalt.
Action owner	Municipality   University of Granada (UGR)

## 6. Pilot actions

As part of the co-creation and testing phase of the Integrated Action Plan (IAP), Granada implemented three pilot initiatives to experiment with circular economy (CE) practices at a local level. These pilots were designed to engage stakeholders, test innovative solutions, and gather insights for future scaling.

### First Pilot Action: Open-Air Festival for European Mobility Week (21 September 2024)

As part of European Mobility Week 2024, Granada organized an open-air festival in a “*verbena*” format, transforming San Juan de Dios Street into a car-free space for the first time. The initiative brought together residents, families, local businesses, and associations in a day filled with activities promoting sustainable urban living and circular economy awareness.

#### Key features:

- Workshops on waste reduction and recycling.
- Workshop on healthy and local products for children.
- Demonstrations of circular economy practices (repair, upcycling).
- Quiz game about neighbourhood history and culture, kids inflatable games and photography workshops.
- Theatre and swing music in the evening by local companies.
- Partnerships with local NGOs and neighbours’ association to deliver engaging content.

#### Results:

- Participation of over 600 people (mostly families with children).
- Engagement of residents in “team building” activities
- Positive media coverage and strong social media engagement.

#### Lessons Learnt:

- Temporary traffic closures can be highly effective in raising awareness of alternative mobility and public space use.
- Collaboration with community organizations ensured higher attendance and local ownership of the initiative.
- Future editions could integrate a stronger focus on measuring behavioral change among participants.





## Second Pilot Action: Bike Hospital (September 2024 – June 2025)

The Bike Hospital pilot integrated circular economy principles with entrepreneurial and technical education. Students from the Mechanical Department at IES Hermenegildo Lanz Vocational Training Institute refurbished bicycles impounded by the Municipal Police, preparing them for reintegration into public use via a bike-sharing system. A mobile application, developed by students from the New Technologies program, will facilitate user access and tracking.

### Key achievements to date:

- Refurbishment of 30 bicycles, using parts from old bikes as well.
- Creation of a cross-disciplinary student team combining mechanical, digital, and business skills.
- Engagement of local businesses for material donations, reducing costs and waste.

### Results (interim):

- The goal is to refurbish 150 bikes in total, and to achieve an average of 2,000 trips per month in the pilot zone.
- Reduction of 15 tons of CO<sub>2</sub> emissions projected annually if scaled citywide.



### Lessons Learnt:

- The pilot demonstrated the value of integrating CE education into vocational curricula.
- Scaling the initiative requires clear governance and a sustainable financing model, possibly through public-private partnerships.

### Third Pilot Action: Granada Circular Map (Planned for Septiembre 2025)

The Granada Circular Map aims to create a dynamic digital platform showcasing local resources and services linked to the circular economy. This includes municipal recycling points, repair shops, second-hand markets, bulk product retailers, training centers, and public water fountains.

#### Expected Outcomes:

- Facilitate citizen access to circular services and promote sustainable consumption habits.
- Strengthen the visibility of businesses and organizations contributing to CE practices.
- Provide data insights on user engagement and gaps in circular infrastructure.

#### Lessons to be Extracted (anticipated):

- The pilot will assess how digital tools can influence citizen behavior and support urban circularity.
- User feedback will be critical in refining the platform for long-term implementation.
- Partnerships with local businesses and NGOs are essential to keep the content updated and relevant.





## 7. Prioritised list of actions

The prioritisation of actions was the result of a structured and participatory process carried out within the Urbact Local Group. Members met to discuss each proposed action in depth, examining its feasibility, potential impact, possible challenges, and the ways in which actions could support and reinforce one another.

Initially, the group considered selecting around ten actions. However, following the debate and individual voting, eleven actions emerged as the agreed priorities. The outcome was a democratic and transparent process that reflects the collective judgement of the agents involved.

PRIORITY	ACTION
1	Reduction of single-use items in events and public spaces (A2.1)
2	Reverse vending machine (A3.2)
3	PAYT tariff system (A3.6)
4	Reduction in urban license fee (A3.1)
5	Reduction of emissions (A3.3)
6	Citizen participation and engagement in environmental initiatives (A1.5)
7	Incentives for Circular Businesses (A1.2)
8	Improvement of Specific Waste Fractions Collection (3.12)
9	Citizen Information and Awareness (1.4)
10	Digitalization and Transparency (3.7)
11	Community composting system (3.11)

## PART III: Action planning details

This section provides a detailed description of the priority actions selected in collaboration with the URBACT Local Group (ULG). Each action includes the rationale, timeline, required resources, involved stakeholders, expected outputs, and risks. These actions reflect the IAP's overall vision of embedding circular economy principles into Granada's urban fabric.

