



IN-HABIT – INclusive Health And wellBeing In small and medium size ciTies

## D3.2 - Innovative PPPs and financial mechanisms for IHW in Lucca

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<b>Authors (names and affiliations)</b>	UNIFI: Francesco Di Iacovo, Giulia Granai, Chiara Mariti, Carmen Borrelli Lucca Municipality: Maria Cristina Panconi, Pamela Salvatore, Alessandra Parenti LuccaCrea: Giovanni Russo		



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## LIST OF ACRONYMS

AAI	Animal Assisted Interventions
A-NBS	Animal-Nature Based Solutions
EC	European Commission
ERDF	European Regional Development Fund
ESF	European Social Fund
EU	European Union
IHAUP	Integrated Human-Animal Urban Policy
IHW	Inclusive Health and Well-being
LCA	Local Community Activator
PAR	Participatory Action Research
PPP	Public-Private-People Partnerships
WP	Work Package



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## EXECUTIVE SUMMARY

### Project partners:

Dept. Veterinary Science - University of Pisa, Municipality of Lucca, Lucca Crea

### Lucca city

Medium size city, 89.048 inhabitants (ISTAT, 2023), high rate of elders

### Main ambition:

to create the first EU hum-animal city with and Integrated hum-animal urban policy

### Timeframe of the report:

Whole project due at August 2025

### Innovative aspects:

Introduction to the idea of *A-NBS as a common good provider and of the opportunity of an Integrated Hum-Animal Urban Policy (IHAUP)*, involvement of University degree and master students, training in primary schools with *mindset change methods*, among the others. The **Lucca case** within the European project **IN-HABIT (INclusive Health and Well-being in small and medium size ciTies)** developed a pioneering approach to improving inclusive health and well-being by introducing **animals as Animal-Nature Based Solutions (A-NBS)**. This innovative perspective reframed animals from being private resources to **urban public goods**, integrated into regeneration policies and citizen services.

### Key points of attention along the Lucca process:

- Schemata shift and new collective knowledge creation and to look at animals in a new public perspective and common resource, to facilitate innovation to spread and to root.
- Educate the wider public on new perception about nature and A-NBS
- Looking in a new perspective on existing underused resources
- Local stakeholders' competences and willingness
- Community involvement in practical and simple proactive initiatives



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- Approaches and methodologies to involve and support the processes
- PPPP as key mobilisation resource and strong institutional involvement
- New architectural solution for Animal-lines and relational areas

#### Crucial/critical points in the Lucca Process:

- The multi-actors (public, private, people) mindset change
- The passage from the project to a sustainable and well rooted path
- The continuity of the dialogue among public and private actors
- To maintain innovation at the core of the city dialogue
- The newly created/recreated A-NBS spaces to be maintained with the PPPP involvement
- Ownership and management require shared responsibility that is growing in local inhabitants
- Adherence to agreements for the maintenance of the new spaces is also better defined and becoming part of the individual responsibility of the users
- The organisation of clear rules to keep the hum-animal city working in the long run

In terms of **beliefs and attitudes**, some additional risks might be considered like:

- Stop believing in the idea developed over the project duration
- Residents may not perceive the complexity of the process and might react critically to emerging issues, beyond support and management, more communication efforts are needed
- Lack of real endorsement and empowerment in the long run to plan/control the process
- Potential conflicts emerging among groups of users

#### Key Achievements until now

- **The political engagement** of the municipality in Lucca
- **Clear evidence of A-NBS and their results:**
  - **Urban infrastructures (Hard VIS):** creation of **relational areas** and **Animal Lines** (15 km of paths), widely used and appreciated by citizens and visitors.
  - **Animal Assisted Interventions (AAI):** implemented in two nursing homes, improving mobility, memory, psychological and emotional well-being of elderly residents.
  - **Pet care services:** innovative support for vulnerable individuals temporarily unable to care for their pets.



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- **Educational activities in schools:** two editions involving more than 350 students, resulting in increased knowledge and awareness of animals and pet-friendly cities. A dedicated board game (City Pets) facilitated the educational process toward gamification.
- **Entrepreneurship and tourism:** incubation of new business initiatives linked to the human–animal bond and development of manuals for **pet-friendly tourism**.
- **Citizen engagement:** events, playful and educational activities, digital tools (apps, games, social media).
- **Biodiversity monitoring:** use of LEKO acoustic sensors to assess species presence and the ecological impact of new infrastructures.

### ***Reccomendations***

The project demonstrated that even small and medium-sized cities like Lucca can **mobilize unconventional resources** (animals as A-NBS) to foster well-being, inclusion, and sustainable urban regeneration. To move forward in such a direction local it became crucial to organise transformative pahn, well mediated by competent people like a urban pet policy manager able to meet the participatory needs with the technical expertise required by the specificity of the topic. A new approach in integrating policies from many different departments (economic, social, health, environment, public buldings, tourism education) is also crucial in replicating the model and affirm a humanimal integrated city policy.



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# TABLE OF CONTENTS

<b><u>LIST OF FIGURES AND TABLES</u></b>	<b>6</b>
<b><u>1. CONCEPTUALISING PPPPS AND IN-HUBS</u></b>	<b>7</b>
<b><u>2. IN-HUB STAKEHOLDERS</u></b>	<b>9</b>
<b><u>3. GDEI MODE OF ENGAGEMENT, FACILITATION AND COMMUNITY ORGANIZING</u></b>	<b>14</b>
<b><u>4. GOVERNANCE OF PPPPS</u></b>	<b>18</b>
<b><u>5. IMPLEMENTATION &amp; SUSTAINABILITY</u></b>	<b>25</b>
<b><u>6. INNOVATION, TRANSFERABILITY AND SCALING UP</u></b>	<b>28</b>
<b><u>7. CONCLUSIONS</u></b>	<b>30</b>
<b><u>REFERENCES</u></b>	<b>33</b>

## LIST OF FIGURES and TABLES

<b>Figure 1.</b> Recap of the process of change (elaboration from the authors).....	<b>10</b>
<b>Figure 2.</b> Stakeholder map updated in May 2025 (elaboration from the authors). .....	<b>11</b>
<b>Figure 3.</b> Co-design, co-deployment, co-monitoring, and co-management phases in Lucca. (Elaboration from the authors).....	<b>12</b>
<b>Figure 4.</b> Process of cultural shift towards a new shared vision on animals/pets (elaboration from the authors). .....	<b>13</b>



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# 1. Conceptualising PPPs and IN-HUBs

The participatory process was pivotal in the Lucca case due to the radical innovation introduced with the hum-animal city concept.

