IN-HABIT

UNIVERSITÀ DI PISA

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

D1.1. Inclusive Transformation Plan of Lucca

Lucca's Pilot

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 869227

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

D3.1 Inclusive Transformation Plan of Lucca into a Hum-an Smart City

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Executive summary

The D3.1 Inclusive transformation Plan of Lucca into a Hum-an Smart City gathers the results deriving from both the Top-down, as well as the Bottom-up participative process in the city of Lucca.
Activities has been held to engage stakeholders and Lucca community thanks to the collaboration of UNIPI, Municipality of Lucca, Lucca Crea, Simurg Ricerche.

Lucca IN-HUB structure has been set with a coordination team composed by UNIPI, Municipality of Lucca and Lucca Crea and a Core Group formed of representatives which will have the role of animating and encourage the involvement of new actors inside 5 thematic working groups (namely Citizenship, Tourism sector, Social sector, Pet care professional sector, Educator community).

Co-design of hard solutions (Animal Lines) has been held during the first year of the project - mostly online due to Covid-19 pandemic - and their deployment is in progress (the inauguration is due in June 2022).
Co-design of soft solutions has begun soon after the IN-HUB launch and will cover most of the second year of the project. The co-deployment and co-management results will therefore be addressed in greater detail in the next months.

Results of the participative processes will create innovative services able to boost Human-animal bond as well as to transform Lucca in the first European smart city with an integrated pet friendly policy.

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1. Introduction

Animals: from problem to resource

The presence of animals in an urban environment has always been managed, with few specific rules, with the perspective to protect humans in terms of hygiene and possible noises.

Concurrently, in countries with developed economy, life confined in built environments has increased a new need and a growing demand for contact and knowledge with nature and non-human beings.

Nowadays, there are many studies that look at the human-animal relationship and its possible outcomes on animals as on people. A set of information and detailed studies that show how the well-being of people, including vulnerable ones, can find new resources and new opportunities by enhancing human-animal interaction. In such respect, a new perspective should be designed in order to better consider the hum-animal perspective in smart cities, in terms of innovative nature-based solutions and by the way of social innovation processes. These processes could be able to mobilize animal resources and their interaction with people to increase quality of life of local inhabitants and support less empowered ones.

Smart cities must give new space to animals

EU Policies are looking for new solutions capable of improving the well-being and quality of life of citizens. Great attention is given to the environmental quality of our cities, sustainable mobility solutions, green technologies, energy saving, more sustainable food models as well as technological innovations aimed at improving information and communication processes between people (European Sustainable Development Goals n. 2, 3, 7, 9, 11, 13, 15; https://ec.europa.eu/international-partnerships/sustainable-development-goals_en). Nature-based solutions are therefore explored in order to match growing environmental needs, although mainly by looking to plants and their possible role. In this proliferation of ideas, the role that animals can play for the well-being of citizens almost always remains in the background. The potential of human-animal relationships to improve the quality of urban life has never been evaluated.

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Thinking and building a city tailored to the human-animal relationship brings with it several implications (i.e., for urban planning, in the organization and management of spaces, on operational and management methods, on the rules of behaviour of citizens, on the protection of animal citizenship, on the provision of innovative social services and supports for less empowered people etc.) All the mentioned elements are important for re-thinking about a new human-animal relationship.

The opportunity to design innovative solutions able to better fit emerging societal needs can be organised by mobilizing new resources - including those of animals - by the way of social innovation paths that must be managed and animated by promoting participation and transition management activities. The definition of animal welfare, of their vital needs, of the identification of new opportunities for sociality and economic activities linked to a new human-animal relationship requires the resolution of doubts and questions that need a coherent vision between the various stakeholders involved. The mobilization of unexpected resources like animals in the cities in the provision of innovative solutions in various fields –like social services for specific targets of people, educational activities for youngsters, new citizenship activation, innovative economic activities related to animal management and tourism- needs a reorganization of shared visions, creation of a new knowledge and translation into new rules and perspectives among actors, competencies and sectors.

For this reason, the participation of citizens, associations, administrators, entrepreneurs is essential to focus attention on the role and potential of animals in the city, to develop new ideas and new awareness that can be translated into solutions to enhance human-animal relationships in an innovative way: creation of new services and / or new skills, new job opportunities, etc.

All these aspects will be investigated in the Lucca Hum-animal project through the identification of experimental actions, the evaluation of their effectiveness, the codification of the implementation rules in order to transfer them to other cities. The general perspective is to generate a new understanding about the potential of the hum-animal interaction in the innovative cities, and to generate a new integrated policies able to support cities and municipalities in order to activate and to valorise such resource and animal nature-based solutions by the way of an integrated hum-animal city policy.

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Lucca: pet- friendly city

Lucca is a medium-sized Tuscan city surrounded by greenery, near to the banks of the Serchio river, suitable for both people and pets. Thanks to its not excessive size and its flat lay it is suitable for being traversed by foot, by bike or with pets on a leash, perhaps along the tree-lined city walls.

Lucca is a pet-friendly city and very suitable also for elderly people and children. The city center is almost 80 percent car-free and, therefore, safe for pets, as well as presenting many drinking fountains scattered throughout the city where pets can drink and refresh. Furthermore, there are many restaurateurs who already welcome animals in their spaces (Tuscan regional law 59/2009 art.21).

In addition to the more environmental aspect, Lucca since a long time pays special attention to the welfare of animals and the correct cohabitation between human and animals in all aspects, also through various ordinances issued by the Municipality over the years. The first ordinance, followed by others over the years, was n. 131504 of 24/12/2015 which prohibited the use of fireworks, firecrackers and pyrotechnics shows in public open spaces (e.g., streets, squares and public areas) where children, elderly people with special vulnerability and animals can pass through or can be present.

In the document it is emphasized that "*the intense noise and smoke generated by the uncontrolled use of fireworks, firecrackers and pyrotechnic shows generates, in the most fragile subjects and in animals, phenomena of high stress, disorientation and panic as well as, in general, possible direct and indirect damage to the physical integrity of those who are accidentally hit*".

All the features described above, together with the many participative process that the city often held to engage its citizens, make Lucca an ideal place to develop the IN-HABIT project.

The "Human animal bond" concept

Lucca IN-HABIT project is based on the innovative concept of Human-animal bond:

"*The human-animal bond (HAB), can be defined as a mutually beneficial and dynamic relationship between people and animals that is influenced by behaviors considered essential to the health and well-being of both. The bond includes, but is not limited to, the emotional,*

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psychological, and physical interactions of people, animals, and the environment". (The American Veterinary Medical Association).

As the definition above explain, human animal bond is a multidisciplinary concept that involves not only the relationship between human and non-human animals but it also includes the interaction of this dyad with the environment that surrounds them. This is in line with the One health approach oriented to "*design and implement programs, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes*" (World Health Organization) and consequently, with the main purpose of IN-HABIT project in Lucca and the demand launched by EU Commission in the call for innovative smart cities able to pay attention on innovative public spaces and new solution for less empowered people.

The purpose of the Inclusive Transformation Plan in Lucca is to provide an exhaustive report of the activities carried out in terms of:

- Creating new knowledges about Human-animal bond topic
- Engagement of stakeholder and citizens
- Co-design of Visionary and integrated solutions
- Challenges and achievements faced during the process

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2. IN-HUB establishment: organization, methods and achievements

2.1. Establishment of core project team & stakeholder mapping

Establishment of core project team:

University of Pisa (UNIPI) as research partner and work package leader (WP3), Municipality of Lucca as local public authority with administrative competence, and Lucca Crea as private company owned by the Municipality of Lucca with expertise in activities related to education, promotion, and dissemination are the components of Lucca's project team.

Roles of different partners:

University of Pisa: Department of Veterinary Sciences is majorly involved and its expertise regard:

- Rural Development and Agricultural Economics with a focus on design, social innovation, transition management paths, participatory activities and policy implementation of nature-based solutions in social farming and animal assisted activities;
- Veterinary Physiology field with a large expertise in animal behaviour, animal assisted intervention and role of animals in education and care.
- Associated with them experts in pet infrastructure design and experts in city planning from the Department of Civil and Industrial Engineering are also involved in the project.

University of Pisa plays a fundamental role as WP3 coordinator and innovation centre supporting the overall activities planned and, especially, the research activities, the participatory process, the monitoring and evaluation activities.

Municipality of Lucca: with the involvement of different department (social, educational and gender policies; economic development; urban planning, environmental policies; public works; cultural and touristic policies). In the last years relevant resources have been increasingly invested by the Municipality for improving animals' welfare. This has been done through the establishment of a specific body: the "Osservatorio degli affari animali" (Observatory of the

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animal affairs); regulatory initiatives as the Cohabitation Human-animal Regulation and the realization of some equipped public recreational areas for dogs.
The Municipality of Lucca is involved in all the tasks of the project and, in particular, it will have a crucial role in the deployment of the hard and soft solutions (respectively the path and areas of the Animal Lines, and all the innovative services that will be organized and planned around them)
Lucca Crea: with the involvement of experts, will develop communication and dissemination activities as well as gamification.
Lucca Crea, leveraging its experience in educational games, will co-design games based on the human-animal relationship. It will also contribute designing a board game to be used for educational and dissemination purposes, especially in school environment.

Stakeholder mapping:

Activities to map stakeholders of the city has been held soon after the beginning of the project (December 2020) and is an on-going activity towards the project evolution thanks to the involvement of Tesserae who provided the useful tools and organized a workshop to lead such activities.
At first, UNIPI Team identified five possible thematic areas to engage stakeholders, namely: citizens and association involved in the activities around pets and their rights, social sector, pet care practitioners, economic sector (in particular all activities related to pets' services) and tourism sector.
After Tesserae's workshop the network of actors was expanded to include the health sector and some departments of the Municipality of Lucca. Meetings were held with them to present the IN-HABIT project and to identify the associations linked to the animal sector to contact and involve in the project.
The network expansion activity also had the task of involving citizens, groups and associations who, due to various kinds of constraints (e.g. knowledge, social and / or economic exclusion, etc.), risked to remain excluded from the benefits of the IN-HABIT project - for example, people with animals relationship's problems (like fears or immune depressive pathologies or cultural problems). This gave us the opportunity to reflect on to the most effective ways of including

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these people also because one of the focuses of IN-HABIT is to guarantee a GDEI approach (that will be further described in chapter 3).
The stakeholders identified at this stage cover all typologies provided from Tesserae, namely Public, Research, Community and civic actors and Private sector, with a prevalence for Public and Community sector (appendix 1).
During the training of the Local Community Activators, we updated stakeholders mapping including people engaged during the first workshops held in the period February - May 2021 to co-design the Animal Lines together with the community (see chapter 4 for a more detailed description of activities).
At this stage stakeholders such as education (schools) and social associations (working with women, elders, people with disabilities), were involved.
People were engaged through personal contact, promotional event and press release that allowed us to widen our possibilities to spread the IN-HABIT project in the city.
The list of stakeholders is regularly updated thanks to the contributions of both UNIPI and Lucca municipality. After the IN-HUB launch, a further increase of the number of people involved, has been observed, thanks to word of mouth.

2.2. Open call and communication campaign to select the members of the local IN-HUB

Selection of the IN-HUBs members

The IN-HUB was designed as a platform aimed at discussing ideas, possible problems, innovative solutions and services on five thematic areas (citizens, social sector, tourism, professionals and education). **The five thematic working groups are coordinated by animators that, at least in the initial phase, were identified by the councillors involved in the IN-HABIT project. Meanwhile, the Municipality of Lucca sent official invitation (appendix 2) asking to be part of Lucca IN-HUB to people / associations belonging to the five-sectors identified for the thematic working groups.**

At this stage University of Pisa was in charge of finding people of the pet care area working locally. Researchers made a list of possible stakeholders based on personal acquaintances, and

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on local practitioner who had a website or a social media page for their business. The list was then made available to the Councillor for Economic Development who sent the invitations. Throughout this phase the GDEI approach was kept in mind to be able to also involve people at risk of exclusion.

On 17th January 2022 a first meeting with the Core Group was held to explain the IN-HABIT project (since for many of them it was the first participation) its aim and structure, as well as the member's roles of the IN-HUB. Ten people (2 for each thematic working groups) were appointed as representatives and members of the Core Group. The representatives were distributed as described in the table below:

Table 1 – Distribution of Core Group representatives

Thematic working groups	Representatives
Social sector	Expert in social services
	ASP Carlo del Prete
Professionals (pet care)	Dog trainer
	Veterinarian
Tourism sector	2 experts on tourism
Citizen	2 former teachers active in the community
Education	Head teacher
	Teacher

Official local launch

On 19th January 2022 the official launch of Lucca IN-HUB was held in online mode through the Zoom platform (due to Covid-19 increase of cases; appendix 3). UNIPI, Municipality of Lucca and Lucca Crea actively participated at the organization of it.

Prior to the event a press release was published on the 18th of January (appendix 4) to promote the launch with the citizenship. In addition, the transversal partner Book On a Tree helped us to share the news and promote the event, publishing an article on the official website of IN-HABIT

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project both in Italian and in English (appendix 5), and spreading the voice also on their official social pages (Linkedin).

The event lasted 3 hours and included:

- **Plenary session**: introduction to the event; presentation of the project and the IN-HUB platform; organization of the World Cafè.
- **World Cafè**: division of the participants into working groups based on their respective topics of interest; execution of the work process.
- **Plenary session**: presentations by a representative from each thematic group to feed back the results of the discussions conducted on their respective topics; discussion and conclusions.

Fifty people attended the online event (appendix 6). Participants were divided into five groups on the basis of their interests and skills and invited to join the table to which they belong. To make the world café, people were sorted into five virtual rooms (one for each working group). Each room was moderated by a researcher from the University of Pisa flanked by another person (from UNIPI or the Municipality of Lucca) as the minutes' taker. The activity lasted about an hour and allowed researchers of the University of Pisa to collect ideas and ways of developing these ideas about possible solutions to be implemented in the city. The need to improve the knowledge and education of citizens towards animals (both pet and wild), to sensitize children and school students of all grades to the human-animal relationship and the right behavior to have with specific pets has emerged. Other ideas have emerged regarding:

- The need to develop new employment opportunities for young companies and operators in the pet care sector;
- New solutions in the field of tourist accommodation for those who visit the city with an animal;
- The improvement of services that involve interaction between pets and the elderly, and encourage the creation of new rules for the reception of animals within the nursing houses.

At the end of the discussion sessions of the thematic groups, the representatives of each table had the opportunity to return what emerged in a plenary session. Numerous common elements / ideas emerged from the various table, as well as transversal ideas to be integrated between

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the various thematic groups. All this gave the participants the idea that the IN-HABIT project is a concrete project capable of developing real connections between the different actors.
This first launch event of the IN-HUB platform will be followed by periodical meetings to review the ideas that have emerged and develop the co-design of soft solutions. In addition to engage new stakeholders and develop new services aimed at enhancing the human-animal relationship with the aim of making Lucca the first HUM-ANIMAL smart city.

2.3. Assignment of specific roles (local community activators/representatives, UAB, thematic sub-groups) and their activities

State of the art of Local community activators (LCA)

For most of the public stakeholders involved in the project, the human-animal bond as a nature-based solution (NBS) to increase the quality of life of people and, in particular, vulnerable one, has emerged as an innovative, unexpected and unusual concept for the city of Lucca.
On the basis of this evidence, a specific activity was dedicated to the creation of adequate knowledge and awareness of public administrators. Meetings were organized with the councilors and the technical structure of the departments of the Municipality of Lucca involved: councilor for social affairs, councilor for education and gender issues, councilor for economic activities, councilor for tourism policies, councilor for public works and councilor to the environment. The engagement of the public parties involved also the technical staff operating in each department.
Due to the full agenda of the many actors involved and the pandemic situation, this process resulted fragmented in many small meetings - quite often online - more than as a common reflection. However, two meetings were held at the presence of many councilors altogether.
In addition, the definition of an innovative shared idea, regarding the opportunities linked to the design of hum-animal NBS, was demanding in terms of mindset change and translation into practical and applicable solutions in the different field of interest of each councilor's area of activities.

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This implicates several administrative and executive steps to be respected (at governance level) and has inevitably generated a postponement in the establishment of the IN-HUB platform in relation to the set deadline (September).
The recruitment of local activators by the municipality of Lucca has been postponed due to the delays in the public competition for the personnel selection due to the pandemic situation. **The recruitment of 2 local activators for the Municipality of Lucca was then completed in the end of November 2021. From the beginning of the project, until November 2021, the UNIPI Team replaced the LCAs in each activity envisaged by the IN-HABIT project supporting the overall process in the first phase of the project.**

Core Group representatives

In December 2021, new meetings with the Lucca administration for the co-designing of the IN-HUB involving all the councilors and technicians of each department concerned were organized.
UNIPI Team proposed a conceptual idea of the IN-HUB and a list of topics, related to the issues to be faced with the IN-HABIT project and to be developed during the work of the platform. The Municipality of Lucca has therefore thought about possible people to be included in the project, choosing them also among those who had participated in the previous phases.
During this process, beside in addition to the involvement of various councilors, some name of people that should have formed the IN-HUB Core Group were identified.
Following further meetings between the Municipality of Lucca and UNIPI Team, the coordinators were identified, and contacts were initiated for their involvement in the IN-HUB.
The coordinators of the Core Group, have the task of promoting the IN-HUB and involving people who are part of their area of expertise to bring them together in various working tables, write reports of the activities carried out and manage the initiatives / activities that tables will decide to develop in concert with the Core Group.

Thematic Subgroups

The structure proposed will be made of representatives of various subjects of interest that will be divided, subsequently, in our idea, in 5 thematic working groups. These groups are

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open to the development of other discussion topics that may arise in progress as well as collaborate to discuss shared themes with the other thematic working groups

- **Citizenship**: Lucca citizens (pet owners as well as non-pet-owners)
- **Tourism sector**
- **Social sector**: NGOs and associations working with women living alone, elders, people with disabilities, ethnic minorities, LGBT people
- **Pet care professional sector**: Lucca veterinarians, dog educators/trainers, groomers, pet shops/animal feed shops, people involved in dog/cat shelters
- **Educator community**: schools' teachers.