### 8. Detailed presentation of the actions

#### 1. Reduction of single-use items in events and public spaces (cultural, sports, and conferences)

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Awareness campaigns for citizens and event organizers to promote reusable and biodegradable alternatives.</b>	2026-2029	Internal resources	Internal resources	Low participation or lack of interest from citizens.	Local government Merchants	Number of campaigns carried out  % of citizens reached
<b>Activity #2</b>						
<b>Implementation of regulations limiting single-use plastics in events (cups, plates, bags).</b>	2027-2030	Monitoring and enforcement costs	Municipal budget	Resistance from event organizers and increased costs for businesses.	Local government merchants, Event organizers, GEGSA Chamber of Commerce	Volume of plastic waste from events  Number of zero-waste events
<b>Activity #3</b>						
<b>Partnerships with local businesses to provide alternatives (reusable cups, biodegradable packaging, rental systems)</b>	2027-2029	Support for transition to alternatives	Public-private cooperation	Limited availability or higher price of sustainable alternatives.	Local government, Merchants	Number of merchants involved  Availability of sustainable products at events
<b>Total funds and assets needed</b>	<b>30.000€ (design and external) and variable amount depending event</b>					

## 2. Reverse vending machine

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Study for the strategic location of machines (high-traffic areas, markets, sports centers, university campuses).</b>	2026	Technical consultancy and data analysis).	Technical consultancy and data analysis).	Limited availability of suitable high-traffic locations or conflicts with urban uses	Local government; University; Merchants.	Mapping of strategic spots to implement machines
<b>Activity #2</b>						
<b>Participatory design of devices, incorporating suggestions from merchants and citizens to improve usability</b>	2027	Participatory workshops, industrial design.	Municipal budget + public-private collaboration.	Low engagement from citizens or stakeholders in the design process	Merchants; Citizens; Technology providers	Prototype of machine adapted to local needs;  Number of participants in the design process.
<b>Activity #3</b>						
<b>Municipal installation of machines with a gamification system (points, rewards, discounts).</b>	2028	Purchase, installation, gamification software, maintenance.	European funds + municipal budget + private contribution.	Technical failures, vandalism, or low user adoption despite incentives	Merchants; Technology providers.	Number of machines installed;  % of citizen usage; volume of containers returned.
<b>Total funds and assets needed</b>	<b>90.000 €</b>					

### 3. Waste Rate PAYT System

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Awareness and information campaigns to explain the PAYT system and its benefits.</b>	2025	Materials, events, workshops.	Municipal budget + internal capacity.	Limited citizen participation or misunderstanding of PAYT principles	Local government; Citizens; Merchants.	Number of campaigns carried out; % of population reached.
<b>Activity #2</b>						
<b>Reward system by neighborhoods to incentivize recycling (discounts, vouchers, recognition programs).</b>	2026	Digital platform, logistics for rewards, partnerships with local businesses.	Public-private cooperation + municipal budget.	Low acceptance if rewards are seen as insufficient or unfair	Merchants; Citizens	Number of neighborhoods participating; Volume of recyclables collected; Rewards distributed.
<b>Activity #3</b>						
<b>Annual monitoring and evaluation of the PAYT system to measure effectiveness and citizen participation.</b>	2026	Data collection systems, staff time.	Municipal budget + possible support from regional/national funds.	Data gaps or inconsistencies that hinder evaluation of PAYT performance	Waste management companies; Citizens.	Annual monitoring reports; Adjustments to improve efficiency; % increase in recycling rates.
<b>Total funds and assets needed</b>	<b>Funded</b>					

#### 4. Reduction in urban license fee

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Municipal study on green taxation to define criteria for tariff reductions.</b>	2022	Technical staff, consultancy	Municipal budget + internal capacity.	Difficulty in establishing clear and verifiable criteria.	Local government (Urban Planning, Environment).	Technical report on green taxation and proposed criteria.
<b>Activity #2</b>						
<b>Dissemination and information campaigns about the reduced urban license tariffs for sustainable construction projects.</b>	2026	Communication materials, outreach events.	Municipal budget + internal capacity.	Low awareness among construction companies and professionals	Local government; Professional associations; Merchants.	Number of campaigns carried out;  % of stakeholders reached.
<b>Activity #3</b>						
<b>Application of reduced urban license tariffs to qualifying projects</b>	2026	Administrative adaptation, IT system updates.	Municipal budget (impact on municipal revenues).	Low uptake if verification of secondary raw materials is complex, costly, or involves heavy bureaucracy	Local government; Developers; Architects; Merchants.	Number of licenses granted with tariff reduction;  % of projects meeting sustainability criteria.
<b>Total funds and assets needed</b>	5.000 € (dissemination)					