To clarify the key terms:

- \* **PPP(Public-Private-People-Partnership):** a model of inclusive governance that fosters collaboration among public institutions, private actors, and citizens, aiming to co-create more sustainable and participatory urban solutions. PPPP's are used as a strategic framework to engage diverse stakeholders in decision-making and implementation processes. The aim of such partnership is to empower citizens who can share their awareness of their territory (Marana et al, 2018), hence becoming co-designer, co-producers, and co-evaluators (Boniotti, 2021). The PPPP's model attempts to involve the whole community in the urban processes warranting the consideration of the contribution and the competencies of each stakeholder (Boniotti, 2021).
- **IN-HUB:** the name given to the living lab installed in the IN-HABIT project in Lucca, representing the tangible space and organizational structure and activities where project partners and stakeholders collaboratively design, pilot, and implement hum-animal solutions. The IN-HUB serves as the focal point for experimentation, co-design, co-deployment, and adaptive management within the project, as well as to enhance reflexive and collective knowledge related to the hum-animal innovation. In our report we'll refer to the IN-HUB as the spaces for interaction able to activate the PPPP in relationship to the Lucca IN-HABIT Living Lab.
- **Stakeholder Mapping:** a dynamic tool used to identify, analyze, and monitor the actors involved, their roles, interests, and influence. It serves to guide engagement, co-design, and adaptive management within the IN-HUB, tracking changes over time and supporting informed decision-making.

The stakeholder mapping was initiated well before the project started and already in the preparatory phase, by involving students at bachelor level at Pisa University. Of course, the mapping was further deepened after the project started.

The stakeholder mapping included quite diverse actors from many areas of activity (animal related, educators and their institutions, social sector and related organization and institution,



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economic firm, pet holders, NGOs, citizens) due to the innovation proposed. Besides the classical stakeholder mapping, high relevance was given to diverse councilors and technicians operating in different topic areas at Lucca municipality level. In this case specific attention was given to facilitate a converging vision on Animal-Nature Based Solutions (A-NBS) moving farer from the traditional perception of animals as private business or as aspect related to urban hygiene and environment management.

From this point of view, in the Lucca case, the humanimal IN-HUB operated on at least two levels:

- \* Internally to the municipal administration, by progressively engaging different departments and sectors in order to establish the foundations for an intersectoral hum-animal policy and to overcome the fragmentation of single specialise policies
- \* In collaboration with the administration, and the local public and private stakeholders, by fostering co-creation processes aimed at developing shared visions that converged into pilot initiative aligned with the new emerginh hum-animal vision.

Participatory engagement was influenced by several contextual factors, like the specificity of the topic and its radical innovation contents, the initial Covid-19 situation, as well as the political election phase and change, with its implications in terms of reorganizing activities internally to the administration.

Most of the stakeholders involved across the different areas were female, suggesting that a hum-animal innovation shows strong attachments with women's life and perspective.

The organization of the IN-HUB with citizens initially relied on the organization of a general assembly with sub-lobs of interest in the different areas of the hum-animal potential.

During the election phase, IN-HUB management was slowed down. Later, with the change in political administration, a period of reorganization/agreement/involvement/trust was necessary, along with a readaptation of the organizational structure to allow for greater flexibility and a clearer path of involvement.

The participatory approach was designed to share the hum-animal concept, to gather views and perspective during the co-design phase for hard solutions, to define targets to be addressed and VIS, to co-deploy and co-manage the selected solutions for pilot initiatives, to co-monitor and co-evaluate main outcomes and results.



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In the initial phase, diaries were organized as well as interviews and narrative exercises, followed later by specific contests implemented through the project app.

## 2. IN-HUB Stakeholders

From the very beginning of the project, the partners - the University of Pisa, the Municipality of Lucca, and Lucca Crea - held a pivotal role in shaping the IN-HUB's structure and in mobilizing various stakeholders to disseminate the concept and kickstart the initiative.

Pisa University played a fundamental part as the WP3 coordinator and innovation centre. It provided crucial support for all planned activities, with a particular focus on research, facilitating the participatory process, and overseeing monitoring and evaluation efforts.

Lucca Municipality, through the active involvement of several key departments (including social, educational, and gender policies; economic development; urban planning and environmental policies; public works; and cultural and touristic policies), engaged actively along the process.

In 2021, a shift in the municipal administration occurred, a common phenomenon in public bodies. This necessitated a period of few months for the new administration to settle, adjust, evaluate, and align with the project activities that were already underway, consistently keeping IN-HABIT's core objectives in sight. Despite the change in political alignment within the government, the new administration fully embraced the project's activities and objectives of the IN-HABIT project.

The collaborative process within the IN-HUB facilitated the co-design of innovative solutions for the Lucca territory. This included both infrastructural developments (the hard VIS animal lines and relational areas) and "soft" VIS to be implemented throughout the city (see Figure 1).



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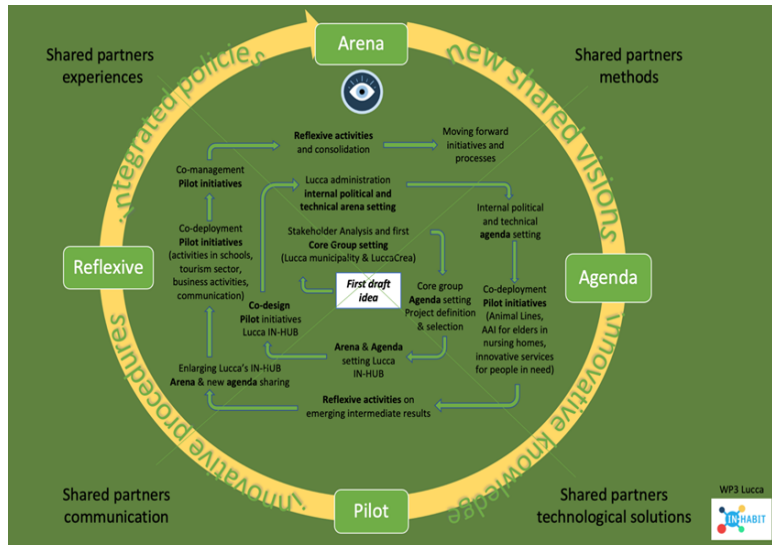


Figure 1. Recap of the process of change (elaboration from the authors).

From the outset, stakeholder engagement primarily focused on the **innovative human-animal concept** and the main targets/needs to be achieved in terms of IHW in the Lucca context. As in many other contexts, the prevailing approach to managing non-human animals at the city level typically centred on two main areas:

- the municipal public health and urban hygiene department, specifically addressing animal rights and ensuring private citizens managed their pets in accordance with animal welfare needs
- local residents, viewing pet ownership as a private, household matter, along with private businesses handling home and family aspects of pet care, and associations advocating for animal rights and responsible citizenship.

