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Paradigm

WECARE: Environmental Commons in Action, Research and Education

Adolf Sotoca

adolf.sotoca@upc.edu | https://orcid.org/0000-0002-7948-0988

Departament d'Urbanisme, Territori i Paisatge,
Universitat Politècnica de Catalunya – BarcelonaTECH

Mateusz Gyurkovich

mateusz.gyurkovich@pk.edu.pl | https://orcid.org/0000-0002-6685-5234

Faculty of Architecture, Cracow University of Technology

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Abstract

This paper describes the WECARE project and its methodology, as a framework for urban regeneration through the urban commons. The methodology combines research (i.e. urban and socio-environmental analysis, literature review, on-site visits and questionnaire surveys) with education on different levels and artistic actions & performances. It proposes a paradigm shift from "ecosystem services" to "ecosystem commons", emphasising community stewardship. Through Participatory Action Research (PAR) and Service-Learning, the study investigates postwar housing estates in Barcelona, Krakow, and Bucharest. The project identifies "latent commons" by mapping quantitative geodata alongside situated qualitative knowledge. On a second stage, it implements collective artistic interventions that may lay the basis for "soft infrastructures" of solidarity, fostering social cohesion and environmental agency. The results are a replicable methodology for community empowerment, proving that sustainable urban regeneration is a relational and cultural process. The findings can be useful for research & educational actions conducted in multicultural districts (which involves both: students and local communities), especially the postwar prefabricated housing estates in various European countries. As well as during the participatory planning processes organized within such areas.

Keywords: socio-environmental commons, mass housing estates, research & actions project, participation processes

1. The Urban Commons and their socio-environmental dimension

Tensions among global flows of capital, ecological crisis, and the dismantling of the traditional welfare state characterise the contemporary urban condition. In this context, the "commons" paradigm has emerged as a transformative political and social proposal to reinvent how we maintain and reproduce life in times of radical uncertainty. Within the framework of the WECARE project (Sotoca et al., 2025), we assert that any truly sustainable urban policy must be rooted in social change and cultural engagement, moving beyond purely techno--functional solutions to address the ecological conundrum as a civilisation--wide cultural challenge. To frame the methodology of WECARE, it is essential to provide a rigorous definition of the "urban commons" based on a literature review of ongoing research and theory on its triadic structure, its evolution from rural pool resources, and its specific application within the "Co-City" framework.

1.1. The Triadic Structure and the Legacy of Common-Pool Resources

The foundational definition of the commons, as established by the seminal work, rejects the binary choice between state control and private ownership. Self-governed human communities mayld successfully manage shared resources – traditionally called "common-pool resources" (CPRs), such as forests, fisheries, and irrigation systems – by establishing clear rules and horizontal governance protocols (Ostrom, 1990). As stated by Ostrom, commons are not merely resources, but more complex social systems formed by three interdependent components: the resource itself, either material or immaterial, the community of users and producers who relate with such resource and a set of values, protocols, and norms for collaboration and care that the community agrees upon.

The traditional model of rural commons faces significant challenges when applied to urban settings, due to the density of social relations and institutions, the proximity of inhabitants, and a heavily regulated, proprietary environment. Urban commons, unlike rural ones, very often use derelict, infrastructure – such as abandoned buildings, vacant lots, or digital networks – rather than being inherited natural resources from which units are "subtracted". Urban commons operate as "third spaces" that exist beyond the logic of both the state and the market, functioning as dynamic entities that must be mapped and understood through their ongoing social use rather than static ownership (Delsante, Orlandi, 2019).

1.2. "Commoning" is a relational practice

A critical advancement in the literature is the shift from viewing the commons as a noun to understanding "commoning" as a verb. Commoning is a social practice that involves the continuous making and re-making of resources through shared labour and capacities. It represents a relation of situated interdependence between humans and non-humans that navigates the limits of needs and the possibilities of capacities within a specific urban context. Following such relational perspective, the wide range of social practices of "Commoning" may be classified according to seven strands through which they manifests in cities: economies, ecologies, infrastructures, knowledges, socialities, localities, and governance (UCRC, 2022).

These strands illustrate that urban commons are not isolated islands but are interdependent with external forces. For example, "boundary commoning" describes the practices that establish connections across different commons systems or between commons and capitalist circuits, sustaining broader ecologies of care. Such practices are particularly relevant in the post-socialist city, where urban commons often emerge as a response to a broken public

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grid, activating "latent commons" that already exist in society but lack formal organisation. These latent forms bubble with unrealised possibilities for ecological repair and social reproduction (De Angelis, 2017).

1.3. Political dimension of Urban Commons

The urban geographer Henri Lefebvre set the precedents of the urban commons with "Right to the City" (Lefebvre, 1991) that was later expanded by David Harvey (2012). This concept suggests that citizens have a collective right to re-appropriate urban space and participate in the formation and stewardship of city life to manage the production of urban space themselves. The more contemporary "Co-City" framework brings urban commons forward by conceptualising the city itself as shared infrastructure collaborative cooperation among local agents (Foster, Iaione, 2022).

The Co-City model proposes five core design principles: (1) collective governance, (2) the enabling state, (3) social and economic pooling, (4) experimentalism, and (5) tech justice. Local public authorities play the role of the "enabling state" that facilitate the creation of shared resources by transferring land, providing technical guidance, and entering into collaborative pacts with neighbourhood residents. In this model, the state does not withdraw, as it does in neoliberal paradigms, but instead acts as a pivotal manager and facilitator of a polycentric system of urban governance, thus allowing multiple commons – such as community gardens, land trusts, or social centres – to operate independently while being nested within the city's institutional framework (Stavrides, 2016).

1.4. Pooling Economies and Convivial Tools

Urban commons also support "pooling economies," which are distinct from the commercial "sharing economy" typified by profit-driven platforms. Pooling economies involve the combined effort of multiple actors – residents, NGOs, knowledge institutions, and the state – to co-produce goods and services that meet community needs, such as affordable housing, land for growing food, or community mesh networks,. These initiatives are often collectively owned or managed and seek no profit other than community welfare, social and distributive justice (Linebaugh, 2008).