## 5. Reduction of emissions

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Improvement and expansion of the cycle-pedestrian network (bike lanes, pedestrian areas, safe crossings).</b>	2027	Infrastructure works, signage, materials.	Infrastructure works, signage, materials.	Delays or opposition due to reallocation of road space and impact on car traffic	Infrastructure works	Infrastructure works; Signage
<b>Activity #2</b>						
<b>Creation of a bicycle hospital (repair, rental, maintenance, and education center)</b>	2024	Equipment, staff, facility adaptation.	Public-private partnership + municipal budget.	Limited participation from students	H Lanz School	Bicycle hospital established;  Number of users and repairs carried out.
<b>Activity #3</b>						
<b>Implementation and monitoring of Low Emission Zone (LEZ) to reduce polluting traffic.</b>	2025	Monitoring systems, enforcement, communication.	Municipal budget + national/regional support.	Resistance from car users and businesses affected by restrictions	Local government; Transport companies; Citizens; Public parking.	LEZ in operation;  Annual monitoring reports;  Reduction of emissions and traffic in restricted area.
<b>Total funds and assets needed</b>	>4M €					



## 6. Citizen participation and engagement in environmental initiatives

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Creation and training of “Green Brigades” for community-based environmental actions (clean-ups, tree planting, awareness)</b>	2026	Training, equipment, coordination.	Municipal budget + collaboration with NGOs.	. Difficulty in ensuring long-term volunteer engagement and coordination of activities	Green Footprint; NGOs; Citizens.	Number of brigades created;  Number of actions carried out;  Citizens involved.
<b>Activity #2</b>						
<b>Development of an application for environmental volunteering (coordination, scheduling, gamification of activities).</b>	2027	Software development, maintenance, promotion.	Public-private partnership + municipal budget.	Low adoption by citizens due to limited visibility or usability issues.	Technology providers; Citizens.	App launched;  Number of downloads;  Number of active volunteers engaged.
<b>Activity #3</b>						
<b>Dissemination and showcasing of citizen collaboration</b>	2026	Communication campaigns, events, materials.	Municipal budget + private sponsorships.	Circular economy initiatives may not be communicated clearly or with enough impact, leading to low citizen engagement	Local government; Merchants; NGOs; Citizens.	Number of campaigns/events carried out;  Visibility of citizen initiatives;  Increased awareness.
<b>Total funds and assets needed</b>	6.000 €/year					

## 7. Incentives for Circular Businesses

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Granada Circular Label</b>	2028	Certification materials, evaluation staff, digital platform	Municipal budget + possible collaboration with chambers of commerce	Low business uptake if the seal is not recognized as valuable or lacks credibility	City Council; Local businesses; Chamber of commerce	Number of certified companies;  Recognition of best practices
<b>Activity #2</b>						
<b>Green Procurement</b>	2027	Procurement staff, training on green criteria, supplier monitoring system	Municipal funds + internal procurement budget	Lack of certified suppliers and increased costs	City Council; Suppliers; Local businesses	Contracts with sustainable criteria;  Increase in green purchases
<b>Activity #3</b>						
<b>Municipal Tax Incentives</b>	2028	Resources for processing, administrative staff, awareness campaigns	Municipal budget	Limited impact if bonuses are perceived as marginal or if verification of compliance is complex	City Council; Local businesses; Chamber of Commerce; Business Confederation	Number of benefiting companies;  Applied incentives;  Promotion of circular economy
<b>Total funds and assets needed</b>	15.000 €/year					

## 8. Improvement of Specific Waste Fractions Collection

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Mobile Ecopoint</b>	2022	Vehicles adapted for collection, staff, communication campaign	Municipal budget + possible regional/national co-funding	Logistical difficulties in ensuring regular service and optimal locations across neighbourhoods	City Council; Waste management companies; Citizens; Ecoparque Norte	Increased collection of specific fractions;  Higher recycling rates
<b>Activity #2</b>						
<b>Agreement with SCRAP for household appliances</b>	2026	Legal and technical resources, coordination staff	Agreement with SCRAP systems + municipal budget	Limited citizen trust or low demand for refurbished appliances	City Council; SCRAP systems; Appliance retailers and manufacturers	Proper collection and recycling of appliances;  Reduction of illegal dumping
<b>Activity #3</b>						
<b>Promotion of food waste reduction</b>	2027	Educational materials, staff for awareness campaigns, partnerships with local businesses	Municipal budget + collaboration with supermarkets and NGOs	Limited business participation due to perceived extra workload or low incentives	City Council; Supermarkets; Restaurants; NGOs; Citizens; HORECA	Decrease in food waste;  Awareness raised;  Partnerships created
<b>Total funds and assets needed</b>	30.000 €					