Activities led by the different parts

The IN-HUB has been set with a coordination team composed by UNIPI, Municipality of Lucca and Lucca Crea. UNIPI Team provides its organizational skills and the methodology to establish the IN-HUB but also to help moderate the discussion of the thematic subgroups and to feed the process with scientific evidence. The Municipality of Lucca brought its political skills and political support during the process of engagement of the first representatives for the Core Group and, thanks to the fact of having a high level of knowledge of the city and citizens, provided practical and logistic help. Lucca Crea has the task to help in expanding and strengthening the knowledge of IN-HUB and its activities using its skills in communication. In the next future, they will also have the task of creating a board educational game to implement people's knowledge of the benefits of human-animal bond and organizing events to promote the game.

The Core Group is a sort of board composed by the first representatives involved during the establishment of the IN-HUB. These people will need to have the ability to animate the group discussion and encourage the involvement of new actors as the work progresses as well as to communicate with the political components of the Municipality of Lucca.

The main task of the five thematic subgroups is to co-design innovative soft solutions related to the topics of interest through a participatory and progressively expanding process. Soft solutions are meant to be various proposals aimed at creating new services and opportunities for the city. Part of the discussion will be progressively focused on the translation of the path into

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suggestions and an integrated hum-animal city policy (with a chart, a strategy a plan of actions and possible guidelines on specific aspects) that can then be replicated in other urban contexts. The meetings of the tables will also be an opportunity to design activities and events feasible along the Animal Lines that will be completed during the year 2022.

The thematic sub-groups will meet periodically with the aim to develop /suggest innovative ideas for the municipal administration which will then have to verify their feasibility and, if so, implement them. UNIPI will support in the codifying process of the established solutions formalized through administration, to evaluate the overall process, its impact and transferability to other contexts.

Local Community Activators will also be included within the IN-HUB structure. They will have the task of carrying out a large part of the management of the platform, as well as of keeping the animation of the thematic working groups active with the coordinators.

In addition to the work for the IN-HUB, Local Community Activators have already performed several tasks since the beginning of the project, mainly with the purpose of being a local and transversal connection point between the partners and the city, including:

- Participation in trainings for LCAs organized by IN-HABIT project;
- Participation in meetings with transversal partners to help them in making contact with the city in order to find the necessary information for the project;
- Help in the translation from English to Italian of documents and brochures of the project including the questionnaires proposed by ISIM and UREAD as well as help in their distribution;
- Help in finding information of various types and in the translation of the documents provided by BOT for the communication and dissemination actions.

As already said, waiting for the recruitment of the official LCAs from the Municipality of Lucca, until the end of November 2021 all these tasks have been carried out by 2 people from UNIPI Team.

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2.4. Setting up principles, procedures, and processes of collaborative development and participation

IN-HUB structure and principle of functioning

Structure of the IN-HUB has been discussed together with Municipality of Lucca and Lucca Crea.

Transversal Partner Tesserae also had an useful role in this process giving us advices and feedbacks.

The main structure will be formed by:

- **Moderators/coordinators** (temporary): Municipality of Lucca (political skills), UNIPI (organizational skills and work methodology), Lucca Crea (communication skills)
- **Core Group/Council**: Representatives of the target groups of interest for the IN-HABIT project on Lucca, aiming to create innovative pet policies solutions. About 10 people (ideally 2 people for each "thematic group of interest" who act as coordinator and sub-coordinator and intermediaries with diverse councilors' areas of interests) to which 2 people from UNIPI and 1 from Lucca Crea are added in the first phase. These people must have the ability to keep the animation of the groups active, promoting the involvement of more and more new actors as the work progresses, to share inside the Core Group and to crosscheck possible integrations and common actions along the activities, to report and to build dialogue with the single councilors deputed to single areas of interest for each thematic group
- **Five working thematic groups** (as described in chapter 2.3).

Regarding incentives for participation, we did not use them until now, and we did not use it for the launch of the IN-HUB platform. This to be sure that people took part in it because they were really interested in giving their support to the IN-HABIT cause. Nevertheless, we are planning to discuss this aspect with transversal partners to have suggestions and advice.

Methodologies

The methodology of the process has been designed according with the transition theory and the transition management processes like:

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- **Arena setting**: with different stakeholders to generate partnership and an area of common interest for further discussion and activities;
- **Agenda setting**: where the actors involved agree on a common pathway and a sequence of actions to be taken together;
- **Pilot initiatives establishment**: according with the definition of specific innovative solutions to be tested in the city both along the designed Animal Lines as well as in the city area according with diverse specific and dedicated places;
- **Reflexive activities based on the outcome emerging from the pilots.**

The process should facilitate the passage from single innovative initiatives towards the definition of a cluster of emerging initiatives in order to generate a new knowledge towards the common reflexive activity run into the Hub by participants, before translating the new knowledge into guidelines, and new dedicated policies and codified solutions.

The management of the arena will be organized and managed according with the following elements:

- Creation of an arena to encourage discussion between stakeholders;
- Creation of thematic working groups on the five areas of interest; in order to maintain a lively and continuous dialogue between the representatives of the various sectors, the use of participatory processes will be focal (focus groups, workshops etc…);
- Agenda of possible activities with periodic meetings of the Core Group to update on the issues discussed, problems, solutions, ideas that emerged in the working thematic groups and the organization of integrated discussions;
- Progressive co-design of innovative solutions that will have to be discussed among all members of the Core Group, so that they can be formalized and proposed to the administration which will ultimately approve and transfer them into the pilots;
- Organization and management of the pilot initiatives with the involvement of the hub participants;
- Common and participatory monitoring and evaluation activities in order to learn from the pilot and improve the collective knowledge around them;
- Improvement in the following cycle of discussion of the lesson learnt for further discussion and co-design.

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Tools provided from transversal partner Tesserae will be also used during workshops and discussions of the working groups.
For example:

- *Thread mapping* is an interesting ad useful tool to be used during focus groups or other participative processes
- *Urban reconnaissance* would be extremely useful to allow IN-HUB members to explore the path of the Animal Lines and consequently give them innovative ideas to be discussed and implemented.

Site visits from Tesserae are scheduled to monitor the IN-HUB work, outcomes and results; at the same time thanks to their expertise in participative processes we will be organized specific workshops and master class that they will coordinate.

Operational Plan

Since Lucca IN-HUB has been launched, monthly meeting will be organized to let the thematic groups meet and discuss innovative solutions and services.
After some discussions with the Municipality of Lucca and Lucca Crea, we came out with the possible plan regarding meetings within the IN-HUB. There will probably be a convocation of the Core Group once every three weeks to discuss about planning of events, workshops, possible issues emerged during working tables meetings. Partner of WP3 will meet every two weeks to update and to organize local communication, that will be managed by Lucca Crea with specific Facebook and Instagram pages and possibly a website dedicated to the IN-HUB. Once every two months the Core Group together with partners from WP3 will organize an event for the whole IN-HUB. Meanwhile, in between events, thematic groups will get-together to work on specific tasks or to co-design, facilitated by WP3's partners and Core Group, new services and solutions.
The IN-HUB will also be the place where training activities or seminars regarding the specific themes of IN-HABIT project in Lucca will be held. Training days, or "master class", as we want to call them, will provide a good switch from traditional meetings and will also be a good opportunity to engage new people on board of the IN-HUB.

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Master class will be held both by transversal partners of the project like Tesserae, Design for Change and UNIPI but can also be organized by local professionals.
The main purpose of the IN-HUB establishment is to co-design activities to create innovative and inclusive solutions, to improve people's health and well-being thanks to human-animal relationship.
Consequently, the two most important tasks, in the short period, are:

1. Co-design of soft solutions
2. Co-design of pet friendly policies

As for the top-down process of the soft solutions, UNIPI together with the Municipality of Lucca has thought about some possible actions that the departments could carry out after discussion and approval by the IN-HUB working groups (further description are present in chapter 5.2). This will be the starting point for activating a process of involvement of the local community in order to generate and increase the "collective knowledge" aimed at identifying solutions to improve the quality of life of people through human-animal relationships.

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3. Co-design of visionary and integrated solutions (VIS): top-down driven process

3.1. Working methods and management of the Toolkit

The IN-HABIT Toolkit aims to provide a set of guidelines, methods and tools for the wider engagement of stakeholders in the People-Public-Private Partnerships (PPPPs). The Toolkit is the basis for the training process of the Local Community Activators and provides the reference set for the management of the four local IN-HUBs established in the cities of Córdoba, Lucca, Nitra, and Riga. It supports the accomplishment of a fully inclusive process of co-creation, co-design, co-management, and co-monitoring of the innovative solutions envisioned by the four local PPPPs, with specific attention at the engagement of less represented and more at risk of exclusion stakeholders.

The toolkit includes:

- The Glossary: defines a shared vocabulary among partners of the IN-HABIT project. It facilitates both the internal communication and cooperation among the partners during the implementation, and the external communication of its objectives and actions towards a wider audience.
- The Gender, Diversity, Equity, and Inclusion (GDEI) guidelines: to support the wider, just and equal support of all social groups to the process.
- IN-HUBs Management guidelines: which provide tools and templates for setting the local PPPPs coordination structure, co-monitoring procedures, and to support the co-creation of innovative solutions with citizens and stakeholders.

This Toolkit is aimed at territorial change-makers, helping them to find useful instruments and methods to steer local activities and engage stakeholders in wide people-public-private partnerships (PPPPs). These tools and methods are aimed at transforming places and behaviours through visionary solutions and inclusive processes. The Toolkit has a particular focus on gender, diversity, equity, and inclusion in promoting the health and well-being of inhabitants in the four cities of the H2020 IN-HABIT project.

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The toolkit was useful for both research partner and at city level.

The glossary, providing a shared vocabulary, allowed members of the IN-HABIT project to agree on a wider shared meaning of the terminology used within the partners and to avoid possible misunderstandings. In addition, since IN-HABIT is a multidisciplinary project, the glossary allowed the sharing of different knowledges between partners, making easier the internal communication and the external dissemination of the project and its purposes.

The GDEI approach is an innovative key aspect of the IN-HABIT project that will help researchers, cities and partners to guarantee the fair distribution of health and well-being to everybody, and reduction of exclusion of vulnerable groups. The GDEI approach was kept in mind both during the engagement of stakeholders for the establishment of the IN-HUB and for the organization of every participative process, workshop, lab as well as during the definition of specific indicators to evaluate Inclusive Health and Well-being (IHW). Furthermore, the GDEI guidelines will be crucial during future implementation of innovative solutions and their management together with citizens, associations, and NGOs.

The IN-HUBs Management guidelines provided researchers and city partner with tools and templates to be used for launching the platform and managing it. The “Stakeholder mapping”, for example, was widely used during engagement of stakeholder both for co-design of hard solutions (which, in Lucca, was held before the IN-HUB launch due to technical and administrative decisions), and for the IN-HUB’s establishment. While more organisational tools like “shared calendar” and “coordination timelines” allowed partners to arrange and to coordinate meetings more easily and to keep track of milestones and key events at project level as well as in the cities. Other instruments like the “Organisational table” and “Organisational Chart” allowed partners to keep track of decision process (in terms of who is involved and how decisions are taken) within the IN-HUB. To record progress of the IN-HABIT project, and to report difficulties, solutions inspirations, and innovative elements of the engagement process of local stakeholders, the toolkit provides the “engagement diaries'” template. Entries of the diary can be written from members of the IN-HUB or can collect interviews or opinion of key stakeholder. The diary would be extremely important not only to have the exact record of activities held within the platform but also to bring people’s point of view about IN-HABIT main themes. The engagement diary was widely used to describe co-design process for the Animal

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Lines (engagement of stakeholder, methodology used, suggested solutions) and we planned on using it to keep track of IN-HUB meetings and their outcomes.

3.2. Training of LCAs in working methods

Local community activators' training was held from March to April 2021. The aim of the training was to provide members with knowledge and tools on how to engage their own city inside the IN-HABIT project, to reach out to people living in the neighborhood (with specific attention to those at risk of exclusion and discrimination) in order to engage them in co-designing and co-creating project solutions.

Local community activators are the link between cities and project partners; they support university's teams and other project partners in desk and fields research:

- Taking care of secondary data collection through networking with local private and public entities
- Translating and making reports on data collection
- Taking care of primary data collection through interviews, questionnaires, workshops and focus groups.

The training was organized in five days with the aim of empower local community activators to perform digital communication tasks, gender-based and diversity-based research and impact assessment activities, organization and animation of events and citizen engagement, co-design and research tasks in the field.

The program consisted of the following lessons:

1. Understanding the transformation process in IN-HABIT
2. Gender diversity equality & inclusion approach
3. Communication & storytelling
4. From vision to co-design
5. Managing the IN-HUB

Since the process of recruitment of local activators from the Municipality of Lucca was slipped down due to the complexity of the organization of a public selection during the pandemic situation, two people (one from the University of Pisa and the other coming from Simurg

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Ricerche) replaced them. They followed the training with the aim of transferring tools and knowledges to the official local community activators once they would be hired. Their recruitment by Lucca municipality was then completed in the end of November 2021 (with one of them being already operative while the other one was formalized in the beginning of January 2022).

The training was extremely useful not only because it provided local community activators with tools to engage their cities and to manage innovative participative platform, but also because it created a strong bond between the former and transversal partners of IN-HABIT project. Being able to follow specific lessons held by the partners themselves allowed LCAs to better understand methodologies and processes, why there were the need to use a particular monitoring or impact assessment tool rather than others. In addition, the training promoted sharing of information between cities, regarding what has been done, what innovative solutions has been proposed, how to engage specific categories of people or how to solve particular problems. Sharing achievements and challenges is the winning strategy to find right solutions and to overcome possible issues.

3.3. Co-design of IHW indicators

Detecting the expectations of local inhabitants regarding their health and well-being. A contribution from the co-design of key impact indicators in Lucca

The co-design of the Key Impact Indicators, process run within the WP7, helped identify the expectations and needs of the target groups of the VIS in each pilot city through the inclusion of citizens' point of view, especially of those representing groups at risk of discrimination and exclusion.

In particular, through the direct consultation of local inhabitants and representatives of groups at risk of discrimination and exclusion, project partners have identified the expectation of the project target groups in terms of possible changes that the IN-HABIT solutions may produce on their health and well-being.

This consultation process was carried by UNIPI's local research team in collaboration with partner ISIM as a joint research activity across WP3 and WP7. In fact, the result of this bottom-

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up co-design process have been used both in WP7 for the definition of the project impact assessment plan as well as in WP3 for the local need assessment and design of the VIS.
In particular, in Lucca, on 4th December 2020 an online workshop was run by ISIM and the UNIPI research group involving 12 inhabitants (2 males and 10 females).
Among the participants, 7 of them were members of local neighborhoods committees and NGOs, while the rest of the participants were self-employed, students and workers of the local public administrations and health care services.
The first discussion point of the workshop was about the most relevant aspects of health and well-being perceived by the participants. The inhabitants in Lucca have identified the following key aspects which contribute to their health and well-being:

- Quality of social relations ("freedom of movement… possibility to meet others in person, talk to each other not through a screen")
- Quality and quantity of free time
- Contact with nature, socialization and relax in the green spaces
- Quality and accessibility of the public green areas, especially for persons with disabilities ("Living and moving in spaces designed with criteria of functionality, accessibility and beauty…walking in neat and clean places… having accessible spaces, on a human scale, not invaded by traffic")
- Safety in public spaces ("illuminated spaces, living in a place where you feel safe and not exposed to aggression, robbery, etc., …have the freedom to frequent green areas that are currently not frequented because they are unsafe").

The second discussion point was about the expected changes in terms of health and well-being that may be produced by the IN-HABIT solutions in Lucca.
They expressed their opinion on both expected changes for all as well as about changes affecting some social groups at risk of discrimination and exclusion at local level.
Compared to the partners' view, the inhabitants' perspective showed a higher attention towards security and quality of the green areas, as well as to the relational well-being aspects.

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In particular, the following additional expected changes emerged from the inhabitants' consultation: "decreased domestic isolation", "improved sense of freedom and comfort in personal relationships", "improved equal access to pets' care services", "improved quality of free time in public spaces".
The most significant expected changes identified by the participants as possible results of the IN-HABIT solutions in Lucca are described in appendix 7.
The last discussion point was about the effect of Covid-19 pandemic on their health and well-being. The inhabitants of Lucca who participated in the co-design workshop identified the effects, which are transversal to the dimensions of social well-being, economic well-being, psychological well-being and healthy lifestyles (appendix 8).
These findings from the consultation of local inhabitants were analyzed and complemented by the literature review and the perspective of the research partners in order to formulate a set of city-specific Key Impact Indicators and research assumptions regarding the expected changes that could be attributable (at least in part) to the Lucca VIS (see D7.1 for more detail on this co-design process).

The research assumptions on the expected changes on IHW which are likely to affect the target beneficiaries in the intervention group in Lucca are summarized in the appendix 9.
In addition to this, the consultation of the members of NGOs representing some of the groups at risk of discrimination at city level allowed to get a deeper insight on the perspective of those groups regarding their needs and expected changes on health and well-being.
In Lucca, a brief survey dedicated to the representatives of those NGOs advocating/protecting people at risk of discrimination and exclusion at city level was distributed in months 5-7.
The questionnaire (see D7.1 Annex 3) consisted of two sections: one aimed at profiling the characteristics of the organization, its mission and vision, and a second, more specific, aimed at collecting perceptions and opinions about the perceptions of health and well-being as well as the expected degree of contribution of the IN-HABIT solutions to health and well-being of groups at risk of discrimination and exclusion.
In Lucca, a total of 6 NGOs were consulted representing/working with: women, ethnic minorities; elderly; persons with disability; LGBTIQ+ people.