To maintain these economies against the enclosure and commodification of urban space, commoners utilize what Ivan Illich called "convivial tools" (Illich, 1973). These tools facilitate creative intercourse among people and between people and their environment, enabling negotiation across differences and the protection of "invisible value" generated through care and maintenance.

1.5. From Ecosystem Services to Ecosystem Commons

More recently, the WECARE project has discussed the paradigm shift from "ecosystem services" to "ecosystem commons" (Sotoca et al., 2025). While the traditional ecosystem services approach views environmental benefits extracted from urban environments for the use of residents,, the ecosystem commons approach positions environmental assets as shared goods managed through collective agency and responsibility (De Angelis, 2017). The sustainability of our urban environment, therefore, depends upon the active agency of inhabitants who, beyond their role as beneficiaries, act as stewards of the resources that sustain life, such as clean air, water cycles, and green canopy.

2. Goal definition: knowledge as transferable commons

2.1. Action-Research and Service Learning for the commons: The MISMeC Experience

The transition from the theoretical conceptualisation of "urban commons" to its practical application as a driver for urban regeneration requires a robust pedagogical and research framework. Academic institutions, particularly those focused on the built environment, are increasingly shifting toward a "scholarship of engagement" that re-centers public issues by co-producing knowledge alongside local communities. A primary example of this outreach is the Master's Degree in Sustainable Intervention in the Built Environment (MISMeC) at the Vallès School of Architecture (ETSAV-UPC). The MISMeC program develops its core curriculum around real-life case studies of neighbourhoods characterised by high degrees of social vulnerability and environmental degradation (Sotoca et al., 2024).

The master's curriculum is structured as a "civic classroom" where the city becomes the primary site of inquiry. The program's overarching objective is to train future professionals in competencies related to local cooperation, participatory diagnosis, and the remediation of social exclusion and poverty through the physical and ecological dimensions of the habitat. This approach aims to overcome the techno-functional architectural practices, viewing the act of research itself as a form of "commoning" by which knowledge is generated and shared between MISMeC participants and local communities.

Central to this pedagogical model is the methodology of Participatory Action Research (PAR). PAR is defined as an iterative process where the observer participates directly in the generation of knowledge. The MISMeC program deploys PAR in five stage: (1) questioning initial presumptions about the case--study; (2) transcending initial observation through ethnographic analysis; (3) registering the agents interactions through stakeholder mapping and semi-structured interviews; (4) diagnosing socio-environmental pathologies; and (5) co-designing spatial and relational interventions. This methodology ensures that students do not merely study a neighborhood as an object, but enter into a dialogue that faces conflicts and elaborates collective solutions. The outputs of the program for the academic years 2021 to 2023 are gathered in a manual includes a choral glossary of fifty concepts on sustainability which serve as tools for critical thinking and community empowerment (fig. 1). For instance, "Social Metabolism" is used to describe the flow of materials and energy across the society and the built environment, highlighting the nature of modern exogenous models and the need to recover local resources. Similarly, the term "Regenerate" is defined not as a pre-figured design but as a series of interventions – disposition, programming, and governance – that improve a system to make it more prosperous, healthy, equitable, and complex (Sotoca et al., 2024).

Through the lens of "Service-Learning" (ApS), MISMeC students provide a direct service to the community by developing participatory diagnoses that feed into actual municipal policies. For example, students' work in the Sud-Oest del Besòs neighborhood informed the official Urban Regeneration Program of the Municipal Institute of Urbanism (IMU) in Barcelona. The outcomes of the program are disseminated through *The Green Gazette (GG)* series (Serra, Sotoca, 2024–25). The GG translates scientific data (Bisordi-Hüwel et al., 2025) into shareable and legible information for residents. Situated knowledge allows residents to recognize ecological values in their surroundings and foster a transition from passive users of "ecosystem services" to active stewards of "ecosystem commons". The MISMeC program acts, therefore, as a catalyst for collective intelligence, weaving together academic expertise and local knowledge for community resilience.

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Fig. 1. *"Barcelona, Besòs: Current Ecologies"*. A handbook for the Urban Ecology of the Besòs Neighborhood. Deployment of the several materials included in the publications (photo by: A. Sotoca)

2.2. Shared knowledge in practice: the WECARE project

Building upon the methodology set by MISMeC, a network of scholars, practitioners and cultural institutions iniciated the the project **Warding Ecosystem Commons through Action-Research & Education (WECARE)**.

Launched under the EACEA Program (CREA-CULT-2023-COOP), WECARE operates on the foundational premise that the contemporary ecological crisis is more of a cultural challenge than a technical one; therefore, any truly sustainable policy must be rooted in social change and cultural engagement. The project' aims to establish a replicable methodology that empowers residents in vulnerable communities to improve their living conditions by reclaiming agency over their "environmental commons" – resources like air, water, and greenery that constitute the material base making life possible.

The WECARE project is developed by a balanced transnational consortium that brings together research institutions, artists' collectives, and socially focused NGOs. The partners include the Universitat Politècnica de Catalunya (UPC) as the coordinator, Politechnika Krakowska (PK) in Poland, Asociatia pentru Tranzitia Urbana (ATU) in Romania, MITO Associació Cultural in Spain, and the Fundacja Instytut Architektury (IA) in Poland. The project and its organizational structure is specifically designed to facilitate the transfer of scientific and technical knowledge to local communities through co-design processes and collective artistic action (Sotoca et al., 2025).

WECARE identifies three paradigm residential complexes as its primary case studies: **El Besòs** i **el Maresme** in Barcelona, the **Złotego Wieku** estate in Kraków, and the **Crângași** district in Bucharest. These selected areas of inquiry represent common and universal patterns of postwar modernization in Europe, often characterized by large-panel prefabrication technologies and modernist urban planning. Following the case study method, WECARE utilizes these case studies to produce context-dependent knowledge necessary for moving from "rule-based beginners" to "virtuoso experts" in social innovation (Flyvbjerg, 2006).