## 9. Citizen Information and Awareness

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Granada Circular Awards</b>	2026	Prizes and recognition materials, event organization staff, communication campaign	Municipal budget + possible sponsorships	Risk that the awards are perceived as symbolic and fail to raise real awareness about circular economy	City Council; Local businesses; Citizens; Media	Number of participants;  Visibility of circular initiatives;  Strengthened community engagement
<b>Activity #2</b>						
<b>Specific awareness programs in schools</b>	2026	Educational materials, trainers, collaboration with schools	Municipal budget + collaboration with educational institutions	Limited integration in curricula or lack of interest from schools	City Council; Schools; Teachers; Students NGOs	Number of schools involved  Students reached;  Improved knowledge on circular economy
<b>Activity #3</b>						
<b>Neighborhood events (gymkhanas)</b>	2025	Event materials, facilitators, logistics, communication resources	Municipal budget + possible collaboration with neighborhood associations	Risk that families see the activity only as entertainment and not as an opportunity for awareness	City Council; Neighborhood associations; Citizens; Volunteers	Number of events held;  Citizens engaged;  Raised awareness on sustainability
<b>Total funds and assets needed</b>	7.000 €/year					

## 10. Digitalization and Transparency

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Development of a Circular Resources Map for citizens</b>	2025	Digital platform, technical staff, data collection	Municipal budget	The map may perform poorly, be slow or not accessible, discouraging use	City Council; Universities; Local businesses; Citizens	Interactive map available; Improved access to information; Resource visibility
<b>Activity #2</b>						
<b>Monitoring and feedback of the map</b>	2026	IT staff, feedback tools, maintenance budget	Municipal budget + EU funds	Data may become outdated or inaccurate	City Council; Citizens; NGOs; Digital platforms	Continuous updates; Citizen feedback integrated; Improved accuracy
<b>Activity #3</b>						
<b>Dissemination strategy for the Circular Resources Map</b>	2026	Communication materials, marketing staff, events, online campaigns	Municipal budget + possible collaboration with media	Low adoption if users do not understand why the map is useful	City Council; Media; Neighborhood associations; Citizens	Increased visibility; Higher map usage; Citizens empowered with information
<b>Total funds and assets needed</b>	5.000 €/year					

## 11. Community Composting System, urban gardens and awareness about waste separation

List of activities per action	Start – End date	Funds and other resources needed	Funding, financing and resource allocation programme	Risks	Stakeholders involved	Outputs
<b>Activity #1</b>						
<b>Installation of urban gardens and composting in civic centers</b>	2027	Compost bins, gardening tools, training staff, maintenance resources	Municipal budget + possible regional/ environmental grants	Low community participation or declining interest over time	City Council staff; Civic center managers; Urban gardens associations; Waste management concessionaire	Number of civic centers with composting;  Reduced organic waste;  Community engagement
<b>Activity #2</b>						
<b>Installation of urban gardens and composting in municipal schools</b>	2027	Composting units, gardening materials, training for teachers and students	Municipal budget + collaboration with educational institutions	Lack of suitable space/infrastructure and parental concerns about hygiene/safety may hinder integration into school routines	City Council staff; School management; Teachers; Students; Parents	Number of schools with composting;  Educational impact;  Reduced organic waste in schools
<b>Activity #3</b>						
<b>Workshops to promote composting in homeowners' associations</b>	2026	Educational materials, trainers, communication resources, composting kits	Municipal budget + collaboration with neighborhood associations	Risk that residents fail to separate organic waste correctly or are unclear about what is compostable	City Council staff; Homeowners' associations; NGOs; Citizens	Number of workshops held;  Communities adopting composting;  Awareness raised
<b>Total funds and assets needed</b>	<b>60.000 €</b>					