However, viewing human-animal bonds as a provider of public good and as Animal-NBS proved to be challenging for most stakeholders. This new perspective also presented difficulties for the entire participatory process involved in sharing the idea and its potential operational implementation.

The process was structured around a Participatory Action Research (PAR) approach, drawing on transition management theory. This was further bolstered by collaborative tools developed with transversal partners (Design for Change and Tesseract).

From its very inception, the IN-HUB was conceived as a unified group comprising five thematic areas, identified by the UNUPI team to engage various stakeholders: citizens and associations



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active in pet-related matters, the social sector, pet care practitioners, the economic sector (particularly pet services), and the tourism sector.

A stakeholder map was developed and continually updated throughout the process. This map continuously integrated valuable insights gathered during both online and in-person participatory sessions. To ensure the highest possible outcomes, customized facilitation methods were employed for every meeting. From the very beginning of the initiative, dedicated efforts to engage the community involved personal outreach, various promotional events, and widespread press releases, which considerably broadened the project's visibility and reach throughout Lucca. The stakeholder list itself benefits from continuous updates, thanks to the ongoing contributions from both the UNIPI team and the Lucca municipality (Figure 2).

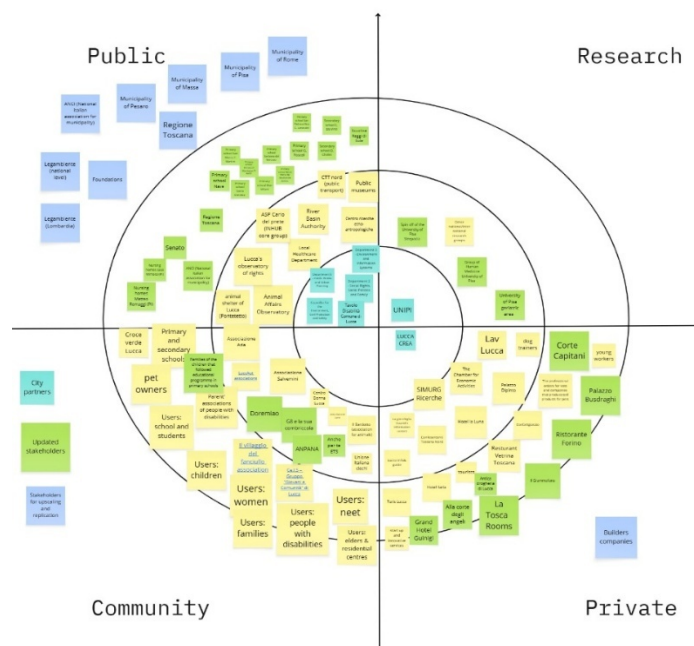


Figure 2. Stakeholder map updated in May 2025 (elaboration from the authors).

The IN-HUB's activities have continuously adapted throughout the project, responding to evolving stages, demands and situations. At the same time plenary, in groups devoted to specific topics and more in-depth small groups activities were utilised with local public and private stakeholders involved. In any case, all the activities and outcomes were and are shared along the process in different ways. Furthermore, university students, both undergraduate and master's level, have been actively involved in these participatory activities and in distinct phases



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of project development, offering their understanding and proposals to facilitate the collection, discussion, and organization of ideas and opportunities.

Within the Lucca IN-HABIT project, the requisite cultural shift concerning A-NBS was orchestrated through the IN-HUB, which functioned as our project's transition management arena. Initially, the debate was focused on the role of animals in urban settings, how to organise innovative hard solutions (such as animal lines and relational areas), and subsequently, for which target group of citizens and with which kind of soft VIS they should be addressed. At the project's very genesis, dialogue among WP3 partners focused on the project's aims and its main implications, particularly from a political standpoint, including decisions regarding the participatory process and its organisation (Figure 3).



**Figure 3.** Co-design, co-deployment, co-monitoring, and co-management phases in Lucca. (Elaboration from the authors).

Along the process two main paths have been organized:

- a first one open to the local public, private, citizens dialogue,
- another one more inside the identified sectors (environment, education, social, economic activities, tourism ones), as well as among the technical and political components of Lucca municipality.

The balance among the two paths was key to advance the discussion in the IN-HUB as well as the overall project with the municipality involvement. The agreement with the technical staff



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was also crucial to move forwards with the administrative components of the process thereby translating IN-HUB ideas into regular administrative public acts.

As the described process unfolded, the actors involved were gradually exposed to a collective knowledge creation process. This facilitated a mental shift from the routine ways public and private entities—including economic actors and NGOs—as well as the general public, typically view animals/pets. Instead, they moved toward the common construction of a new shared human-animal vision, as presented in Figure 4. Three key aspects need to be mentioned:

- The repositioning of the traditional actors according to the new perspective of A-NBS
- The engagement of unusual new actors in the debate on the topic (those coming from the social/health and economic sectors, mainly)
- The progressive reorganisation of the new and the existing arena (the municipality council, the already existing in Lucca observatory on animal rights) on the topic and the new perspective.



Figure 4. Process of cultural shift towards a new shared vision on animals/pets (elaboration from the authors).

Within this framework, aims, opportunities, and expectations progressively converged and aligned among IN-HUB participants. This was further solidified through the organization of various pilot projects and subsequent reflective activities. In a meeting organised last July by the municipality, the main outcomes were positively received by the Observatory for Animals, a permanent group that includes representatives from all political parties and local animal



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associations, alongside technical bodies such as the public health veterinary services and the municipal police.

### 3. GDEI Mode of engagement, facilitation and community organizing

Since the beginning, the Lucca project focused on a mindset shift in looking animals as an available resource in the cities able to provide public goods and to support inclusive health and well-being for urban inhabitants and especially for the most fragile ones.

From the start of the IN-HABIT project, the local involvement followed different channels to enlarge the possible involvement and to achieve as many voices as possible.

As already underlined during most of the activities, the participation included different members of Lucca society, taking into consideration genders, groups of people, different social strata and ages. To enrich the stakeholders involved and to take into consideration the most fragile ones, specific meetings were organized with devoted institutional groups (disabilities group and fragile group active at Lucca level in the dialogue with the municipality, social sector) collecting the participation of main associations involved in the two areas at Lucca level.

During the co-design phases and the involvement of the partnerships, the main targets addressed were the elderly and youngsters and they were considered as guiding targets for the co-design of the pilot initiatives in the project.