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In particular, the results of question 9[1] were analyzed and taken into account within the bottom-up co-design of the VIS in Lucca. By answering to this question, the local NGOs gave key information on **target-specific expectations in terms of changes/improvements of health and well-being in relation to the different types of project solution, both digital, cultural, nature based and social innovations (appendix 10).**

3.4. Secondary data collection

Among the quantitative research action within the proposed plan, ISIM will run the analysis of secondary data (open data, administrative data and available statistics) with the help of city partners UCO, CORD, SUA, NITRA, UNIPI, LUCCA, BSC and RPR.
This activity will be carried out twice (ex-ante and ex-post) during the project lifetime, and it will be used for the analysis of the 4 city context with the twofold aim of:

- better interpretation of the IN-HABIT results
- discounting external factors who may have contributed to the changes affecting inhabitants' IHW.

Secondary data have been collected by city partners and analyzed by ISIM.

The preliminary analysis of the context of the territory of Lucca was carried out between end of May and July 2021, through the creation of a database defined by the research groups of UNIPI and ISIM.
The database provided was organized in thematic areas, covering various aspects of the quality of life of the resident population, in social and economic terms, and those of availability of services.
As a whole, the objective of this study was to outline the starting context for the implementation of the project. In particular, the thematic areas identified were:

- **DEMOGRAPHY**
- **SOCIO-ECONOMIC WELL-BEING**
- **B2. POVERTY AND INCOME**
- **B3. HOUSING**

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- **B4. EDUCATION**
- **B5. EMPLOYMENT**
- **B6. CRIME, DISCRIMINATION AND VIOLENCE**
- **B7. CONSUMPTION**
- **B8. TIME USE**
- **C. HEALTH**
- **C1. HEALTH DETERMINANTS**
- **C2. MOBILITY**
- **C3. MENTAL HEALTH**

Each thematic area, in turn, was articulated in a set of indicators, whose construction required the search for primary data. Where possible, official sources with a high level of reliability and a good level of usability have been used, mainly ISTAT sources and statistical archive sources of the Tuscany region. In the absence of useful feedback through these sources, contacts have been initiated with the individual competent offices of the Municipality of Lucca - which have provided archives created at local level - and relevant works on the subject of the survey available online were consulted.
The cognitive frame, for each thematic area, has therefore been outlined through the indicators reported in the appendix 11.

3.5. GDEI determinants of spatial and functional elements/or Gendered landscape

The gender and diversity landscapes aim to develop an integrated understanding of inclusion, gender equality and sustainable urban development. It considers how gender and sexuality are portrayed in communities, towns, cities and regions from a gender equality and diversity perspective. Viewing families, communities, towns, cities and regions from a gender equality and diversity perspective requires understanding of the main differences affecting the use of urban space.
Gendered landscape improves inclusivity through three pillars:

- institutions,

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- lived experiences,
- health and well-being inequality.

The first pillar examines the integration of gender in decision-making. The second pillar adopts a group perspective to analyse the urban space on specific dimensions of life, such as work, education, caring, transport, leisure, etc. The last pillar analyses group differences in health and well-being from a spatial perspective.
Each of the pillars has a specific objective within the overall aim of developing an integrated understanding of inclusion, gender equality, and sustainable urban development.

The gendered landscape will be fully integrated within the human-animal bond, the specific dimension of intervention of the city of Lucca. To ensure that the gendered landscape integrates the key aspects of each city and will serve policymakers and the public in the most effective way a participatory approach has been followed.
The approach to establishing gendered landscape has three phases:

- assessment: includes stakeholder engagement and city-wide and area-specific assessment
- design: focuses on the analysis of challenges and preparation of ideas and solutions
- implementation: includes an action plan and sharing and validation.

In Lucca, researchers from UNIPI, in the role of local community activators, helped University of Reading (UREAD) to collect data about the first pillar. The objective of this pillar is to produce a comprehensive mapping of the institutional framework that supports decision-making at the city level. Data collected inform UREAD of the extent to which gender and diversity aspects have been taken into consideration in policy making at different levels, from the political commitment to the possible implementation of action plans.
This is an important aspect of the gendered and diversity landscape of the city. Each step of the policy making cycle can have undesired and unexpected discriminating effects. Mapping policy makers' commitment to gender, diversity and inclusion, their translation into effective strategies and plans, and their implementations, will help to understand whether there are gaps and how these can be filled.

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A specific questionnaire investigating gender, diversity and inclusion inside institutions was filled by the councillor to education who is also in charge of gender budgeting, together with the help of local community activators in September 2021.
The questionnaire was divided in two main sections, namely political and executive, and administration. The former asked about number of city government and political parties by gender, presence of members who are in charge of equal opportunities and gender equality, if there are any political objectives on equal opportunities/gender equality, and if the city states target about them. The second part focused on administration, in particular on budget dedicated to equal opportunities/gender equality, on the presence of possible strategy to enhance equality, and on surveys conducted in the past years by the administration.

3.6. Survey, interviews and focus groups/Baseline study on IHW

The general objective of the Lucca pilot is to promote inclusive mental health, social and relational well-being among local inhabitants in the city of Lucca by creating the first Human-animal (Hum-an) smart city in Europe.
IN-HABIT assessment framework includes both quantitative and qualitative research tools to monitor the inclusive health and well-being in the four cities as a result of the implemented innovations during the lifetime of the project (ex-ante and ex-post).
Regarding the ex-ante assessment of the state of health and well-being of Lucca's inhabitants (Task 7.3, WP7), a baseline study was carried out in all the city neighborhoods inside and outside the walls in a radial pattern. **The study included 3 types of data collection** (key findings in appendix 12):

- **survey including health and well-being indicators;**
- **one focus group with 10 participants;**
- **5 storytelling on relevant health and well-being dimensions.**

For what concern the **survey**, it has been promoted by UNIPI and other partners in Lucca from 1st September 2021 to 30th October 2021 by various means:

- sharing the survey link with several organizations:

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- Lucca Crea and University of Pisa shared the link among their staff and acquaintances
- Croce Verde
- Anfass, Unione Italiana Ciechi and Croce Rossa (we wanted to bring them also paper questionnaires, they were contacted and told us not to give them the papers as they rarely met due to Covid-19 pandemic)
- LuccAut
- Città delle Donne
- Caritas
- Khetanè
- La mano amica
- Lucca senza barriere
- Representatives of the social tables on marginality and disability have been contacted to spread the link among the associations they "coordinate"

- meeting in presence:
- Focus group carried out on Saturday 9th October 2021, where representatives of organizations were present (participants were already aware of the survey and had completed it, we asked to further promote it)
- People interviewed for story telling (at the beginning of October 2021) were asked to reply and share the link
- Public event "Lucca città a misura di animali" on Friday 1st October 2021

- social networks:
- Municipality of Lucca posted the info and link twice on Facebook
- Personal contacts of people living in Lucca, including some involved in NGO, via WhatsApp and Facebook
- Personal contacts with veterinarians of Lucca

- direct interviews on the control areas and other areas of the city of Lucca
- distribution of the paper questionnaire to NGOs already contacted:
- Croce Verde
- Representatives of the social tables on marginality and disability have been contacted to spread paper questionnaires among the associations they "coordinate"

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Reflecting on all the modalities, the online distribution was the most effective. During direct interviews we noticed that people were always in a hurry and didn't have so much time to dedicate to fill a questionnaire that was too long for them. As for the target groups that should have been reached by the respective NGOs, the problem in spreading paper questionnaires was given by the fact that, in the specific period, they didn't meet with their members due to the Covid-19 pandemic.

During the survey collection we found out some difficulties in reaching the target number (300), both for target and control groups. For this reason, we didn't succeed in completing the survey collection on the deadline of the 15th October 2021, and we asked for a 15 days postponement. The main difficulties concerned:

- respondents didn't feel comfortable in replying about sensitive data after having left personal data (even if only in the consent form)
- difficulties in understanding the link between a project where animals are involved and a survey asking about ethnicity, gender, etc..
- the length of the questionnaire.

The **Focus Group** has been carried out, without finding any particular difficulties, on Saturday 9th October 2021 with 10 participants (appendix 13), 3 males and 7 females from 20 to around 60+ years, representing quite equally both associations and citizens.

After a preliminary internal discussion of the UNIPI Team, through the help of one member of the team, that lives in Lucca and has some connections, people had been personally contacted through emails or mobile phone. After knowing about their availability, formal invitations were sent via email. (appendix 14)

The Focus Group lasted a little more than 2 hours and was developed around 3 topics:

- Topic 1: Spatial Well-being
- Topic 2: Social Well-being
- Topic 3: Ability/inability for inclusion

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The key issues came to light during the discussion where:

- Lucca as "green city": green areas are present, sometimes they should be improved/enhanced
- The problem of the traffic outside the historical city center and the lack of public transport
- Lucca as a city open to third parties (tourist, foreign etc...)
- Active associationism
- Large number of events but not advertised properly
- Lucca has a big potential for young people, but it isn't enhanced enough
- Active associationism, but sometimes difficulties of integration
- Lucca is an open city but at the same time people tends to be closed
- Compartmentalized relationships.

The last but not least, qualitative research carried out in Lucca, without founding difficulties, was the collection of 5 **storytelling** on relevant health and well-being dimensions.
People were identified through personal contacts and official invitations were sent to them via email (the same invitation as for the Focus Group). They agreed to meet us only on the basis of their availability, even if they didn't get any incentives for making the storytelling.
The stories have been collected through both online interviews and in presence, based on the availability of the protagonists. For the modality in presence, meetings in Lucca in places where people would feel more comfortable (their house, their work place) were arranged.
Unfortunately, we didn't succeed in including among the stories at least one person belonging to specific target groups. We tried to contact them, but we found some difficulties because most of them did not feel comfortable in recording interviews about themselves.
People interviewed were:

- Elderly gentleman: The protagonist is an aged man who runs an agricultural business and who helps his son in the management of a residence located in the historic center of Lucca. Furthermore, he is also a dog owner.
  - IHW sub-dimension involved: "Social Inclusion" and "Financial situation".

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- Woman: The protagonist is a woman who works in the center of Lucca where she has a studio of her own and carries out her activity as a restorer of antique textile in autonomy without employees.
  - IHW sub-dimension involved: “Employment” and “Financial situation”.
- Pet owner: The protagonist is a dog and cat owner who, in her free time, as a volunteer takes care of the management of some feline colonies (especially those in the historic center of Lucca).
  - IHW sub-dimension involved: “Leisure and free time”
- Person active on the social field: The protagonist of the story is a lady very active in the social field, both for a personal interest and for work. The lady carries out a work that is manly based on relationships and relations aimed at creating synergies in the territory.
  - IHW sub-dimension involved: “Social inclusion”
- Student: The protagonist is a student at her first year of university, she lives in a town near Lucca and, in her free time, she usually goes to the city in order to go for a walk, to meet friends or to enjoy city services such as libraries.
  - IHW sub-dimension involved: “Leisure and free time” and “Cultural consumption”

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4. Co-design of visionary and integrated solutions (VIS): bottom-up participative process

4.1. Co-design workshops

The aim of the IN-HABIT project is, besides improving and enhancing health and well-being in four European small and medium sized cities, to engage the local community to empower them giving them the right tools to start and carry on a transformation process.
There are two different approaches that allow the beginning of the transformation process in cities: the Top-down and the Bottom-up. The former refers to all the activities organized by transversal partners that allow cities to gain tools and methods useful to engage citizens and stakeholders (further described in chapter 3).
The latter, linked to the previous one, refers to the possibility to organize specific event or meetings to activate stakeholders and communities previously engaged. This will allow cities to co-design together with their community innovative infrastructures, solutions and services.
In Lucca, the participative process was divided in two main parts: the one for hard solutions, i.e. Animal Lines and the one for soft solutions, i.e. innovative services and activities to be implemented both around Animal Lines and in the whole city to enhance human-animal relationship.

Co-design of hard solutions
The co-design workshops to plan Animal Lines was held from February to the end of May 2021. Since the use of Human-Animal Bond as a means to improve people inclusion and well-being is an innovative topic, especially if linked to the urban environment, the UNIPI Team decided to organize various previous meetings with councillors of different departments (Social Policies, Education, Tourism, Environment, Public work). The aim of the meetings was to introduce the councillors to the project and to be able to prepare the right field. In addition, thanks to the active involvement of councillors we were able to engage some vulnerable groups. Without the help

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of institutional figures that are well known in the city, these people would not have been easy to include.

The first public event to introduce the IN-HABIT project to Lucca's citizens was held (online) on February the 6th (appendix 15). During the event the Municipality of Lucca, UNIPI and Lucca Crea presented the main themes, future actions, and solutions to be deployed. This event was crucial to be able to engage different stakeholders. After this, a two-day online meeting was organized to better explain the concept vision behind the project.

On 26th and 27th of February, together with a first group of stakeholders, we held the first workshops to present the idea and the possible structure of the Animal Lines designed by the architect hired from the municipality together with the UNIPI Team.

Animal Lines, at this stage, are thought as a path that links the ancient city centre with the peripheral areas, different areas accessible to people and their pets will be built along the path. The purpose of Animal Lines is to create new public spaces and places where people and pets can interact among them and with each other. The presentation was followed by a plenary session in which we asked opinions about the Human-Animal Bond, and how we could try to improve the quality of this interaction. The Lab was ran by Simurg Ricerche (the partner hired by the Municipality of Lucca in charge of the participatory process) thanks to the use of a virtual board (appendix 16). From the discussion different ideas regarding various areas of action emerged: for example, people agreed that public spaces should be accessible to everyone, both persons (especially vulnerable ones) and pets (installing specific stations with dog waste bags along popular paths, as well as thinking of specific areas in which leaving dogs off leash to socialize with conspecifics); specific signage should be positioned to report rules of civil behaviour, coexistence and cleaning of public spaces. Regarding tourism, people agreed on developing specific services for tourists that travel with their pets (like dog-sitting services or museums and restaurants more accessible to pets or visits of the city with their pets). Various participants expressed the need to support health services with that of pet therapy, making hospitals and nursing homes more accessible to animals. In general, from the discussion emerged the idea of promoting meetings to sensitize citizens on animals' well-being linked to the urban environment, and the need for integration between different professions to create innovative pet services.

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On the second day, we organized a workshop in which we asked people to imagine what could be the two different scenarios (a positive and a negative one) in the future after the IN-HABIT project. Different opinions emerged about the possible development of public green areas, social and health services, sport facilities, professions, and tourism. For example, regarding public green areas, in a future positive scenario, people imagined that there will be ad hoc structures for pet and their owners, that pet friendly policies will be published to manage pet presence in the city, that a new eco-ethics will be created where people, animals and environment could live together in harmony. On the contrary, in a negative scenario, there will be poor cleaned public green areas, with people who don't respect rules and where the cohabitation of human and animals is not possible. This exercise was especially useful to understand people's needs and opinions and at the same time to highlight what kind of actions we need to take to reach the positive scenario and what to avoid.

To be sure to also involve categories of people at risk of exclusion, we contacted the representatives of the two already existent social tables (disability and marginality), and we organized two different meetings. The first one was held on the 31st of March to present the IN-HABIT project to the social tables, and, after this, we scheduled a second meeting (on April the 14th) to co-design the Animal Lines together with these sensitive groups. The aim was to collect opinions and suggestions to manage to make Animal Lines accessible to everyone. Needs and fears were listened carefully: in particular, some parents of children with autism spectrum disorder were worried that the IN-HABIT project would push owners to let their pet off leash more often, causing problems like panic attack, or unwanted fears on their sons. In addition, people with disabilities or mobility reduction were able to give the architect in charge of the Animal Lines' project, some suggestions on materials to use, especially the one for paving, to guarantee an easy access to the infrastructures.

A separate appointment to co-design Animal Lines was scheduled with the rest of the citizenship and stakeholders on 24th April 2021 (online). Using the virtual board, we were able to collect all the different opinions and needs of citizens and stakeholder. Therefore, the design of the Animal Lines was changed accordingly, following what has emerged during these workshops.

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A final design was created by the architect and then showed in our last face to face meeting on the 27th of May during the "Ecowalk" (appendix 17). This event consisted in a walk in the two areas where, thanks to the IN-HABIT project, new infrastructures will be built to improve inclusion and well-being through Human-Animal bond. Additional suggestions were given from participants to finalize the project.

At this level, students from both the department of Veterinary Sciences and Civil and Industrial Engineering, were involved to work on ideas for soft solutions as well as some proposals regarding the Animal Lines project.

All the activities and events organized to co-design the Animal Lines were arranged and facilitated by UNIPI's research team and Simurg Ricerche, due to the lack of Local Community Activators in Lucca (as specified in chapter 2.3). Most of the meetings were held online due to the Covid-19 pandemic, in fact, as reported by the graphic in appendix 18, during the period between February and May 2021 there was an increase in the number of cases and most areas in Tuscany were under lockdown. In addition, due to administrative reasons, the co-design of hard solutions begun before any other city, since the decision was made to have the Animal Lines finished before June 2022. For this reason, we were not able to postpone the participatory activities, and, at the same time, we did not use specific tools provided by transversal partner during LCA trainings (held from March to April 2021). In addition, all the workshops described above were done before the launch of the IN-HUB that was due in September 2021 (as indicated in the grant agreement).

Submission of definitive project and steps through the co-deployment of Animal Lines

The definitive project was submitted by the architect in charge, at the end of August/first days of September 2021. Afterwards, the technician in charge - from the public works, urban planning and traffic office - prepared the conference of services and the request for an opinion from the landscape commission (with the landscape report made by the architect and the related request models). Both were emitted at the end of October 2021. Conference of services which started on October 29, 2021, expired after 60 days (28th December 2021). The opinion of the landscaping commission was issued on January 14, 2022. Then the municipal council resolution was uploaded for the technical approval of the definitive project on 1st February 2022. The

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resolution was viewed by the Manager who decided to proceed with a further verification of the double compliance of the project with the old Town Planning Regulations still in force and to the new Operational Plan adopted last November. This check was carried out on 8th February 2022 with the help of the town planning office. After the resolution will be approved and made executive, the technician in charge can proceed with the approval of the executive project which is already completed by the architect. The approval will be done presumably at the end of February 2022, and then at the beginning of March 2022 the tender can proceed. The inauguration of the areas will be around the beginning of June 2022.