## PART IV: Implementation framework

### 9. Financial plan

Action		Missing funds	Missing assets	Funds' raising plan
1	<b>Reduction of Single-Use Items in Events and Tourism</b>	Medium investment for coordination and monitoring	Staff coordination for events; reusable items stock	Staff coordination for events; reusable items stock
2	<b>Reverse vending</b>	Medium investment for machines	Reverse vending hardware; installation	Retailers' associations; private sector co-funding; municipal incentives; possible LIFE Circular Economy call
3	<b>Waste Rate PAYT System</b>	Medium funds for implementation	Digital meters; household bins with ID; ICT platform	Municipal budget; ERDF for digitalisation; national circular-economy grants
4	<b>Reduction in Urban License Fee</b>	No missing funds (incentive-based)	---	Municipal budget adjustment; no external funds needed
5	<b>Sustainable Mobility</b>	4.000.000 €	Electric mobility assets; infrastructure	NextGenerationEU, PRTR, FEDER Andalucía 2021-2027, CEF-Transport
6	<b>Citizen engagement and participation</b>	Low funds	Staff time; materials for workshops	Municipal budget; regional participation grants; 2030 Agenda programme
7	<b>Incentives for circular businesses</b>	Medium funds	Advisory office resources	Chamber of Commerce; ERDF—Support to SMEs; regional innovation grants
8	<b>Mobile Ecopoint</b>	200.000 €	Mobile collection vehicle; equipment	ERDF EDUSI, municipal budget, regional waste-management funds
9	<b>Information and Citizen Awareness</b>	Low funds	Materials, communication tools	
10	<b>Circular Resources Web Map</b>	Low funds	Maintenance of digital platform	Municipal ICT budget; ERDF digitalisation lines; Horizon Europe (small pilot)
11	<b>Community Composting System, Urban Gardens and Awareness about Waste Separation</b>	Medium funds	Composters, collection containers, garden equipment	LIFE Programme (Circular Bioeconomy), regional agriculture funds, municipal budget

## 10. Time plan

Action	Activity	2025				2026				2027				2028				2029				2030			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>1</b> Reduction of Single-Use Items in Events and Tourism	#1																								
	#2																								
	#3																								
<b>2</b> Reverse Vending	#1																								
	#2																								
	#3																								
<b>3</b> Waste Rate PAYT System	#1																								
	#2																								
	#3																								
<b>4</b> Reduction in urban license fee	#1																								
	#2																								
	#3																								
<b>5</b> Reduction of emissions	#1																								
	#2																								
	#3																								
<b>6</b> Citizen participation and engagement in environmental initiatives	#1																								
	#2																								
	#3																								
<b>7</b> Incentives for circular businesses	#1																								
	#2																								
	#3																								
<b>8</b> Improvement of specific waste fractions collection	#1																								
	#2																								
	#3																								
<b>9</b> Citizen Information and Awareness	#1																								
	#2																								
	#3																								
<b>10</b> Digitalization and Transparency	#1																								
	#2																								
	#3																								
<b>11</b> Community composting system, urban gardens and awareness about waste separation	#1																								
	#2																								
	#3																								

## 11. Risk mitigation plan

Action	Risk	Type	Probability	Mitigation plan
<b>Reduction of Single-Use Items in Events and Tourism</b>	Low participation or lack of interest from citizens.	Operational	Medium	Launch targeted campaigns through schools, associations, and media; provide small incentives or recognition for participation; adjust content regularly based on feedback and monitoring.
	Resistance from event organizers and increased costs for businesses.	Operational	High	Phase in regulations with a transition period, provide clear guidelines and training for organizers, and offer financial incentives or reduced municipal fees to offset initial costs.
	Limited availability or higher price of sustainable alternatives.	Operational, Financial	Medium	Support joint procurement schemes to lower costs, foster agreements with local suppliers and distributors, and pilot rental/reuse systems for cups and packaging.
<b>Reverse vending</b>	Limited availability of suitable high-traffic locations or conflicts with urban uses	Operational	Medium	Conduct early mapping of potential sites, coordinate with urban planning and mobility departments, and prepare alternative location options.
	Low engagement from citizens or stakeholders in the design process	Operational	Medium	Use targeted outreach to schools, associations, and retailers, simplify participation methods (online surveys, workshops), and provide recognition for contributors.
	Technical failures, vandalism, or low user adoption despite incentives	Technical	High	Pilot test machines before full rollout, establish regular maintenance and monitoring, and combine gamification with communication campaigns to boost trust and use.
<b>Waste Rate PAYT System</b>	Limited citizen participation or misunderstanding of PAYT principles	Operational	Medium	Design clear and simple messages, collaborate with neighborhood associations, and use practical examples to show benefits.
	Low acceptance if rewards are seen as insufficient or unfair	Operational	High	Define transparent criteria, ensure visible and attractive rewards, and combine with community events to reinforce trust.

