Deliverable 4.1.8: Developing an Urban Innovation Ecosystem for Sustainability - A Toolbox

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Revision History

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Table of Contents

Introduction

Welcome to the toolbox for developing and establishing an innovation ecosystem for sustainability and climate in your city. This kit is designed to provide you with clear and measurable tools. Whether you are an authority official or a stakeholder who wants to drive change in partnership with a local authority, the toolbox will provide you with the insights, tools and strategies needed to foster a thriving ecosystem of environmental innovation.

By understanding the principles of a natural ecosystem and applying them to create an innovative ecosystem, local authorities can turn the unique environmental challenges they face into opportunities.

The task is complex but vital, and this toolbox serves as a guide, bridging the gap between the ideals of sustainability and the practicality of innovation.

The Innovation Ecosystem Toolbox is a product of the SME4SMARTCITIES project - Mediterranean SME working together to make cities smarter. SME4SMARTCITIES is designed to connect local authorities in the Mediterranean basin with businesses and small and medium-sized enterprises, in order to promote, strengthen and support economic, social and environmental development. Organizations and municipalities from Spain, Italy and Israel participate in the project. The project created tools and guides for the use of both municipalities and small and medium-sized innovative companies (SMEs). Learn more about the project here.

A step-by-step toolbox

The toolbox has five stages. Each step stands on its own, but it is advisable to follow and complete them in sequence, thus ensuring that the entire development and establishment of the toolbox reaches its optimal results.

1. Capacity Building
2. Mapping of Current Situation
3. Formulating Goals and Objectives
4. Work Plan and Implementation
5. Monitoring and Evaluation

Anchors and Tools

The anchors and tools are designed to mark for you the main players and options that will help you develop and establish the environmental innovation ecosystem

1. Anchors: Corporate, Academia, Civil
2. Shared public space
3. international networking

Case Studies

For learning from the experience and knowledge of other cities and to learn how did they solved challenges and achieved breakthroughs, the following pages present case studies across all the domains that are discussed in this toolbox.

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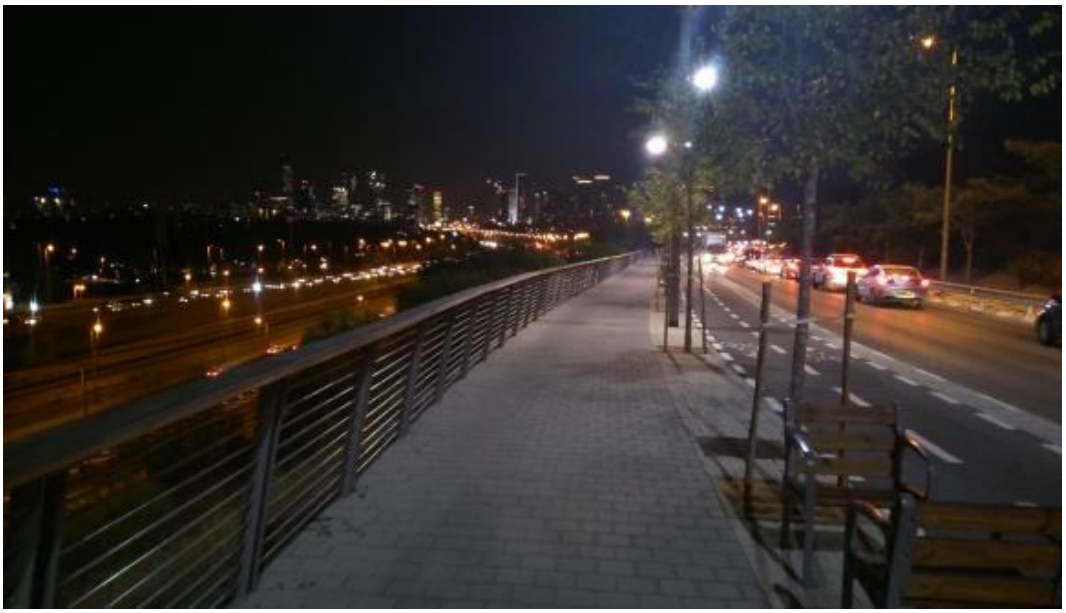
Challenges and The Opportunities - Why create an ecosystem for innovation



The Challenge: Cities at the Forefront of Climate Change

Climate change is happening in our time and its consequences are evident all over the planet. The release of carbon dioxide and other greenhouse gases into the air have been among the main causes of rising global temperatures, resulting in long-term climate change. The dangers arising from these changes are varied, including an increase in the frequency of extreme heat waves, damage to natural environments, a decrease in freshwater sources, damage to marine life and a decrease in food security. Climate Change and continual environmental degradation are impacting our present and certainly our future.

In the beginning of August 2021, the Inter-Governmental Climate Change Panel (IPCC), published the first part of the sixth report on climate change, presenting the current scientific assessment of the changes in progress. The report states that:

- Observed increases in well-mixed greenhouse gas (GHG) concentrations since around 1750 are unequivocally caused by human activities. Since 2011, concentrations have continued to increase in the atmosphere, reaching annual averages of 410 ppm for carbon dioxide (CO2), 1866 ppb for methane (CH4), and 332 ppb for nitrous oxide (N2O) in 2019.
- Each of the last four decades has been successively warmer than any decade that preceded it since 1850. Global surface temperature in the first two decades of the 21st century (2001-2020) was 0.99 [0.84- 1.10] °C higher than 1850-1900 (The period 1850–1900 represents the earliest period of sufficiently globally complete observations to estimate global surface temperature and, consistent with AR5 and SR1.5, is used as an approximation for pre-industrial conditions). Global surface temperature was 1.09 [0.95 to 1.20] °C higher in 2011– 2020 than 1850–1900.
- In order to ensure that the temperatures do not rise above 2°, by the end of the century, expansive global efforts are being made to transition into a carbon zero economy.

The slow progress of governments so far, means that a rise of 3° is still likely, unless severe measures are taken, in policy, in finance and in technology. While climate change impact affect the planet as a whole, it is cities who are at the forefront of the hazards.

The concentration of people and capital in cities renders them vulnerable (Mpanje, et. al., 2018). According to the UN World's Cities reports (2016, 2018), 59% of cities with at least 500,000 inhabitants were at risk of exposure to at least one of six types of natural disasters, (cyclones, floods, droughts, earthquakes, landslides and volcanic eruptions); 15% were vulnerable to two or more types of disasters. Floods were the most common potential natural disaster, followed by droughts and cyclones, all anticipated to increase in frequency and intensity due to climate change.

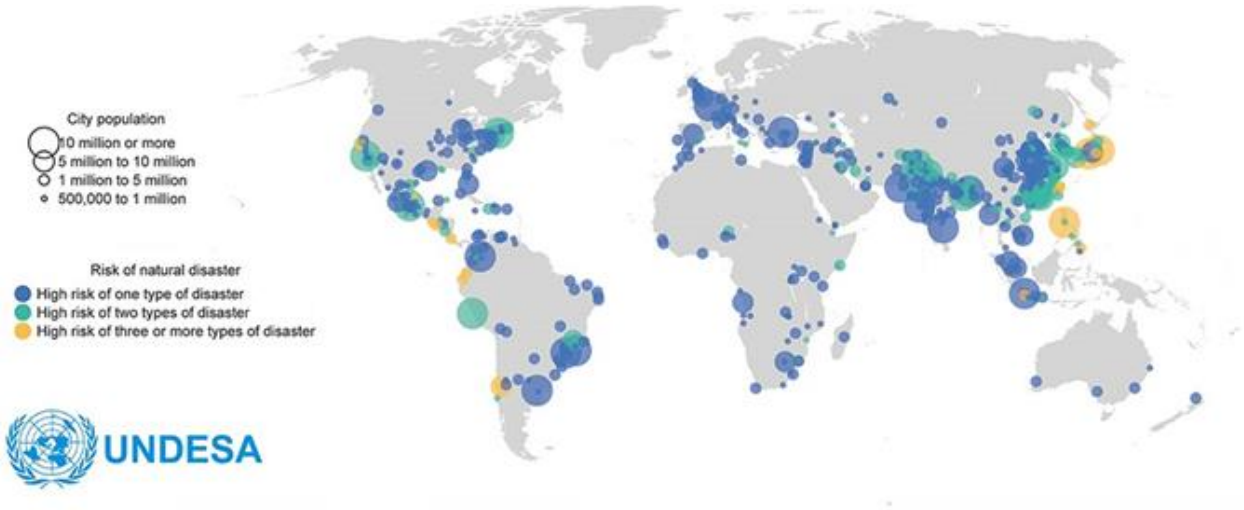


Image: Cities' risk of exposure to natural disaster (UN, 2018)

It is therefore not surprising that resilience has become a prerequisite for a successful city; urban wellbeing as defined by the SDG framework is **Resilient, Sustainable and Equitable** (SDG11).

Learn more: Climate Change Policy

The Opportunity: Innovative cities

The rise of tech startups in cities is driving economic growth and leading to new sources of employment, by creating new businesses and employment categories. While traditional manufacturing and low-skills jobs are being eroded, startups are a rapid and resilient job growth engine, with tech jobs growing on average 10% year on year worldwide. The creation of new sources of employment and growth is vital to maintain competitiveness, reduce poverty, and increase shared prosperity, well being and sustainability in cities.

However, the growth of tech innovation and entrepreneurship is not equal in all cities. Some cities experience higher, faster, and more sustainable growth than others. Cities can drive specific directions and provide a fertile **ground for experimentation** led by private-public partnerships. Initiatives like Bloomberg CityLab or MIT LivingLab have provided a framework and capacity building for cities around the world to experiment. Some cities have invested resources in supporting innovation around themes which were part of their existing strengths or characteristics.

Networks are central to urban technology innovation ecosystems. They are the connectors which sustain the social network of the ecosystem and have the potential to boost the ecosystem's growth by increasing the collisions that result from social connections. By being central to the ecosystem and these connections, networking assets play a critical role in the growth and success of urban technology innovation ecosystems.

Entrepreneurship flourishes in cities, where the majority of SMEs are created and grow. Cities offer not only business opportunities but also the combination of services, support and infrastructure that entrepreneurs need. City authorities – in partnership with local grassroots organizations, research and education centres, are well-placed to define the most appropriate strategies to create a favourable environment for creativity and innovation.

The most relevant implications for policy design and implementation are that technology innovation ecosystems in cities need to be understood as a community or combination of communities, and the focus of policies to support these ecosystems is the community within the city, and it is the city's task to bring together the different partners.

Learn more: **Innovation Ecosystems**

Municipalities - key players for innovation and environmental wellbeing

We are in the midst of a test period that will determine whether we are able to provide a response to the environmental threats we face, which includes climate change, resource depletion, pollution and the erosion of biological diversity. These problems and many others are crucial at the global level, but many of them have solutions at the local level. This understanding makes the local authority a central player in the ability to successfully face these challenges.

The power of local authorities in being able to make a real impact is based on several key factors: First, the local authority has direct and indirect relationships with the residents and other parties in the urban areas such as academic institutions, commercial bodies and civil society organizations - It has the ability to raise awareness to these issues and mobilize all stakeholders as partners in beneficial moves for the environment. Second, the local authority knows very well how to adapt the plans and actions to the local culture, norms and values. Third, as a provider of resources and an example to other organizations, the authority's influence is great among those around it. Hence, leading authorities in Israel and in the world show today that they can be a pioneering force, leading to solutions.

Case Study: Tel Aviv - Israel's Start-Up City

This is how the city of Tel Aviv became Israel's city of innovation, when environmental innovation is an important component of change. Learn More Online

Driving Change Through Innovation

In an era of constant change and of growing climate, social and economic challenges, local authorities are developing avenues of growth that connect more and more innovation and sustainability!

The local authority is given four possible engines of change: **technology and innovation**, **environment and climate**, **society and community** and **strong governance**. Each of these four engines is important in creating an effective change for the better and our recommendation is to test the activation of all of them.

This toolbox focuses on the engine of innovation, through which you can strive towards a new model of sustainable urban life. This is not an empty promise - along the way you will find a variety of case studies that will illustrate how cities can succeed in providing solutions to critical problems, through the application of the tools presented in the kit.

The toolkit before you is suitable for any authority, regardless of its size and the scope of its resources:

Small authorities with limited resources can focus on local innovation moves, on creating collaborations with other authorities in their vicinity as well as with anchor bodies (see below).

Medium-sized authorities, benefiting from more extensive resources, can actively support research, facilitate cooperation between sectors and create a favourable regulatory environment.

Large authorities with significant resources, can design policies, initiate large-scale projects and create a significant impact.

Let's start by understanding what an innovation ecosystem is and what are the important principles we should be aware of.

Why strive for an ecosystem of innovation

> *Innovation ecosystems can be defined as "a loosely interconnected network of companies and other entities that coevolve capabilities around a shared set of technologies, knowledge, or skills, and work cooperatively and competitively to develop new products and services" (James F. Moore "Predators and prey: a new ecology of competition", 1993)*

Leading cities that have shown openness to innovation, stimulated and encouraged it, record success in dealing with local challenges and enjoy urban resilience and social, economic and environmental well-being. Whether it is products, technologies or services - innovative solutions improve the functioning of the city in various fields, including transportation, energy, water, food, waste management, ecology, urban nature, climate and more.

To find solutions for these and other areas, a very useful first step would be to see how the different components and areas of the city are related to each other and interact with each other. This is where nature can come to our aid - a look at complex ecosystems reveals what we call an "ecosystem" - an efficient and wonderful network of interdependence and interactions between the system's components. If we are able to learn from an ecological ecosystem, identify and adopt similar features, we can build an urban ecosystem of innovation on a different scale and contribute to the city's prosperity and making it sustainable.