Co-design of soft solutions

Regarding co-design of soft solutions, they will probably start at the end of February 2022 after some planning with the Core Group of the IN-HUB.

As described before, the IN-HUB was launched on 19th January 2022, and soon after we had the opportunity to hold our first site visit with transversal partners. In this day we could also discuss a bit of future actions to programme within the IN-HUB, and how to engage more people in it. During that occasion, Tesserae's team organized an activity with some members of the Core Group, to understand how the launch went, if there were some categories of people missing in the 5 working tables and to give suggestions on how to engage new people, how to use local public green areas to do so, and how to plan future actions.

Creation of the board games to engage pupils

Meanwhile, Lucca Crea is working on the realization of a board game to be disseminated within schools. The idea of a board game, as a "Gamification" tool (intended as the dissemination of virtuous notions and behaviours), arises mainly from the idea that during third and fifth grade, children are more receptive to concepts that aims to raise awareness among citizens, keeping in mind that these children will be the citizens of the near future. This belief is strengthened by the experience gained through previous similar projects that Lucca Crea has already developed, over the years, on various topics, that shared the macro topic of respect for the environment in all its forms. From these experiences it was possible to highlight the effectiveness of the game as an educational means on such a young audience, but also the resonance of these activities carried

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out in the classrooms. In fact, children shared what they have learnt within their families. In addition, this experience was supported by communication activities on the territory through events and media partnerships linked to the game and its tournaments and finally the experiences on the project sites, in this case the Animal Lines.
The educational activities will be divided into a theoretical lesson on project topic, supported by ludo-educators selected by Lucca Crea, and a part dedicated to the explanation and following trial of the game. The game in question was imagined as a card game, a choice made on past experiences, as it is faster, portable, easier to understand and set-up, compared to a boardgame-type, and finally to be able to play both at school and at home, with peers and family members. The themes of the game, in addition to the context of the human-animal relationship, will be inspired by the various ideas provided by the researchers of the University of Pisa on pets and how to relate to them, seeking to convey the message of this entire project. This is not just an animal-themed game, but one in which by playing it is possible to learn and to reflect, to make choices with relative consequences.
For the development of the game, excellences have been chosen from the world of the boardgame regarding as publishers, as well as illustrators and game designers, who will surely know how to give their contribution to this project to generate a quality product.

4.2. Bottom-up methods and tools used

To facilitate and moderate the bottom-up process various methods and tools have been used. First of all, the organization of participatory processes to achieve active participation of stakeholders and citizen in decision making process (Rowe and Frewer, 2005; Bayley and French, 2008). The primary goal of participatory processes is to create productive discussions to develop solutions about specific themes; methods used during the activity can vary based on number of people involved, categories, age, or main topic we want to discuss.
In the specific case of Lucca, it must be pointed out that most of the meetings to co-design the Animal Lines were held online, due to Covid-19 pandemic. Therefore, some tool could not be used or had to be modified and adapted to the online mode. For example, during first

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meetings with stakeholders, a virtual board worked in place of traditional post it and an online app called “Mentimeter” was used to ask some ice breaking question to participants.
Scenario development was another useful method applied during first meetings. This approach is commonly used by planners, policymakers and researchers of various disciplines with the aim of forecasting future events. A facilitator introduces the working topic and provide a sort of analysis of current situation, then he asks participants to imagine how the situation could change after some years and under specific circumstances. UNIPI’s research team together with Simurg Ricerche used this method to let Lucca community imagine about two different scenarios regarding IN-HABIT project. The facilitator asked the participants to think about a positive and a negative scenario after 20 years from the end of the IN-HABIT project. The outcomes of the activity were useful to understand people’s expectations and to try to manage them. In addition, it was a good opportunity to start collecting some suggestions and opinions about how Animal Lines should be done and what were the needs of citizenship regarding them.
One of the tools provided by Tesserae during LCA’s training was the Urban Reconnaissance. This method provides a good opportunity to explore urban environment. During the last meeting of the co-design process for Animal Lines, we were able to organize a “Ecowalk” near the two areas where the infrastructures will be built thanks to the IN-HABIT project. We could say that this was a first kind of Urban Reconnaissance even though we did not exactly used the matrix provided by the toolkit. Nevertheless, we would like to organize Animal Lines reconnaissance within the members of the IN-HUB.
Storytelling and Focus Groups have been other participative tools used during the first year of the project, mainly to collect data for the baseline study conducted by ISIMPACT within the four cities. Both processes are further explained in chapter 3.5.
Finally, during the IN-HUB’s launch we were able to use an adapted version of the World Café methodology within an online platform. Dividing participants in 5 virtual rooms, we were able to collect some primary suggestions about soft solutions to implement thanks to the facilitation of UNIPI’s researchers that asked questions regarding the Human-Animal relationship.

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4.3. Design for Change (DFC) workshops to promote mindset change

The DFC workshop took place the 21st and 22nd January 2022 (the 21st from 14:00 to 18:00 pm and the 22nd from 10:00 am to 19:00 pm) at the "Real Collegio di Lucca", in the city center of Lucca (appendix 19).

During the 12 hours workshop, 9 educators working in Lucca have been involved and trained in the DFC methodology. The DFC methodology, I CAN Mindset, uses the principles of design thinking. This "formula" intentionally cultivates the I CAN Mindset through 5 steps: Feel, Do, Imagine, Evoluate and Share.

The workshops introduced design and co-design activities to educators working in schools, educational centers, and social organizations of Lucca, with the aim of providing them co-design tools to help the community (women, children, young people, elderly, people with disabilities...) becoming the primary actor and agent of change within the framework of the IN-HABIT project. Participants were guided by a DFC facilitator through the 5-steps process based on design thinking and trained in the I CAN Mindset tool to develop abilities through challenge-solving.
The workshop organized by DFC provides a well-established methodology in which, always in group, participants:

- **feel** what worries them about a proposed area and, through a series of divergences, convergences and synthesis exercises, they choose together a common focus of action that they turn into a challenge
- everyone **imagines** some solutions that are shared in a brainstorming exercise, they choose one together, they make it a prototype and share the results with other groups. During this phase participants learn the importance of giving adequate feedback
- participants **do,** preparing an action plan to overcome theoretical concepts
- educators reflect on what they have learned and "**evoluate"** (assessment + evolution)
- finally, they **share** the results of this experience with the world.

The trained educators will further apply the DFC method and adapt it accordingly to the needs of specific target groups.

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The organization of the workshop has considered, as a first step, contacts between DFC Spain and Lucca through a person of the UNIPI Team, who at the time (July-August 2021) acted as local community activator, in order to better understand the aim of the methodology and the target needed. DFC Spain provided this person with informative material (a leaflet) to allow the dissemination of the course and the recruitment of people interested in this training. This leaflet has been translated from English to Italian and has been spread to educators through different channels:

- Personal contacts
- People who already participated to previously processes of the project (participative processes for Animal Lines)
- "Lucca Learning city" a platform that involves various NGOs working locally in Lucca
- Formal communication sent by the Municipality to schools of every grade in Lucca
- Formal communication sent by the councillor in charge of education policies.

After receiving some expressions of interest, we tried to understand what could have been the best time to conduct the course in person in Lucca, trying to maintain the maximum possible security because of the Covid-19 pandemic, and therefore the most appropriate date has been chosen based on the availability of facilitators from Spain.
DFC Spain proposed to carry out the course in English but, asking the educators interested in the course, there were several difficulties for lack of knowledge of the language. It was therefore asked for the possibility to run the workshop in Italian with a DFC's facilitator who knew the language. Given the impossibility to fulfill the request, the final decision was to carry out the workshop in Spanish by making available to participants a figure who acted as an interpreter (the current LCA).
After choosing the right place for the workshop, a formal invitation with all the details was sent to all the contacts who expressed interest in participating.
The workshop was carried out, as agreed, in Spanish, but despite the presence of the interpreter, his participation was very negligible. This both because it was agreed together with the DFC facilitator to try not to literally translate everything that was said because the workshop would

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have been very interactive, and because some participants knew Spanish and helped the others when they didn't understand something.
During the workshop, although some participants were puzzled as to why they were involved in this type of project, there have been a strong interest in the methodology and a great enthusiasm in the active participation required during the two days.

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5. City-specific VIS to boost IHW

5.1. Planned hard and soft solutions

At the beginning of the project, UNIPI Team planned some hard and soft solutions to be developed.

Regarding the hard solutions, the idea was to involve stakeholders, at a neighbourhood level, into the co-design of the Animal Lines: a path that links an area of the old city centre (corresponding to the city's ancient walls and the under-utilised surrounding green areas) with Lucca's suburbs and peri-urban areas. Different areas accessible to people and their pets are planned to be built along the path. These co-design workshops were planned through a bottom-up participative process with the involvement of local citizens in order to decide how the spaces will be modified. At the same time, in addition to the bottom-up participative process with stakeholders, a top-down co-design process involving local urban planners, municipal offices, private and public owners in the area was planned.

As regards the soft solutions, the UNIPI Team planned some idea, distinguished among the departments to which the thematic groups are referred, to suggest to the IN-HUB. These proposals are conceived only as an input for the IN-HUB's participants from which to start to develop their own co-designed solutions. The planned solutions are presented below:

- Department of environmental policies:
  - Creation of a Hum-animal chart in which to place shared principles to build new visions and working goals regarding animals and citizenship's rights and related issues
  - Organization of "waste collection days" in the urban environment/Parco Fluviale/ancient walls, handled by the IN-HUB's participants, with the participation of citizens and possible involvement of associations dealing with the theme, in order to attract interest to the future co-management of the Animal Lines
  - Organization of birdwatching, beewatching, etc. days, with the help of experts on the subject, along the "Parco Fluviale" or other areas
  - Organization of courses aimed at involving new people in feline colonies management and at updating those who already deal with them

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- Training days/seminars on subject matters such as environmental sustainability, eco-friendly solutions, Nature Based solutions for both adults and school classes
- Department of cultural and touristic policies:
- Organization of events and services for families and tourists to increase contacts and connections with animals in the urban space
- Specific dog-sitting services and day and night boarding for tourists' pets
- Animals' access to public buildings and accommodations (hotel, B&B, residence)
- Organization of paths, supported by tour guide and experts in animal behavior/dog educators, along the Animal Lines (both the entire route and specific parts)
- "Dog kits" to distribute to tourists with poop bags, a little plastic bowls, phone numbers of local veterinary hospitals and the Animal Lines map
- Department of educational policies:
- Animals' access in schools
- Organization of Animal Assisted Interventions (AAI), especially activities (AAA) and educations (AAE) with animals
- Education activities on pet management
- Trainings for educators on new methodologies (i.e. DFC course)
- Department of social policies:
- Animal Assisted Interventions (AAI) in public spaces (Animal Lines), in collaboration with local health services and associations to increase human-animal relationships, including people with physical and mental disabilities, young volunteers and elders who live alone (and other project's targets)
- Dogs/cats access in nursing homes and hospitals
- Pet access in accommodation facilities for homeless or the building of special structures (box etc...) or services where they can leave the dog during the night
- Department of economic development:
- Free/facilitated veterinary assistance for disadvantaged people
- Courses on pet management in the urban environment with the collaboration of the University of Pisa and professionals in the field (dog educators/trainers, veterinarians, etc...).

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Regarding the creation of a Hum-animal chart, pet friendly policies will be designed following a specific plan:

1. Definition of meanings, principles, guidelines, shared rules
2. Creation of a **Hum-animal Chart**: shared principles to build new visions and work objectives regarding animals and citizenships right
3. Creation of a **Strategy for a Hum-animal City**: paths, actions, organizational methods to give concrete and progressive affirmations of the principles contained in the Chart to define a plan for the Hum-animal city
4. Creation of a **Plan for the Hum-animal City**: operational details for interventions and policies.

Point three will be focused on the creation of specific objectives divided as follow:

- Knowledge objectives: improvement of people's awareness of the issues defined in the Hum-animal Chart
- Health objectives: improvement of specific health indicators related to hum-animal interaction
- Equity objectives: improvement of specific indicators of accessibility to health in the hum-animal interaction (accessibility to a hum-animal city for vulnerable groups etc...)
- Sustainability objectives: level of qualitative-quantitative organization of the management of hum-animal actions (list of infrastructures by type, actors adhering to the Chart and Strategy, volumes of services activated, levels of satisfaction achieved)
- Innovation objectives: entity of innovative practices to be promoted (in the field of education, health promotion, public policies, production practices)
- Organization objectives: definition of practices to integrate policies that have a positive impact on hum-animal citizenship (program agreements, coordination entities etc...)

These activities will be carried out with the active participation of LCAs, UNIPI, Municipality of Lucca and Lucca Crea, and they will involve also transversal partners.

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5.2. Co-designed VIS

Regarding IN-HABIT's co-designed hard solutions, they are very similar to what has been planned in the first months of the project. The participative process within the community helped gathering information, needs and ideas about what to implement inside the relational areas, what materials to use to create an accessible place, how to make the areas comfortable for both people and their pets.

Regarding Animal Lines we are talking about very simple interventions (e.g. adapting existing cycle paths or pedestrian paths so that they are "pet friendly"). We have identified a route that goes from the “Parco Fluviale del Serchio” from north, arrives in the city passing through the Urban Walls and the “Spalti” (green areas that surround the walls) and then goes south to the “San Concordio” district and the “Acquedotto Nottolini”, a path with both naturalistic-environmental and monumental value (appendix 20).

The project also provides for the creation of spaces where the Hum-animal relationship is facilitated and, consequently, social relations and inclusion of the most fragile subjects are facilitated. They will not be simply fenced areas for the traditional "walking" of the dogs, but spaces also equipped with benches and shade where to foster relationships. There will be areas where dogs can certainly stay free and also interact with conspecifics in safety, but also and above all areas where humans can interact both with their pet, with people and also with other animals.

Animal Lines will have areas where it will be possible to carry out activities such as Animal Assisted Interventions (pet therapy) - especially aimed at categories with special needs-, sports activities with pets. Since the areas will be equipped with stuff that can also be used by people with disabilities, there can be performed activities in collaboration with professionalism in the pet field for educational events and more.

The interventions will be:

- Animal Lines (Parco Fluviale- Mura Urbane- Acquedotto Nottolini)
    - Punctual interventions, with light equipment: waste bins, manure bag dispensers, pet friendly benches, lights
- Relational Area of the “Parco Fluviale”

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    - Creation of equipped fenced areas
    - Creation of the Animal Lines around
- Relational Area of the behind the old hospital
    - Creation of equipped fenced areas
    - Creation of the Animal Lines around
- The small green area in “San Concordio” neighborhood
    - Creation of a fenced area
    - Punctual interventions with light equipment: waste bins, manure bag dispensers, pet friendly benches

The relational areas that will be built were chosen all based on their accessibility (presence of a car park area, accessibility for people with disability) and their closeness to the path of the Animal Lines.

All interventions have been designed in such a way as to minimize the environmental impact using natural materials.

The relational space behind the old hospital provides, for several separate enclosures, to have the possibility of sanitizing the areas in turn, during the year (2 areas for large dogs, 2 areas for small dogs). These spaces will also be usable for the IN-HABIT's soft solutions: they will have a more detailed and specific equipment for the access of people with disabilities, like flooring, accessible paths, greater attention to shade and furniture. In the largest region there will be several common areas (appendix 21).

Concerning soft solutions, they will be co-designed during the next months within the IN-HUB. During the platform launch on 19th of January (2022) we had the opportunity to gather some first ideas on solutions and services to be implemented around Animal Lines (see table below).

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Table 2 – Ideas of soft solutions emerged during the first IN-HUB meeting

Working table	Ideas	Subjects to be involved	Actions for the realization
Active citizens	**Improve citizens' knowledge and education about animals (pets and wild)**	• Schools starting from kindergarten • Order of Veterinarians • Biologists / wildlife experts	• Meetings in schools • Playful activities for students aimed at understanding a correct human-animal relationship • Field trips to learn about local wildlife • Workshop / simulation activities open to citizens to understand the ethology of animals • Educational activity (license?) for those who want to get a dog • Well-defined itineraries for those who want to walk with their pet • Organization of demonstration / educational events in the spaces of the Animal Lines (e.g. also on first aid to animals ...)
	Improvement of public spaces for pet management	• Municipal administration • Dog-sitter • Voluntary Associations	• Creation of a dog-sitters network (voluntary action) - civil service - specific project for the elderly, people with mobility difficulties, etc... • Problem of veterinary care (often not very accessible to low-income groups)
Tourism	**Developing of a map showing pet-friendly services and**	• Accommodation facilities, • restaurateurs,	• Check of facilities which already are pet friendly /or willing to join the network

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	places with a logo to identify pet-friendly services	• cultural institutes • Veterinarians or other experts in the field • Schools or graphic designers by profession	• Follow the path of the Animal Lines • To establish (to define) the basic requirements that the facilities (accommodation facilities, restaurateurs, cultural institutes) must have to request the logo created to have this service recognized • To create and to insert the logo in the map
Social	**Pet and elders**	• Associations in support of the elderly • Associations in support of animals • Students and schools (also meeting between generations) • Dog educators to accompany the processes	• Home care: Service for the elderly at home (extension of the range of activities also to animals) • New integration • Welcome for animals (to facilitate the transition) • New focus on nursing homes
Education	**Involvement of high schools with tourists addresses, in the creation of specific routes for tourists or citizens with animals / school-**	Schools and school-work alternation projects	• Involving schools as a tool for implementing certain initiatives • Create partnerships between school and tourism, restaurateurs • Creating an app (web community manager course) / creating a site

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	work alternation projects		• Collaboration also with museums • Make children and students protagonists • Move according to the order and address of the school to involve educational institutions
	Educational events	Middle schools, Bureaucrats, Schools directors, Families	• Raising awareness about animals and how to approach them in schools • Have the children tell what the animal is and then talk about it together • If you can't bring the animal in flesh and blood, maybe play with an image or a soft toy
	Animals in schools/ educational farm	School directors, Bureaucrats	• Hard to handle • Difficult for spaces
Pet care	• **Dog sports incentives** • **Platform of pet-friendly services** • **Services for non-dog species** • **Educational projects for various ages**	• Med vet, dog centers, pet shops, schools • Open days, advertising, demonstrations, fairs • Municipality, animal protection associations, potential managers	• Open days, advertising, demonstrations, fairs • Digital communication / advertising Identifying areas and type of intervention (e.g. feline oases) • Involvement of teachers / managers, common

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		• Med vet, dog instructors, associations, teachers	

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5.3. Co-deployment and co-management of VIS

Concerning co-deployment and co-management of VIS, as previously done, we decided to split the planning respectively in hard and soft solutions.