Although the case studies are very diverse in their political, cultural, and geo--climatic conditions, they share similar socio-environmental conflicts, such as the erosion of public space and the degradation of shared resources. The project approaches these states as "modern legacy" identifying their multidimensional urban, architectural, and ecological heritage as a critical asset for local identity. The aims of the project are operationalized through three specific lines of action: (1) participatory socio-environmental diagnosis; (2) the collective discovery of ecosystem commons; and (3) the implementation of collective artistic actions.

In Barcelona, the project leverages the city's ambitious city-wide sustainable regeneration agenda. In Bucharest, it utilizes the network of local libraries as social nodes for young women and children to participate in "silent sustainability" practices. In Kraków, the project integrates Ukrainian refugee communities within the modernist urban composition, strengthening social ties through architectural heritage.

WECARE further expands its impact through capacity building and professional education: the Master programs of the Universitat Poltècnica de Catalunya and Politecnika Krakowska include in their syllabus the methodology and learnings of the project, thus providing to future architects and planners competencies in "architectural mediation and the social communication of themes related to urban culture and environmental sustainability. WECARE also engages professional associations like the Architects' Association of Catalonia (CoAC) and the Romanian Order of Architects (OAR) to offer continuing education for active practitioners. The production of "soft infrastructures" of solidarity, such as sustainability guidebooks and community empowerment roadmaps, constitutes an additional mean of knowledge sharing, thus ensuring that its findings transcend their immediate sites and provide a transferable framework for resilient urban futures in different contexts across Europe.

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3. Methodological framework: a multi-scalar diagnosis

3.1. Methodology: planning the Participatory Action Research

Once the project's objectives, as introduced in the previous section regarding the integration of academic and community engagement, a timeline is set to frame the Action-Research (AR) methodology (fig. 2). While the previous section outlined the master's program's role in bringing the academic environment to the site, the WECARE project specifically deploys this as a structured, iterative process where research not only informs social action but is fundamentally generated by it. Action-Research is particularly suitable for vulnerable urban environments because it treats the community not as a passive object of study, but as a primary stakeholder in the co-production of knowledge. The project is methodologically organized into six distinct phases designed to move from initial data gathering to long-term sustainability (Stringer, Ortiz, 2021; Merler, 2020).

Fig. 2. Timeline of Action-Research methodology for WECARE, including the planned phases and deliverables for each phase (by Adolf Sotoca)

The first phase, extended for three months, sets the strategy and produces "from desktop" knowledge that include the creation of sociograms to identify local agents and the development of preliminary environmental, social, and historical cartographies. The second stage, brings the project to the ground through kick-off events, urban walks, and community workshops aimed at building trust and initiating a shared vocabulary around environmental commons. This phase is critical for the "collective discovery" of resources that residents value, transitioning them from "informants" to active "commoners". This phase of societal engagement extends for three more months, thou engagement does not really cease all along the project.

The heart of the project lies in the **Action Phase**, which involves the implementation of collective artistic actions along nine more months. The "Service-Learning" approach becomes central at this point of the project, as the research team of the project work alongside residents to design and erect symbolic "counter-monuments" or social archives in public spaces. This is followed by the **Evaluation Phase**, in which a set of community workshops and meetings measure the social and environmental impact of these interventions, as well as their potential for replication.

The final stages include the Celebration and the lessons Learned phases. The goal of the first one is to return knowledge to the community to consolidate, so that the awareness of agency gained and made explicit. The second synthesizes

the entire experience into scientific outputs, documentary films, and the "Warding Ecosystem Book" (we_BOOK) to ensure the experience gained in the project is spread and transcends its duration and local context.

3.2. Diagnosis: geodata and context-based knowledge

The socio-environmental diagnosis of the selected case-studies tackle very diverse challenges, as the available information is not homogenous in Barcelona, Krakow and Bucharest. However, they all attempt to merge "top-down" quantitative data with "bottom-up" qualitative insights. This dual approach is essential for identifying the "hidden potential" of urban fabric and validating the subjective experiences of those living in large-scale housing estates.

Quantitative Foundations: Mapping the Biophysical Reality

The quantitative component of the diagnosis is built on ten thematic layers: Urban morphology, Socio-demography, Building stock, Public spaces, Facilities, Health, Heritage, Heat, Land, Water, and Air. Geodata such as NDVI satellite flights assessing greenery quality, LIDAR data for green canopy density, and Land Surface Temperature mapping are example of data used in the study.

A comparative analysis on data availability showed a significant discrepancy in digitization and interoperability between cities like Barcelona and Krakow (Szczerek et al., 2025). While extensive data on the building stock and its energy performance abound in Barcelona, Krakow required more complex formal procedures to access certain socio-environmental metrics. The quantitative analysis often highlighted areas of "social vulnerability to climate change", where high population density and poor building insulation overlapped with

p. 6 | The Green Gazette · El Besòs i el Maresme | Agents

Miguel Moreno: Jubilados Macosa-Alstom

Miguel Moreno: Jubilados Macosa-Alstom (Barcelona)

"Thousands of asbestos fibers have contaminated our bodies"

Network
They Collaborate with the Airenet metropolitan coordinator.

Origins and description
Between 1960 and 1994 around 3,000 people worked in the old Macosa factory, which was bought by Alstom in 1989. Located between Llull and Provençals streets, the factory, which had been created in 1947, was located in the old steel complex of Can Girona, a place created in 1888 where the Besòs Water Tower was located. Built in 1882 the tower supplied drinking water to the Barcelonans. It is currently Plaza Ramon Calzina and the tower is preserved as a cultural asset of local interest. The site has become a place to show the evolution of the factory until 1994 and to commemorate the workers who died due to contact with asbestos. The Poblenou Historical Archive is also located on the premises.