	Data gaps or inconsistencies that hinder evaluation of PAYT performance	Technical	Medium	Deploy reliable digital monitoring tools, establish standardized reporting formats, and conduct external audits to validate results.
<b>Reduction in Urban License Fee</b>	Difficulty in establishing clear and verifiable criteria.	Technical	Medium	Work with technical experts and associations to set simple criteria, pilot test with selected projects, and adjust based on feedback to ensure clarity and verification.
	Low awareness among construction companies and professionals	Operational	Medium	Launch targeted information campaigns through professional associations, provide practical guidance, and organize workshops with sector representatives.
	Low uptake if verification of secondary raw materials is complex, costly, or involves heavy bureaucracy	Operational, Regulatory	High	Define clear and proportionate verification criteria, streamline administrative requirements, and provide technical assistance to applicants through municipal offices or professional associations.
<b>Sustainable Mobility</b>	Delays or opposition due to reallocation of road space and impact on car traffic	Operational	High	Conduct traffic impact assessments and phase implementation with pilot corridors.
	Limited participation from students	Operational	Medium	Integrate the activity into curricula or extracurricular credits, provide basic resources and technical support, and ensure municipal coordination for logistics.
	Resistance from car users and businesses affected by restrictions	Regulatory, Operational	High	Introduce gradual restrictions, reinforce public transport services to offer a real alternative for access to the city centre and run strong communication campaigns on health and environmental benefits
<b>Citizen engagement and participation</b>	Difficulty in ensuring long-term volunteer engagement and coordination of activities	Operational	Medium	Collaborate with schools and associations, provide recognition or small incentives
	Low adoption by citizens due to limited visibility or usability issues	Technical, Operational	Medium	Launch targeted promotion campaigns, design a simple and user-friendly interface, and link the app with municipal or school programs.
	Circular economy initiatives may not be communicated clearly or	Operational	Low	Design a clear and engaging communication strategy, use impactful visuals and storytelling, and actively involve citizens in exhibitions and events to increase identification and participation.

	with enough impact, leading to low citizen engagement			
<b>Incentives for circular businesses</b>	Low business uptake if the seal is not recognized as valuable or lacks credibility	Operational	Medium	Define clear and transparent criteria, promote the seal through campaigns and events, and link it to tangible benefits such as visibility, networking, or preferential access to municipal programs.
	Lack of certified suppliers and increased costs	Financial, Technical	Medium	Support local supplier certification, promote joint procurement to lower costs, and provide transitional incentives to ease adoption.
	Limited impact if bonuses are perceived as marginal or if verification of compliance is complex	Operational	Medium	Ensure bonuses are financially attractive, simplify verification procedures, and provide technical support to businesses to meet circularity requirements
<b>Mobile Ecopoint</b>	Logistical difficulties in ensuring regular service and optimal locations across neighbourhoods	Technical	Medium	Plan routes based on waste generation data, coordinate with local services, and adjust frequency/location after pilot phase.
	Limited citizen trust or low demand for refurbished appliances	Operational	Medium	Highlight SCRAP's technical expertise, certify refurbished products with quality labels, and run awareness campaigns to promote trust and encourage uptake.
	Limited business participation due to perceived extra workload or low incentives	Operational	High	Provide practical guidelines and training, offer municipal recognition or tax incentives, and promote partnerships with food banks and NGOs.
<b>Information and Citizen Awareness</b>	Risk that the awards are perceived as symbolic and fail to raise real awareness about circular economy	Operational	Medium	Define transparent selection criteria, ensure strong media coverage, and link the awards to campaigns that showcase winning practices as models for citizens and businesses.
	Limited integration in curricula or lack of interest from schools	Operational	Medium	Collaborate with education authorities, adapt content to school needs, and provide teachers with ready-to-use materials and incentives.
	Risk that families see the activity only as entertainment and not as an opportunity for awareness	Operational	Low	Design activities that are fun and attractive for families but also clearly convey circular economy messages.

<b>Circular Resources Web Map</b>	The map may perform poorly, be slow or not accessible, discouraging use	Technical	Medium	Ship an MVP and test with users, ensure responsive and accessible design.
	Data may become outdated or inaccurate	Technical, Operational	Medium	Assign a team to keep the map updated, set regular reviews, and allow users to suggest corrections.
	Low adoption if users do not understand why the map is useful	Operational	Medium	Highlight the map's practical uses (repair, refill water, find second-hand items) and promote it with QR codes placed at fountains, eco-points and circular businesses.
<b>Community Composting System, Urban Gardens and Awareness about Waste Separation</b>	Low community participation or declining interest over time	Operational	Medium	Provide ongoing incentives such as sharing produce, recognition or small rewards, and promote the gardens as a social and recreational hobby for residents.
	Lack of suitable space/infrastructure and parental concerns about hygiene/safety may hinder integration into school routines	Operational, Legal	Medium	Pre-assess available space and use closed, small-footprint composters; approve clear hygiene/safety protocols with school leadership; inform families and assign a responsible teacher/eco-committee for upkeep.
	Risk that residents fail to separate organic waste correctly or are unclear about what is compostable	Operational	High	Deliver practical demonstrations, distribute clear visual guides (what goes in/what doesn't), and set up monitoring with feedback from facilitators.