The former is nearly under deployment (since the co-design was done early) and it will probably be ready by June 2022. Management of Animal Lines will be planned within the members of the IN-HUB. It will probably regard organization of volunteering activities to maintain the path and its areas tidy and clean, as well as the utilization of the spaces to organize, inside them, Animal Assisted Interventions and other social activities.

Regarding soft solutions, different meeting will be held within thematic working groups, to co-design their deployment and management (which is still in progress and will be added accordingly).

In the table below we include some proposals emerged both from discussion within UNIPI Team as well as during first IN-HUB's meeting, that will be probably subject to some changes during the participative process.

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Table 3 - First ideas for the co-deployment of the soft solutions

Soft solutions	Details	Human resources involved	Co-deployment
Eco-walks with dogs: appointment for storytelling walks	Specific aspects of the human-animal relationship can be faced during the walk	Associations/IN-HUB	Definition of a timeline with dates and themes, paths
Brief trainings in dog-education, in presence	Together with professional dog-educators	Associations/UNIPI	Engagement of dog educators/trainer, definition of the themes on request of the participants
Box to collect advices	Suggestions or request for services, requests on the themes that must be faced or initiatives to carry out	Municipality of Lucca, Lucca Crea	Placement of boxes/letterboxes/notice boards along the IN-HABIT areas to collect suggestions from the citizens
Specific signage along Animal Lines	Useful signage to encourage the use and the management of Animal Lines	Municipality of Lucca, Lucca Crea	Call for bids for the assignment and development of the work

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"Via Pettigena"	Creation of a path to travel with dogs on the leash, alone or in groups	Associations/IN-HUB	Definition of the path, advertising of the event, choice of the awarding method for completing the path
"Animal aperitif" at 7:00 pm	Aggregative walk on the Animal Lines that ends with an aperitif in a nearby bar with the organization of theme nights	Associations/Municipality of Lucca	Affiliation with local bar (to organize the aperitif) and pet shops (to distribute specific products for animals)
Endurance routes (How much time do you spend with your pet?)	Itineraries with different difficulty levels from amateurs and pets to athletes who can cover longer distances	Initiatives with animal associations?	Definition of route sections according to difficulty and length
"Pet Sundays"	Initiatives during the weekend dedicated to the human-animal relationship	Initiatives with animal associations?	Definition of a timeline with dates and themes
Pills on education to human-animal relationship	Information and education actions, in presence or online - you tube - on human-animal relationship	UNIPI? Dog educators? Students?	Involvement of research corporations/universities/experts on the subject
Courtyards and feline colonies:	Initiatives to reconstruct the history of animals in the	Associations for animal-rights, schools, educators	Involvement of schools and awareness on the subject, definition of projects

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initiatives with schools	courtyards (in the courtyards of Lucca) and the meaning/benefit of the new feline presences and their active management		
Actions and communication/ "AVIS night", donation with Veronica	Facilitation of donation for people and animals	AVIS, UNIPI	Organization of specific nights with the engagement of AVIS and the veterinary hospital of the University of Pisa
Awareness raising of the tourism	Initiatives of discussion about the opportunities of hum-animal enhancement in the city	Sector associations, UNIPI	Organization of meetings/seminars/discussions on the subject
Twinning agreements with other cities	Transfer of learning with dedicated initiatives	Municipality of Lucca/IN-HUB	/
Public happenings about and with animals		Lucca Crea	/

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Cultural initiatives about animals and their relationship with humans	Animals in literature, hum-animal pictures, thought and animals, animals in comics, theatre and animals, religions and animals	Various cultural groups	Organization of cultural events with literature/philosophy/theatre/etc experts
Hum-Animal Chart	Creation of a Hum-Animal chart in which to insert shared principles to build new visions and work goals regarding animals and citizenship rights and related issues	IN-HUB	Creation of discussions within the tables of the IN-HUB, creation of shared principles/values, presentation and approval by the local administration
Events aimed at increasing the knowledge and the education of citizens towards wild animals	Events of wild animals' watching along the "Parco Fluviale" or in areas of naturalistic interest: birdwatching, beewatching and other similar activities	Experts/UNIPI	Definition of a timeline with dates and type of event according to the wild species of interest, engagement of experts
Clean the Animal Lines!	Organization of waste collection days in the urban environment/Parco Fluviale/	Associations on the subject, IN-HUB	Definition of a timeline with dates and areas

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	walls with the aim of raising awareness of the future management and maintenance of Animal Lines as voluntary activities		
"Scuolattiva hum-animal"	Projects of alternation between school and work for students (high school): organization of events/naturalist walks in the areas of the Animal Lines and voluntary works in shelters/refuges and related to the human-animal relationship (elderly people, minors, homeless, etc..)	Schools	Involvement of technical institutes for tourism in the creation of specific paths for tourists or citizens with animals/projects of alternation between school and work
Development of a map showing pet-friendly services and	Mapping of pet-friendly services already existing/interested in becoming it, with the aim of creating a clear map to offer to tourists	Sector associations/professionals in tourist sector (IN-HUB)	To check who is already in or who is willing to join the network. To follow the Animal Lines path. To establish (to define) the basic requirements that the structures (accommodation, restaurants, cultural institutions) must have to apply for the

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places with a specific logo			logo created to recognize this service. To create and to insert the logo in the map
Dog sitting and boarding kennels	Specific services of dog sitting and day and night boarding for tourists' pets	Pet care professionals (IN-HUB)	Involvement of professionals to define ad-hoc services and subsequent advertising
Initiatives for homeless people	Pet access in accommodation facilities for homeless or the building of special structures (box etc...) or services where they can leave the dog during the night	Municipality of Lucca, Social associations	Involvement of the municipality and associations that manage accommodation facilities, definition of a shared path to define the service
Pet in nursing home and hospital	Provide access to pet (dogs, cats) in nursing homes and hospitals both those of property and those involved in Pet therapy activities (useful tool for people in nursing home)	Social associations/Nursing homes	Involvement of healthcare facilities/public and private nursing home to define the minimum requirements for access to animals in the facilities, involvement of professionals in Pet therapy activities in order to structure projects

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Pet and unaccompanied children	Organization of activities with animals and unaccompanied children (care, growth, rehabilitation, in relation to weakened family ties)	Social associations	Involvement of associations that manage structures addressed to these targets to define the needs and the possibility of access to animals, involvement of professionals in animal assisted interventions to structure projects
Platform for services offered by pet care professionals	Using digital communication/advertisings to enhance offered services	Pet care professionals / developers	Clear definition of the offered services, definition of the most effective type of communication for the field of interest, creation/development of the chosen mode
Incentives for dog sports	Open days, advertising, exhibitions, fairs.....	Dog educators	Organization of promotion events and knowledge of the various dog sports that professionals in the area can offer

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6. Emerging lessons and recommendations

6.1. Challenges and achievements in the organization and development of the IN-HUB and PPPPs schemes

The organization and development of the IN-HUB faced up to several challenges which led to the postponement of the launch of the platform.

The main challenge was related to the process of recruitment of the 2 local activators from the Municipality of Lucca which, due to the complexity of the organization of a public selection during the pandemic situation, was completed only between the end of November 2021 and January 2022. This lack of staff consequently generated some difficulties in the relationship among the University, the administration and the Public-Private-People parties to be involved in the project.

At the end of the 2021, the political ministers of each department involved, succeeded in the process of identification of the first representatives that should have formed the IN-HUB Core Group. Following further meetings within the Municipality and with UNIPI Team, these representatives have been contacted and engaged.

The biggest challenge was then represented by the organization of the IN-HUB launch event, planned for mid-December 2021 but postponed due to the overlap of such activity with a particular political period (upcoming primary elections for the new major candidate in Lucca municipality taking place the 18th December) and the incoming Christmas period.

The further worsening of the pandemic situation in the following period (the beginning of January 2022) and the relative restrictions didn't allow the organization of a face-to-face event.

A great achievement, in this case, was therefore the success in organizing on 19th January 2022 the official launch of Lucca IN-HUB in online mode through the Zoom platform. The event has been carried out very successfully and with a great enthusiasm of the participants.

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6.2. Challenges and achievements in combining bottom-up and top-down co-design, mindset change, and social innovations

Firstly, the introduction of an innovative approach, such as Nature Based Solutions related to human animal bonds, emerged as particularly demanding in terms of awareness raising among diverse stakeholders both at administrative level as well as in Lucca city.

The specific project objectives in the case of Lucca provided, unlike other cities, an active involvement of diverse politics and, consequently, a more transversal involvement of various types of departments in Lucca city. The process of top-down co-design, in this case, had inevitably to involve the administrations that initially showed some difficulties in founding an interaction between the innovative theme and the different departments. A challenge in this field was therefore certainly represented by the process of presentation and support of the theme within the administration. To overcome this challenge, a period was devoted to the co-creation of the knowledge and awareness of the municipal administration on the opportunities offered by the improvement of Hum-animal bond. . Being able to bring a mindset change within the administration (still evolving process) about the proposed theme has therefore represented a great achievement.

Regarding the bottom-up process in the co-design, mindset changes about the topic happened in different ways among the categories of stakeholders: from some thematic groups positive answers immediately came, while for others the process of change needed more time. The tourism sector and the various stakeholders of the social sector (elderly people, associations, etc.) embraced the idea with great enthusiasm, generating immediate correlations between the innovative idea and their sectors. As regards the professional sector (pet care), it seemed initially more reluctant to accept the mindset change, probably because of difficulties of understanding the mode of innovation. For example, animal rights associations initially looked at the project as something that could only be used for animal protection, but later this difficulty was overcome. In fact, they understood that IN-HABIT project could offer a lot more of just that and it's not focused solely on animal welfare. In addition, a representative of these associations took part in the activities of the IN-HUB and brought a new approach to it that was not only strictly conservative.

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6.3. Challenges and achievements in ensuring the GDEI perspective

The GDEI perspective has been ensured in all the parts of the project in Lucca, even if sometimes it was difficult to include certain targets, such as LGBTQ+ people and ethnic minorities. This especially represented a great challenge during the collection of questionnaires and interviews for the baseline survey.

Regarding the gender perspective, we can highlight that during the participative processes carried out (especially as regards the structure of the IN-HUB in the current state) the largest part of the participation has been feminine A gender issue to be noticed could therefore be the male one.

As for the issue of the inclusion of those groups at risk of exclusion, in the specific case of Lucca there has been an engagement of all groups and all minorities. A great achievement in terms of inclusion was achieved during the process of co-design of the Animal Lines. In this case, it was possible to work a lot together with the social tables on marginalities and disabilities, as well as during the first meeting of the IN-HUB, to which representatives of various sectors in the social field have responded with great interest and participation.

Despite the difficulties, ethnic minorities, such as Roma groups, were involved and participated in the Focus Group carried out during the investigation of ISIM for IHW indicators.

A challenge that the group aims to achieve, as the work progresses, can be represented by the ability to give continuity to the presence and the active and equal participation of these minorities.

6.4. Assessment of and reflection on the Toolkit: methods and tools used in the co-design, co-deployment, and co-management of VIS

As already described in chapter 4.2 the methods and tools used during co-design workshops were various.

First of all, we have widely used participative process methods and tools like:

- Virtual board (instead of working with post it)
- Web app to do short anonymous surveys
- Scenario development

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- Storytelling
- Focus groups
- World café

The utilization of the methods above was useful to gather information about needs, ideas, specific themes, to be sure to engage people (belonging to different categories) and to leave room for everyone's opinion. In addition, they were all particularly adaptable to virtual activities, since most of the workshops were held online due to Covid-19 pandemic.

Concerning the toolkit provided by transversal partner, it was practical because allowed city partners to apply the same schemes and tools to different contexts. Stakeholders' engagement was definitely different in every city regarding ways to attract people and targets, but, since everyone got the same tool to map stakeholders, comparisons between cities were possible. In addition, being able to make use of the same toolkit allows cities to share information about challenges, achievements and possible recommendations on how to use it more efficiently.

Regarding co-deployment and co-management activities we will definitely use tools provided by transversal partner, and we will continue to work with participative processes since the focus of the IN-HABIT project is to create PPPP schemes.

6.5. Emerging recommendations: city-specific, comparative among the cities, general

One of the biggest problems we faced since the beginning of the project, was certainly the Covid-19 pandemic. This heavily conditioned the whole process, and it led to the postponement of some events and tasks (like the IN-HUB establishment, the hiring of LCA etc...). In addition, most activities had to be held virtually. Being prepared to adapt plans is something really important to be sure to continue progressing with the whole project.

Other important things to take into consideration are the various interactions between different subjects interested. In the specific case of Lucca, we had to interact with different councillors belonging to various departments of interest, being aware, at the same time, of the administrations timing.

Regarding stakeholders' engagement, especially from a GDEI point of view, recommendations would be to try to take into considerations already formed organizations and platforms within the community. It's important to build a dialogue with them and try to engage them in your

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project, otherwise trying to build everything from zero might lead you to exclude some important stakeholders from the process.

Another important recommendation is to pay attention to the relationship between research subject and local's one: keep in mind that timing is different.

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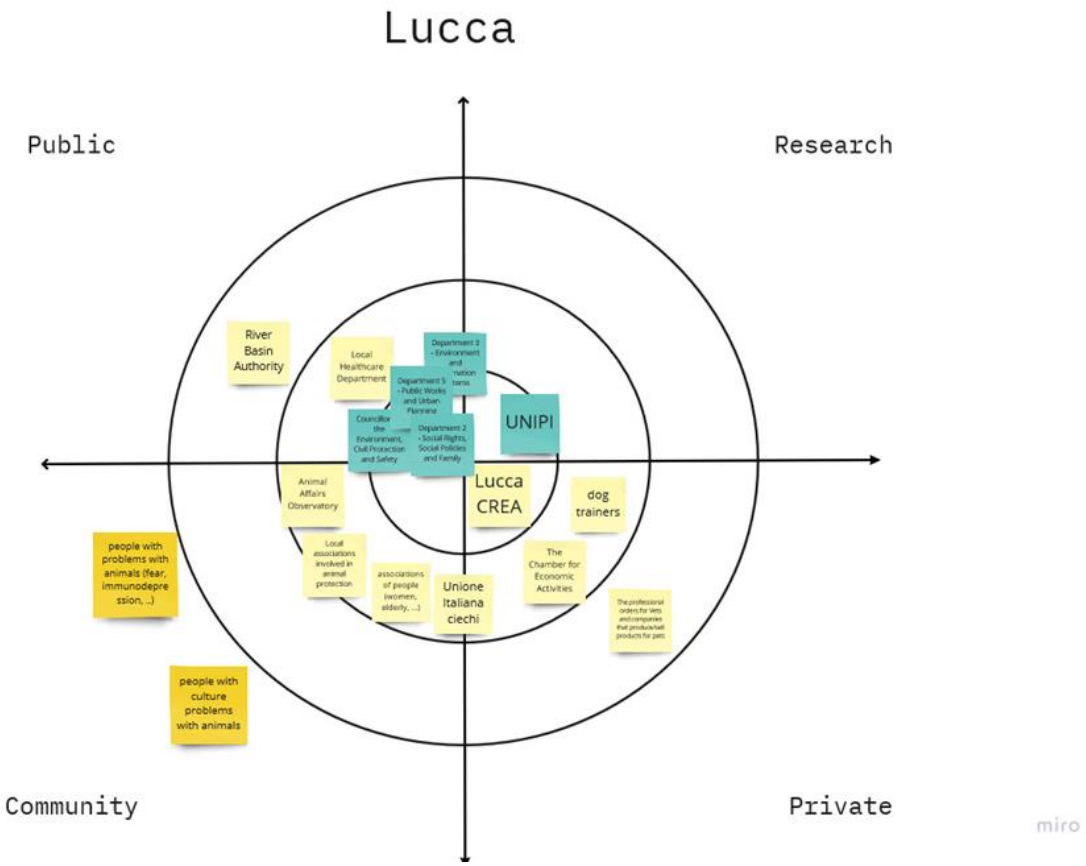
Appendixes

Appendix 1: Stakeholder Mapping; From November 2020 (first figure), through March 2021 (second figure), to January 2022 (last figure).