Problem detected
During the period 1960-1994, 40 factory workers died from continued exposure to asbestos. Scientific studies have found that up to 50,000 asbestos fibres take as little space as one human hair. In this neighbourhood, 75% of asbestos is located in housing construction materials so a good part of the blocks is affected by its presence. 25% goes to marketable products, such as stoves or microwaves. The soil on the grounds of the old factory is also contaminated. There are scientific studies where soil contamination levels are identified. The effects on health are very severe and more investment is necessary for its detection and subsequent treatment.

Projects and proposals
Complaint platform for data investigation and support for affected workers. In 2019, 10,000 signatures were obtained to promote an ILP that would require censusing the presence of asbestos and facilitating medical check-ups for exposed personnel. At a political level, it is about putting pressure on the different parties in the Parliament of the Generalitat of Catalonia to remove asbestos from the built environment. An interdepartmental commission has been created to generate a national plan to eradicate it. According to the EFE agency ,"Retirees demand the total removal of asbestos from all buildings, especially public ones, as well as the mentioned census and subsidies and coordination to investigate methods of curing diseases related to asbestos, especially mesothelioma." Malignant mesothelioma is a tumour that can affect the pleura, peritoneum and pericardium, and is associated with asbestos exposure."

Common Ecosystemic Resources
Land

Anti-Resources
Asbestos

Blanca y Elisabetta : Asociació de consum ecològic Tirabec

Blanca y Elisabetta : Asociación de consumo ecológico Tirabec

Self-management towards local, seasonal and zero waste food

Network
They collaborate with the site of Ca l'Isidret and Hort Fortalesa, and the Casal de Barri. Sagrat Cor ecological consumption association.

Origins and description
The entity is formed by a group of family units whose objective is to consume organic, seasonal and local products, that are directly bought to the producers.

Problem detected
Plastic waste pollution linked to food, health associated with ecological consumption and respect for the environment.., all of this, in a neighbourhood marked by high rates of urban vulnerability, become secondary issues and hardly a priority. The lack of an ecological food culture is an increasing trend due to the effects of economic neoliberalism.

Projects and proposals
Faced with this trend, the entity promotes self-sufficiency through direct purchases from km.0 suppliers, ecological production and that generate zero waste. Twelve families, mainly from the El Maresme neighbourhood as well as from El Besòs, participate in the project. They contact fruit and vegetable suppliers and are in charge of the management of orders. They source from the Eco-Maresme network. They also include animal protein products such as meat and dairy, and domestic and body hygiene products. Its headquarters are located in the Casal de Barri Besòs. They spread the bases of cooperativism and food sovereignty, and try to ensure that the economic cost of the products remain affordable for everyone. Their activity is completely voluntary.

Common Ecosystemic Resources
Food, People, Land, Space, Time, Culture/Knowledge

Kick-off Workshop | The Green Gazette · El Besòs i el Maresme | p. 7

Kick-off Workshop in the Besòs and Maresme neighbourhood.

This first workshop aimed to meet the team with the neighbours of El Besòs I el Maresme. On the first day, we gathered around the streets, with a big axonometry and a table. The aim was to walk with the neighbours and ask them where to stop, considering their concerns about each place. Once they found a place, we would unfold the table and start drawing all the information they would tell us on the axonometry. We had previously contacted some of the representatives of the most relevant entities, who came to explain their projects.
Some curious neighbours also gathered around the table to share their experiences as part of the vicinity.

This allowed us to create a common mapping with some members of the neighbourhood and representatives of initiatives developing there. Resulting in the axonometry that follows on the next page, we could detect some problems as well as we learned from the projects and proposals the people have in each ambit.

On the second day of the workshop, we visited some of the most emblematic places such as the Gregal community kitchen and the Martinet Solidari adult's school. All of this brought us through a walk around the neighbourhood that made the team understand more precisely the place we were analysing.

Lastly, on the second day in the afternoon, the WECARE Team gathered with some expertise in the Architecture and Urban field to talk about the visit. There we started a discussion about the similarities and differences of each city: Barcelona, Krakow and Bucharest.

We discussed the definition of commons, and what elements we have detected as such. We also shared some other aspects that we believed could have the potential to become one.

Loli and the WECARE Team

Neighbours and the team commenting on the axonometric

WECARE final Meeting of the WorkshopA

Visit to el Martinet Solidari

Blanca drawing on the axonometry

Neighbours togheder with the WECARE Team

Bombo Ndir Fall and N'Deye Gueye explaining their project

Visit to el Gregal common

Fig. 3. Excerpts from the interviews developed at Besòs. Source: Sotoca García, A. [et al.]. WECARE El Besòs i el Maresme. 2024, published also in: Matusik, A., (ed.) (2025) *WECARE. Warding Ecosystem Commons through Action Research and Education*. Kraków. Wydawnictwo Politechniki Krakowskiej

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a lack of permeable green surfaces. Nevertheless, access to data alone is did not suffice, as operative studies require appropriate visualization and educational initiatives to enable residents to use this information critically.

Qualitative Integration: The Voice of the Community

To complement these measurements, WECARE employed a participatory ethnography centered on interaction with local agents (Delsante, Orlandi, 2019).

The methodology used to gather information from residents resembles that of a "snowball effect", by which an initial contact with a reduced group of local agents may lead to a wider network of residents, activists, and healthcare professionals.

In **Barcelona (Besòs i el Maresme)**, 14 in-depth interviews were conducted to map "crossed perceptions" among residents. Many of them identified critical "anticommons" – i.e. elements that degrade the environment or social cohesion—such as the legacy of asbestos fibers in building materials and the noise pollution from large-scale city events at the Fòrum. Conversely, they highlighted social potentials like the "Menjador Gregal" community kitchen and the self-managed tree pits that act as micro-ecosystems of care (fig. 3).