What makes an ecological ecosystem successful?

Despite the great complexity of ecosystems, they all have a small number of powerful principles that make them successful over time:

Diversity and reciprocity

Ecosystems are more resilient when they contain a diversity of species. Accordingly, a diverse combination of ideas, technologies and approaches can strengthen the connections and reciprocity between the parts of the ecosystem, thus improving the resilience and creativity of and allowing it to thrive in the face of various challenges.

Flexibility and adaptability

The power of the components of an ecosystem to adapt to changing conditions, makes it more immune to the changes taking place. In the case before us, this is true for every player and especially for the local authority that enables and promotes the ecosystem.

Connectivity

The ecosystem consists of a network of connections, ties, nodes and anchors that differ in size and centrality. The more the scope of the relationships and connections between the parts of the system increases, the stronger and more diverse it is.

Regeneration

Nature has the ability to grow and develop by using renewable local resources - this is how the system nourishes itself and its environment.

Thanks to these principles, ecosystems have proven to be efficient, flexible and sustainable over the ages. If we know how to use them in the process of planning and building our ecosystem of innovation, we can ensure its growth and prosperity over time - similar to the resilient ecosystems of nature.

Now that we understand what an innovation ecosystem is and how it can be established according to ecosystem principles, let's dive into the steps in the toolbox

Learn More: Resilient Ecosystems - the Complex Fabric of a Thriving City

Stage 1 - Capacity Building

The local authority has a decisive role in developing and establishing an ecosystem of environmental innovation. This move does require commitment, getting together professionals and units in the authority, strategic planning and practical implementation, but the payoff for the effort is great: the authority strives to improve not only the environmental performance of the city, but also its own as an influential organization. Along with the contribution in reaching its sustainability goals that it has set for itself, an authority that establishes innovation contributes by positioning itself as a responsible body that thinks forward in the environment in which it operates.

The decision to adopt an innovative approach to sustainability can come from various factors in the authority, the city council, the management, environmental unit, strategy or planning units. Sometimes the impetus for the move will come from an external municipal, governmental, or international entity such as the C40 cities network.

A strategic decision of this type will be translated into an action plan that will direct municipal activity to promote innovation for sustainability, it is important that the plan be anchored within the framework of municipal policy and be reflected in work plans, budgets and personnel.

Formulating an action plan

The best way to start is by establishing a dedicated task force - a team or person with responsibility for coordinating and supervising innovation and entrepreneurship buildup. The role of the dedicated task force

includes the following actions:

- Develop the ecosystem establishment and growth plan
- To connect stakeholders and partners from within the authority and outside
- Establish innovation for sustainability as an action that is identified with the municipality
- Make sure that the steps in building the ecosystem are properly implemented and meet the expectations and goals that were defined in advance
- Create visibility and ongoing reporting in and out

Deliverables

> Establishing a dedicated task force

Have you formed a task force? Now it is possible to examine what exists today.

Stage 2 - Mapping the Current Situation

Mapping the current situation will allow you to evaluate accordingly in terms of "found versus desired". In the mapping process, emphasize the following points:

Existing state of the authority's capabilities

Does the authority have a cohesive policy that includes a strategy, a work plan, measurable goals and resources to promote environmental issues

What has the Authority done to promote this policy (if any)

According to the principle of diversity and reciprocity in ecosystems, who are the internal organizational teams working in the promotion of environmental issues and/or innovation - what are their abilities, strengths and weaknesses? How do these affect each other?

According to the principle of connectivity in ecosystems, it is necessary to examine what are the possible intra-organizational communication channels for promoting the issue

Stakeholders mapping

According to the principle of diversity and reciprocity - who are the stakeholders who are active or have the potential to be active in environmental issues in the area where the Authority operates, who are the main ones (the anchors) and what are the interactions that characterize them?

Are there any innovation centers in your area or near you?

According to the principle of connectivity - how do these communicate between themselves and the authority?

How things stand today

To what extent are projects related to the environment and sustainability present in the area? How many of them involve innovation?

According to the principle of flexibility and adaptation - do they adapt themselves to a changing reality? Do they receive public sympathy and community support?

Deliverables

> Map the existing characteristics and interactions of the local authority organizational

> Stakeholder mapping

> Review of the current situation of innovation in the authority's span of engagement

Stage 3 - Defining Goals

Before proceeding to promote innovation, we have to ask what are the objectives of the authority and what are the main issues or challenges?

To this end, define clear, measurable sustainability goals that are aligned with the authority's vision. It is important to refer as much as possible to global goals, such as the UN's sustainable development goals (international initiatives can help you here).

If the authority has goals, this is an opportunity to apply the principles of flexibility and adaptation, and innovation and examine again how well they meet current needs and perhaps there is room to update them.

When defining the goals and objectives, it is important to pay attention to the following elements:

Define ambitious but realistic goals and objectives - our experience shows that authorities mobilized to promote environmental issues succeed in meeting the goals they set for themselves and beyond. For this purpose, it is possible to use the goals as defined in international initiatives, with adjustments to local needs and character.

Address as wide a variety of topics as possible and thus apply the principle of sustainability and reciprocity - under the umbrella of sustainability there are a variety of topics - from energy and infrastructure to green planning, environmental education and even the degree of tolerance. After mapping the topics, examine how they affect each other. The approach taken by the City of London is a good example of this.

Involve all the stakeholders and make them part of the design of the goals and objectives - here again the principle of diversity and reciprocity comes into play - cooperation between the professionals of the authority or on its behalf, together with stakeholders such as representatives from the local community - can contribute to the establishment of the goals and having great public support for them.

Case Study: London - strategic planning that leads to innovation

The city that proved how strategic planning and its comprehensive implementation results in a burst of innovation. Learn More

Deliverables

> Ambitious but realistic and measurable goals and objectives, defined in collaboration with stakeholders

Stage 4 - Work Plan and Implementation

After defining the goals and objectives, cames the main stage of building the work plan for the development of the ecosystem. The task force is indeed responsible for formulating and implementing the work plan, but even in the case before us, it is recommended to share as wide a circle as possible of stakeholders, inside and outside the organization. These can provide ideas and initiatives, refine moves and give feedback regarding the various actions in the work plan.

When the work plan is ready, it is important to communicate it to all the stakeholders involved in its implementation, and to articulate expectations from them in the process of implementation.

To strengthen principles such as diversity and reciprocity and connectivity, the work plan must include reference to issues such as:

- **Cultivating community involvement** - in addition to the importance of communicating with the stakeholders and especially the residents, it is useful to work in cooperation with community leaders and active residents to ensure that local needs and insights are met.
- **Leveraging partnerships** - it is recommended to create or strengthen partnerships at the national and global level - cooperation with other cities, regions and countries can contribute to learning from their experience and sharing best practices. In addition, cooperation with local businesses will help you adapt the move to the needs of the market and create opportunities for you.
- **Ensuring long-term engagement** - sustainable funding models that include public-private partnerships, grants and other funding mechanisms can ensure that the program will thrive over time. In addition, it is recommended to prioritize key winning factors and deliverables - successful initiatives that will give impetus to additional initiatives and the overall process. Finally, make sure that the countries where the authority is administered provide an appropriate framework for the sustainable development of these moves.

The following are some of the common moves that exist in programs to develop an ecosystem of innovation:

- **Establishing or strengthening innovation centers** - physical or virtual hubs that foster collaboration and encourage innovation. These centers can host the hackathons - a joint competition event for developers with potential investors or with a leading technology company that will host the event and take part in the judging. In addition, the physical centers can be used as the hub - allocating an existing space to groups developing start-ups such as a library, a school outside of operating hours or any other space. Besides allocating the space, it is also possible to develop a professional escort system around it.
- **Support for start-up and small and medium-sized companies** focused on innovation such as cleantech, climate-tech, mobility and environmental innovation. This support can be, among other

things, in the establishment of beta sites - allowing entrepreneurs to use the site/facility/database owned by the local authority, to examine the application of the new technology. Building beta sites has a double value: you as an authority will gain a technological solution and the entrepreneurial company will gain a pilot that will help it promote the product.

- **Creating policies and procedures** that encourage innovation and ensure it is properly implemented.
- **Encouraging investment in research and development** activities within universities and private organizations.

Further expansion on the topics and tools in work plans for innovation ecosystem can be found in the anchors and tools pages:

- The corporate, academia and civil anchors
- An atmosphere that promotes innovation
- Shared public space
- international networking
- internal organizational measures

Deliverables

> Creating a work plan, in collaboration with stakeholders

> Communication of the work plan, and of expectations from the stakeholders

Stage 5 - Monitoring and Evaluation

At the same time as implementing the work plan, it is important to follow up in order to create a feedback system and make changes.

Carrying out continuous monitoring and evaluation during the implementation of the program best reflects the principles of flexibility and adaptation and renewal.

Monitoring, evaluation and flexibility to changes will ensure the resilience of the ecosystem and its development over time, as well as its ability to provide a response to the changing environmental needs.

Here are some key highlights for improving the monitoring and evaluation system:

- **Set key performance indicators (KPIs) to measure progress** - a necessary step that, if not already done in the stage of defining the goals and objectives, now is the time to do it.
- **Establish a system of monitoring and measurement**: perform regular evaluations and audits from time to time to measure the pace and nature of progress towards meeting the program's goals and these are areas for improvement.
- **Communicate successes and challenges**: Regularly communicate the successes and challenges of environmental initiatives to all levels of the organization. Encourage feedback and continuous improvement.

- **Comply with legal requirements and standards**: Make sure you comply with relevant laws, regulations and voluntary standards. Certifications such as ISO 14001 are recommended and effective tools that demonstrate commitment to environmental management.

After going through all the steps, you can free yourself up and delve deeper into the anchors and tools we have put together for you that will help you implement the development of an ecosystem for environmental innovation in the best possible way.

At the same time as implementing the work plan, it is important to follow up in order to create a feedback system and make changes.

Deliverables

> Determination of performance indicators

> Establishing a monitoring and measurement system

> Communication of successes and challenges
> Compliance with requirements and standards

The 3 Anchors

The corporate, academia and civil anchors

At the core of the intention to develop and preserve an ecosystem of environmental innovation is the ability to identify the important players in the fabric and create effective ways to create connections between them. Of all the existing players, we chose to focus on four: corporations, research bodies, civil society and you - the local authority.

The corporate anchor

Corporations play a vital role in promoting environmental innovation in cities, being a key engine of growth, creativity and change. Corporations often have the financial resources, technological expertise, and global reach needed to develop and implement innovative solutions that address ecological challenges that cities face. By collaborating with local authorities, investing in research and development, and aligning their business practices with environmental goals, corporations can significantly accelerate the adoption of green technologies and advanced sustainable practices. Their involvement not only strengthens the local economy but also fosters a culture of innovation and responsibility, making them vital players in the city's push towards a sustainable future.

To establish an ecosystem of environmental innovation, our recommendation is to focus on a "corporate anchor" - a concept that refers to large and established companies that are a generative force for environmental innovation and play a decisive role in the development of the field in the industry and in the region in which they operate. These companies often have the resources, influence and infrastructure to catalyse change and inspire smaller businesses and startups to follow suit.

Case Study: Hamburg - A cross-sector partnership that produces achievements

The collaboration between the city of Hamburg and Siemens shows that a partnership between the sectors can make the city environmentally outstanding. Learn More

The academia anchor

Academic institutions play a vital role in promoting environmental innovation in cities, being a focus for research and development. As centers of knowledge, they foster creativity and critical thinking, and provide the intellectual and technical basis for understanding complex environmental challenges. By collaborating with public authorities, industries and communities, academic institutions can translate theoretical insights into practical solutions that drive sustainable development.

Academic institutions and research centers are key players engaged in research applications for the development of the urban ecosystem on various topics, from the development of new technologies to reduce emissions to the planning of strategies for urban planning and waste management. Furthermore, by cultivating the next generation of environmental leaders, academics and entrepreneurs, research anchor institutions generate a continuous flow of new knowledge and ideas – a generative force for creating real change at the local, national and global levels.

By cultivating close cooperation between the local authority and the academia anchor, in a strategic combination of funding, policymaking, education, public involvement and constant evaluation, it is possible to create a thriving ecosystem of innovation with developed research capabilities. Such a partnership not only promotes scientific understanding but also drives practical solutions and has the power to strengthen the city's abilities to anticipate the future and respond to existing environmental challenges.

Case Study: Freiburg - academic leadership to establish abilities

Freiburg, positioned as one of the leading green cities in the world, owes a lot to the successful cooperation between the authority and the local university. Learn More

The civil anchor

The community has a central role in promoting environmental innovation within the local authority, being the framework that manifests the municipal policy, the innovation moves and the details that these affect. Unlike other stakeholders, the community lives and experiences the environment every day, making its involvement essential to identifying challenges that actually occur, as well as being able to implement practical solutions. The knowledge and experience, values and collective preferences of the community members contribute to the formulation of a more effective and socially inclusive environmental policy.

By actively participating community members in decision-making processes, encouraging bottom-up innovation and fostering a sense of shared responsibility, environmental initiatives have a greater chance of becoming established and successful. Therefore, the integration of the community in the process of environmental innovation while taking into account cultural sensitivity, economic viability and social equality, is not only desirable but essential to achieve a significant and sustainable change.