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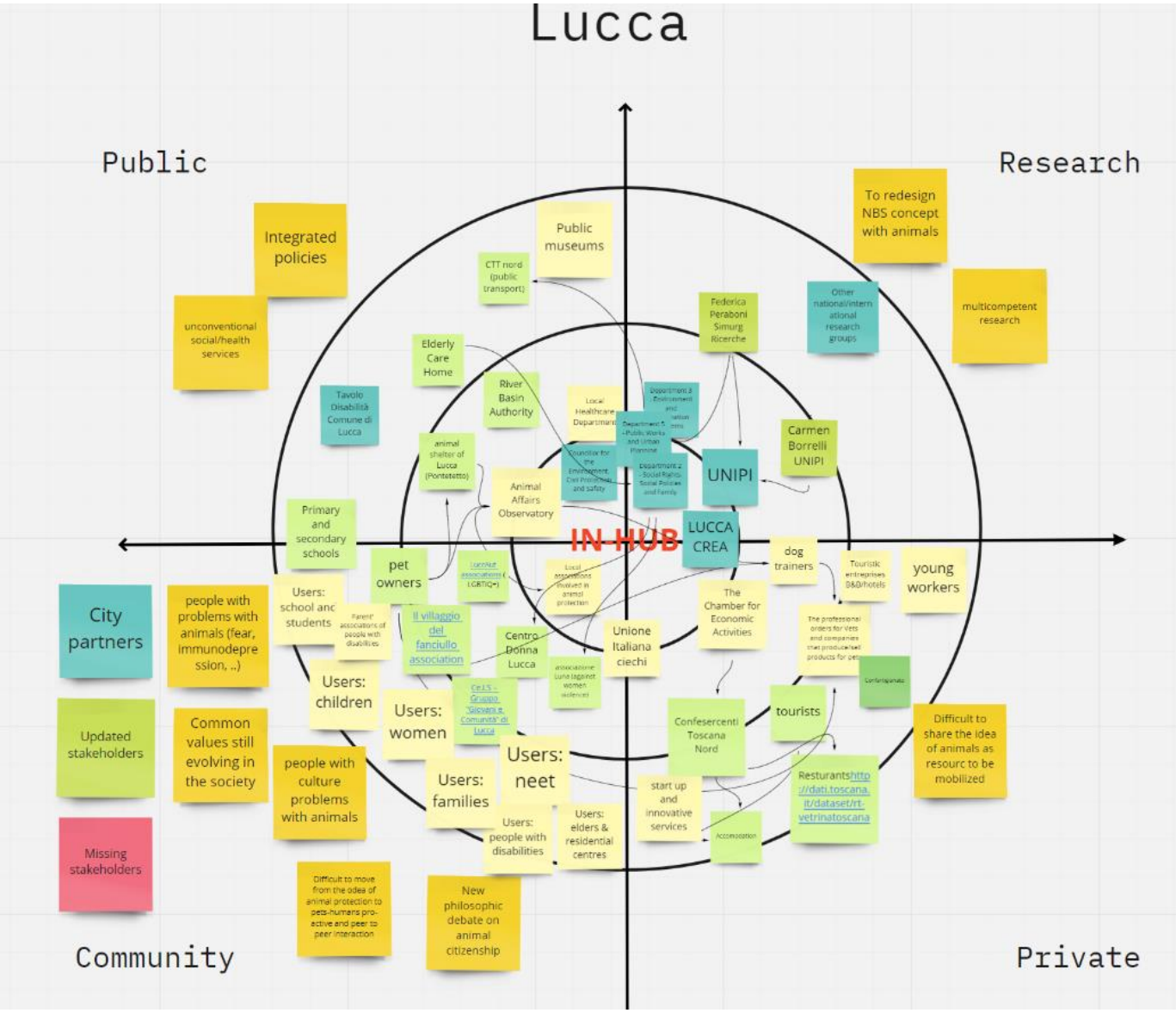

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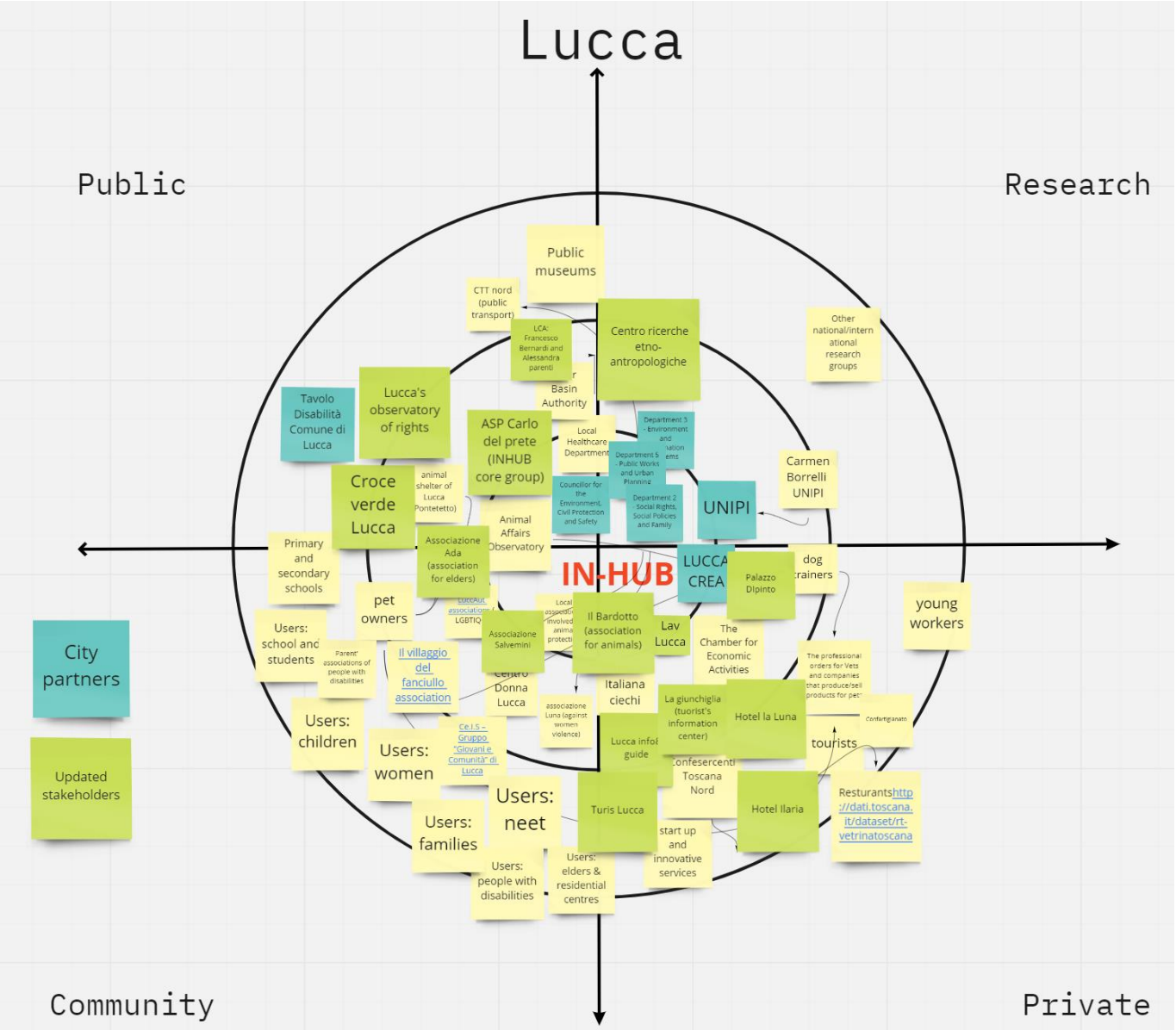

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Appendix 2: Invitation letter sent to representatives of Core Group (Italian)

Spett. le ……..

siamo a scrivervi in relazione al progetto **IN-HABIT,** finanziato dalla Commissione Europea.

Grazie a questo progetto pilota Lucca diventerà **la prima città europea** ad avere una politica integrata volta a rafforzare il **legame Uomo - Animale**.

Il progetto avrà i seguenti obiettivi principali:

- **Migliorare la qualità della vita urbana per tutti** (residenti, bambini, anziani, persone con disabilità e turisti).
- **Diminuire la marginalizzazione, l'isolamento e l'esclusione di gruppi vulnerabili** (in particolare persone anziane, sole, emarginate, minoranze etniche, persone affette da disabilità fisica o psichica).
- **Potenziare lo sviluppo dell'economia inclusiva e l'uso degli spazi comuni** intercettando investimenti pubblici e privati e sperimentando nuovi modelli di impresa basati sul rapporto uomo - animale e sui correlati benefici per la salute.
- Saranno costruite "**animabili**" (percorsi di cui usufruire con gli animali alla stregua di piste ciclabili) accessibili a tutti al fine di ricollegare il centro storico, le antiche mura e le aree verdi circostanti.

Gli spazi verdi inutilizzati che circondano le Mura saranno trasformati in **aree smart** accessibili per gli animali, con lo scopo di riconnettere il centro cittadino con le circostanti aree periferiche e facilitare le interazioni innovative fra uomo ed animali. Saranno coprogettate soluzioni basate sulla natura, come parchi gioco verdi, percorsi verdi e giardini "terapeutici". In questi spazi (messi in sicurezza con specifici interventi) saranno inoltre inserite nuove aree relax, aree di servizi, aree equipaggiate per lo sport e strutture per il tempo libero sia per uomini che per gli animali, aree adibite alla **pet therapy** e saranno allestiti spazi pubblici volti alla formazione sul rapporto uomo-animale (ad es **pet classes**, corsi di addestratori cinofili).

Per la sua realizzazione, è necessario costituire un gruppo di persone, denominato IN-HUB, che si riunirà periodicamente e nei cui tavoli tematici verranno elaborate le soluzioni specifiche da adottare in città.

I tavoli dell'**IN-HUB** - coordinato dal Comune di Lucca, Università di Pisa e Lucca Crea - saranno inizialmente 5 e risulteranno suddivisi in base alle seguenti categorie di riferimento:

- **settore sociale** (rappresentanti delle associazioni disabilità e marginalità, anziani, minoranze etniche, donne sole);
- **settore professionale legato al mondo animale/pet care** (veterinari di Lucca, educatori/addestratori cinofili, negozi per animali/mangimistica, canili/rifugi per cani e gatti);
- **settore turistico** (strutture ricettive, servizi turistici, guide turistiche)
- **settore istruzione/formazione** (insegnanti delle scuole)
- **cittadinanza** (proprietari di animali da compagnia o cittadini in genere).

Grazie a incontri mensili (workshops, laboratori, focus-group ecc) verrà dato vita ad un vero e proprio **processo partecipativo** in cui le associazioni, i gruppi di interesse e i cittadini saranno **co-produttori** delle idee e delle scelte da attuare in città.
Vi invitiamo pertanto ad indicarci quanto prima, entro questo mese massimo, nominativi di persone, nella vostra categoria di riferimento, che siano interessate a prender parte alle attività del gruppo di lavoro suddetto.

Ringraziandovi anticipatamente per la vostra disponibilità, inviamo distinti saluti.

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Appendix 3: Graphic of Covid-19 cases on January 2022

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Appendix 4: IN-HUB launch's press release (Italian)

Città di Lucca
ufficio stampa

Lucca, 18 gennaio 2022

Rapporto uomo-animali: domani parte IN-HUB, il percorso di partecipazione del progetto In-Habit

Parte domani, mercoledì 19 gennaio, IN-HUB la piattaforma che darà corpo e sostanza al percorso per In-Habit, il progetto Eu Horizon 2020 dal titolo INclusive Health And wellBeing In small and medium-size ciTies, che coinvolge e unisce le città di Cordoba, Nitra, Riga e Lucca. "IN-HUB è un laboratorio di innovazione sociale - commenta l'assessora all'ambiente, **Valentina Simi** -. Una piattaforma fisica e virtuale, dove le persone provenienti da organizzazioni diverse, pubbliche o private, o come singoli cittadini, lavorano insieme per il cambiamento sociale. Si tratta di una strategia di rete per il miglioramento della cooperazione con lo scopo di co-disegnare e co-gestire spazi e progettare insieme In-Habit, il progetto che renderà Lucca sarà la prima città in Europa pensata su misura per favorire il rapporto tra essere umano e animale. L'obiettivo dell'IN-HUB è quindi quello di facilitare processi trasformativi tramite un approccio partecipativo".
La piattaforma IN-HUB sarà composta da 5 tavoli di lavoro, ognuno dei quali toccherà una tematica di interesse del progetto In-Habit (cittadinanza, turismo, sociale, educazione, professionale) a cui possono prendere parte portatori di interesse e cittadini. Ciascun tavolo sarà coordinato da 2 rappresentanti, i quali, a loro volta, costituiscono il Core group o consiglio, che ha il compito di gestire la piattaforma in collaborazione con il Comune di Lucca e l'Università di Pisa.
"Il lancio di questa piattaforma segna l'inizio della fase di progettazione delle soluzioni innovative e visionarie (VIS) che miglioreranno salute e benessere dei cittadini tramite la valorizzazione della relazione uomo-animale - aggiunge **Francesco Di Iacovo**, Coordinatore del progetto IN-Habit a Lucca -. Grazie a una partecipazione inclusiva sarà possibile ripensare le politiche in modo integrato intorno alla relazione uomo animale, valorizzare il ruolo degli animali come risorsa per la qualità della vita urbana della cittadinanza intera e di persone vulnerabili".

Il progetto In-Habit coinvolge quattro città-pilota: Lucca, Cordoba, Nitra e Riga. Ognuna di queste città ha individuato un tema specifico come base di partenza per sviluppare il progetto: l'obiettivo è che ogni cittadina possa diventare, in futuro, un esempio replicabile anche per le altre città di piccole e medie dimensioni esistenti nella stessa regione o nello stesso Paese. I partner del progetto sono: Università di Cordoba, Città di Cordoba, Associazione vicinale di Las Palmeras, Centro di studi baltici, Riga Planning Region, quartiere di Kalnciema, Università di Pisa, Comune di Lucca, Lucca Crea, Università slovacca di agricoltura, Mesto Nitra, Hidepark Civic Association Triptych, Università di Reading, isIMPACT, Tesserae, Bridge for Billions, Design for Change Spain, Book on a Tree, Engie Laborelec, Wellness TechGroup, Pontificia Universidad Javeriana.

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Appendix 5: IN-HUB launch's article published on IN-HABIT website

January 19, 2022

LUCCA – IN-HUB online launch

Wednesday 19th January 2022

h. 5 – 8. P.M. CET

Introduction to the IN-HUB The idea of creating a participatory IN-HUB in Lucca is based on the model of the Public-Private-People Partnership. PPPP is an emerging concept that provides for the inclusion of a wide range of actors – in particular organisations, civil society, and individuals – in planning processes. Moreover, the purpose of the IN-HUB will be to work on the creation of innovative Nature based solutions (NBS), designed to address various environmental challenges and, at the same time, provide multiple benefits to the economy, society, and ecological systems; in the case of Lucca, the idea of Nature based solutions will be translated into real "Pet based solutions".

MEETING AGENDA

Time	Type of session
5 p.m.-6 p.m.	**Plenary session:** introduction to the event; presentation of the project and the IN-HUB platform; organisation of the World Café.
6 p.m.-7	**World Cafè**: division of the participants into working groups based on their respective topics of int/ execution of the work process.

https://www.inhabit-h2020.eu/lucca-in-hub-launch/ 1/3

14/02/22, 14:40 LUCCA – IN-HUB launch – IN-HABIT

p.m.	
7 p.m.-8 p.m.	**Plenary session**: presentations by a representative from each working group to feed back the results of the discussions conducted on their respective topics; discussion and conclusions.

TO ATTEND

If you'd like to attend the Zoom event (only in Italian), please send an email to giulia.granai@phd.unipi.it with a short introduction. This will help with the organization of the **World Café** rooms.

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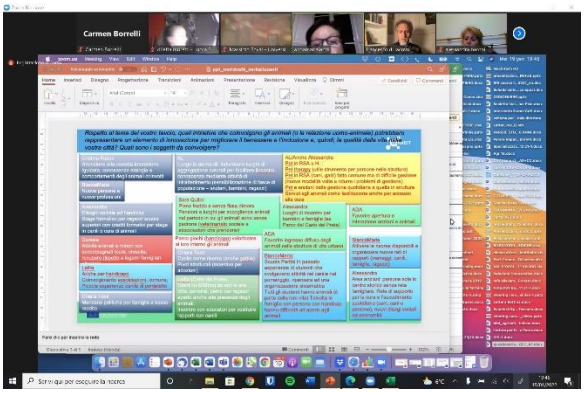
Appendix 6: Photos of the IN-HUB's launch



Appendix 7: Lucca's expected changes on IHW from the perspective of the local inhabitants

Social group	Expected changes – local inhabitants' view
All groups	• Improved satisfaction with urban green areas • Improved quality of free time in public spaces ("going out for pleasure and not for duty, for example pleasant walks with dogs.."have diversified stimuli to make use of the same urban areas in a different way") • Increased inclusiveness of public squares and green areas • Increased social relations in public spaces • Decreased domestic isolation • Improved sense of freedom and comfort in personal relationships • Increased time spent playing relaxing or doing sports in public green areas Improved individual psychological well-being • Increased practice of sports in public green areas • Improved social relations • Increased perception of benefits from human – animal bonds ("improvement of relationships with people in attending green spaces with animals") • Increased time spent in social and recreational public spaces • Improved equal access to pet's care services

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Elderly people	• increased free time from pet care activities as they may benefit from pet parking services (especially older women) • increased social relations in public spaces • decreased domestic isolation • improved sense of inclusion
Persons with disabilities	• Improved satisfaction with urban green areas • improved access to green and recreational spaces;
Women	• Increased sense of safety • Improved access to green and recreational spaces • Increased practice of sports in public green areas
LGBTQI+ people	• No specific change has been identified which may affect people based on their gender identity and sexual orientation
Ethnic and religious minorities	• improved sense of inclusion "Adults, who live more in isolation than young people, could have new meeting spaces and opportunities for integration" • Increased social relations in public spaces

Appendix 8: Effects of Covid-19 pandemic on health and well-being from the inhabitants' perspective in Lucca

Effects of Covid-19 on one's health and well-being
• negative effects on relational well-being, freedom and opportunities for socialization ("habit of free social contact and without mistrust") • worse economic / financial situation of households • higher attention to the quality of food with a view to preventing diseases but also to animal's well-being increase of business and consumptions related to pets' care • economic crisis in the tourist sector ("the project could be a resource for tourism related to animals…the majority of tourists are foreigners and many move if they can take their pets on vacation…an opportunity for the revival of tourism after the crisis caused by the pandemic")

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Appendix 9: Research assumptions on the expected changes on IHW in Lucca

Assumption n.1 the proposed VIS will improve the level of social cohesion
Assumption n.2 the proposed VIS will increase the perception of security in the intervention group
Assumption n.3 the proposed VIS will strengthen social inclusion of the target beneficiaries
Assumption n.4 the proposed VIS will improve equality related to the access to pets' service, culture and leisure
Assumption n.5 the proposed VIS will improve the spatial well-being of the target beneficiaries in the intervention group
Assumption n.6 the proposed VIS will improve people's mental health and life satisfaction
Assumption n.7 the proposed VIS will improve the sports practice in public green area
Assumption n.8 the proposed VIS will enhance cultural participation and culture-related well-being
Assumption n.9 the proposed VIS will improve the quality of free time
Assumption n.10 the proposed VIS will improve employability and satisfaction with one's living environment of target beneficiaries