The recruitment of Local Community Activators (LCA) by the Municipality of Lucca has been postponed due to delays in the public competition for personnel selection due to the pandemic situation. This process was finally completed at the end of November 2021. In the interim, the UNIPI Team (through 2 PhD students working on the topic of the project) stepped in to fill the role of LCAs for all activities outlined in the IN-HABIT project, providing crucial support during its initial phase. Thereafter, the LCAs started to actively engage in the project, helping in the organization of the activities and in the involvement of the stakeholders.

Besides the local stakeholders' involvement, also the transversal partners were supporting the project with their activities.

B4B started entering in the topic specificity, trying to better focus the existing as well as the possible links with innovative business ideas related to pet-economy and selecting mentors and



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new entrepreneurs. In the first selection round it was more difficult to select people mainly coming from the Lucca area while it became easier and more possible in a second round (see B4B deliverable for further details). The final events of the training activities have been organized at university level (first one) and in Lucca (second one). The wide range of ideas generates a wide picture of the potential of the pet-economy space and in some cases, ideas support and reinforce initially established businesses. Many of the new entrepreneurs incubated were females giving an idea about the positive links between animal/pets-new businesses ideas and women empowerment.

DFC opened in Lucca an Italian area of interest to apply and to transfer the methodology design for young involvement in participatory processes. In the Lucca case they were involved in training teachers in using the approach, as well as via their methodology, to actively involve youngsters of different ages in the school in the co-design of hum-animal solutions. The activity was piloted in a first round with some schools in Lucca and then replied and upscaled involving more classes in Lucca and Pisa schools as well as with young researchers.

Tesseræ supported the Lucca case along two main paths: from the one side by discussing and sharing common methods and tools to support the participatory processes on the ground; on the other side, by supporting the reflexive process along the action research process with Pisa University staff.

Among the transversal partners, a specific task was devoted to the evaluation tools –ex-ante with Isimpact and ex-post with Turin University- as well as with the University of Reading. Regarding this task, a specific participatory initiative was focused on Behavioral Games with the support of Lucca Crea that involved around 100 citizens.

Again, Lucca Crea organized a specific board game devoted to educating citizens about the hum-animal city (largely applied in schools/university and during specific events).

A specific reflection on gender dimension in the Lucca hum-animal case was also opened. In the relationship between human and non-human animals there is an increasing number of studies devoted to gender aspects and especially on feminism, animal dimension, and environmental dimension. The common root being related to the common challenge in the social hierarchies assigning marginal roles to women as to people with diversities as for non-human animals and the environment, making connections among diverse forms of oppression (Gaard) regarding all, and at the same time connecting the well-being of all oppressed and minorities including women



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and animals, the violence against animals and women as part of the patriarchy perspective. From this perspective empowerment of animals can move in pairs with animal liberation and representation in society and a hum-animal city might generate a more equal representation of all human and non-human animals.

On the other side, by introducing the non-human animals in the public good provision might generate also other links with the caring activities and on one side the re-proposition of the classical women roles in ensuring the reproduction of the society. This is the case of attending family children as well as the new family members as the animals, and/or by extending the care to the interaction with animals and fragile people (most of the Animal Assisted Interventions (AAI) are provided by women). Meanwhile the new attention on animal generates the space for new business activities for women and their empowerment towards new economic opportunities. The alliance among women and animals might be also seen in the support against men attack in public spaces as well as a common sign to prevent male violence at home as in the society.

In a way the hum-animal city is reopening the space for re-considering the relationships in the society, not only in the provision of the inclusive health and well-being for urban dwellers, but also in the society among humans and non-human animals and towards the redefinition of their relationships in the society. At the same time, the hum-animal' idea being a new and transversal one can be achieved only toward a progressive and socially based process of change.

By looking the hum-animal city idea there is an enlarging space for both the organization of new inclusive opportunities for many diverse targets of people, to innovative inclusive paths for the fragile ones, to redefine spaces and societal dialogue, to reinforce networks and membership for collective initiatives, but also to reactivate urban livable material and immaterial spaces.

The hum-animal interaction might be effective in diverse context and spaces like:

- in everyday life with companion animals, they are directly involved in the daily family routine and life, independently from the family composition and organization. This aspect mainly concerns the people that directly handle their own animals/pets and might more directly interest some of the family components dependently from its internal organization, members' attitudes and specific needs. These activities might regard:



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- daily routine organization (like feeding, caring) that can support the life of the people and that can stimulate a better and full organization of the daily routines, especially for fragile people or single ones
- attachment, reciprocity, closeness, gaming, companionship, intimacy, physical activities and emotional stimuli that might support the most, but especially more fragile and in need members of the family
- all the aspects described might directly affect specific categories of fragile people like homeless, people experiencing isolation at different ages
- in the life experience and societal interaction outdoor, with:
  - the external environment (wild animal observation and interaction) to have better comprehension of nature, its cycles and complexity, but also to enjoy the interaction and the comprehension also with active playing activities (photo, nature observation and study) that generate also non expensive experiences for all people
  - companion animals handled by other components of the local society and/or the societal interaction and dialogue that might be generated beware of the animal mediation and interaction (in such respect this can reinforce and stimulate the public dialogue among also very diverse members of the local society
  - the participation to engaging associative activities related to animals' care, to facilitate inclusion as well as evolutionary processes in the organization of the society
- with the provision of specific activities devoted to Animal Assisted Interventions and therapy organized for specific groups and target people. There can be very large typologies of actors, like:
  - elders living in specific institutions like (nursing homes, hospitals for long term presence to achieve specific goals like interaction, physical activation, expectations, group activities, calm and satisfaction
  - people with disabilities, with autism
  - jailed
  - Neet, Hikikomory needing to be captured by new and different experiences



- facilitating everyday life with the direct support of trained animals like those for blinded people or for specific tasks related to focused activities.

In the Lucca case most of the cases described above were focused on:

- organizing new knowledge on human-animal relationship,
- promoting educational and participatory activities with children and youngsters,
- co-designing and co-deploying new public spaces to facilitate management and interactions mediated by animals (Animal Lines and relational areas),
- co-deploying and co-managing AAI in nursing homes,
- supporting events and participatory activities,
- ensuring engagement, support, toward the organization of the PPPP and related activities and events,
- up-scaling initiatives in prisons,
- promoting initiatives and economic activities devoted to the valorisation of innovative services based on hum-animal interaction,
- supporting events in nature with and looking to animals,
- supporting events and activities mediated with animals and devoted to societal interactions.

## 4. Governance of PPPPs

As previously mentioned, the PPPP activity in Lucca Living Lab was implemented with the objective of establishing an IN-HUB devoted to advancing humanimal innovation.