## 12. Monitoring framework

### Governance Structure for Implementation

To ensure coherent progress in the implementation of the *Granada URBACT LET'S GO CIRCULAR!!* Integrated Action Plan, a tailored governance structure has been designed.

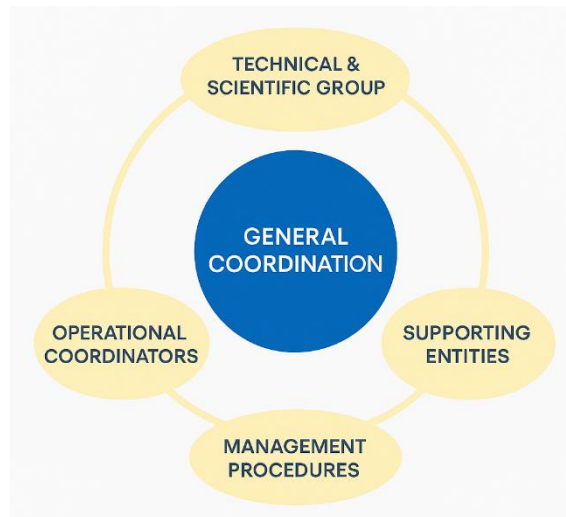
Its purpose is to provide **continuity, accountability, and coordination**, while ensuring that the collaborative spirit of the URBACT Local Group (ULG) is preserved throughout the implementation period.

The governance model is built on three principles:

**simplicity**, to avoid administrative burden;

**inclusiveness**, ensuring that all relevant stakeholders remain engaged;

and **flexibility**, allowing each action to evolve at its own rhythm while staying aligned with the overall strategic direction of the city.



*Governance Model*

### General Coordination

The **Área de Sostenibilidad, Agenda Urbana y Fondos Europeos** will act as the General Coordination body of the Action Plan.

Its responsibilities include:

- Ensuring the coherent implementation and monitoring of all actions;
- Aligning the plan with Granada's strategic frameworks (Agenda Urbana 2030, Climate and Energy plans, Circular Economy Roadmap, etc.);
- Identifying and disseminating funding opportunities at the local, regional, national, and EU levels;
- Leading communication and public dissemination activities linked to the plan;
- Assessing how implemented actions contribute to Granada's sustainability, innovation, and circular-economy goals.

The General Coordination team will work closely with universities, research institutions, and technical departments to integrate new knowledge, identify emerging opportunities, and ensure that the action plan remains relevant in the medium and long term.

### **Operational Coordination**

Each action will have a **designated operational coordinator**, typically the entity responsible for its execution.

Operational coordination principles:

- Municipal departments lead actions directly under their remit (e.g., mobility, waste, water, economic development).
- When an action involves multiple partners, a lead organisation will be appointed as liaison with the General Coordination team.
- This structure ensures clear responsibilities, avoids duplication, and supports agile decision-making.

Operational coordinators will also be responsible for providing regular progress updates and participating in monitoring activities.

### **Technical and Scientific Advisory Group**

To reinforce the Action Plan with solid technical expertise, a **Technical and Scientific Advisory Group** will be established, composed of representatives from:

- University of Granada (UGR);
- Research centres specialising in sustainability, circular economy, water management, and materials recovery;
- Sectoral experts and professional associations.

Main functions of this group:

- Provide technical validation for methodologies and pilot initiatives;
- Support the preparation of project proposals and funding applications;
- Facilitate transfer of knowledge and good practices across actions;
- Strengthen the connection between local initiatives and broader metropolitan, regional, or national strategies.

This group will play a decisive role in ensuring that Granada's circular transition remains evidence-based and innovation-driven.

### **Supporting and Implementing Entities**

Depending on the nature of each action, **specific supporting entities** will be engaged, including:

- Municipal public companies (e.g., Emasagra, Inagra);
- Chamber of Commerce and business associations;

- NGOs, neighbourhood associations, or sector-specific collectives;
- Educational and training organisations.

These entities will contribute through technical know-how, equipment, community mobilisation, or operational support.

Selection of supporting partners will be carried out jointly by the General Coordination and the relevant Operational Coordinator, ensuring that partnerships remain responsive to each action's evolving needs.

### **Management and Monitoring Procedures**

A **regular monitoring rhythm** will be established through coordination meetings between the General Coordination team, Action Leads and supporting partners.