Appendix 10: Degree of contribution of the VIS to the IHW of some groups at risk of discrimination and exclusion in Lucca

Level of contribution to IHW	**Type of VIS**
For all the target groups	

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High/very high	• Renovation of public areas to make them more accessible, safe, well-lit • Renovation of public spaces to make them more green, pleasant, quiet • Provision of opportunities for socialization, culture, leisure Provision of services (physical and digital) to improve health and healthy habits (diet, physical activity …) • Provision of job opportunities • Provision of training, learning and education opportunities included business support • Provision of digital service to improve access to local opportunities, services, places and events • Provision of infrastructures and services for sustainable mobility • Provision of opportunities to improve the human-animals relationship • Provision of better access to healthy food or self-grown food
For NGOs members representing **women**	
High/very high	• Renovation of public areas to make them more accessible, safe, well-lit • Provision of opportunities for socialization, culture, leisure • Renovation of public spaces to make them more green, pleasant, quiet • Provision of services (physical and digital) to improve health and healthy habits (diet, physical activity …) • Provision of job opportunities • Provision of training, learning and education opportunities included business support • Provision of digital service to improve access to local opportunities, services, places and events • Provision of infrastructures and services for sustainable mobility • Provision of opportunities to improve the human-animals relationship • Provision of better access to healthy food or self-grown food
For NGOs members representing **ethnic minorities**	
Low/very low	• Renovation of public areas to make them more accessible, safe, well-lit • Renovation of public spaces to make them more green, pleasant, quiet

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	• Provision of opportunities for socialization, culture, leisure • Provision of services (physical and digital) to improve health and healthy habits (diet, physical activity …) • Provision of job opportunities • Provision of training, learning and education opportunities included business support • Provision of digital service to improve access to local opportunities, services, places and events • Provision of infrastructures and services for sustainable mobility • Provision of opportunities to improve the human-animals relationship • Provision of better access to healthy food or self-grown food
For NGOs members representing **elderly**	
High/very high	• Renovation of public areas to make them more accessible, safe, well-lit • Renovation of public spaces to make them more green, pleasant, quiet • Provision of infrastructures and services for sustainable mobility • Provision of opportunities for socialization, culture, leisure (high contribution) • Provision of opportunities to improve the human-animals relationship • Provision of better access to healthy food or self-grown food
Low/very low	• Provision of services (physical and digital) to improve health and healthy habits (diet, physical activity …) • Provision of job opportunities • Provision of training, learning and education opportunities included business support • Provision of digital service to improve access to local opportunities, services, places and events
• For NGOs members representing **people with disabilities**	
High/very high	• Provision of opportunities for socialization, culture, leisure • Provision of job opportunities • Provision of training, learning and education opportunities included business support

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	• Provision of services (physical and digital) to improve health and healthy habits (diet, physical activity …) • Provision of digital service to improve access to local opportunities, services, places and events • Provision of infrastructures and services for sustainable mobility
Moderate	• Renovation of public areas to make them more accessible, safe, well-lit • Renovation of public spaces to make them more green, pleasant, quiet • Provision of opportunities to improve the human-animals relationship • Provision of better access to healthy food or self-grown food
For NGOs members representing **LGBTIQ+ people**	
High /very high	• Provision of opportunities for socialization, culture, leisure • Provision of services (physical and digital) to improve health and healthy habits (diet, physical activity …) • Provision of training, learning and education opportunities included business support 5 • Provision of digital service to improve access to local opportunities, services, places and events • Provision of infrastructures and services for sustainable mobility • Provision of job opportunities
Moderate	• Renovation of public areas to make them more accessible, safe, well-lit • Renovation of public spaces to make them more green, pleasant, quiet • Provision of opportunities to improve the human-animals relationship • Provision of better access to healthy food or self-grown food

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Appendix 11: ISIM secondary data collection

Type of indicator	Reporting year	Source
DEMOGRAPHY		
Resident population, *distributed by sex and age groups*	*2020*	ISTAT "Popolazione residente comunale per sesso anno di nascita e stato civile", anno 2020, http://dati.istat.it/
Mortality rate standardised by age (x 100.000 inhabitants) *distributed by sex*	*2007-2016*	ARS Toscana, https://www.ars.toscana.it/banche-dati/dettaglio_indicatore-1438-toscana-asl-zone-sanitarie-presidi-mortalit%C3%A0-tutte-le-cause?
Life expectancy at birth	*2019*	ARS Toscana, https://www.ars.toscana.it/banche-dati/dettaglio_indicatore-1290-toscana-asl-zone-sanitarie-presidi-speranza-vita-alla-nascita?
Family unit's composition: number of families with more than 5 members	*2020*	Amministrazione comunale di Lucca, http://www.comune.lucca.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/4086
Family unit's composition: number of families with 1 member	*2020*	Amministrazione comunale di Lucca, http://www.comune.lucca.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/4086

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SOCIO-ECONOMIC WELL-BEING		
B1. ATTITUDES, PARTICIPATION		
Participation to volunteering: number of associations of the third sector present; number of people who carry out voluntary work	*2020*	Amministrazione comunale di Lucca
Existence of EDI policies/plans in local government	*2017*	Relazione 2017 della Commissione Pari Opportunità del comune di Lucca
Number of associations which work in favor of LGBTIQ+ people's rights	*2020*	Amministrazione comunale di Lucca, Regione Toscana, Documenti - Regione Toscana
Number of associations operating in promotion of inclusion, parity and gender equality	*2020*	Amministrazione comunale di Lucca, Regione Toscana, Documenti - Regione Toscana

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Individuals in local assemblies (Membri Consiglio Comunale di Lucca) distributed by gender	*2020*	Consiglio Comunale - Città di Lucca (comune.lucca.it)
Individuals in local government posts (Membri Giunta Comunale di Lucca)	*2020*	Consiglio Comunale - Città di Lucca (comune.lucca.it)
B2. POVERTY AND INCOME		
Resident families with ISEE income lower than 6.000 euros	*2019*	regione Toscana. https://www.regione.toscana.it/
Families in absolute poverty	*2019*	regione Toscana. https://www.regione.toscana.it/
Number of users taken into social services' care	*2020*	Amministrazione comunale di Lucca
Number of elderly people assisted by direct home care – rate	*2020*	ARS Toscana, https://www.ars.toscana.it/banche-dati/dettaglio_indicatore-260-toscana-asl-zone-sanitarie-presidi-anziani-assistiti-domiciliare

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standardized by age		diretta?provenienza=comuni_capitoli&par_top_geografia=046017&dettaglio=ric_anno_geo_comuni#
Number of elderly people assisted in permanent nursing home – rate standardized by age (x 1.000)	*2019*	ARS Toscana, https://www.ars.toscana.it/banche-dati/dettaglio_indicatore-261-toscana-asl-zone-sanitarie-presidi-anziani-assistiti-residenza-sanitaria-assistenziale-permanente?par_top_geografia=202D&dettaglio=ric_anno_geo_ausl&provenienza=correlati
IRPEF average income per city	*2018*	ARS Toscana, https://www.regione.toscana.it/-/redditi-irpef-in-toscana-dati-2018-anno-d-imposta-2017
B3. HOUSING		
Families who live in a house owned	*2011*	ISTAT, Censimento della popolazione e delle abitazioni
Families who live in a house for rent	*2011*	ISTAT, Censimento della popolazione e delle abitazioni
Families who live in a house with other title, different from owned and for rent	*2011*	ISTAT, Censimento della popolazione e delle abitazioni
B4. EDUCATION		
Percentage of individuals	*2019*	ISTAT, Dashboard | Censimento permanente della popolazione e delle abitazioni (istat.it)

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having primary education		
Percentage of individuals having secondary education	*2019*	ISTAT, Dashboard | Censimento permanente della popolazione e delle abitazioni (istat.it)
Percentage of individuals having tertiary education (university and post-graduate degree)	*2019*	ISTAT, Dashboard | Censimento permanente della popolazione e delle abitazioni (istat.it)
B5. EMPLOYMENT		
Unemployment rate	*2019*	ISTAT, Dashboard | Censimento permanente della popolazione e delle abitazioni (istat.it)
Activity/Participation rate	*2019*	ISTAT, Dashboard | Censimento permanente della popolazione e delle abitazioni (istat.it),
B6. CRIME, DISCRIMINATION AND VIOLENCE		
Intentional homicide rate: numero di omicidi volontari consumati	*2019*	ISTAT: "Delitti denunciati all'autorità giudiziaria da Polizia di Stato, Arma dei Carabinieri e Guardia di Finanza", http://dati.istat.it/
Resident women who called anti-violence centers	*2019*	Osservatorio sociale della regione Toscana

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B7. CONSUMPTION		
Cultural/ Leisure consumption: museums or similar and guests	*2019*	ISTAT, http://dati.istat.it/
Number of guests in the main cultural events and places of culture	*2019*	Amministrazione comunale di Lucca
B8. TIME USE		
Average time spent with family and relatives: 15 years old people, time spent alone or with a relative	*2013*	ISTAT, http://dati.istat.it/
Sports consumption	*2020*	ISTAT, Istat.it Sport
C. HEALTH		
C1. HEALTH DETERMINANTS		
Young people inactive (14–19 years old)	*2018*	regione Toscana, https://www.regione.toscana.it/documents/10180/13811053/report_zona202D.pdf/9f8f5084-1419-a002-b168-4f4ac86c0995?t=1606901151384

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Young people (14-19 years old) who report a daily habitual consumption of at least five portions of fruit and/or vegetables	*2018*	regione Toscana, https://www.regione.toscana.it/documents/10180/13811053/report_zona202D.pdf/9f8f5084-1419-a002-b168-4f4ac86c0995?t=1606901151384
Young (14-19 years old) smokers resident in the Piana di Lucca	*2018*	regione Toscana, https://www.regione.toscana.it/documents/10180/13811053/report_zona202D.pdf/9f8f5084-1419-a002-b168-4f4ac86c0995?t=1606901151384
Young people (14-19 years old) affected by obesity resident in the Piana di Lucca	*2018*	regione Toscana, https://www.regione.toscana.it/documents/10180/13811053/report_zona202D.pdf/9f8f5084-1419-a002-b168-4f4ac86c0995?t=1606901151384
Overweight adults resident in the Piana di Lucca	*2015-2018*	regione Toscana, https://www.regione.toscana.it/documents/10180/13811053/report_zona202D.pdf/9f8f5084-1419-a002-b168-4f4ac86c0995?t=1606901151384
Adults with habitual high alcohol consumption	*2015-2018*	regione Toscana, https://www.regione.toscana.it/documents/10180/13811053/report_zona202D.pdf/9f8f5084-1419-a002-b168-4f4ac86c0995?t=1606901151384

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Patients in charge of territorial mental health services	*2019*	regione Toscana, https://www.regione.toscana.it/documents/10180/13811053/report_zona202D.pdf/9f8f5084-1419-a002-b168-4f4ac86c0995?t=1606901151384
C2. MOBILITY		
Number of individuals per means of transportation used and average time taken to go to work	*2018*	Amministrazione comunale di Lucca
Number of road accidents involving personal injury	*2018*	ISTAT: “Incidenti stradali con lesioni alle persone coinvolte o morte. Sezione "Salute e sanità - Incidenti stradali”
C3. MENTAL HEALTH		
Prevalence of use of antidepressant drugs	*2019*	ARS Toscana, https://www.ars.toscana.it/banche-dati/dettaglio_indicatore-1629-toscana-asl-zone-sanitarie-presidi-prevalenza-uso-farmaci-antidepressivi?par_top_geografia=202D&dettaglio=ric_anno_geo_ausl&provenienza=aziendale_capitoli#
Suicide mortality	*2014-2016*	ARS Toscana, https://www.ars.toscana.it/banche-dati/dettaglio_indicatore-1477-toscana-asl-zone-sanitarie-presidi-mortalit%C3%A0-,suicidio?par_top_geografia=202D&dettaglio=ric_anno_geo_ausl&provenienza=aziendale_capitoli

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Suicide death rate as a percentage of total deaths over the same period (x 1.000 death)	*2014-2016*	ARS Toscana, https://www.ars.toscana.it/banche-dati/dettaglio_indicatore-1477-toscana-asl-zone-sanitarie-presidi-mortalit%C3%A0-suicidio?par_top_geografia=202D&dettaglio=ric_anno_geo_ausl&provenienza=aziendale_capitoli
Satisfaction with life overall	*2019*	Fonte ISTAT: "Multiscopo sulle famiglie: aspetti della vita quotidiana - parte generale"

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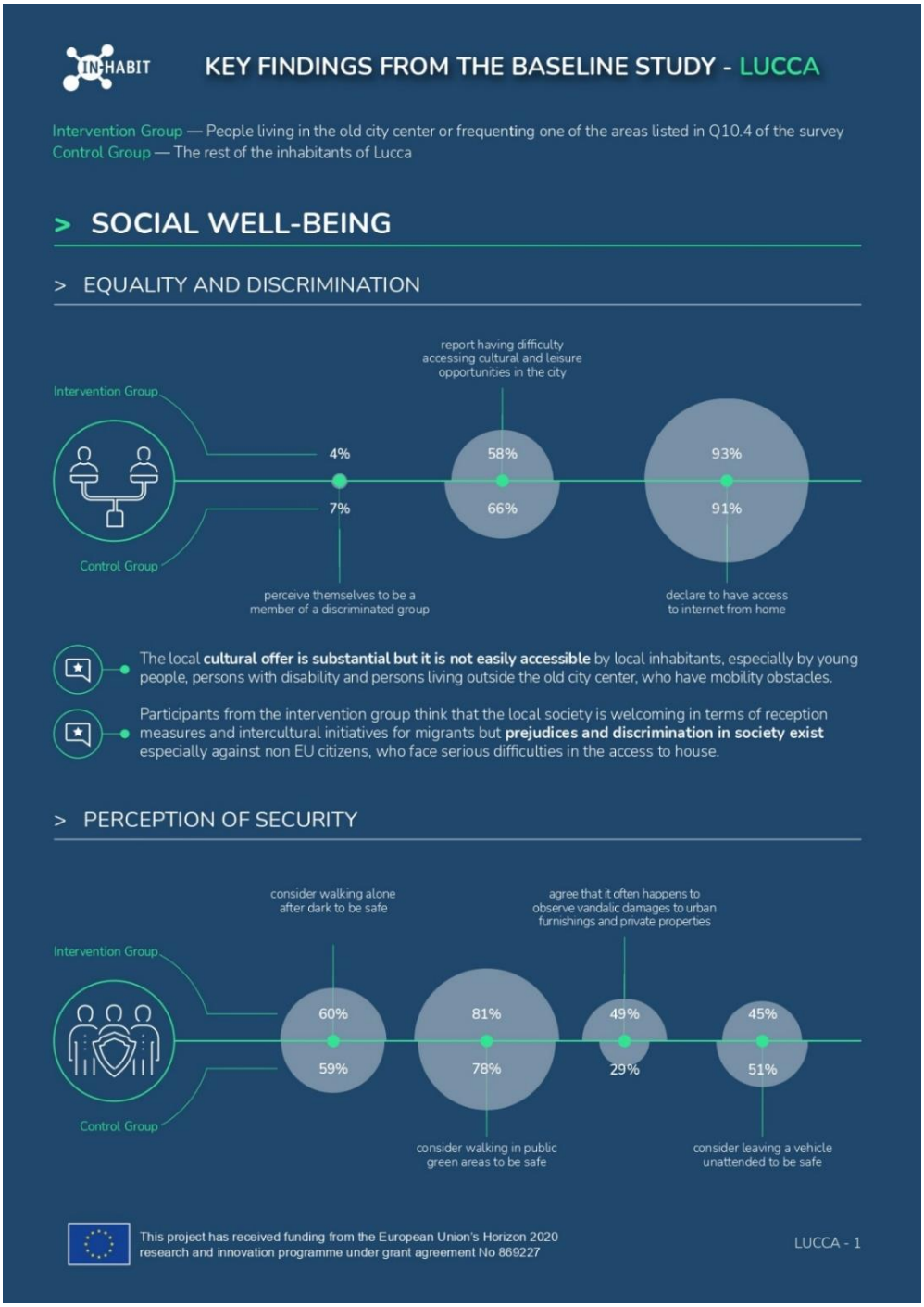
Appendix 12: Key findings of Baseline study in Lucca (infographics provided by ISIMPACT)