Despite being held online, the IN-HUB's inauguration attracted considerable interest. It kicked off with an open discussion expertly mediated by the World Café method, chosen for its simplicity, effectiveness, and adaptability in facilitating dialogue among large groups. Over the course of subsequent meetings, various other participatory techniques were also employed to encourage productive discussions. In its initial stages, the conversation primarily explored the function of animals within the urban environment and the design of innovative hard solutions. Subsequently, the discussion evolved to consider what kind of soft VIS supportive for specific targets of people should be addressed.

The project's foundational concept was introduced and debated early on with Lucca's Mayor and the diverse political ministers involved, who showed varying degrees of enthusiasm,



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comprehension, and perception of the possible political feedback from the citizens to the idea. After an initial stage focused on internal engagement with the Lucca administration and its technical personnel, the IN-HUB was officially launched. It became the transition arena for managing change, facilitating the agreement of new visions and agenda, the collaborative design of both "hard" and "soft" VIS, and the discussion and selection of pilot projects and their target audiences. Later, the progress of these pilots and initiatives was monitored and assessed in the IN-HUB.

Prior to the meetings, specific selection criteria were defined to identify the stakeholders to be involved in the IN-HUB. Particular attention was given to ensuring the direct involvement of various sectors of the public administration, each traditionally responsible for distinct areas of interest related to a human-animal policy (including education, social affairs, economic development, public spaces, citizen participation and engagement, tourism, and environment, among others). To launch the IN-HUB, the following criteria were adopted: 1. the participation activities had to be properly represented with the involvement of people, private and public entities able to operate in the diverse area of interest of the IN-HABIT Lucca innovation case; 2. local stakeholders should live in Lucca; 3. a gender, diversity, equity, and inclusion approach should be considered; 4. stakeholders dealing with the theme of animals were required. In the first stage, seven specific co-creation workshops were carried out to stimulate discussion around innovative business solutions linked to different themes. About 80 stakeholders took part in these meetings, encompassing citizens – including people belonging to categories at risk of exclusion –, professionals—pet-care sector and educators—and associations. Participants shared their opinions about the human–animal bond and what kind of sustainable innovative solutions could be developed to improve the quality of this interaction. The activities were initially organized in the form of a general assembly and developed through specific focus groups dedicated to the different pilot initiatives. Public events and open initiatives were organized to facilitate knowledge sharing and continuous engagement among all stakeholders, both from the outset of the project and progressively throughout its implementation.

During the early phases of IN-HUB, discussions kicked off by examining the potential and significant societal shifts occurring in human-animal interaction, viewed through both cultural and social perspectives. On one hand, a growing awareness surfaced regarding the environmental footprint of animal products and concerns about animal welfare in production.



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On the other hand, the discussion also addressed the increasing integration of pets into families and the promising potential shown in scientific literature regarding the positive impact of human-animal bonds on IHW. Naturally, practical needs related to pet management in Lucca also came to light, underscoring the desire to foster a stronger sense of responsible pet ownership and its positive effects. A key takeaway from participants in the IN-HUB was the clear recognition that urban pets are increasingly considered integral family members with citizenship rights, thereby necessitating new approaches to urban planning to address these emerging needs, demands, and opportunities.

In parallel, specific attention was devoted to progressively promoting and consolidating recognition of the potential of hum-animal interaction in public service provision, including its relevance for the IHW of citizens.

Within the IN-HUB activities in Lucca, the participative process was organized around two main areas of innovation: one focused on “hard” solutions and the other on “soft” solutions.

In the initial phase of the IN-HUB activities and of the Lucca project, specific attention was dedicated to the co-design of the so-called “Animal Lines”. The Animal Lines should suggest a path able to increase the links between the old city center (the city’s ancient walls and the under-used surrounding green areas) with Lucca’s suburbs and peri-urban areas. From the beginning, these new public spaces were envisioned as areas for fostering dialogue among citizens – mediated by the presence of animals under their care - as well as spaces for enhancing hum-animal interactions with a particular focus on supporting vulnerable people. Participative processes within the community supported in gathering information, needs, and ideas about:

- what to implement inside the animal lines and the relational areas
- what materials to use to create easy and accessible spaces able to support in the best way the human-animal and human-human interactions
- how to organize spaces to avoid conflicting situations between owners with bigger and smaller pets
- how to avoid dangerous situations for those experiencing doubts and problems with animals to prevent any trouble (people afraid of animals, possible injuries especially with children, the management of pet wastes).

The IN-HUB discussion on the hard VIS were then supported with specific knowledge and competences available in the Department of Veterinary Sciences at Pisa University, with the



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public officers of the Lucca municipality, and with specific recruited competences (architect experts in animal behaviors and needs). Eco walks were organized in the co-design phase (when possible, for the pandemic situation) also by involving university students of engineering and veterinary departments. Meetings with the Superintendence of architectural heritage were organized to understand the room for manoeuvre to plan intervention in some specific areas (strong restrictions were received for signage and for any intervention on the ancient walls). The spaces were selected in agreement with the local WP3 partners and with IN-HUB. A public call was launched to start the relational areas' construction.

After initial broad discussions and the focus on hard VIS, the project entered a second phase aimed at identifying specific target populations for interventions designed to enhance IHW through A-NBS, co-designing innovative soft VIS and the prioritization of their practical application.

Subsequently, the process moved towards establishing a formal administrative procedure, in line with Italian legal requirements, for the co-planning and co-deployment of chosen VIS (AAI and Pet Care services), and their subsequent co-management. The fourth step was dedicated to co-monitoring and co-evaluation activities, along with the crucial reflexive component of the transition management process. This was conducted via specific focus groups involving key AAI actors, including the political components of the Lucca municipality and members of the Observatory for animal rights.

The implementation of the first VIS (hard and soft) marked a pivotal moment in fostering shared acceptance and agreement of the human-animal concept and the value of the tested A-NBS. It also bolstered the idea of promoting these solutions across the city. Evidence emerged from the pilot created a valuable opportunity for more in-depth discussion and consideration, both within political spheres and among stakeholders in the IN-HUB, regarding the inherent benefits of these solutions. Specifically, the widespread engagement of diverse local community groups in the relational areas, coupled with the remarkably positive outcomes from AAI involving elders, significantly supported the process. This, in turn, helped cultivate broader political support for the entire project and its planned initiatives.