In **Krakow (Złotego Wieku)**, the diagnosis was carried on through the distribution of "green booklets" where residents recorded their affective relationship with their living environment. This process identified more than forty urban commons, ranging from the Batowice Fort to the "Family Allotment Gardens", which residents perceived as vital "oxygen" for the community. As in Bucharest and Barcelona, the commons were weighted using a "concentric--radius diagram", showing that social practices like volunteering and participation were as highly valued as physical green spaces.

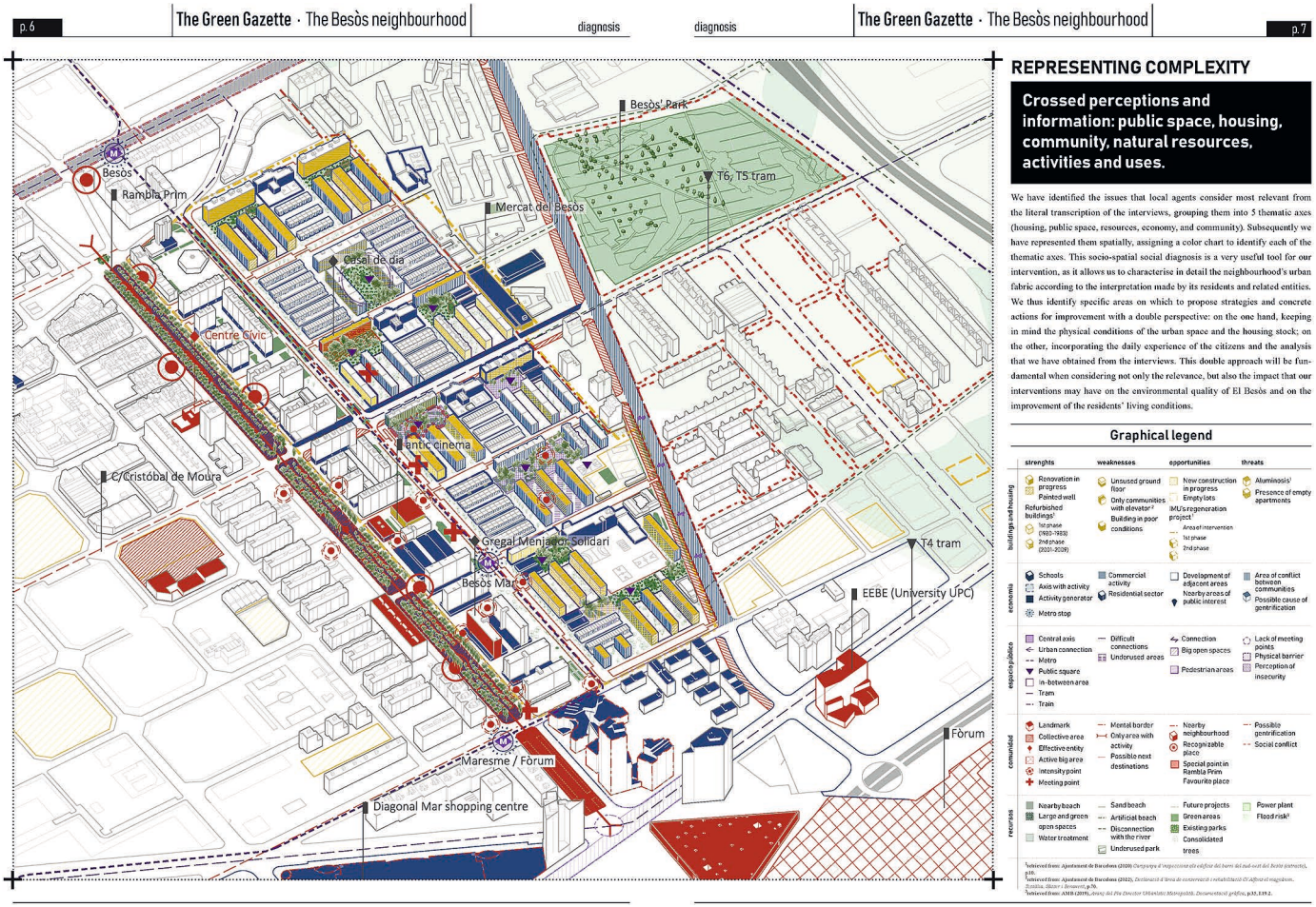

Fig. 4. Axonometric view mapping the social diagnosis in Besòs. Source: Sotoca, A. and Serra, M. (2024) The Besòs neighbourhood. [Monograph] The Green Gazette. ISSN: 2938-5083, published also in: Matusik, A., (ed.) (2025) WECARE. *Warding Ecosystem Commons through Action Research and Education*. Kraków. Wydawnictwo Politechniki Krakowskiej

In **Bucharest (Crângași)**, the research focused on "informal green practices" and the "gardens by the block". A series of guided walks and storytelling sessions were organized at the Nichita Stănescu Library. Participant researchers documented such process as a form of "silent sustainability": intergenerational knowledge of gardening that has adapted to the socialist-era block structure. This qualitative research stressed how inbetween spaces function as "narrative spaces" that resist the excessive mineralization and over-parking of the post-socialist city.

Synthesis through Cartography
The ultimate result of this phase was a series of axonometric maps that spatially represent the convergence of technical data and lived experience (fig. 4). Besides mapping the spatial qualities of the neighborhoods, these maps also reveal a "latent commons" that, in the form of silent, often invisible acts of environmental care, provide the scaffolding for community resilience. This is how the participatory diagnosis produced a series of qualitative cartographies that underpinned the subsequent artistic interventions. Such materials, considered as "technologies of belonging," ensure that the artistic interventions to come in the following phase would be rooted in the specific histories and emotional landscapes of each neighborhood.