The status of civil organizations as a community anchor

The civil society organizations, which act as the anchor of the community, have a huge potential to contribute to the promotion of environmental innovation in the city. These organizations often embody the collective voice, values and interests of the community, channeling grassroots insights into actionable change. Through advocacy, education, collaboration, and mobilization, civil society organizations can bridge the gap between government policy, academic research, and the daily experiences of city residents. They can encourage resident participation, foster community-led innovation, and ensure that environmental strategies are rooted in local context and needs. By activities focused on communication, coordination and empowerment, civil society organizations as community anchors strengthen the essential connection between people and policy, and accelerate significant and effective environmental innovation.

Case Study: Curitiba - the municipality and the community that changed the city together

The engagement of the community is a key move in being able to successfully promote innovation in the city. Curitiba understood this and implemented the move in the best way. Learn More

Deliverables

> Ambitious but realistic and measurable goals and objectives, defined in collaboration with stakeholders

Five steps to harness the three anchors to cultivate innovation

Below are five steps that will contribute to tightening the collaboration and the connections between the corporate, research and community anchors, enabling the growth and prosperity of ecosystem.

1. Early evaluation and determination of clear goals

To understand the environmental needs and to plan how to incorporate stakeholders in realizing these goals, a review of the challenges and a dialogue with each of the three players, needs to be initiated to understand how the challenges meet their interests, abilities and constraints.

2. Build partnerships in a unified program

The creation of formal partnerships with corporate bodies, research institutions and community organizations, and their anchor in a strategic program that incorporates the interests and strengths of all anchors and reflects joint priorities, will contribute to strengthening each of them.

3. Implementation and execution

Take advantage of the strengths and interests of each anchor in the stages of application and execution:

Corporate anchor: The main power is in the development of new technologies and involvement in projects that emphasize corporate responsibility. Therefore, encourage corporate innovation with green technologies through incentives, grants or subsidies, and initiate joint projects that incorporate aspects of corporate responsibility.

Academia anchor: Its ability to combine scientific knowledge with environmental solutions and effectively translate research into environmental applications, requires you to build an environment for it that will allow it. To that end, invest in research programs in academic institutions that focus on environmental innovation, and set up centres that encourage cooperation between researchers, businesses and the community.

Community anchor: The main goal is to bring active community participation and take responsibility for environmental initiatives in the field. Collaboration with civil society organizations or prominent activists in the community is an effective step in the city's lead in decision -making and the implementation of the project. In addition, promoting understanding and involvement in the community through educational and awareness initiatives, can provide a stable and long -term support base on the part of the residents of environmental innovation projects in the city.

4. Monitoring, evaluation and adjustment

For the implementation of the program to bring about constant improvement and fit itself to changing challenges and opportunities, it is important to have regular estimates that follow the progress, effectiveness and adjustment of any activity for needs. Continuous feedback mechanisms among all anchors, which allow real -time adjustments, can contribute to you. These anchors will also improve the transparency of the moves with the various stakeholders.

5. Cultivating success to establish long-term moves

One of the ways to ensure that ecosystems of innovation will develop and prosper over time is through the development of long-term programs beyond the immediate projects. To do this, stick to success stories – the analysis of successful initiatives to serve as anchors for further expansion of the move and its establishment over time.

An atmosphere that promotes innovation

In recent years, cities have been making efforts to brand themselves as "smart", "innovative" and "advanced" cities under the assumption that this contributes to the social and economic value of the city and establishing it as a centre of attraction for a quality population.

Richard Florida, an American urbanism researcher, developed the "Creativity Index" to target and measure the city's ability to attract creative people and companies. Out of it, you should focus on three key components, also known as the three T's:

1. **Talent** - measures the extent of the population with higher education or professional skills. The degree of merit depends on the ability to attract business as well as the ability to produce a culture of innovation and creativity.

2. **Technology** - measures the technological readiness of the place, including accessibility to high-tech industries, to integrated innovative solutions and other elements that affect the ability to develop and adopt new technologies.

3. **Tolerance** - measures the level of diversity and how the community is open to different cultures, lifestyles and ideas. A high level of tolerance can serve as a factor for entrepreneurs looking for diverse and heterogeneous environments.

How then can cities act to attract to them those factors that are the cornerstones of an ecosystem for innovation and drivers for promoting sustainability?

Attract and retain talent: A city can attract and retain talent by creating a vibrant and dynamic environment that is attractive to entrepreneurs and innovators. This can be done by offering a high quality of life, as well as by providing opportunities for people to learn and grow.

Promote collaboration and networking: A city can promote collaboration and networking by creating opportunities for people to meet and share ideas. This can be done by organizing events, such as hackathons and meetups, as well as by providing online platforms for people to connect.

Celebrate innovation: A city can celebrate innovation by recognizing and rewarding the achievements of entrepreneurs and innovators. This can be done by establishing awards and prizes, as well as by creating a culture that values creativity and risk-taking.

Provide access to resources: A city can provide access to resources to entrepreneurs and innovators by offering incubators, accelerators, and other programs that provide startups with the resources they need to succeed.

Create a supportive environment: A city can create a supportive environment for entrepreneurs and innovators by providing tax breaks and other incentives, as well as by making it easy to start and run a business.

Be open to new ideas: A city can be open to new ideas by being willing to experiment and take risks. This can be done by creating a culture that values creativity and innovation.

Be connected to the global community: A city can be connected to the global community by participating in international events and programs, as well as by attracting foreign investment. This can help to expose entrepreneurs and innovators to new ideas and markets.

By taking these steps, cities can create a vibe that is conducive to innovation and entrepreneurship. This can lead to the creation of new businesses, jobs, and technologies that can benefit the city and its residents.

Case Study: Copenhagen - a model of creativity and tolerance

Creativity and tolerance can make a real difference in making the city green. The case of Copenhagen shows how. Learn More

Shared Urban Space

In the past, uses of the city space were separated into sectors - industry separately, research and academia separately, business separately and of course residential. - This pattern created a city or metropolis of "patches" - a spatial structure that geographically separates uses, populations and roles (functions).

Creating a shared public space is one of the most important ways to enable closeness and human encounter, and to bring about a vibrant urban culture. In fact, the knowledge about the planning of social and technological systems leads to an encouraging conclusion, according to which humans are flexible creatures who learn quickly, if only we give them the chance.

How to create shared public spaces that work

The creation of shared public spaces involves the combination of a range of urban specialties from urban planning, through engineering, architecture, environmental planning, management, etc. To connect the diverse functions, we organized the common core principles, on which the features and actions to promote the ecosystem can be based:

1. **Accessibility**: The public space must be easily accessible to all individuals, regardless of age, gender, mobility or socio-economic status. This includes physical accessibility through well-designed entrances, pathways and public transport links, as well as economic accessibility, i.e. entry at no or low cost.
2. **Inclusion**: A shared public space should reflect the diversity of the community it serves. This means taking into account the needs and preferences of different cultural, age and social groups. A space that caters to different interests will attract a wider variety of people..
3. **Safety and comfort**: Public spaces must be safe and comfortable for all users. This can be achieved through appropriate lighting, visibility, seating and shelter from the elements.
4. **Sustainability**: Design with environmental sustainability in mind ensures that shared public spaces contribute positively to the local ecosystem. This can include using local materials, energy efficient design and more.
5. **Flexibility**: Multipurpose spaces must be designed to accommodate different activities and events, whether planned or spontaneous, over time.
6. **Human Scale**: Human scale design ensures that spaces feel comfortable and inviting. This can be achieved by considering the proportions and arrangement of buildings, paths and open spaces in relation to human dimensions.
7. **Connection with the community**: the public spaces must be integrated into the larger community fabric. This means connecting them with surrounding neighbourhoods, landmarks and other public spaces, encouraging social interaction and cohesion.
8. **Participation and involvement**: The community must be involved in the planning and design process to ensure that the space meets local needs and aspirations. Community participation contributes to creating a sense of ownership and connection with the space.

9. **Aesthetic consideration**: Attention to aesthetics through art, gardening and architectural design adds to the quality and attractiveness of the space. A visually pleasing environment can improve the user experience and encourage people to return.
10. **Maintenance and management**: Effective and ongoing maintenance is essential to keep the space clean, functional and attractive. This may include a management plan involving local authorities, community groups or other stakeholders.

International Networking

In recent years, there has been a growing recognition that in order to optimally deal with climatic challenges, local authorities must cooperate not only at the local level, but also at the global level. To this end, initiatives of international networks such as C40 and ICLEI have emerged that allow cities to be part of a global movement that promotes a greener environment in cities. The companies in these networks gain access to resources, knowledge and collaborative opportunities. Through them they innovate, influence and implement sustainability strategies more effectively.

For the cause of creating and establishing an ecosystem of environmental innovation, the membership of global initiatives can help in the following aspects:

1. **Knowledge sharing and joint actions**: These platforms provide an opportunity for cities to share best practices, innovations and lessons learned elsewhere in the environmental field. Additionally, through meetings, workshops and webinars, they can collaborate on different projects and share insights on what worked and what didn't.
2. **Access to resources and expertise**: Belonging to these networks often provides access to resources such as technical expertise, research, tools and funding opportunities (including international funding agencies) that may not be available through other channels. These resources allow the local authorities to initiate more ambitious projects on a large scale. Also, with the help of knowledge and expertise, it is possible to build training programs, workshops and consultations between experts, thereby developing abilities among the authority's officials, how to plan and implement effective environmental programs in the authority.
3. **Guidelines and policy support**: Initiatives such as C40 and ICLEI have frameworks and guidelines that help local authorities align their policies with global sustainability goals, such as the Sustainable Development Goals (SDGs) or the Paris Agreement. They provide necessary tools for the development and implementation of policies suitable for local contexts, and ensure that the efforts will have both a local and global impact. Authorities that join these initiatives often also agree to certain commitments and standards, while building regular monitoring and reporting mechanisms ensures that these commitments are met, leading to a culture of accountability and continuous improvement.
4. **Building partnerships**: These networks can foster partnerships between cities, academia, the private sector and other stakeholders, leading to more integrated and effective solutions. In addition, they enable the sharing of advanced technologies and innovative solutions between cities. This sharing helps local authorities implement new technologies and solutions that may have been tested and proven effective elsewhere, adapting them to their unique local conditions, culture and challenges.

5. **Motivation and recognition**: participation in a global network can motivate local authorities by providing them with a platform to showcase their achievements. Recognition and awards through these networks can encourage efforts and increase motivation among local teams.

International networking through initiatives such as C40 and ICLEI serves as a powerful tool for local authorities to foster an ecosystem of environmental innovation. By collaborating and leveraging the collective knowledge, technology and resources of these networks, cities can significantly advance their sustainability agendas and contribute to global efforts in combating environmental challenges.

International initiatives open to cities

C40 Cities: Involves cities from all over the world in their mission to address climate change through collaborations, alongside supporting cities in the development and implementation of sustainable policies.

ICLEI - Local Governments for Sustainability: open to cities worldwide, and promotes sustainable urban development. Municipalities can communicate with ICLEI to improve local biodiversity, coping with climate change and community resilience.

Smart Cities Council: A network providing access to smart technologies and methods to create more sustainable urban environments, energy efficiency and waste reduction.

100 Resilient Cities: a network focused on strengthening urban resilience. The initiative provides tools, funding and expertise to build resilience strategies.

Global Covenant of Mayors for Climate & Energy: a global alliance of mayors for climate and energy that promotes a voluntary war on climate change and reducing emissions

EU Urban Agenda: Although aimed primarily at European Union cities, Municipalities can participate in this initiative to learn and contribute to the promotion of sustainability and environmental innovation in urban areas.

UN Global Compact - Cities Program: As part of the UN Global Compact, the Cities Program provides a framework that allows cities, including those in Israel, to share experiences and implement innovative strategies to deal with climate and environmental challenges.

Mediterranean Climate Change Adaptation Awards: Mediterranean cities can take part in this initiative, which rewards cities for noteworthy action in adapting to climate change, and expose them to methods of sharing and learning from cities around the Mediterranean basin.

World Wildlife Fund's (WWF) One Planet City Challenge: a global competition inviting cities to report on ambitious and innovative actions and plans towards compliance with the Paris Agreement. The platform provides an opportunity to expose solutions, receive and inspire other cities regarding actions related to improving the climate situation.

The Sustainable Urban Mobility Network: The SUM network allows cities to collaborate on projects that promote environmentally friendly urban mobility solutions.

EcoMobility Alliance: An initiative that encourages cities to prioritize walking, cycling and public transport to reduce air pollution and improve the urban environment.

Global Green Growth Institute: The Global Green Growth Institute (GGGI) is a network of cities designed to develop and implement green growth strategies, including sustainable urban planning and development.

Case Study: Toronto - Achievements through international partnership

Toronto, a city rich in capabilities and resources, was not fully satisfied and chose to turn outside to international partnerships. This move yielded the city many successes in promoting environmental and sustainability issues. Learn More

Internal Organizational Measures

To foster a culture and readiness of innovation in the Local Authority, it is not enough to put all the weight of the weight on the task force dedicated to the subject. The change necessarily starts at home and must be a comprehensive and profound change.

Below is a series of steps that have not been detailed so far in the various stages, which are intended to help you succeed in the task of developing the ecosystem - with the power to recruit other players and stakeholders and establish your status as a leading authority in the field:

Human capital development and organizational culture

1. **Invest in education and training**: an effective way to foster a culture of sustainability and innovation within the authority is through continuous training and education for the professional teams in the organization.
2. **Encourage through incentives**: Create an environment that encourages creativity and problem solving by incentivizing and rewarding employees who provide innovative ideas and solutions that contribute to sustainability.
3. **Promote environment-friendly mobility**: encourage employees to use public transport, cycling, walking or driving.
4. **Adopt a culture of continuous improvement**: Encourage an organizational culture that is open to experimentation, learning and continuous improvement in environmental practices.
5. **Involve employees in decision-making**: Encourage employees at all levels to participate in decision-making processes related to environmental initiatives. Their insights and knowledge can be invaluable to the move.