In the project's final year, the administration reinvigorated the IN-HUB, transforming it into a vital platform for both reflecting on prior achievements and exploring potential new A-NBS. Following an initial internal consultation between the University of Pisa and the Lucca



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Municipality, the Chart of Principles for an Integrated Human-Animal Urban Policy (IHAUP) was presented to the IN-HUB. The objective was to gather their input, ensuring the development of a strategic plan that is both practical and implementable from the IHAUP's perspective. Concurrently, the successful educational programs in schools were replicated across various other schools in Lucca, and the AAI offered to elders were extended to nursing homes in Pisa. The participation to the IN-HUB of new actors from those normally active in the management of animal affairs in the cities offers an insight into the cultural shift occurring along the process. Besides this, also the new way that the stakeholders normally involved in animal affairs are looking at the A-NBS offers some evidence of the process done and of the partial achievement of the initial expectations from the processual point of view.

The implementation of the ITPlan was based on a dedicated governance structure at the municipal level. In the IN-HABIT project, this was supported by the allocation of €2.3 million, covering actions, animation, and research activities. When considering the upscaling and long-term continuity of the project, three crucial interconnected aspects emerge:

- Strategic Coordination: this encompasses the overarching management of PPPP, organizing events, and ensuring the cohesion of the urban human-animal integrated plan and strategy. From an institutional innovation perspective, the establishment of a city pet policy manager position would be pivotal. This role would be responsible for steering all necessary governance activities and facilitating seamless integration across various policies and among different councilors.
- Individual Solutions Management: this aspect focuses on the co-design, co-deployment, and co-management of each distinct solution. The resources required for these initiatives might fluctuate based on the specific solutions chosen (such as Pet care services, AAI, educational activities with schools, event organization, or the maintenance and implementation of Animal Lines and relational areas), as well as the overall scale of their application across the city.
- Monitoring and Reporting: this crucial component involves the collection of data, ongoing monitoring, comprehensive evaluation activities, and the generation of detailed reports.

In light of these considerations, a city budget of approximately €250.000-300.000 could be considered as appropriated for the ITPlan' implementation in a medium-sized city, in addition to the intervention on the hard VIS, that is done normally at the beginning as starting investment



for the reorganisation of public spaces devoted to the facilitation of the humanimal interaction. This amount should remain flexible and adaptable to the specific urban context, as well as to the number and frequency of initiatives implemented, in line with the city's process and its scale of action.

The IN-HUB activities benefited from the organization of dedicated activities and the definition of co-design schemes tailored to specific initiatives.

Regarding the medium-term maintenance of the hard VIS, a formal agreement was established between the municipality (environmental department) and a selected NGOs, aimed at carrying out maintenance interventions and reducing deterioration to the greatest extent possible. Relational areas, which are particularly frequented by people and their pets (mainly dogs), were identified as especially exposed to erosion. In this respect, citizens played an active role by signalling disfunctions, enabling the municipality to promptly activate the contracted NGO for full maintenance. For the future the maintenance will be directly managed by the area of green management of the Lucca municipality.

For **AAI and Pet Care** services, **specific co-planning activities** with NGOs were organized in compliance with Italian Law 241/1990 and subsequent ministerial guidelines (Decree n. 72, 31/03/2021)<sup>1</sup>. The process included: I) a public call indicating specific requirements for the activities involved and the applicants; II) the selection of NGOs meeting these requirements (3 in the case of AAI and 2 in Pet Care service); III) a co-design and co-deployment phase, which, depending on the type of VIS, involved the Municipality, the selected NGOs, health institutions, and the University of Pisa in defining criteria and organizing implementation processes; IV) co-management of activities by the NGOs, and, where applicable, by public health authorities involved; V) including co-monitoring and co-evaluation of the main results, expected outcomes and impacts.

For **educational activities, co-management schemes** were established between the municipal education sector, the participating schools, and the councilor's office. Co-design was carried out

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<sup>1</sup> More specifically the normative aspects are related to the so called "co-progettazione con il terzo settore" art. 55 d.lgs. 117/2017 (Codice del Terzo Settore) and in the provision of art. 13 L.R. n. 65/2020 "Norme di sostegno e promozione degli enti del Terzo settore toscano" and Decreto Ministero del Lavoro e delle Politiche Sociali n. 72 31 March 2021 "Linee Guida sul rapporto tra Pubbliche Amministrazioni ed enti del Terzo settore negli articoli 55-57 del d.lgs. 117/2017".



based on proposals developed by Lucca IN-HABIT partners (Lucca Municipality, Lucca Crea and the University of Pisa). Monitoring and evaluation activities were led by the University of Pisa in collaboration with the other partners.

**Events** were co-designed and co-organized with the involvement of NGOs active in the education sector, animal protection, and pet shelter management, alongside schools and cultural associations, to test potential collaborative schemes that could later be transferred to upscaling activities.

From a **financial perspective**, also in the idea of up-scaling the humanimal city policy in other cities, resource allocation must consider both **human** and **financial** components:

- **Human resources** may be partially recruited internally to the municipality structure and trained specifically for the management of a hum-animal city project. In this regard, the proposal to establish the role of a “**pet policy city manager**” could meet this demand. When internal staff are used, the related costs (approximately 50.000-60.000€/year) may already be covered within the existing municipal budget, although this requires organizational restructuring. For other activities (i.e. events, educational activities, services provided for innovative pet-based services), co-planning activities with specific NGOs and professionals is necessary. This part of the human resources translates into a financial allocation, which municipalities might secure through different channels like:
  - a) **reallocating** part of the budgets of individual departments to hum-animal initiatives, and/or introducing innovative requirements in conventional public calls (e.g. including AAI in nursing homes for elders, environmental policies for the maintenance of the hard VIS, integrating hum-animal perspectives in environmental policies or school programs);
  - b) activating specific **co-funding initiatives** with part of the economic sector active in the pet-economy sector; c) leveraging **regional/national policies** supporting hum-animal initiatives.

Similarly, for hard VIS interventions, funding can be mobilized through:

- **better considering** the potential of the hum-animal interactions in the design of public spaces and green areas, thereby reallocating part of the existing budget towards



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innovative solutions (the same can be also for the management of the hum-animal hard VIS to be introduced in the green areas management);

- **II) involving private building contractors** in urban regeneration projects, encouraging designs that account for the hum-animal potential.

Overall, the financial requirements to sustain the hum-animal city concept are not necessarily high, and may in fact be **cost-effective** when compared to the typical expenditures of municipalities across the involved intervention areas. The primary challenge lies less in the absolute cost than in the reorientation of existing financial resources towards new, non-conflicting objectives. In this sense, the upscaling process of the hum-animal initiative depends strongly on **clear communication of expected outcomes and impacts** (not only for citizens' IHW, but also from a political perspective).