4. Results: from the shared resources to artistic interventions

4.1. A cartography of the Commons: specificities and local contexts

The transition from "top-down" quantitative mapping – utilizing NDVI, LIDAR, socio-demographic indicators – to a qualitative methods of inquiry, allowed to identify specific assets that the residents perceive as vital for their well-being. By treating these postwar housing estates as "modern heritage" and identity anchors, the project sought to unveil latent resources that sustain a healthy and convivial urban environment. Based on the taxonomy proposed in the *Urban Commons Handbook*, which some of the WECARE research team co-authored, (UCRC, 2022), WECARE identified 43 positive environmental commons across the three sites. They were categorized into seven strands: economy, ecology, infrastructure, knowledge, socialities, localities, and governance. During the interviews with local agents, the list of commons was weighted by the representativeness of topics allowing researchers to prioritize interventions based on lived needs.

Barcelona: Greenery, Food, and Education
In the Sud-Oest del Besòs, a neighborhood with a long history of class-struggle, the participatory diagnosis revealed latent forms of resilience against urban vulnerability and social exclusion. The community recognized **Greenery** as a prime commons. Its most explicit manifestation is the "Escocells Project", a grassroots initiative by which residents have long reclaimed neglected tree pits and transformed them into micro-gardens that foster biodiversity across the neighborhood. These acts signify a shift from greenery as a municipal "service" to an "ecosystem common" managed through the agency of the local residents. The second commons identified by the residents was **Food**, which emerged as a central social practice and an element of intercultural cohesion. The "Menjador Solidari Gregal" community kitchen serves as a node where basic needs are satisfied through a cultural and feminist perspective, building trust and social bonds among diverse migratory groups. Finally, **Education** was identified through the work of "El Martinet Solidari," an adult school that employs the pedagogy of liberation advocated by figures such Paulo Freire.

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In the Besòs context, knowledge sharing–especially language learning for migrants–is viewed as a basic precondition for community agency and autonomy. In contrast to Greenery, Food and Education, the residents mentioned also the "anti-commons", disruptive conditions such as noise pollution and the high concentration of asbestos in building materials (estimated at 75% of housing stock), which residents perceive as direct threats to their shared environmental health.

Kraków: Art in Public Space, Heritage, and Green Spaces
The urban commons in the Złotego Wieku estate, are intimately related with the unique urban composition designed by Witold Cęckiewicz (Gyurkovich et al, 2021). Residents expressed a strong attachment to the estate's **Heritage**, identifying the late modernist architecture and the Batowice Fort as identity anchors. The fort, despite the threats it faces due to real estate investment and parking encroachment is highly valued for its architectural and landscape qualities.

Art in Public Space was identified as a crucial common resource, particularly the open-air sculptures and installations that were originally designed to "humanize" the industrialized environment during the socialist era. Many of these high-class artistic forms were lost during post-1989 renovations, and residents signaled a desire to bring art back to their daily surroundings to restore the place's identity. Furthermore, the **Green Spaces** of the estate, including the "Family Allotment Gardens" (ROD), are perceived as the community's "oxygen". Similarly to the "Save the trees at Fort Batowice" campaign, the residents are willing to mobilize and protect greenery around the allotment gardens.

Bucharest: Water, Self-organization, and Knowledge
In the Crângași district, the identification process highlighted a complex micro--ecology of care functioning without formal institutional support (Voinea et al., 2022). The relationship with **Water** is dominated by the proximity to Lake Morii, an artificial landmark that serves as a site for recreation and environmental value. **Self-organization** is most visible in the "gardening by the block" phenomenon. These informal gardens, hand-down through generations, represent a form of "silent sustainability" where residents adapt rural gardening knowledge to the socialist-era block structure (Axinte, 2025).

In such context, neighbors collectively negotiate planting and maintenance to resist the over-parking and mineralization of the post-socialist city. Finally, **Knowledge** was identified as a common resource housed in the Nichita Stănescu branch of the Bucharest Metropolitan Library. It serves, as many other local branches within the network of city libraries in Bucharest, as a social node and "civic platform" for storytelling and ecological learning. Librarians act as stewards of knowledge and trusted mediators of social dynamics by facilitating the circulation of local history. Their daily deeds should be considered as legitimate contributions to urban sustainability.

4.2. Collective Artistic Interventions: Materialising Stewardship

As set by the Participatory Action Research timeline, the project moved into the "Action Phase" after the Diagnosis. Taking the identified commons as a starting point, the public and collective actions were initiated. These actions were designed to move beyond techno-functionalism, utilizing culture as a lever for social engagement and community empowerment (Bollier, 2016) (Petrescu et al., 2021). The several interventions were also conceived as "soft infrastructures" of solidarity, making the residents' agency visible and measurable.

Barcelona: "PLANTADA" and the Living Monument
The intervention in Barcelona, titled "**PLANTADA**," was organized by the MITO collective at the Escola Concepción Arenal. It took the form of a festive

neighborhood meeting where neighbors contributed their own plants to construct a living "counter-monument". PLANTADA was conceptually structures in three different levels: firstly, as an affective dimension where each plant carried a personal story of migration or care; secondly, as a historical-ecological dimension integrating native and migratory species; and lastly, as a social dimension that documented the neighborhood's cultural diversity.

Local agents played a central role in the design; associations like "Ambar Prim" and the "Grup Verd del Casal" took a very active part in coordinating the outreach. A "Plant Photobooth", which allowed residents to take portraits with their plants, was also set, thus creating a digital community archive that validated their role as caretakers. The continuation plan for the actions, a required output set in the methodology, took shape in the form of the expansion of the "Escocells Project". The participant neighbors "sponsored" tree pits, ensuring the intervention's long-term sustainability through continuous monitoring and social cohesion (fig. 5).