Procurement plans and policies

1. **Implement green procurement procedures**: Establish guidelines for the preference of purchasing products and services that are produced in a manner that considers the environment and have a minimal environmental impact. See our Green Procurement Toolbox for how-to guidelines and tools.

2. **Improve energy efficiency**: invest in energy efficient devices, lighting, heating and cooling systems. As a complementary step to this, encourage a culture of energy saving within the organization.
3. **Equip facilities such as bicycle racks** or create subsidies for employees to travel by public transportation.
4. **Emphasize waste reduction and recycling**: implementing programs that minimize waste and promote recycling and composting within the authority.
5. **Use technology**: Take advantage of technological solutions available in the market such as building management systems, environmental monitoring tools and other smart technologies to optimize and minimize the authority's environmental impact.
6. **Invest in research and development**: encourage and invest in research and development of innovative solutions to environmental challenges specific to the organization.

Establishing an Innovation Zone

The innovation zone is a local area designated to demonstrate and facilitate community involvement in innovation and sustainability. The innovation Zone offers opportunities for experiencing and developing the full urban ecosystem collaboration of the local government, SMEs, academic institutions, NGOs, schools and the local resident community.

This is especially relevant for the smart cities market as the commitment of the regional stakeholders and the close cooperation with local governments will allow SMEs to develop solutions more suitable to the real needs of cities.

Therefore, an “Innovation Zone” should be understood as a friendly ecosystem that supports SMEs creation and capacitation towards smart cities solution innovation. It will serve as a pilot action in the field of smart cities innovation and of co-creation and co-innovation based on transnational cooperation.

The planning and design of the innovation zone toolbox builds on previous work undergone through the project, the studies and work with both cities and SMEs and on the resulting deliverables of the SME4SMARTCITIES project and it increases their impact - A3.1.3 Urban Challenges and Readiness Study, A3.1.6 Report on the opportunities for SMEs to participate in the market of smart city solutions, 3.2.2: Diagnosis of the existing & needed support services for innovative & technological SMEs in the MED region and A4.1.1 online smart cities course. This toolbox is also integrated with A4.1.8 Sustainable Innovation Support Toolbox.

This toolbox is a methodological framework applicable for cities across the Mediterranean region and for going beyond individual cities, establishing transnational knowledge sharing and cooperation.

Purpose and Objectives

In recent years, city leaders have been attracting talent through the transformation and sustainable development of public buildings, institutions, streets, and even whole districts that were getting old, outdated, and little used.

This has been done on various scales of size. From single buildings, such as empty historical buildings, through schools that ceased operation because of changing demographics, to abandoned industrial sites up to a large-scale renovation of a whole district. In this review, we will look at some case studies of various scales of size.

Using the innovation zone toolkit, Mediterranean cities can develop a pilot action in the field of smart cities innovation and of co-creation and co-innovation based on transnational cooperation. They can create a local area designated to demonstrate and facilitate community involvement in innovation and sustainability, based on the existing potential, buildings, organizations and human capital already in place, with minimal resources required and no new construction except for the establishment of a meeting and co-work space in an existing public building.

The innovation zone offers opportunities for experiencing and developing the full urban ecosystem collaboration of the local government, SMEs, academic institutions, NGOs, schools and the local resident community. It will create an opportunity for small and creative businesses in the city to create a business network, a friendly and synergistic ecosystem that will connect businesses, and from it will emerge opportunities for co-creation for the innovative development of smart city solutions, which can also be implemented in the host local authority as a beta site.

The innovation zone will also enable networking between the businesses and the local community, building involvement, strengthening local pride and positive communication to the place and the local authority. He will be a well-publicized example that can generate international cooperation.

Examples for some of the benefits:

Developing the potential of a street segment in the city, on the existing basis and without the need for development and construction investments - to experience and develop cooperation of the local government, small and medium businesses, academic institutions, non-governmental organizations, schools and the local resident community.

Allow small and medium-sized businesses to develop solutions that are more suitable for the real needs of the cities, thereby enhancing the value contribution of the city in the smart cities market.

Enable the creation of a success story of innovation zones that will be communicated and will be a model for other cities in the Mediterranean region, leading eventually to a growing network of cities.

Scope – What is an Innovation Zone

An Innovation zone is an existing stretch of a major street in a city, a 1~2 KM section of the street and areas extending up to 500 meters on each side of the street. It is a community building and synergy creation initiative which brings together existing business, public organisations, academic and learning institutions and the resident community, to develop and build on the existing potential of the existing intellectual assets, community assets, urban infrastructure and environment to facilitate increased collaboration, innovation and wellbeing for all stakeholders.

Therefore, an Innovation zone is an urban development initiative based on the intersection between entrepreneurship, local government, community and environment to facilitate sustainable innovation in the public sphere. Since it is based on existing assets and infrastructure it does not require construction works or any disruption to the fabric of the urban ecosystem, only the setting up of a meeting hub and community space, preferably in an existing public building.

Innovation Zone vs Innovation District

While an innovation zone is centred around a single existing street section and is based on existing human capital and existing urban infrastructure, an Innovation District is a large-scale reconstruction of an entire neighbourhood or a usually run-down or derelict urban area. These districts build on and revalue the intrinsic qualities of cities: proximity, density, authenticity, and vibrant places. Given the proximity of many districts to low-income neighbourhoods, their intentional development can be a tool to help connect disadvantaged populations to employment and educational opportunities" (Brookings Institute - Innovation Districts).

Innovation districts are residential and commercial areas that offer favourable environments and amenities that attract research institutions, high-growth firms, and tech and creative start-ups. Innovation districts facilitate the creation and commercialization of new ideas and support metropolitan economies by growing jobs in ways that leverage their distinct economic attributes.

Innovation districts can completely transform urban areas, bringing remarkable business, learning, social and environmental benefits for the city and drawing in both local and international talent, as well as major organisations and enterprises.

They may be based on a renovation and rejuvenation effort of a declining district which has lost its appeal, or on ambitious construction projects in already thriving areas and they can also be based on existing infrastructure and buildings. There are opportunities in many locations waiting to be rediscovered, either with a major redesign or a subtle rejuvenation of existing assets.

The 22@Barcelona Innovation District

In Barcelona, the 22@Barcelona Innovation District has started as a governmental initiative to transform an old industrial district into an innovation zone. By developing a synergy of an attractive living environment with an advanced work environment, the 22@Barcelona district has become a center for SME companies surrounded by museums, galleries, bars and restaurants. The district has an area of 4,000,000 sqm of offices, commerce and research, 220,000 sqm of green spaces, residential and social housing buildings.

The district drives technological and economic innovation by bringing together innovative companies, universities, learning centers and research centers. It attracts local and international talent. By 2020, the district had more than 93,000 people in 9,000 companies and 25,000 students at the local universities. 16% of the residents are from other countries around the globe.

The 22@Barcelona district. Source: More than Green

An innovation zone has similar objectives yet at a much modest and smaller scale, in an existing street space.

Both Innovation districts and Innovation zones build on and revalue the intrinsic qualities of cities: proximity, density, authenticity, and vibrant places. Their secret of success is in community building and in creating new opportunities and collaborations, engaging multiple and diverse stakeholders - local residents, students, entrepreneurs and artists, business, culture, science, learning, social and health establishments and organisations.

They also need to create convenient, pleasant and green places for meetings and a healthy, comfortable environment that will attract both local and international talent to commit to long-term sustainable engagement.

Amsterdam's Knowledge Mile

The Knowledge Mile in Amsterdam is a remarkable example of a collaborative local area project, a business and innovation district that runs through 2 streets in central Amsterdam (Wibautstraat and Weesperstraat).

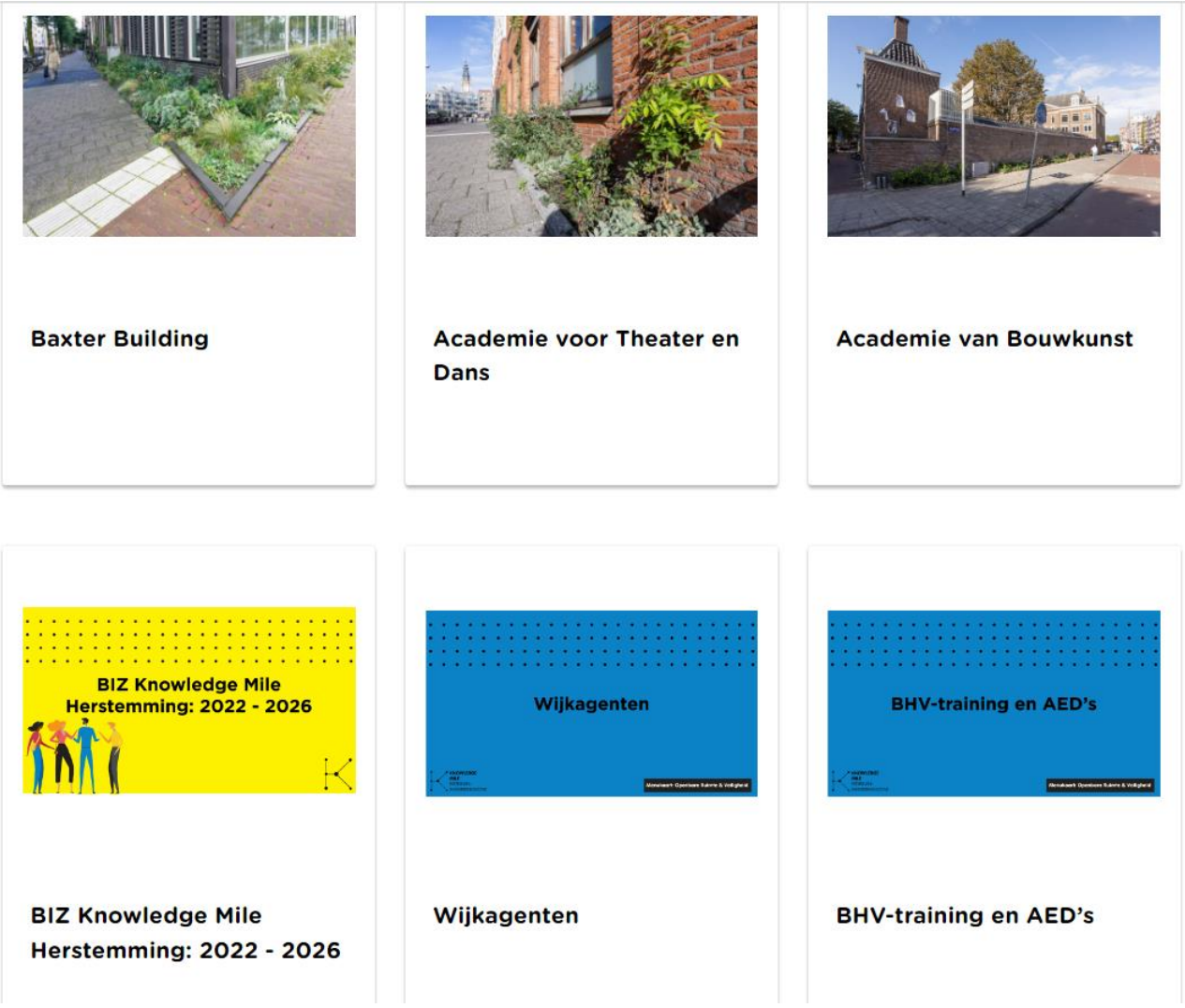
This area in the heart of the city was facing challenges such as heavy traffic, air pollution, and flooding. Since its inception in late 2017, a diverse community is working to solve these issues by sharing knowledge, driving innovation, establishing connections, and creating partnerships. It has a community of 30.000 residents, 60.000 students, 735 organisations, municipal institutions and3 universities located in the vicinity - the Amsterdam University of Applied Sciences, the University of Amsterdam, and Amsterdam University of Arts.

The business, social, and knowledge institutions located at the Knowledge Mile have united in a business investment zone (BIZ) that is becoming increasingly intertwined with the development of the area between Amstelplein and City Hall, working to sustain a green, safe and networked business area. This is a great

example of experiencing and developing the full urban ecosystem through a collaboration of the local government, SMEs, academic institutions, NGOs, schools, students, and the local resident community.

In 2019, the municipality of Amsterdam started the Knowledge Mile Park project to work together with the community and other partners on greening public space and building facades. Solar panels and water storage facilities were also installed to better manage abundant renewable natural resources.

The design of the district was also based on local stakeholders' engagement. The design team has conducted over 150 interviews with local stakeholders and more than 50 meetings with residents in the area. Beyond business development, the project was designed to create a vibrant innovative community, nurturing leisure and social activities and drawing in talents.



Multiple projects at the Amsterdam Knowledge Mile

(Source: https://knowledgemile.amsterdam/s/projects)

Greening Amsterdam's Roofs - A mission to install 10,000 SqM of blue-green roofs

source: De Amsterdamse dakenrevolutie

A large number of participants in the Knowledge Mile business investment zone have joined forces in a collective waste contract, for clean collection and sustainable processing of waste and raw materials. This reduces the amount of polluting transport movements, resulting in lower CO2 emissions and better traffic flow. The Knowledge Mile is therefore close to Zero Waste status.