Additional funding can also be mobilized through existing **EU and national policies**, such as the Urbact+, ESF+ program, which supports social interventions and the development of new Hum-animal-related businesses and services led by young people and women. Likewise, the ERDF can be employed for the requalification of public spaces, the reorganization of hard VIS, and the enhancement of pet-friendly tourism initiatives.

Finally, the **integration of hum-animal and A-NBS aspects and policies at the EU, national, and regional levels could play a crucial role** in supporting the process of upscaling, thereby progressively fostering the adoption of hum-animal innovation in cities and territories.

## 5. Implementation & sustainability

Regarding the Hard VIS, in the Lucca case, they have been co-designed prior to the soft ones. The co-design phase started at the end of 2021, and it was composed of two stages: an external participatory approach – involving citizens and different stakeholders - and an internal one, concerning the Municipality of Lucca (political/technical parts). The external process was composed of 7 workshops to stimulate the discussion and to collect opinions and suggestions from stakeholders and a final eco walk involving, also, project and solution from the engineering and veterinary students. The administrative discussion included several specific institutional meetings to generate a common vision of new infrastructures and to finalize and align the



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administrative process with the participatory one. Subsequently to the co-design phase, the co-deployment one followed through the publication of public calls for interest for the construction of the areas and the selection of builders. In April 2022, the Municipality of Lucca initiated a public call for expressions of interest, yet it received no responses. Consequently, a second public call was launched in May 2022. Following the selection of builders for the deployment phase, the construction works were officially commissioned in June 2022. Operations on the first site, the Ex-Hospital at Campo di Marte, began in September 2022. Unforeseen global events, specifically the war in Ukraine, the ongoing post-COVID situation, and a period of significant inflation, introduced considerable challenges. These factors resulted in unavoidable delays and a mismatch between the originally planned resources and what could actually be achieved, largely due to the sudden surge in prices, especially within the construction sector. Despite these challenges, the area was successfully inaugurated in June 2023. Shortly thereafter, in July 2023, construction began on the second relational area, located at Serchio river park. This second phase concluded in early November 2023, at which point this area was also officially inaugurated.

The management of the areas has been included in the “Green Areas Management Programme” of the Municipality of Lucca. The monitoring of the areas has been entrusted to one association of the territory that has the task of weekly checking the space – ground, fences, etc – making a report to the municipality that then does the work of management.

Once the Animal Lines were organized, the IN-HUB started focusing on pilot initiatives able to translate human-animal interaction into new services and activities (Soft VIS).

The participatory phase for these Soft VIS began with a focus on establishing potential links among animals, people, and a range of urban policies. These policies included tourism, education, social services, efforts to enhance companion animal-related economic and professional activities, and the activation of responsible citizenship. From the very first discussions involving the various stakeholders in this process, many innovative ideas emerged. These ideas clearly defined the territory's needs and revealed a convergence of requests for similar initiatives, which could, therefore, integrate various interest groups. This co-design phase then led to the co-deployment of different solutions:

- Animal Assisted Interventions (AAI) in two nursing homes in the city to boost the well-being of elderly residents. Following the initial co-design phase conducted within the IN-



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HUB, in December 2022 the municipality issued a public call for proposals, aligning with existing administrative regulations for "co-progettazione" (co-planning) with third-sector organizations. Three associations, recognized for their expertise in the field, were subsequently selected. A comprehensive co-deployment process then commenced in March 2023, strictly adhering to the national law on "co-progettazione" involving third-sector actors. Numerous coordination meetings were held between the selected NGOs, the Municipality, the University of Pisa, and the professionals from the participating nursing homes to structure the project. Co-deployment was based on organized activities with NGOs and nursing home professionals. In September 2023, the project started in both nursing homes. The co-management was then handled by the NGOs and nursing home professionals, adapting to internal routines and space availability. The co-monitoring and evaluation phase was subsequently organized using specific focus groups, as outlined earlier in the discussion.

- Pet Care services for vulnerable pet owners experiencing temporary need. In this instance, a public call for proposals was also launched in March 2023, attracting applications from two associations. A dedicated co-deployment phase, started at the end of May 2023, which included representatives from the Municipality, the University of Pisa, and the selected associations, focused on meticulously defining the various necessary aspects for the service offering. This process also led to the identification of three "macro-categories" of services to be provided: Domestic services; Outdoor services with the owner; Outdoor services without the owner. Following the precise definition of these elements, service delivery commenced in June 2024. Monitoring questionnaires have been administered to the people receiving the service.
- Educational projects in schools. For the first edition, initial meetings were held to introduce the educational proposals from UNIPI, Lucca Crea, and DFC Spain to school directors and teachers in the Lucca area. The commencement of activities faced delays, primarily due to the necessity of aligning project timelines with the schools' own planning schedules. This delay was further compounded by a political transition within the Lucca administration, resulting in changes to both the political and technical personnel involved. However, by the end of 2023, the municipality successfully launched the program, with 7 primary schools officially joining and the activities have been conducted



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in the first months of 2024. A second edition of the program was proposed to schools in Lucca for the subsequent school year, and 7 schools joined again with the activities carried out in April/May 2025. Monitoring questionnaires have been administered to children in schools.

In navigating the transformation process, risks were carefully considered and proactively addressed. To mitigate potential hazards, it was taken into consideration since the beginning that any innovative concept, regardless of its initial sparkle, requires continuous modification and adaptation to suit specific spaces and contexts. Introducing a new, complex and intriguing concept such the hum-animal city concept and the A-NBS' one isn't a one-size-fits-all approach; rather, the successful implementation of the innovative concept is heavily dependent upon the unique environment in which it is proposed and how it is received by stakeholders (where and how it's applied). How innovation is received plays a crucial role in its success. This highlights the importance of communication, stakeholder engagement, and tailoring the presentation and implementation to match the target audience. Finding the balance between the project and the audience's expectations was also key. In addition, sticking to a single approach for too long can lead to "saturation" and potential rejection of the innovation proposed. By continuously adapting and allowing the concept to evolve based on feedback and evolving contexts, this decline can be prevented, and it ensures the concept remaining dynamic and continues to offer value. This is exactly what has been done in the Lucca case.

## 6. Innovation, Transferability and Scaling up

The hum-animal city concept introduces a radical innovation in the perception of the human-animal bonds in the society and how to promote and valorize them in the perspective of innovative public good provision and resource mobilization toward social innovation processes and transition management.

It's worth underlining that for most animals it is a changing world, and an evolving perception of human-animal bonds is evolving in all world societies, generating new trends, attitudes, cultural behaviors and demands everywhere opening a large potential for progressively contaminating larger areas of interest, cities at national level, as well as countries, in Europe and outside.



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The hum-animal concept has a transversal potential impact in the whole urban society with specific attention to IHW for fragile people, although not only for them.