Fig. 5. PLANTADA developed by MITO collective at Besòs (https://wecare.upc.edu, accessed on January 2026)

Kraków: Restoration of Creative Values

In Kraków, the intervention's aim was to cherish the heritage value and to foster the stewardship of the creative and architectural values of the Złotego Wieku estate. The event, titled "**The Four Seasons of Mistrzejowice**", brought together architecture historians with the community. A central component was the

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architectural walk that familiarized residents with the "hidden" artistic values of their housing structures. The project facilitated meetings with the original authors of the architecture and art, Maria Chronowska and Janusz Jutrzenka Trzebiatowski, which helped bridge the generation gap between original residents and newcomers, including Ukrainian refugees.

A symbolic result of the intervention was the proposal to reconstruct a large--scale steel enamel decoration that originally decorated a shopping pavilion but was demolished 20 years ago. The artistic installation presented at Klub Kuźnia used student-led design concepts as a stimulus for further joint discussion. The other idea was to implement one of student's project of 3D-instalation in front of Klub Kuźnia as the element of retrieved "Nowa Huta Route of Sculptures", which was existed in 170-ies and parts of which still remains in urban realm of nowadays Nowa Huta, Czyżyny and Mistrzejowice districts. The intervention extended beyond the public events and was continued by a follow-up exhibition, "Złoty Wiek. A New Perspective" (fig. 6).

Fig. 6. Public lecture and round table at the opening of the "Złoty Wiek. A New Perspective" exhibiton, curated and organized by the Institute of Architecture in Krakow (https://wecare.upc.edu, accessed on January 2026)

Bucharest: The "Crângași Herbarium"

"**The Crângași Herbarium**", is an interactive archive cabinet placed in the Nichita Stănescu Library. Co-produced by studioBASAR and architecture students, the herbarium functions as a hybrid between a museum artifact and library furniture. It contains drawers filled with dioramas of imaginary gardens, ethnographic drawings, and postcards featuring quotes from neighborhood gardeners.

The design process was rooted in active ethnographic work that required librarians to observe and register the neighborhood's social dynamics. The intervention aimed to explicit the informal labor of neighborhood gardeners while valuing the community knowledge in their own urban ecology. Once installed, the Herbarium offers to the visitors, often children, the possibility to intuitively explore the drawers, validating the object as a magnetic tool for experience-based pedagogy. The follow-up strategy emphasizes the "Green Library" as a civic platform for neighborhood storytelling, where the herbarium serves as a brief for future "City School" projects, ensuring the library remains a hub for ecological transition (fig. 7).

Across all three cities, these interventions proved that urban regeneration is most effective when it is "relational". By empowering residents to design and implement these symbolic markers, WECARE created a transferable framework of values – grounded in co-creation and the recognition of local labor – that strengthens the "technologies of belonging" necessary for resilient urban futures.

Fig. 7. "The Crângași Herbarium", at Nichita Stănescu Library in Bucharest. Concept and design by StudioBASAR (https://wecare.upc.edu, accessed on January 2026)

5. Discussion: Synthesis of Learnings and the Future of Commoning

The implementation of the WECARE project across Barcelona, Kraków, and Bucharest has provided a robust empirical testing ground for the theoretical frameworks of urban commoning. The project has put special emphasis in moving from the technical "ecosystem services" paradigm towards the social "environmental commons," by which urban ecology is reclaimed as the entanglement of shared commons whose sustainability depends on collective agency and stewardship.

5.1. The Cultural Dimension of Ecological Sustainability

WECARE asserts that the ecological conundrum in Barcelona, Krakow and Bucharest, as well as many European cities, is fundamentally a cultural and social challenge rather than a purely technical one (Gandy, 2019). The data-driven diagnosis discussed in **Section 3** – which utilized teledetection means, such as NDVI and LIDAR technology, to spatially map environmental commons provided a necessary scientific baseline. However, as evidenced by the qualitative synthesis, these technical indicators only gained transformative potential when confronted with the "situated knowledge" and "affective attachment" of the residents. A case in point is the "PLANTADA" intervention in Barcelona serves: the physical erection of a "counter-monument" was less about the botanical species themselves and more about the "technologies of

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belonging" generated through the sharing of migration stories and personal care rituals. Such experience resonates with the "Co-City" principle of experimentalism, where the city acts as a laboratory to test new relational models. By prioritizing the emotional and historical dimensions of the habitat, WECARE has shown that social cohesion is the most vital resource for climate resilience in vulnerable housing estates.

5.2. Rethinking Professional Roles: The Architect as Mediator

The project has provided numerous opportunities that enabled architects and urban planners to play a different role to that of traditional practice. As noted in the MISMeC pedagogical experience described in **Section 2**, professionals must move beyond conventional design tools to embrace "architectural mediation". In the Kraków case study, university faculty and students transitioned from being "external experts" to "facilitators of memory", working alongside original modernist creators and contemporary residents. The approach of WECARE for Mistrzejowice aligns with Flyvbjerg's assertion that "virtuoso expertise" is only developed through deep engagement with context-dependent case studies (Flyvbjerg, 2006). The comparative analysis of data availability in Kraków and Barcelona highlighted that technical data is often fragmented or inaccessible at the neighborhood scale (Szczerek et al., 2025). Therefore, the architect's new "convivial tool" is the participatory diagnosis, which empowers residents to define their own priorities–such as identifying the legacy of asbestos as an "anti-common" that requires urgent collective attention.

5.3. Validating "Silent Sustainability" and Informal Practices

The project made also a significant conceptual advancement by means of acknowledging "silent sustainability", as highlighted in the Bucharest findings in **Section 4**. In post-socialist housing estates, informal gardening practices by the block represent a resilient form of urban commoning that has persisted despite institutional neglect or market-oriented governance. WECARE's "Crângași Herbarium" specifically avoided to formalize these practices protocolled and institutionalized systems; rather, it sought to "dignify local labor" and provide a platform for civic imagination (Smith, Jehlička, 2013).

This approach challenges the "institutional enclosure" of knowledge. Informal gardens as "narrative spaces", are then lively proofs that urban regeneration should not focus solely on large-scale infrastructural changes but should support the "discreet commoning" that already sustains the material base of life (Tsing, 2021). Humble and silent sustainability in Crângași resonates on the triadic structure of urban commons: a pool of resources (green interstitial space), a community (gardeners by the block), and a set of negotiated norms (informal care protocols).