Action plan

This action plan is a step-by-step plan for establishing an innovation zone framework and making it ready to conduct actual activities, events, meetings and co-creation, business community and full stakeholders community activities

1. **Compile Innovation Zone Thematic Plan** –The plan will encompass the required criteria for choosing the location based on the readiness and suitability of urban space, target audience, scope, outputs, potential opportunities for municipalities, , SME involvement, potential benefits for climate and innovation and estimated investment required.

2. **Establish steering committee and Identify Municipal Partners** – bring together a steering committee to identify partnerships, establish diverse point of view, engage existing knowledge and experience and guide together the actual activities going forward.

3. **Establish criteria and choose location based on the criteria -** The first step in developing an Innovation zone is choosing the most appropriate street area that already has the right infrastructure, facilities and blend of multiple and diverse stakeholders - local residents, students, innovative SMEs, businesses, artists, culture, science, learning, social and health establishments and organizations. This initial setting conditions for engagement and synergy building with as low initial ground laying work as seemingly possible.

   The criteria that will be established and decided after a vote of the steering committee will be the

basis for evaluating proposals and choosing the most appropriate location. It is best to suggest, evaluate and compare 2-3 alternative city locations, to find the most suitable location based on the predefined criteria.

4. **Establish City Partnership** – In the example case study of the Herzliya innovation zone, The TAU SME4SMARTCITIES team published an open call for cities in Israel that participated in the project's cities support group. Following replies and proposals by municipalities to participate in this endeavor, a task team was established with the chosen municipality. A municipal manager was assigned to lead the task team. Managers in the municipality such as the CEO or Director General, Sustainability, environment, innovation and businesses engagement managers should be core members of this task team, and with support of logistics departments will lead the actual implementation. The task team will compile the partnership agreement, work plan and set up the timeline and requirements for the project.

5. **Set Up, Adapt the program to the city** – this phase is the actual execution of the physical aspects of the pilot, including the following activities:

1. coordinate initiative with relevant municipal entities – attain the required permits, align plans with urban planner, architect and landscape architect, ecological survey, etc.

2. Establish the key stations of the Innovation Zone, which will include the meeting hub demonstration space, co-working space, appropriate signage and linkages throughout the zone.

6. **Engagement** – establish the multi-stakeholder engagement aspects of the project. Activities will include community mapping, SME engagement, public engagement, setting up meeting facilities in an existing public building such as a library or a community centre (NO construction, only interior design and garden landscaping), initiating meetings, events, establishing an online community and bulletin board, etc. In order to create growing collaboration between the city, SMEs, local learning organisations, and the local community.

Establish steering committee and Identify Municipal Partners

As a first step to creating an innovation ecosystem of stakeholders in the planned innovation zone, it is advisable to create a steering committee or an advisory board with a broad view and representation and identify partnerships. It will be a budding ecosystem in itself – municipal managers such as CEO, city engineer, environment, innovation and similar relevant roles, relevant academy scholars and experts, innovation centers, businesses development unit and city managers in similar roles from other cities. based on the objectives and criteria defined in this document. The steering committee / advisory board (choose the title that best suits your project) will advise on setting objectives, defining criteria and eventually on creating and executing actual activities together.

As the Innovation zone project progresses, the steering committee / advisory board should be engaged in planning and making decisions, learning from the experience of other cities, engaging stakeholders across the municipality department and the local business and resident community, participating in major milestones and events and facilitating actual activities and initiatives as the innovation zone matures on the long run.

Criteria for Establishing an Innovation Zone

The first step in developing an Innovation zone is choosing the most appropriate street area that already has the right infrastructure, facilities and blend of multiple and diverse stakeholders - local residents, students, innovative SMEs, businesses, artists, culture, science, learning, social and health establishments and organisations. This initial setting conditions for engagement and synergy building with as low initial ground laying work as seemingly possible.

The criteria are based on the readiness and suitability of the urban space, target audiences, scope, outputs, potential opportunities for municipalities, involvement of small and medium-sized businesses, potential benefits for the climate and innovation, and the estimate of the required investment.

Here are some suggested criteria that can be used as a basis for planning in your own city:

Nr	***Criteria***	***Weight***
1. Urban landscape and Infrastructure		
1.1	There is a street section of 1-2 km in length, served by crossing or parallel streets at least 500 m on each side (“Innovation zone area”)	
1.2	There is an easy accessibility by public transportation – bus stops with a bus at least every 15 min. or train station no more than 300 m away (Required to ensure the area is accessible and can grow without causing traffic congestions)	
1.3	An urban area that has been identified as a heat island or environmental hotspot requiring intervention to improve environmental conditions	
1.4	Area contains demonstration sites for sustainability, climate adaptation and innovative technologies or practices	
2. Local Community & Businesses		
2.1	There are current offices of at least 10 legally constituted SME (micro, small and medium-sized enterprises), as per the definition provided by the European Union[1], in the Innovation zone area	
2.2	There is availability of existing office locations for SMEs to move to the innovation zone area	
2.3	There are learning institutions and academic establishments in the Innovation zone area	
2.4	There are apartments and homes for a local resident community in the Innovation zone area	
2.5	There are current cafes and small shops in the Innovation zone area	

3. Municipal commitment and services		
3.1	The municipality appoints an employee from a relevant department as a focal point and liaison to facilitate the Innovation zone project set-up and implementation	
3.2	The municipality can provide space for a meeting centre in the designated street section (to serve as a meeting hub and community space)	
3. 3	The space for the meeting centre has enough built area for a reception desk, a meeting rooms for at least 20 people and a co-working area for at least 10 persons	
3. 4	The space for the meeting centre does not require any new building construction work, except for possible room design or division by modular walls	
3.5	The municipality provides funds for long-term implementation and operations of the Innovation zone project	
3.6	The municipality commits to communicate and promote the Innovation zone project and its activities	
3.7	The local infrastructure allows for environmentally sustainable facilities (e.g. large windows, green building standards, waste recycling bins, use of renewable energy, trees, garden or patio area)	

[1] COMMISSION RECOMMENDATION of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (notified under document number C (2003) 1422) [JO L 124 20.5.2003]

Set Up the program for the chosen location

1. **Coordinate the initiative with relevant municipal entities**
    1. Attain the required permits for use and minor redesign of rooms in a public building or community center
    2. Align plans with urban planner, architect and landscape architect
    3. Ecological survey
    4. Coordination with all relevant departments

2. **Establish the key stations of the Innovation Zone**

In the detailed planning, establish some key locations where meeting places, demonstration sites, displays and other actual components will be created, This will create a guiding route along the innovation zone street and adjunct spaces and buildings, will provide space for casual activities, such as a shaded area to have lunch outdoors or for community activities such as meetings and seminars. These should Include the meeting

hub, co-working space, environmental information station (heat, humidity, air quality) and appropriate signage.

3. **Setup the Innovation Zone Meeting Hub**

Design and create the Innovation zone meeting hub – a meetings and demonstration space, co-working space, with appropriate signage and linkages throughout the zone to direct to the location of the Innovation zone meeting hub.

The meeting hub is the physical hub for meetings, events and activities, for visibility and communications visibility. It will allow to host events and to bring together SMEs, entrepreneurs, academy researchers, municipal staff, public organizations and NGOs and the general public for events, hackathons, co-creation meetings and other collaborative initiatives.

In the Herzliya Innovation zone that was established in the SME4SMARTCITIES project, the meeting hub was established at the offices of the municipal central business district authority. It will be directed and facilitated by a liaison from the municipality and a liaison from the SME4SMARTCITIES team, on the basis of the "Playground" program that was developed by the SME4SMARTCITIES project.

Activities and events can by initiated by the Innovation zone facilitators or by participating stakeholders from the business, academy, schools and civic communities.

Resulting future activities

After the innovation zone plan, components and the key stations are established, a broad array of activities and engagements can follow. The Innovation Zone "Playground" guidebook provide a thorough approach to planning and conducting co-creation, collaboration and municipal-business community engagement.

The following are some examples to illustrate the planning of activities after the centre is established.

1. **Meetings between local entrepreneurs and SMEs** whose offices are located in the innovation zone area - to introduce themselves and look for ideas for collaboration, such as combining products of several companies to offer a comprehensive solution, presenting together at exhibitions etc.
2. **Facilitating co-creation ideation and co-business development initiatives**, at the share facilities provided by the municipality. The MIT U.Lab / Theory U methodology for leading emerging future innovation can be applied to direct the co-development initiatives
3. **Sharing resources** - for example if a company is hosting guests from abroad or is planning a lecture and is looking for an appropriate large meeting room or gathering place for this purpose
4. **Meetings with residents** to present the local companies, these meetings can contribute to a sense of community pride, create new relationships, recruit employees and make use of the wisdom of the crowd for feedback or "citizen science" activities and testing of new products
5. Meetings to encourage **local businesses' feedback and brainstorming for the development of the area** that can lead to joint initiatives such as the presentation of the work of local artists in the offices of development companies, "lecture at the bar" meetings in a local cafe and other initiatives
6. **Creating street signage** leading to sites of interest, corporate offices, local businesses and community centers in a unified design of the Innovation Zone

7. **Encouraging a circular economy** and "industrial symbiosis". Products that are considered "waste" of one company can be raw materials for other companies, local artists or creative workshops in the local community center
8. **Lectures** on technological issues for municipal representatives and lectures on procurement processes and tenders for entrepreneurial companies. One of the barriers identified in the project were knowledge gaps on these topics between the 2 groups
9. **Meetings** on "How to make our street the most innovative and "green" area in the city
10. **Signing a charter of the plan** to make our street the most innovative and "green" in the city
11. **Workshops** for school students in the area led by experts from the local innovative companies, guidance of projects in schools
12. **Innovation Hackathon / Sustainability Hackathon**
13. **Initiating a local happening** that prominently shares and communicates values of innovation, environment and quality of life and more of an atmosphere that connects business and community (example: Knowledge Trail in Amsterdam)
14. **Initiatives** with the participation of all the parties in the urban space for "zero waste" and other initiatives such as green facades, planting trees, reducing the use of plastic, reducing waste, encourage walkability, with the participation of all the parties in the place - companies, businesses, students, artists.
15. An **exhibition** of the past, present and future of the street segment, as an example of the innovation mile exhibition initiative in Amsterdam

The Herzliya Innovation Zone

The Herzliya Innovation zone is an actual implementation by the SME4SMARTCITIES project of the tools and guidelines in this toolbox. It was established in collaboration with Herzliya municipality and the Central business and Hi-Tech district council. It is a designated city street area, functioning as an Innovation hub – with demonstration sites, meeting spaces, collaborative activities and signage.

Case Study: Herzliya - The Innovation Zone

he Herzliya Innovation Zone (IZ) was set up as a living lab project of the SME4SMARTCITIES Toolbox to establish the Innovation Zone branding, framework and infrastructure. Learn More

Cities' Case Studies

For learning from the experience and knowledge of other cities and to learn how did they solved challenges and achieved breakthroughs, the following pages present case studies across all the domains that are discussed in this toolbox.

- Tel Aviv-Yafo - Israel's Start-Up City
- London - strategic planning that breeds innovation
- Copenhagen - a model of creativity and tolerance
- Hamburg - an inter-sector partnership that produces achievements
- Freiburg - academic leadership to establish abilities
- Curitiba - the municipality and the community that changed the face of the city
- Toronto - Achievements through international partnership
- Herzliya - The Innovation Zone

Tel Aviv-Jaffa - Israel's Start-Up City

Tel Aviv, often referred to as the Start-Up City, stands out for being a generative force of innovation. Thanks to its lively entrepreneurial spirit and effective use of technological developments, and the costant drive for the promotion of urban sustainability, the city is working constantly to meet the goals it has set for itself.

Tel Aviv was ranked fifth place in the world in the annual survey of most attractive ecosystems for startups and innovation by research firm Startup Genome, moving up two spots from seventh place in 2021 to fifth in

2022. The Startup Genome global study mapped the global startup industry across more than 140 ecosystems, with data on 3.5 million startups. The higher the ranking, the better is the probability of an early-stage startup at building global success.

Tel Aviv was also ranked as the second highest-valued startup ecosystem in EMEA in 2022, with a combined enterprise value of $393 billion in 2022, second only to London, fifth in Asia and Oceania, and seventh in the Americas, according to a report by Dealroom.co, the global startup & venture capital intelligence platform. Since 2018, Tel Aviv's startup ecosystem has grown 3.5 times in value, faster than the Bay Area, New York, Beijing, London, and Paris during the same period of time.