From this perspective, innovative aspects of the hum-animal city concept are two sides aspects:

1. The first one being mainly related to the improvement of infrastructures able to see and to accept the presence of the animal in an urban society environment;
2. The second one being more related to the potential positive impact of the human-animal interaction in the society as A-NBS to support and improve social inclusion, health and well-being of people (fragile ones but also the whole components of the society) especially in terms of resource scarcity and increasing societal demands.

The first point being closer to common sense in society and so easier to be commonly understood and accepted today, the second one being less evident in society but with a large and positive expected impact for innovative cities.

For sure, in both cases animal resource mobilization is not so economic resource demanding, but on the other side it's demanding in terms of routine break imperative, mainly in building crosscutting and integrated policies, an institutional innovation as well as a strong participatory engagement toward a process of transition with continuously negotiation processes among many actors.

Starting from such reflections and aware that the concept is organized around many different A-NBS the upscaling process can regards diverse paths like to:

- replay and to enlarge the single solutions in the same starting city to make the concept even more evident and more stable in the medium-long run;
- start with upscaling single pilot solutions to start introducing new concepts and ideas;
- replicate the whole package (concept & solutions) as such -besides contest adaptations- from one city to other ones.

Considering the points above, the innovation process can conceptually take advantage by:

- a continuous process of nesting support to the innovation it in the first phase of its life cycle,
- this nesting process might jump from one place to another taking into consideration that in some cases innovation can stop in a place/city, but it can build on the previous practices and build on them without restarting from the beginning.



From a procedural standpoint, the framework for this institutional innovation is anchored in:

- the introduction of a **Chart of principles** specific to the hum-animal city concept
- the drafting of a **strategic plan** that outlines the key directions for establishing and solidifying the hum-animal city
- a project plan featuring a well-defined **action plan** that aligns with the strategic plan and seamlessly integrates with various municipal policies and departments (including education, social-health, transportation, public building, participatory governance, economic development, tourism, environment policies)
- the establishment of an **innovative governance** structure designed to promote and manage the integrated human-animal urban policy, built upon:
  - the formation of a human-animal project board/council capable of engaging local stakeholders for the hum-animal city initiative through various configurations, thereby creating a participatory counterweight to the administration
  - the designation of a single councilor responsible for coordinating the diverse policies encompassed within the human-animal integrated city policy
  - the introduction of an animal/pet policy city manager to technically coordinate, support, and manage both the strategic and action plans, as well as the participatory process.

## 7. Conclusions

The IN-HABIT project in Lucca is based on the idea that animals in the cities might offer the opportunity for the promotion of so-called (and introduced by the project) A-NBS. A-NBS might valorize the existing and still increasing presence of animals (wild, food producing animals and pets) in the cities to better integrate their presence with the human interaction and moreover to facilitate inclusive health and well-being for the citizens in respect with animal life.

The main lessons emerging by the project can be listed as follows:

- There is still a gap in the society –both from a scientific point of view as well as from an operational one – regarding the role of animals as A-NBS for the improvement of the everyday life of the people and for the people, besides the animal rights.



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- There is an increasing attention and a growing number of animals in the cities being wild, food producing as well as pets, that might be looked at with new glasses and that might support a lively and inclusive experience in the urban areas.
- According with the first two points, there is a large space in the cities for improving the human-animal bonds and to consider them as a resource that might be better understood and mobilized to both plan and generate new opportunities and urban solutions to better accommodate the presence as well as the interaction among humans and non-humans animals in urban areas.
- A-NBS can generate inclusive health and well-being in an innovative way and for many different members of local society with a small effort.
- There is the opportunity to introduce a hum-animal integrated urban policy to take into consideration the previous aspects.
- A hum-animal integrated urban policy has implication in terms of mindset shift for many urban stakeholders (public and private) and might be composed of many different solutions related to diverse urban policies (educational, social health, environmental, public buildings and space reorganization, economic & commerce, touristic, transportation, access to spaces), that can be applied progressively and in a flexible way according with local contexts.
- The new A-NBS can regard both the introduction of new infrastructures (i.e. Animal Lines, relational areas) as well as the more immaterial ones (like activities, events, code of conduct, AAI, educational activities, interactive spaces for the people with the animals, etc).
- While the integrated human-animal urban policy during the up-scaling interaction was able to immediately attract many actors in a positive response, its application in new contests was more problematic mainly due to the demanding reorganization of policy spaces in the definition of the new policy as well as the power relationships and the routine break that is always needed by integrating policies.
- An integrated human-animal urban policy demands a governance innovation based on the definition of new planning tools (a chart of principle, a strategic plan, an action plan with devoted resources).



- The organization of the new integrated policies based on innovative governance is grounded on participatory places able to involve citizens, NGOs, private enterprises, public institutions, in a new collaborative environment devoted to it, a clear appointment in the municipality for the coordination of the activities to a specific councilor, the introduction of a urban-pet-policy-manager that can technically support with enough competence (in animal management, A-NBS, planning, negotiation and participatory methods management) the new trajectories needed.
- The definition of innovative financial mechanisms able to activate resources from different sources being them internal and crosscutting the administration of the city, as well as from NGOs, single citizens and new financial mechanism linked to urban regeneration and public spaces reorganization.

Being a cross-cutting topic at the city level, the successful organization and introduction of an integrated hum-animal urban policy must align with the existing administrative and societal culture of the specific location. Several crucial aspects need to be considered:

- The transformative nature of the concept requires it to influence many different actors at both city and societal levels
- The relevance of pilot solutions to effectively translate ideas into processes and vice versa. This fosters a collective reflective process that progressively accommodates and solidifies ideas, evidence, and the definition of innovative solutions in a positive spiral of co-design, co-deployment, and co-management.

In conclusion, as demonstrated by the Lucca IN-HABIT project, an innovation process typically demands a longer timeframe than a standard research project, particularly when the new ideas are rooted in a transformative change. Nevertheless, the process initiated in Lucca is set to advance step by step. This continuity is assured by the University of Pisa's sustained interest in leveraging this pilot project to establish and solidify a new idea and concept, forming alliances and pathways with interested stakeholders at both national and international levels.



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## References

- Boniotti, C. (2021). The public-private-people partnership (P4) for cultural heritage management purposes. *Journal of Cultural Heritage Management and Sustainable Development*. <https://doi.org/10.1108/JCHMSD-12-2020-0186>
- Marana, P., Labaka, L., & Sarriegi, J. M. (2018). A framework for public-private-people partnerships in the city resilience-building process. *Safety Science*, 110, 39–50. <https://doi.org/10.1016/j.ssci.2017.12.011>



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