5.4. Institutions as "Soft Infrastructures" of Solidarity

WECARE took advantage of existing formal institutions and used them as catalyzers for social change. The project has successfully reformulated the local cultural institutions in Bucharest (libraries) and Kraków (cultural clubs like "Kuźnia" in Kraków) as active hosts for ecological transition. These institutions moved from being passive repositories of information to becoming "soft infrastructures" of solidarity where residents could participate in "boundary commoning". The Green Gazettes proved also to be effective tools for transformation, as they translated technical and ethnographic findings into shareable and portable resources.

The project concludes that his institutional shift is essential for the long--term sustainability of the interventions. To that end, it is also essential to embed WECARE's methodology into university curricula and professional

training, so that the project ensures that the "seed" planted during the action phase continues to grow within formal structures (Mertler, 2020). The legacy of these interventions rests not in the physical artifacts, but in the "distributed ecosystem of care" established between librarians, students, activists, and neighbors.

5.5. From Formula to Framework: Replicability through Values

Finally, a key learning from the compared case studies methodology is that urban regeneration cannot follow a rigid "formula". The diverse geo--climatic and political conditions of the three cities – ranging from Barcelona's Mediterranean climate to Kraków's and Bucharest central European conditions – required a flexible "research framework". Replicability, in the context of WECARE, is not about duplicating a specific artistic object but about adapting a value-based framework grounded in co-creation, accessibility, and the recognition of local capacities.

The "crossed perceptions" axonometric mapping discussed in **Section 3** proved to be a universally applicable tool for visualizing the complex relationship between social metabolism and urban form. Whether mapping noise pollution in Barcelona or the "invisible treasures" of public art in Kraków, this methodology allowed for a "polycentric governance" of knowledge that is essential for a more democratic and equitable urban future. WECARE proved that accessible and horizontally discussed knowledge enables and fosters civic participation in urban regeneration processes. Such a contribution was acknowledged as the project was selected as a CREA best practice within the thematic field of "**Democratic Values**" and published by the European Education and Culture Executive Agency. The publication will show the added value of the Creative Europe COOP projects across wide range of audience. Primary targets are Brussels policy-makers and Member State decision-makers who are currently working on the future MFF and cultural funding.

In conclusion, WECARE has demonstrated that warding ecosystem commons requires a persistent commitment to "commoning" as a relational process. The transition from being a "rule-based beginner" to a "virtuoso expert" in urban planning requires a continuous dialogue between scientific data and lived experience (Schon, 1984).

6. Conclusions: WECARE and future paths for more convivial cities

Warding Ecosystem Commons through Action-Research & Education (WECARE) stands as a proof of concept that urban regeneration is most sustainable when it is practiced as a relational and cultural endeavor rather than a purely technical one. As framed in **Section 1**, the contemporary city requires a departure from the binary of state and market toward the paradigm of the **urban commons**. The project has tested the possibilities of transforming the management of environmental assets from a passive "ecosystem services" model into an active "ecosystem commons" framework where residents are the primary stewards of the resources that sustain life. The project has done so by adopting a **triadic social structure** – shared resources, communities of commoners, and negotiated protocols – WECARE has successfully

The project's **overarching objective**, as stated in **Section 2**, was to establish a **replicable methodology** to empower residents in vulnerable housing estates to improve their own living conditions. This aim was pursued through a rigorous **Action-Research** methodology that effectively brought academic research out of the classroom into the social fabric of the neighborhood. The involvement of the **MISMeC** research program at UPC and the Master of Architecture at CUT ensured that this knowledge was not only co-produced with residents but also

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transferred to future generations of architects and urban planners, who are direct beneficiaries not only of the specific knowledge gained during the project but, most importantly, of the Action-Research methodology developed within the WECARE framework.

Moving from strategy and multi-scalar diagnosis to direct community engagement, as explained in **Section 3**, demonstrated that scientific geodata (such as NDVI and heat-island mapping) only achieves transformative power when synthesized with **situated knowledge** and local ethnographic work. "**Latent commons**" so inherent in modernist housing estates were unveiled throughout de process. The informal gardening practices, social networks, and historical anchors provide the scaffolding for community resilience in local communities.

The **results** presented in **Section 4** across the three case-studies proved that while urban vulnerability is a universal challenge, its remediation must be site-specific. Although the identified commons shared greenery and public space as a common denominator, the specific materiality of each site gave way to distinctive interventions. The living "counter-monument" of **PLANTADA** in the Besòs, the restoration of modernist creative values in Kraków, and the creation of the **Crângași Herbarium** in Bucharest are diverse in scale, agents' outreach and future development. What they share is their assertion of everyday practices of care. These interventions served as "**soft infrastructures**" **of solidarity**, using existing practices (either institutionalized or informal) as active hubs for civic imagination.

The project's legacy resides not only in physical interventions but in the **Continuation Plans** and the **Community Empowerment Roadmap (CER)**, as discussed in **Section 5**. WECARE has shown that the most enduring impact is the creation of a **more conscious local community** – one that is equipped with the agency to defend shared resources against environmental and social threats (Young, 2000).

The project continues its mission under the umbrella of the **MISMeC**, a master program in which Learning Service and Action Research methodologies are brought further to other case studies in the Metropolitan Area of Barcelona. Furthermore this research-action trajectory has been consolidated through the **Càtedra RUMB**, ensuring that proposals for the **Baix Besòs** continue to be developed according to the principles of environmental viability, social justice, and the circular economy. Ultimately, WECARE stands for inclusion, diversity, and democratic participation, reclaiming the city as a vibrant, sustainable, and shared common for present and future generations as stated in the cross-cutting priorities of the European Executive Agengy for Culture and Education (EACEA).

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More information about the project is available at: https://wecare.upc.edu/

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