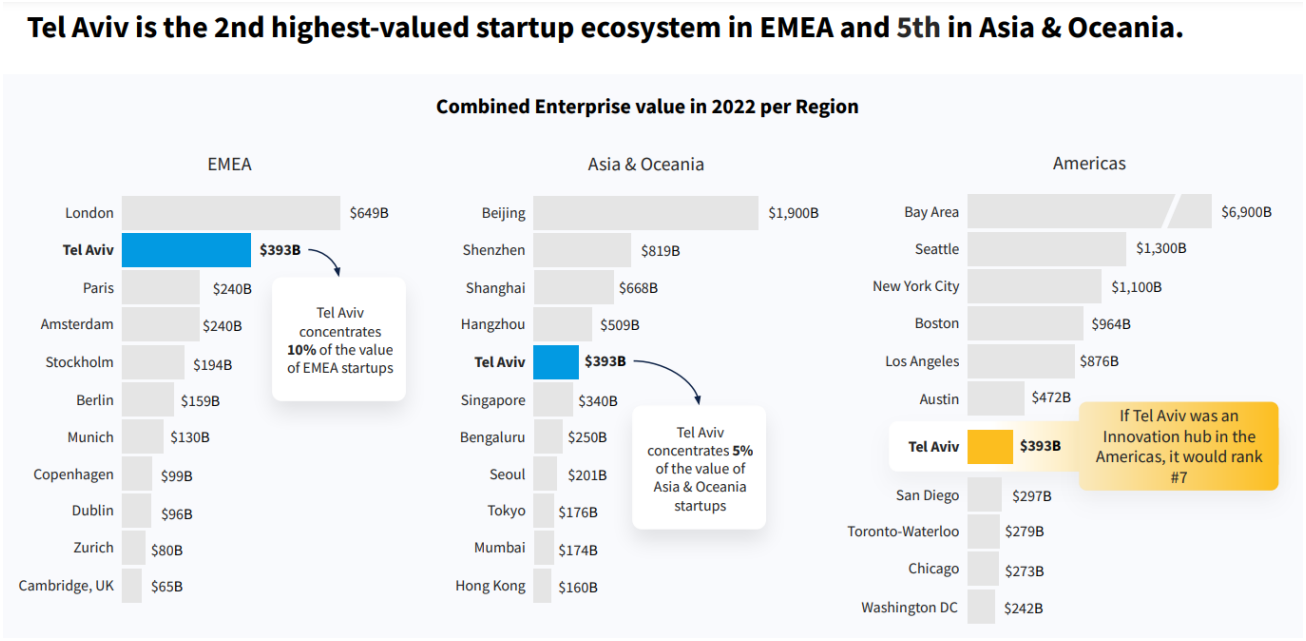


Image: Combined Enterprise value in 2022 per Region. Source: Dealroom.co.

As the story of Silicon Valley had shown, combining a good climate with access to the prestigious university produces an interesting and inspiring startup scene. Tel Aviv has currently the highest startup per capita rate in the world.

Timeline of Tel Aviv becoming a startup city

- 1990s: The first wave of Israeli startups emerge, focusing on internet and software technologies.
- 2000s: The Israeli government establishes the Office of the Chief Scientist, which provides funding and support to startups.
- 2010s: The startup ecosystem in Tel Aviv grows rapidly, with the number of startups increasing from 1,000 in 2010 to over 5,000 in 2020.
- 2020s: Tel Aviv is ranked as the fifth place in the world as most attractive ecosystems for startups and innovation by research firm Startup Genome and second highest-valued startup ecosystem in EMEA by global startup & venture capital intelligence platform Dealroom.co.

Here are some of the key events that have helped Tel Aviv become a startup city

- **The rise of the internet and mobile technology** has created new opportunities for startups, as it has made it easier for businesses to reach customers and partners around the world.
- **The availability of venture capital** has also been a major driver of the growth of the startup ecosystem in Tel Aviv. Venture capitalists are willing to invest in early-stage startups with the potential for high growth.
- **The presence of a strong entrepreneurial community** has also helped to drive the growth of the startup ecosystem in Tel Aviv. This community includes angel investors, incubators, accelerators, and other organizations that help startups get off the ground.
- **The government's support for Innovation and for startups** has also been a key factor in the city's success. The Israeli government provides funding, tax breaks, and other incentives to startups, which has helped to create a favourable environment for startups to thrive.

Tel Aviv is a vibrant and dynamic city with a strong entrepreneurial spirit. The city's startup ecosystem is expected to continue to grow in the years to come, and Tel Aviv is likely to remain one of the world's leading startup hubs.

Notable examples:

Encouraging residents' participation

- **DigiTel Platform**: The platform, offered to city residents, provides personalized information and services. Among other things, it encourages users to join environmental initiatives, invites to events on environmental and sustainability issues, and encourages active participation in green programs.

Smart city initiatives

- **Smart irrigation**: IoT devices have been implemented in public parks and gardens to monitor soil moisture levels and ensure efficient water use.
- **Green roofs**: The municipality promoted the construction of utility roofs throughout the city. Some of these roofs are equipped with solar panels, while others feature urban farming technologies that combine sustainability with local food production.
- **The Urban Heat Island**: The city uses an advanced system that analyzes satellite images to identify and monitor urban heat islands. The analyzes help develop strategies to combat these heat pockets, such as increasing vegetation or changing infrastructure materials.

Sustainable transport

- **AutoTel**: A car-sharing service introduced by the municipality, which provides hundreds of vehicles throughout the city, reducing the need for personal ownership of vehicles and thus reducing overall vehicle emissions.

Resource management - Trash

- **Underground waste containers**: to reduce the smell and visibility of the waste, the city installed in some neighborhoods underground bins equipped with sensors that warn when they are full, while optimizing the collection routes and their timing.

Energy management

- **Solar panels**: The city is expanding the use of solar technologies to promote cleaner energy and reduce dependence on non-renewable sources.
- **Energy-saving Street lighting**: by implementing LED lights with sensors, the city ensures that the streets are well lit while significantly reducing energy consumption.

Water management

- **Detection of leaks with the help of technology**: Tel Aviv has integrated technologies to detect and treat water leaks in the city's plumbing infrastructure, saving water and reducing the waste of this valuable resource.
- **Desalination and water recycling**: using advanced technologies, the city draws a significant part of its water from desalination and recycles wastewater for agricultural use.

Further reading:

Tel Aviv Global & Tourism - The 2022 Tel Aviv-Yafo Tech Ecosystem Report

Startup Genome – Tel Aviv Start-up Ecosystem Report

Dealroom.co - Tel Aviv - A Global Startup Trailblazer

London - strategic planning that breeds innovation

London's strategic environmental planning combines long-term thinking with policy-making that includes, among other things, exploiting the potential of technological and environmental innovations. The planning is based on a holistic approach which sees the challenges as a whole and therefore the way to a solution never focuses on the single challenge. The treatment of air quality, for example, is not only focused on vehicle emissions, but also on the promotion of green areas, green roofs and sustainable urban drainage systems.

The City of London advocates close cooperation with stakeholders with the understanding that it cannot achieve its goals alone. From this, London actively pursues partnerships with businesses, NGOs, community groups and even other cities. Cooperation requires transparency, and this is reflected in the regular publication of strategic documents detailing the environmental challenges facing the city, setting clear goals and providing ways to achieve them.

As mentioned, a central part of London's strategic planning is the integration of environmental innovation. Below are several key phrases for this:

- **Smart city initiatives**: London's "Smarter London Together" roadmap combines digital innovation with environmental goals. Examples include deploying sensors to monitor air quality in real time and using data analytics to optimize waste management.
- **Innovation in transportation**: London invested in electric vehicle charging infrastructure and provided incentives for the adoption of the switch to electric vehicles, thus positioning itself as a leading city for electric transportation. At the same time, the city is constantly updating its public transport fleets to incorporate the latest environmentally friendly technologies.

- **Built environment**: London's building codes encourage innovations in the field such as passive design, green roofs and the integration of renewable energy.
- **Energy management**: London promotes decentralized energy networks that include local energy production, reducing waste generated in the transmission process and promoting the use of renewable sources.
- **Finance**: The London Green Fund was established to support projects that contribute to the city's environmental goals.
- **Circular economy initiatives**: London has been at the forefront of promoting a circular economy, reducing waste and making better use of resources. This includes initiatives to reduce single-use plastics and increase recycling volumes.
- **Adaptation to climate change and urban resilience**: Projects such as the tidal tunnel of the river Thames flowing through the city illustrate the ability to combine advanced engineering with environmental goals, in this case, clearing the river of overflowing sewage.
- **Promoting an ecosystem of innovation**: the city stimulates start-ups and technological initiatives in the field, among other things through hackathons and incubator programs that focus on solving environmental challenges.

Copenhagen - a model of creativity and tolerance

Copenhagen, the capital of Denmark, has set itself the goal of becoming the first zero-energy city in the world, as early as 2025. In order to meet this ambitious goal, the city invests effort in building a sustainable infrastructure, fostering a green economy, emphasizing education and awareness, active participation of residents and support for art and culture. Along with these moves, the city makes sure to promote social tolerance and inclusion, and the design of fascinating urban spaces, through which it was able to create an atmosphere where creativity and tolerance form a fertile ground for thriving environmental innovation.

Here are some of the key moves she made in each of these areas:

Social tolerance and inclusion: Copenhagen is known for its high levels of social equality and tolerance. This inclusive atmosphere is not limited only to personal freedoms but extends to other areas, encouraging diversity in thought and creativity. The city's policy welcomes immigrants and people from different cultural backgrounds and strengthens the creative pool.

Urban spaces that encourage creativity: Copenhagen's public spaces are often designed to encourage social interaction, creativity and sustainable co-living. Spaces like Superkilen Park demonstrate this, being a focus for community gatherings, art installations and green living.

This comprehensive, cohesive and inclusive approach makes Copenhagen a model for other cities aiming to foster creativity and environmental consciousness.

Hamburg - an inter-sector partnership that produces achievements

One of the prominent examples of a partnership between a local authority and an anchor corporation to promote environmental innovation is the collaboration between the municipality of Hamburg in Germany and the Siemens company. The partnership aims to make Hamburg a leading city in its environmental performance through the implementation of advanced solutions.

Among the variety of impressive moves, it is worth noting some of the most prominent ones:

Promotion of energy efficiency and renewable energy: Siemens worked with the city to create a smart grid infrastructure, reduce energy consumption and integrate renewable energy sources such as wind and solar. In addition, the city used the company's technologies in the field of green construction to lead to energy savings in buildings, installing smart meters and energy management systems in public buildings.

Smart transportation solutions: The collaboration included a project to electrify public transportation in the city. In addition, intelligent traffic management systems have been developed to optimize traffic flow, reduce congestion and fuel consumption.

Water management: The partnership led to the creation of smart solutions for water management, using sensors and data analysis to monitor and optimize water use and wastewater treatment.

Air quality monitoring: Siemens provided technology to monitor and analyze air quality in real time. In doing so, the city gained the ability to respond quickly to pollution levels and take corrective actions when necessary.

Encouraging the business environment: Siemens served as an example and mentor to other local companies, helping them adopt sustainable practices through workshops and collaborations. In addition, the company supported local startups that worked on green technologies, while allocating knowledge and resources.

Community involvement: Both parties engaged with local communities through educational programs, exhibitions and public discourses on sustainability issues, fostering a culture of environmental awareness and responsibility.

The partnership between the city of Hamburg and Siemens led not only to significant improvements in the city's environmental performance but set an example for other cities and corporations on how public-private collaboration can lead to significant progress in environmental innovation.

Freiburg - academic leadership to establish abilities

Freiburg, often referred to as the "green city" of Germany, has a series of successes to its credit, thanks in part to collaboration with the University of Freiburg. This strategic move forged between the local authority and the academy contributed to the creation of a sustainable urban living environment.

This collaboration was conducted across 3 channels:

1. **Comprehensive research and development** by the university on issues related to the city such as renewable energy, sustainable architecture, urban planning and transportation.
2. **Public involvement**, through the joint construction of public forums and workshops, while involving citizens in the decision-making process.
3. **Experimental projects** such as the Vauban district, which has become a model for sustainable urban living.

The collaboration contributed to the city in reality solutions that improved the state of the environment and the way of life in the city. Thanks to research and implementation led by experts from the university, more than 50% of the city's energy now comes from renewable sources; The collaboration also led to the planning of a transportation system that prioritizes cycling, walking and public transportation, resulting in a reduction

in emissions and an increase in quality of life; The University of Freiburg introduced several programs, courses and workshops focused on sustainability, while improving the educational ecosystem around environmental management; The partnership also fostered a green economy, which included giving preferences to businesses that consider the environment and created new jobs in the green technology sector.

The synergy between the city of Freiburg and the University of Freiburg demonstrates how collaborative efforts between local authorities and academic institutions can drive environmental innovation that produces impact, among other things through the promotion of scientific research and its translation into practical and sustainable solutions that will benefit the entire community. From this, one can understand why Freiburg has become a model for sustainable urban development worldwide, attracting researchers, policy makers and city planners to study its innovative methods.

Curitiba - the municipality and the community that changed the face of the city

A prominent example of successful cooperation between the local authority and civil society organizations to promote local environmental innovation is the city of Curitiba in Brazil.

Thanks to a series of joint initiatives, the city reached extraordinary achievements in improving the quality of the environment and the quality of life in the city, among them:

World-renowned public transportation: Curitiba's public transportation system is currently considered one of the most efficient in the world, thanks to its popularity, the city recorded a significant reduction in greenhouse gas emissions and improved the quality of life.

Increased recycling rates: The joint recycling initiatives have led to one of the highest recycling rates in Brazil, with considerable community participation.

Joint planning of green areas: creation of green areas that contributed to the appearance of the city, to biological diversity and to strengthening community ties through shared spaces for residents.

Shared responsibility for the environment: Perhaps the most important achievement of cooperation is the cultivation of a sense of community responsibility for the environment. Curitiba residents became actively involved in the design and maintenance of the city's environmental innovations.

The joint walk of the local authority together with the civil society organizations in Curitiba highlight the potential of community involvement in promoting an ecosystem of environmental innovation. Through strategic collaboration, shared vision and action, they were able to create practical environmental innovations that were embraced by the community and produced lasting impacts. These achievements have been recognized worldwide and serve as a model for other cities.

Toronto - Achievements through international partnership

A prominent example of a city that has leveraged its membership in international networks for local successes in promoting environmental innovation is the city of Toronto, which is considered one of the most advanced cities in the world in this respect.