These meetings will be used to:

- Review progress and update implementation timelines;
- Collect monitoring indicators and qualitative information;
- Identify delays or bottlenecks and agree on corrective measures;
- Plan communication, dissemination, and stakeholder-engagement activities;
- Ensure alignment with funding requirements.

Documentation from these meetings will feed into short monitoring reports that will support internal learning, external communication, and strategic decision-making.

### **Purpose and Added Value of the Governance Model**

The governance model reflects the integrated, participatory and multi-level spirit of URBACT. It aims to guarantee:

- **Transparency** in decision-making and progress reporting;
- **Shared responsibility** among public entities, businesses, academia, and citizens;
- **Continuous learning and knowledge transfer** between stakeholders;
- **Scalability**, allowing successful actions to evolve into larger projects or be replicated across districts;
- **Long-term continuity**, ensuring that Granada's circular transition extends beyond the URBACT programme.

By fostering coordinated action, collective ownership, and strategic alignment, this governance framework ensures that the *LET'S GO CIRCULAR!!* plan becomes a lasting driver of transformation for Granada.

## Conclusions

The Integrated Action Plan for Granada reflects the city's ambition to position circular economy as a transformative tool for environmental sustainability, social well-being, and economic resilience. Developing the plan required a substantial collaborative effort, bringing together municipal departments, the University of Granada, professional associations, businesses, and civil society under the umbrella of the URBACT Local Group (ULG). This participatory process highlighted both the complexity and the necessity of interdisciplinary cooperation to design effective circular solutions for the city.

An essential dimension of the journey has been Granada's active engagement within the *LET'S GO CIRCULAR!!* network. The exchange with other European cities created opportunities for mutual learning, peer review, and the sharing of practical experiences. These interactions enriched Granada's approach, offering new perspectives and confirming the value of embedding transnational dialogue in local policy-making.

The process was not without challenges. Ensuring adequate funding remains a critical hurdle, as many actions require significant investment in infrastructure, innovation, and citizen engagement. European and national funding instruments such as ERDF, Next Generation EU, and sectoral programmes will be essential to bridge this gap and ensure the long-term viability of the plan. At the same time, institutional coordination—particularly at the metropolitan and regional levels—emerged as a key factor to unlock synergies and prevent fragmented implementation.

The IAP for Granada is not conceived as a static document but as a living framework. Its iterative nature allows the city to adapt based on the lessons learnt from pilot actions, stakeholder feedback, and monitoring results. Early pilots, such as the Bike Hospital and the Open-Air Festival during European Mobility Week, have demonstrated the potential of combining awareness, education, and practical experimentation to mobilize citizens and test circular solutions on the ground.

Key lessons learnt so far include the importance of linking circular economy with issues that resonate most with people—such as health and quality of life; the need for strong communication strategies to engage both citizens and businesses; and the value of integrating circular criteria directly into governance tools such as procurement, licensing, and taxation.

Looking ahead, Granada's challenge will be to ensure the effective implementation, monitoring, and scaling of its priority actions. Robust monitoring frameworks, continuous dialogue with stakeholders, and adaptive governance mechanisms will be critical to sustain momentum.

In conclusion, Granada's Integrated Action Plan represents a decisive step towards embedding circularity into the city's DNA. By combining local commitment with European collaboration, and by translating policy ambitions into concrete and measurable actions, Granada is laying the foundation for a more sustainable, resilient, and liveable city—one that can serve as a reference for circular innovation in Andalusia and beyond.

## Acknowledgement

The City Council of Granada wishes to express its sincere gratitude to all individuals and entities who have contributed to the development of this Integrated Action Plan within the framework of the URBACT IV Network "LET'S GO CIRCULAR!!".

This plan represents the fruit of collaborative effort, meaningful dialogue, and unwavering dedication. We would like to extend our heartfelt appreciation to Mrs. Eleni Feleki, Lead Expert, for steering this work with such professionalism and warmth. Our deep gratitude also goes to the Munich team for their tremendous coordination efforts and patience in managing such a diverse group of partners. We are equally thankful to the representatives from all network cities for their valuable contributions, their constant willingness to share experiences, and for creating a welcoming and supportive circular family.

Special recognition is due to the members of the URBACT Local Group (ULG) – representatives from municipal departments, the University of Granada, local businesses, NGOs, public agencies, and engaged citizens – whose active involvement and insights have been fundamental to shaping this plan. We are particularly grateful for their generous commitment and the time they have selflessly devoted to developing this Integrated Action Plan. Their enthusiasm and collaborative approach have transformed an ambitious vision into a practical and achievable roadmap.

Finally, we thank the people of Granada. Their creativity, engagement, and community spirit continue to inspire us as we work together towards a more sustainable, resilient, and circular future for our city.