Below are some of the notable steps taken by the city through membership in platforms such as C40 and ICLEI:

Knowledge sharing and learning from best practices: Toronto actively participated in C40 networks and events to learn and exchange knowledge with other cities. This activity contributed to the city understanding which moves can be adapted to local contexts. In addition, training programs and workshops provided through C40 and ICLEI improved the skills of local officials and stakeholders, enabling them to effectively plan and implement the city's sustainability projects.

An action plan for climate change: The city's comprehensive action plan called "TransformTO", which aims to reduce greenhouse gas emissions by 80% by 2050, while aligning with international climate goals, is based on the C40 guidelines.

Access to expertise and technical assistance: ICLEI provided Toronto with technical assistance and tools to develop and implement the TransformTO program. Expertise in areas such as transportation, energy efficiency, waste management available on the platform allowed the city to formulate strategies focused on these areas.

Creating cross-sector collaborations and partnerships: Membership in these networks has made it easier for Toronto to create collaborations with other cities, academic institutions and private sector partners. These partnerships have led to innovative projects such as green building initiatives and the expansion of electric vehicle infrastructure.

Funding opportunities: Participation in international networks provided access to funding opportunities that Toronto leveraged to invest in environmental projects such as green building renovation, renewable energy integration and sustainable transportation.

Community Engagement: Toronto used ICLEI tools and frameworks to engage the local community in the development of TransformTO. Public consultations and community engagement ensured that the plan reflected local needs and priorities.

Monitoring and Evaluation: The tools provided by these initiatives have enabled Toronto to establish effective monitoring and evaluation mechanisms for its environmental projects that ensure continuous improvement.

Global Advocacy and Impact: Being part of these global networks, Toronto has played a role in international climate dialogues and positioned itself as a leading city in promoting urban sustainability at the global level.

Herzliya - The Innovation Zone

An innovation zone (see “Establishing an Innovation Zone” above) is a local area designated to demonstrate and facilitate community involvement in innovation and sustainability. The Innovation Zone offers opportunities for experiencing and developing the full urban ecosystem collaboration of the local government, SMEs, academic institutions, NGOs, schools and the local resident community.

This is especially relevant for the smart cities market as the commitment of the regional stakeholders and the close cooperation with local governments will allow SMEs to develop solutions more suitable to the real needs of cities.

The Herzliya Innovation Zone (IZ) was set up as a living lab project of the SME4SMARTCITIES Toolbox to establish the Innovation Zone branding, framework and infrastructure in Herzliya.

The innovation zone intends to create opportunities for experiencing and developing the full urban ecosystem - collaboration of the local government, SMEs, academic institutions, NGOs, schools and the local

resident community. It will create an opportunity for small and creative businesses in the city to create a business network, a friendly and synergistic ecosystem that will connect businesses, and from it will emerge opportunities for co-creation for the innovative development of smart city solutions, which can also be implemented in the host local authority as a beta site.

The innovation zone will also enable networking between the businesses and the local community, building involvement, strengthening local pride and positive communication to the place and the local authority. It will be a well-publicized example that can generate international cooperation.

Benefits

Developing the potential of a street segment in the city, on the basis of existing facilities and stakeholders and without the need for development and construction investments - to experience and develop cooperation of the local government, small and medium businesses, academic institutions, non-governmental organizations, schools and the local resident community.

Allow small and medium-sized businesses to develop solutions that are more suitable for the real needs of the cities, thereby enhancing the value contribution of the city in the smart cities market.

Enable the creation of a success story of innovation zones that will be communicated and will be a model for other cities in the Mediterranean region, leading eventually to a growing network of cities.

The Innovation Zone Toolbox was developed by Tel Aviv University as part of the SME4SMARTCITIES project. The pilot project demonstrates the toolbox, and creates tangible tools, which can be used later by other cities around the Mediterranean.

Setting up the Pilot Project

The project team issued a call for proposals to the partner Israeli cities and established a steering committee to evaluate the proposals and select the pilot site. The cities submitted proposals, detailing:

- The site for the Innovation Zone site
- The municipal team set to manage the site
- Activities proposed for the Innovation Zone

The city of Herzliya was selected as the host city for the Innovation Zone pilot, based on the evaluation below:

Nr	Criteria	Weight	Score	Weighted score	Notes
1.1	Area contains demonstration sites for sustainability, climate adaptation and innovative technologies or practices	0.87	8	6.96	
1.2	There is an easy accessibility by public transportation – bus stops with a bus at least every 15 min. or train station no more than 300 m away	0.87	10	8.7	Numerous bus lines and major train station at 12 min. distance

1.3	The location is in a city already associated in the SME4SMARTCITIES project and its' Cities Support group	0.78	10	7.8	
1.4	There is a street section of 1-2 km in length, served by crossing or parallel streets at least 500 m on each side ("Innovation mile area")	0.76	10	7.6	
2.1	There are apartments and homes for a local resident community in the Innovation mile area	0.71	8	5.68	
2.2	There is availability of existing office locations for SMEs to move to the innovation mile area	0.69	10	6.9	
2.3	There are learning institutions and academic establishments in the Innovation zone area	0.69	10	6.9	Most SMEs are Hi-Tech start-ups and development companies
2.4	There are current cafes and small shops in the Innovation mile area	0.67	10	6.7	
3.1	The municipality commits to communicate and promote the Innovation Mile project and its activities	0.96	10	9.6	
3.2	The municipality appoints an employee from a relevant department as a focal point and liaison to facilitate the Innovation Mile project set-up and implementation	0.93	10	9.3	
3. 3	The municipality can provide space for a meeting centre in the designated street section (to serve as a meeting hub and community space)	0.84	10	8.4	
3. 4	The municipality provides funds for long-term implementation and operations of the Innovation Mile project	0.82	10	8.2	
3.5	The local infrastructure allows for environmentally sustainable facilities (e.g. large windows, green building standards, waste recycling bins, use of renewable energy, trees, garden or patio area)	0.8	8	6.4	0.8
Total	**(perfect score is 104)**			**99.14**	

Establishment of an Innovation Zone in the City of Herzliya

The Herzliya Innovation Zone is designed to be a hub for businesses, organizations, and individuals working to promote Innovation, co-creation and sustainability. The Zone is located in the area surrounding Maskit Street, a central street in the city's central business district, and will connect a diverse range of businesses and associations. The Zone features public spaces that encourage walkability and promote the agenda of sustainability, environmentalism, walkability and engagement in the open spaces.

The Zone also serves as a platform for networking and collaboration between businesses and organizations. By working together, the businesses and organizations can make a significant impact on promoting sustainability in the city and beyond.

The project creates several benefits:

- It will create a central hub for businesses and organizations working to promote sustainability.
- It will provide a platform for networking and collaboration between businesses and organizations.
- It will help to raise awareness of sustainability among businesses and the public.
- It will encourage businesses to adopt sustainable practices.
- It will make the city more attractive to businesses and residents.

The project is well-supported by the Herzliya Municipality and the businesses in the central business district . The municipality has been working to create an ecosystem and network businesses with the community, and the municipal bodies, with an emphasis on preserving the quality of the environment, introducing advanced and green technologies, and transforming the public space to be more accessible, attractive, green and walkable. The businesses in the central business district are diverse and include small businesses, restaurants, large office buildings and tech startups. The businesses support the project and see it as an opportunity to collaborate and promote sustainability.

The Herzliya Innovation Zone is a unique and innovative project that has the potential to make a significant impact on the city and other cities.

The City of Herzliya

Herzliya, Israel, is a city of approximately 180,000 people located just north of Tel Aviv. In recent years, Herzliya has emerged as a leading innovation center in Israel and around the world. The city is home to a growing number of startups, multinational corporations, and research institutions. Several factors have contributed to Herzliya's success as an innovation center. These factors include:

- A strong talent pool: Herzliya is home to a highly educated and skilled workforce. The city is also home to several universities and colleges, which produce a steady stream of graduates in STEM fields. According to the 2022 Herzliya Municipality Annual Report, the city has a higher percentage of residents with a bachelor's degree or higher than the national average.
- A supportive government: The Israeli government has been a major supporter of innovation in Herzliya. The government has provided funding for startups and research institutions, and it has also created a regulatory environment that is conducive to innovation. For instance, the Israeli Innovation Authority provides grants and other support to promising startups, while the Office of the Chief

Scientist of the Ministry of Economy and Industry offers funding for research and development projects.

- A vibrant entrepreneurial ecosystem: Herzliya has a thriving entrepreneurial ecosystem, which includes a number of incubators, accelerators, and co-working spaces. This ecosystem provides startups with the support and resources they need to succeed. Organizations like the Hicity Entrepreneurship and Innovation Center, the HAC Herzliya Accelerator Center, and the Reichman University Innovation Center offer mentorship, networking opportunities, and access to funding for startups at various stages of development.

Herzliya has a strong focus on specific industries, such as Cybersecurity, Fintech, and Cleantech. This focus has helped to attract leading companies in these industries to the city. Herzliya has become a hub for cybersecurity companies, with over 100 companies operating in the city, including global players like Symantec, Check Point, and Palo Alto Networks. The city is also home to a growing number of Fintech companies, such as PayPal Israel, Pioneer, and eToro. In the cleantech sector, Herzliya is home to companies like BrightSource Energy, SolarEdge, SolFocus, and UBQ.

Innovation has had a significant impact on Herzliya. The city has experienced strong economic growth in recent years, and it has become a more attractive place to live and work. According to the 2022 Herzliya Municipality Annual Report, the city's unemployment rate is lower than the national average, and the average salary is higher than the national average. Innovation has also helped to improve the quality of life in Herzliya, by creating new jobs and opportunities, and by improving public services. For instance, the city has implemented smart city initiatives such as smart parking sensors and a network of electric vehicle charging stations.

Image 1: Herzliya central business district - Hi-Tech buildings (images: Wikipedia)

The Innovation Zone

The Herzliya Innovation Zone area is a core part of the city's business district, located in west Herzliya (also called Herzliya Pituach), between Israel's central coastal highway and the Mediterranean coast, on an area of about 0.65 square KM. The Innovation Zone area is a rectangular polygon of about 0.1 square KM, running along the two main streets of the central business district (CBD): Maskit and Galgalei Haplada:

Image 2: The Herzliya Central Business District and the Innovation Zone areas

The industrial area of Herzliya, also known as Israel's high-tech capital, is a unique complex with a supportive and active business community, which is on a growth and momentum trend and serves as home for tens of thousands of workers per day. Today, major corporations are located there, such as Microsoft Israel, which recently opened a large development center in the industrial zone, Formula, Matrix, and others. Altogether, approx. 1,500 companies operate in the central business district with 50,000 employees. There are also more than 100 restaurants, cafes and bars and numerous showrooms, especially for leading cars and electronics companies.

A business hotel is being built on Abba Even St. and another hotel is planned nearby. Other major hotels are located along the Mediterranean sea beach promenade.

Since the founding of the city, this was an industrial/business area, located outside the main residential area, with factories and small industries. Since 2000, the area underwent a major change from a heavy industrial area to a business, high-tech and entertainment area. The names of the streets are a recollection to old times: "Galgalei Haplada" – wheels of steel and "Maskit" – the name of Israel's leading fashion company in 1954-1994.

The central business district is highly accessible to both public transportation and private cars, the northern train line is within walking distance and there are many bus lines passing through Highway 2. There is heavy traffic through the day, resulting in air pollution and heat increase; surveys indicate that a majority of the area's employees and users prefer private transportation to walking or public transportation.

Municipal Involvement

The municipality established a dedicated municipal administration to develop and promote the collaboration between the businesses and the municipality. The administration seeks to integrate and improve the relationship between all the entities that operate in the central business district, and to promote and strengthen the relationship between the companies and the municipality. The municipality sees small and medium-sized businesses as an important municipal asset and an engine of economic growth for the entire city. The administration's actions support the local businesses through promoting events, ventures and collaborations, aiming to increase sales potential and business prosperity. The administration calls innovative companies to see Herzliya as a supportive beta site for development. It provides assistance and access to services to all entities operating in the area, aiming to integrate cultural and leisure events, to turn the area into a lively attractive district.

A survey conducted by the municipality found that only 30% of the employed there are residents of the city of Herzliya, 30% are residents of Tel Aviv And the rest are divided between other towns and villages in the Central and Sharon regions. The municipality aims to increase the consumption of services in Herzliya (commerce, society, culture, etc.) and to work to create a lively life in the place even after working hours.

In addition, the municipality recently approved a master plan that turns the central business district into a mixed-use neighborhood and adds thousands of housing units, public institutions and open spaces.

Setting up the Innovation Zone Pilot

Following an open call to cities, the SME4SMARTCITIES project selected the proposal of the city of Herzliya as the site for the Innovation Zone pilot (June 2023). On the municipal side, the Central Business District Administration was responsible for the pilot. The action plan is a step-by-step plan for establishing an innovation zone framework and making it ready to conduct actual activities, events, meetings and co-creation, business community and full stakeholders community activities.

The pilot intended to establish the platform for the Innovation Zone, through five key outputs:

1. Municipal mechanism – establish the municipal partnership to manage and support the activities of the zone.
2. Mapping – surveying and establishing a database for the stakeholders of the innovation Zone.
3. Branding – create a distinct visual identity for the Innovation Zone to be displayed on the street.
4. Establish three anchors for innovation activities in the zone:

a. Indoor meeting spaces

2. Outdoor meeting spaces

3. Knowledge points

5. Activity Plan – a detailed activity plan for the municipal administration to engage and support the varied stakeholders for the Innovation Zone - The “Playground” plan.

Municipal Mechanism

The central business district administration was set up as the focal point for the Innovation Zone, both in relation to the municipal entities and the varied stakeholders:

1. Establishing a steering committee – the steering committee is headed by the city CEO and includes relevant department heads and representatives from the SME4SMARTCITIES project.
2. Establishing City Partnership – once the municipality was assigned, it needed to build the task team and recruit municipal partners. Managers in the municipality are the core members of this task team. The Municipal Environmental Unit is a lead partner, from their point of view, the Innovation Zone program creates an opportunity to focus on Climate Readiness activities for a critical urban space and also to explore collaboration with companies in the central business district for environmental and climate solutions.

Mapping

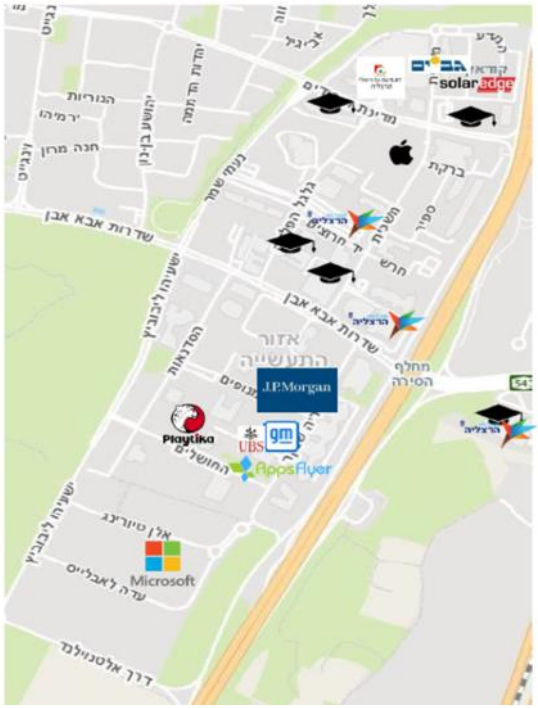
The mapping action identifies the potential for actions that the Innovation Zone has to offer and helps to identify challenges and opportunities in the space. The map is created using several tools, including:

- Interviews with key stakeholders
- Surveys – to identify needs and perceptions
- Observations – scoping and assessing the physical space of the area
- Mapping – actual spatial maps, utilizing varied mapping tools.

Anchor Organizations

The three maps below demonstrate the mapping and density of entities that can become anchors in the innovation networks.

Businesses, Local Government, Academia



1. Microsoft
2. Solaredge
3. GavYam
4. APPEL
5. PLAYTIKA
6. Hertzeliya Outlet
7. General Motors
8. UBS
9. JP MORGAN

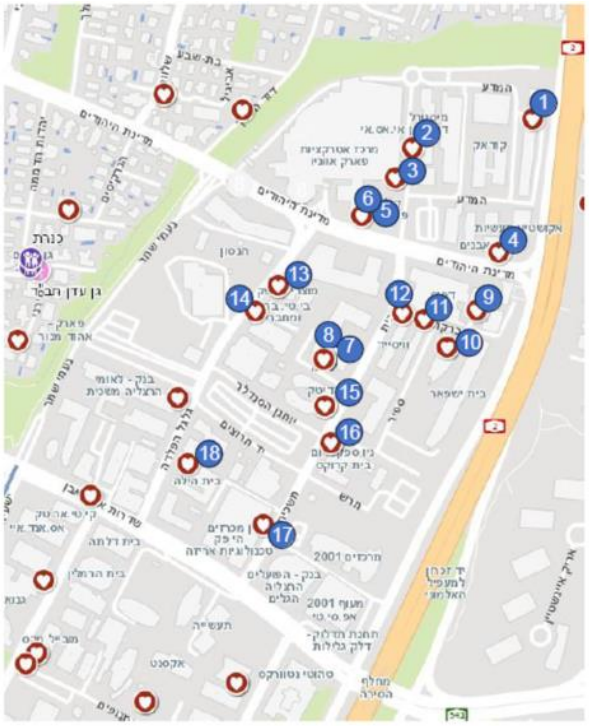
Municipality:

1. Area Administration Office
2. Public Parking designated for re-planning as a public space
3. Hertzeliya Theater

Academia:

1. HiTECH College
2. GAYA College
3. SEPERIA College
4. Kernelios Cyber Course
5. Yitzhak Shamir School

Public centers



1. Cultural and Art Center
2. The Israel Grid Technology Association
3. JCS
4. Gandir Foundation
5. The Organization for Financial Education
6. Pisgat Amir
7. Menomadin Foundation
8. Mitrelli Group
9. Friends of Atidim
10. Organizaiton for Brian Cancer
11. GAVYAM Social Change
12. Hertzeliya Theater
13. Israel Venture Network
14. The Israel Arab Economic Developmen Center
15. Born for Life
16. The Organization for Lost Property
17. Economic Consultants Association
18. The Congress for Judaism and Democracy
19. Jacobzon Foundaiton
20. Delek Foundation
21. Haim Israeli Foundaiton

Green Spots

Maschit Street and its surroundings lack open public spaces. However, there are about 20 – Open Private Spaces, built as extensions of renovation plans. These are well-kept and pleasant corners that allow a quality stay in the space and provide a good solution for employees and users in the innovation zone.

Branding

The design process of the Innovation Zone began with determining the branding aspects, based on principles from the SME4 project together with local foci.

The leading qualities were identified through a brainstorming activity with the municipal staff, the following qualities were set:

- Young and vibrant
- Less formal
- Designating the public space as exciting and lively, enabling people to connect and collaborate.

The design palette emphasizes contemporary colors that allow for a variety of options and high playfulness. The idea behind the graphic language is that it is a flexible platform, allowing cities to design their own brand, combining different texts and uses.

Image 3: Branding of the Herzliya Innovation Zone

For more information and examples, see the Innovation Zone Design Playbook.

The work plan of the Herzliya Employment Zone Administration

The Herzliya Innovation Zone activity plan was compiled in collaboration between the IZ pilot team and the TechForGood organization. Founded in 2015, TechForGood provides impact innovation services to corporates, governments, and entrepreneurs in their journey to capture opportunities for generating profitable social and environmental impact.

A guide for the work plan and activities is outlined in the Innovation Zone Playground guidebook.

The work plan of the Herzliya innovation zone was based on the vision and goals of the Innovation zone administration and incorporated values of co-creation, innovation and climate change readiness. The conceptual framework of the plan incorporated the goals of the administration's activities, taking into short, medium and long-term ranges, aiming to recruit additional staff and expand the activities.

Vision

The Herzliya employment area will be a space where a bustling and diverse business community operates with a deep connection to the place. The businesses and organizations operating there will maintain an ecosystem of synergy, mutual learning and cooperation with an emphasis on innovation and addressing climate change, which will be a model for Innovation Zones in Israel and around the world. The area

administration will lead the implementation of the mix of uses in the IZ in an optimal way, in accordance with the municipal vision.

Objectives

1. Building and strengthening the local business community, connecting the various businesses in the area.

2. Strengthening the sense of belonging and connection of the businesses and their organizational identity to the area and the city of Herzliya, along with strengthening the connection of the employees to the physical space.

3. Connection to the issues of sustainability and climate change to provide an added value to all businesses operating in the employment area.

4. Redefining the goals of the administration and increasing the scope of its influence in the city.

The vision and goals were compiled into an operational activity plan for 2023/2024. The main activities are presented below:

Goal		
Connecting the business community to sustainability and climate change to provide added value to all businesses operating in the IZ		
Partners		
• **Herzliya Economic Corporation** • **Municipal Innovation Dep.**		
Target I		
Mapping companies from relevant fields: Cleantech, Climate Tech, Smart Transportation, Energy, etc.		
Activities		
● **Contacting the companies listed in Startup IL** ● **Identifying managers of relevant fields of leading companies** ● **Publication of a call for businesses in the IZ to join the co-creation community**		
Target II		
Establishing a peer learning group		
Activities		
● **Establishment of a multi-sectoral steering committee**		

● Construction of an outline and work plan
● Recruitment of participants
● Organizing 1-2 meetings per quarter
● Publishing and disseminating content to the general public
Target III
Organizing a Climate and Innovation Hackathon event in the Herzliya innovation strip
Activities
● Choosing a theme for the hackathon
● Locating partners, moderators and judges
● Organization and coordination
● The hackathon event
● Engaging the participants to continue collaborations within the IZ
Target IV
Implementation of a selected pilot in the innovation strip area
Activities
● Selecting a site for a pilot project with the steering committee
● Publication of a call for proposals
● Recruiting municipal partners
● Collaborative planning sessions
● Launch pilot project
● Publication of conclusions and outputs

The Design Process

Establish three anchors for innovation activities in the zone:

1. Indoor meeting spaces
2. Outdoor meeting spaces
3. Knowledge points and data gathering stations

The Innovation Zone is also a type of Urban Lab, generating data and experimentation. The Herzliya IZ data point is a street meteorological station, placed on Maskit street. The Meteorological station generates live data to the environmental unit's dashboard, which is displayed in the IZ public room and will be shared with any interested stakeholder, in collaboration with the Municipal Environmental Unit.

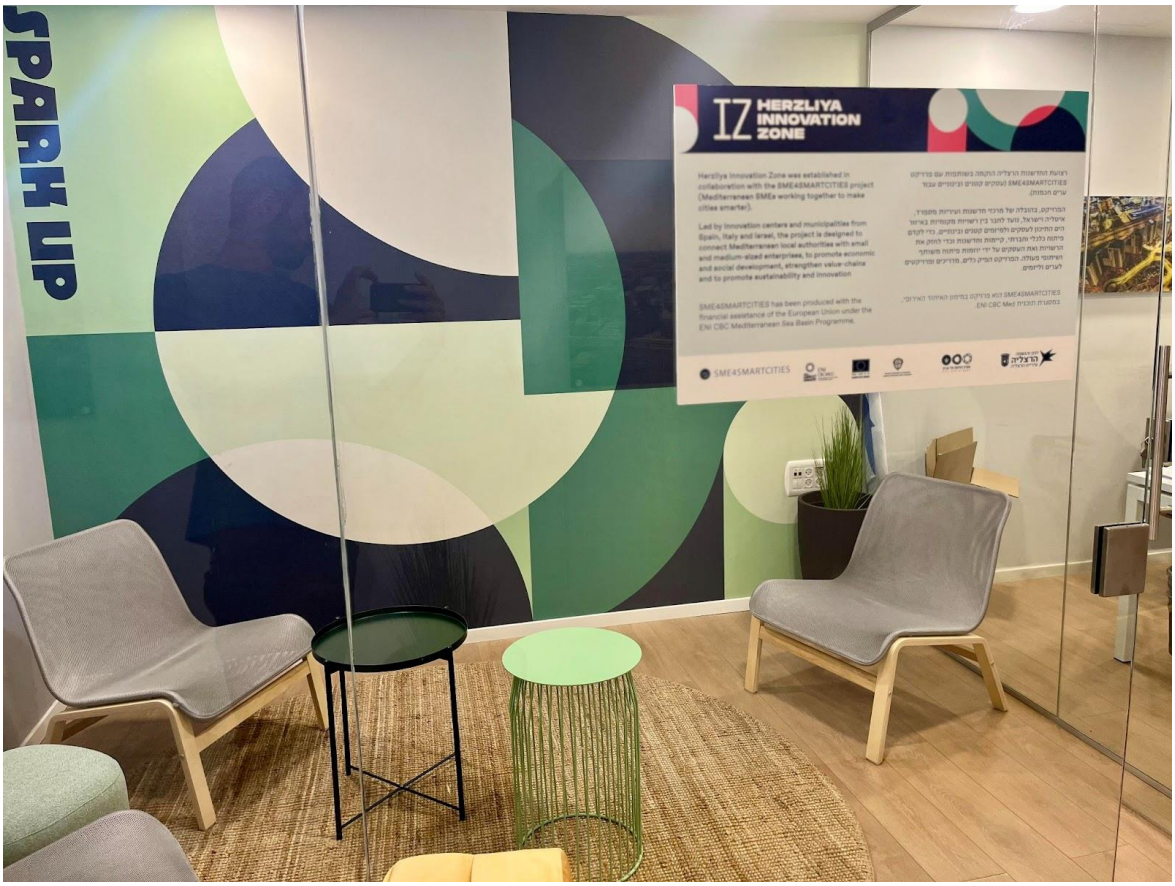


Image 4: The IZ public room – a meeting hub

Image 5: The Meteorological station and data dashboard

Summary

The Herzliya Innovation Zone is an actual implementation by the SME4SMARTCITIES project of the tools and guidelines in the Innovation Zone toolbox. It was established in collaboration with Herzliya municipality and the Hi-Tech district council. It is a designated city street area, functioning as an Innovation hub – with demonstration sites, meeting spaces, collaborative activities and signage. The resulting design of the Herzliya Innovation Zone is in the Innovation Zone Design Playbook guide and the Innovation Zone Playground guidebook.

Conclusions

Openness to innovation, stimulating and encouraging it, is a key to success in dealing with local challenges and in achieving urban resilience and social, economic and environmental well-being. A city with a marked spirit of innovation, that facilitates and leads the creation of a thriving ecosystem of innovation, enjoys economic growth, prestige and becomes a magnet to businesses and to human talent.

Whether it is products, technologies or services - innovative solutions improve the functioning of the city in various fields, including transportation, energy, water, food, waste management, ecology, urban nature, climate and more.

Yet, a city is a complex environment and creating an ecosystem of innovation can be seen as a daunting task and as a far way goal that required long-term planning and abundant resources. This toolbox was therefore designed to lead step by step in the establishment of a resilient ecosystem of innovation for sustainability. It shows that the journey can be achieved and that it create great benefits to cities that implement it.

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