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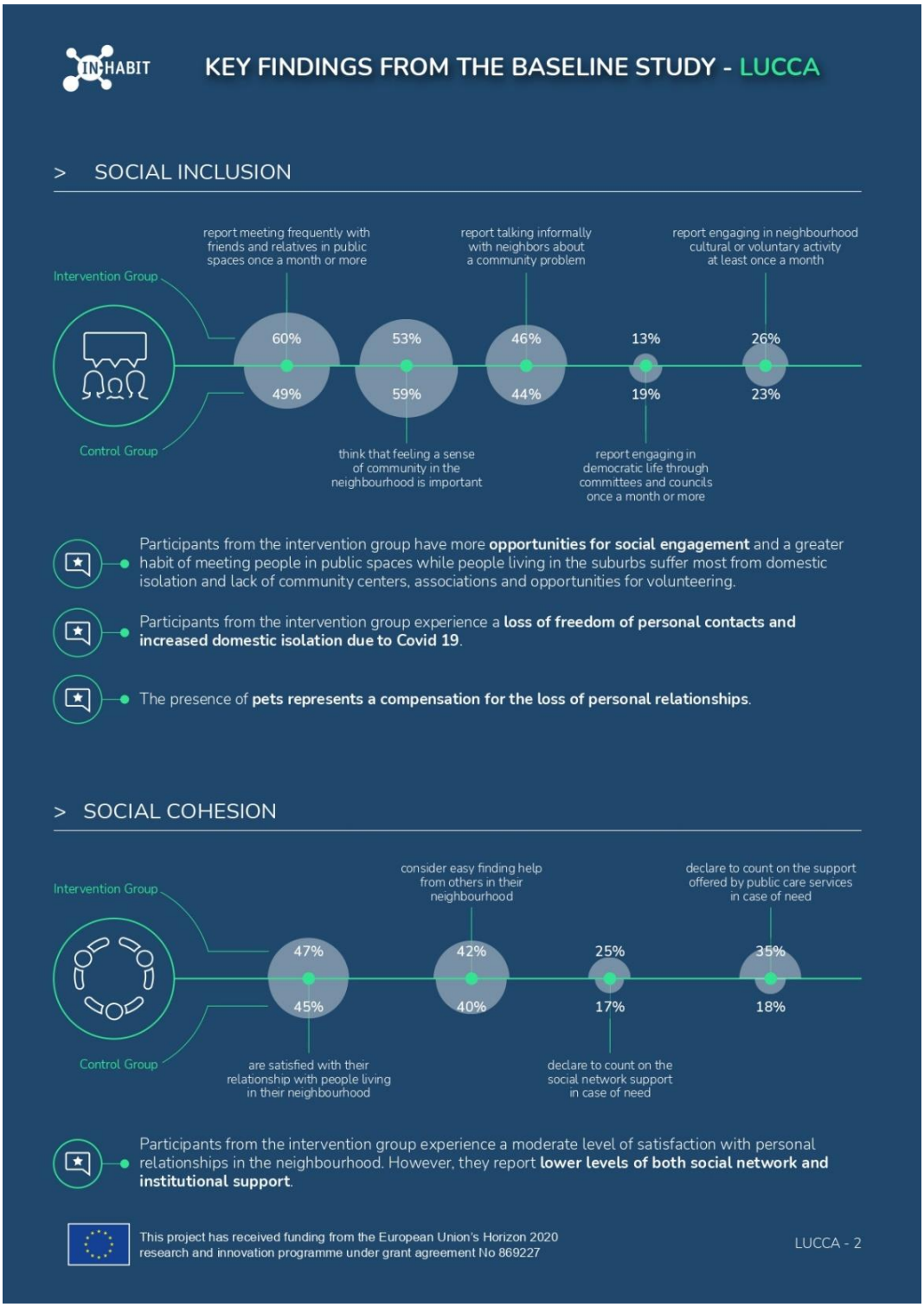

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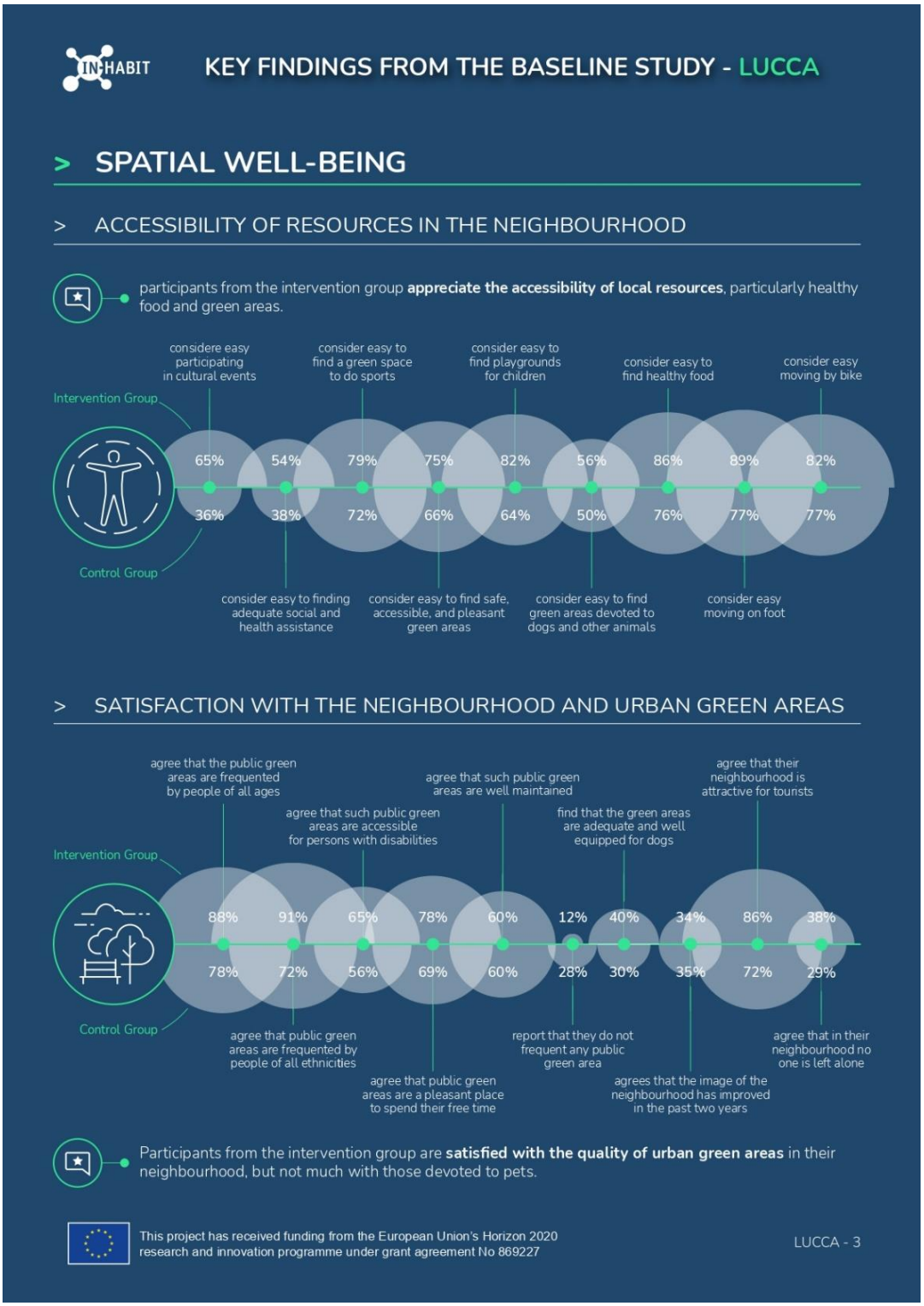

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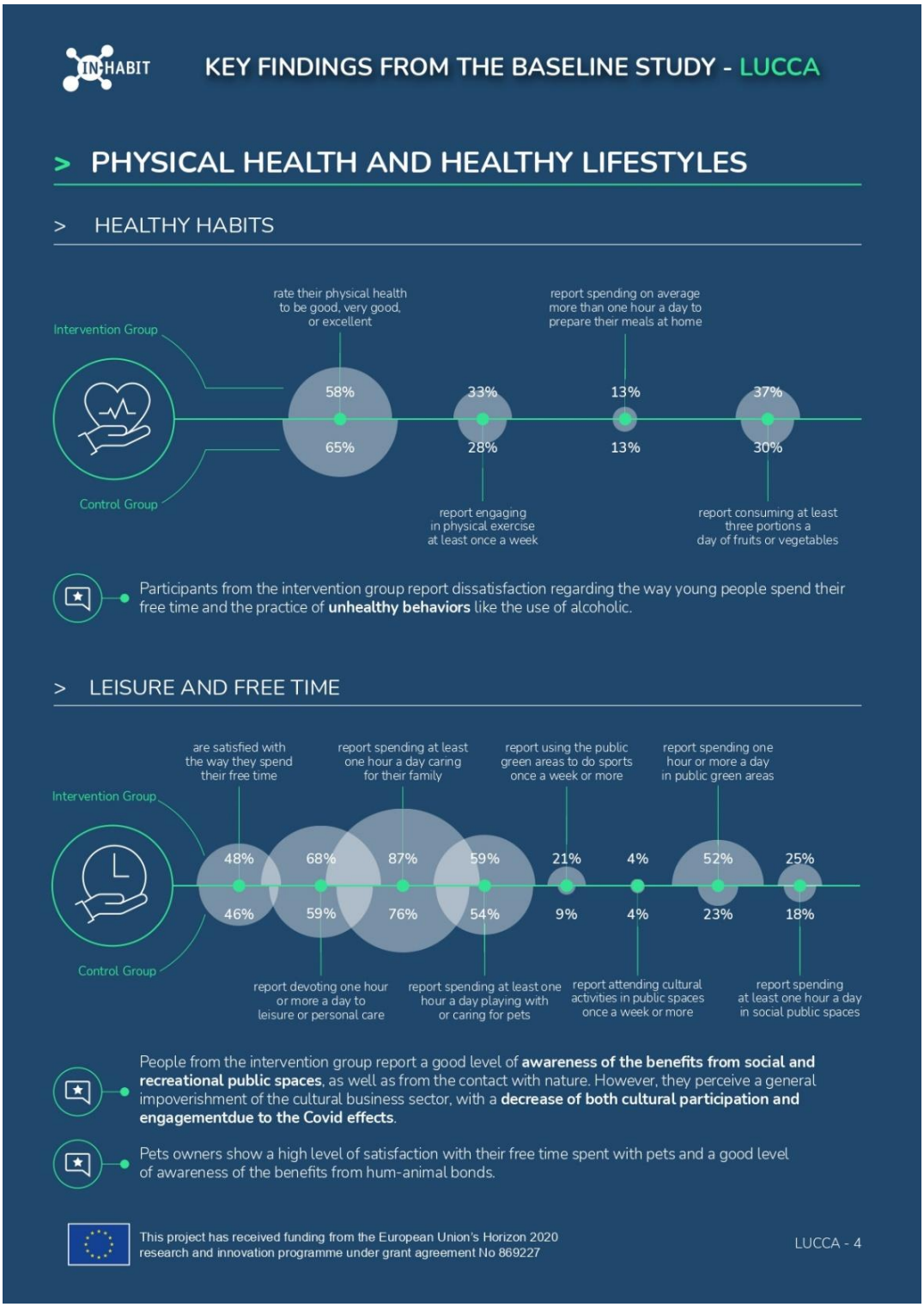

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Appendix 13: List of participants to the Focus Group run for ISIMPACT baseline study (divided for categories or belonging association)

- Cooperativa Impronta: social cooperative
- ARCI: NGO
- Kethane: ROM association
- Città delle Donne: association for violence against women
- Emergency: association for voluntary
- Amnesty: human rights defense associations
- Active citizen on the territory

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Appendix 14: Invitation letter to participants of Focus Groups and storytelling organized for ISIMPACT's baseline study

Con la presente,
abbiamo il piacere di invitarti al ***Focus group*** che l'Università di Pisa, Isimpact e la città di Lucca stanno organizzando nell'ambito del progetto di ricerca e innovazione "IN-HABIT".
Con il *Focus group* vogliamo raccogliere i punti di vista e le impressioni dei cittadini sui temi della salute, del benessere e dell'inclusione nella città di Lucca.
IN-HABIT è un Progetto EU Horizon 2020 coordinato dall'Università di Pisa e coinvolge 21 organizzazioni partner (università, amministrazioni pubbliche, ONG, PMI). L'obiettivo generale di IN-HABIT è quello di promuovere la salute e il benessere inclusivi (IHW) in quattro città di piccole e medie dimensioni (Cordoba, Lucca, Riga, Nitra) attraverso soluzioni innovative e integrate, basate sulla mobilitazione di specifiche risorse non sempre adeguatamente valorizzate (cultura, cibo, interazione uomo-animale e corridoi ecologici), con particolare attenzione al genere e alla diversità. Nel caso della città di Lucca l'attenzione del progetto si concentra sulla relazione tra persone e animali e i possibili impatti sulla qualità della vita urbana.

Il **Focus group** si terrà **presso Sala dell'Entry Point Via Francigena presso ex Casa del Boia in via dei Bacchettoni nr. 8** il **9 Ottobre** alle ore **10:00**
La partecipazione è volontaria. I risultati saranno resi anonimi e utilizzati unicamente ai fini della ricerca.
I vostri Dati Personali saranno gestiti in conformità al "Regolamento Generale sulla Protezione dei Dati" dell'Unione Europea (Reg. No. 2016/679).

Per la partecipazione al Focus group è richiesto il green pass o certificazione di esenzione. Sarà necessario indossare mascherine e non avere temperatura corporea superiore ai 37 gradi.
Ringraziandovi in anticipo per la vostra collaborazione,

Cordiali Saluti
Il Team di IN-HABIT di Lucca

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Appendix 15: Poster of the first public event held in Lucca about IN-HABIT project

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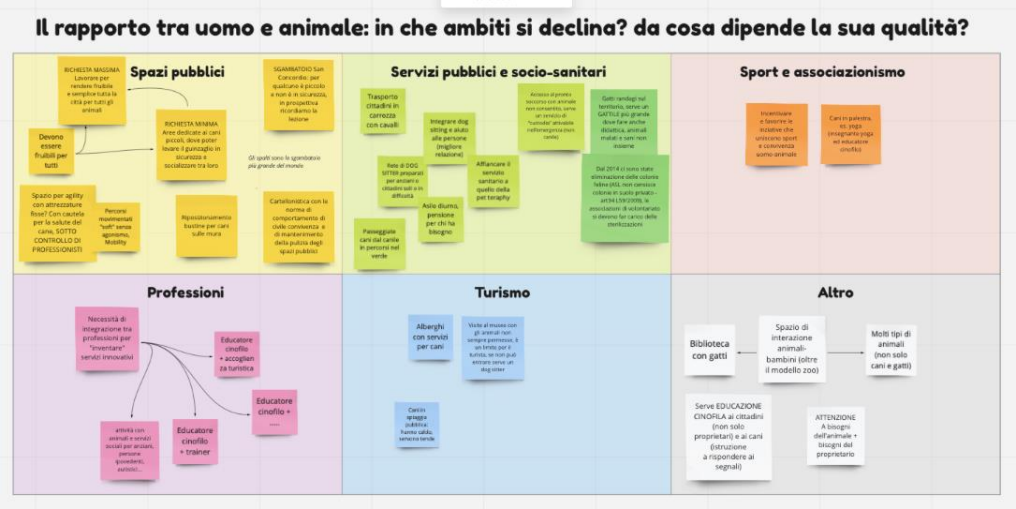
Appendix 16: Virtual board on 26th of February concept vision meeting



Appendix 17: Ecowalk along the animal lines

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Appendix 18: Covid-19 cases from February 2021 to the end of May 2021 in which we held co-design of hard solutions

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Appendix 19: Design for Change workshops

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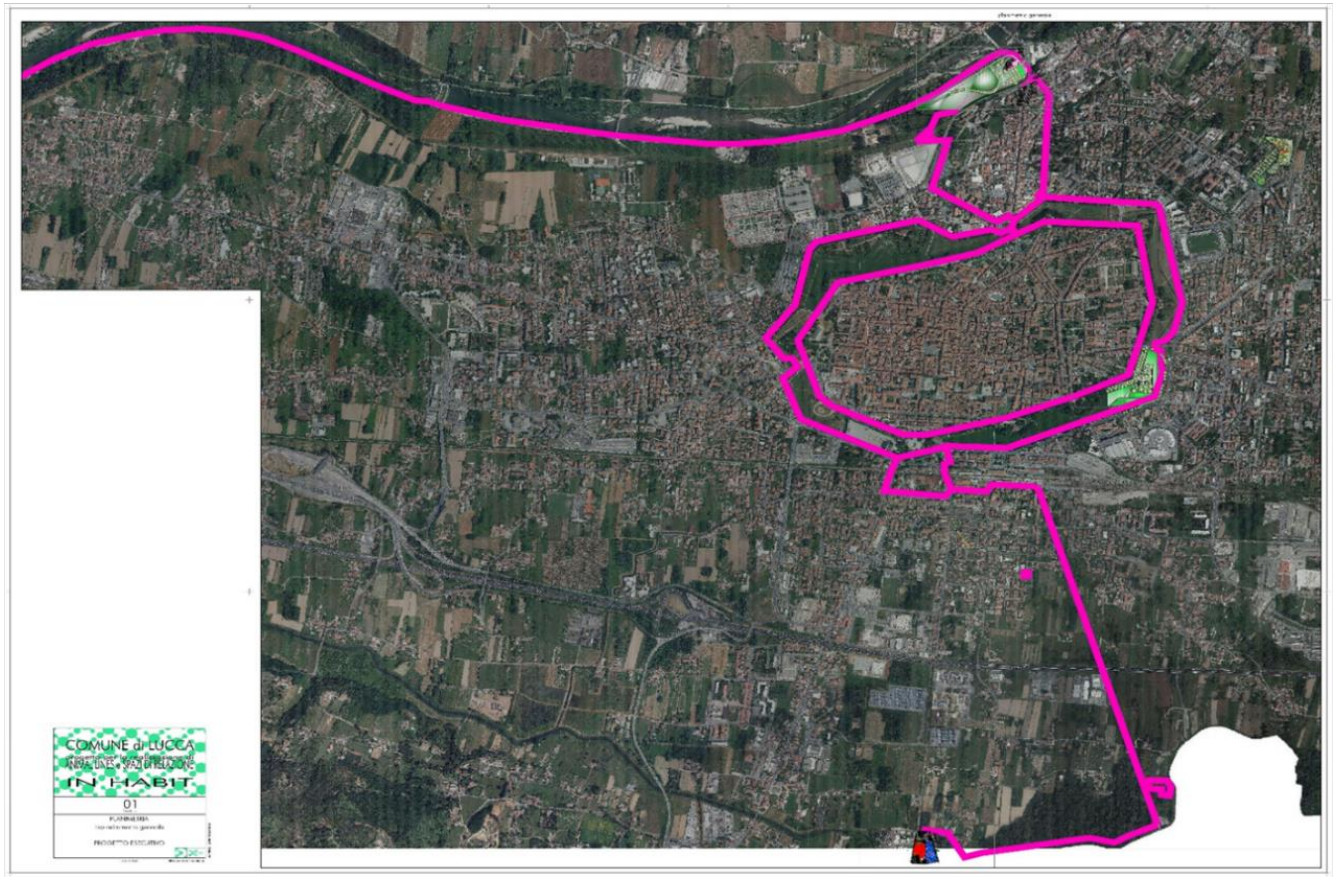
Appendix 20: Animal Lines' path



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Appendix 21: Boards of the two areas along Animal Lines, namely the area behind the old hospital and the “Parco Fluviale” area.

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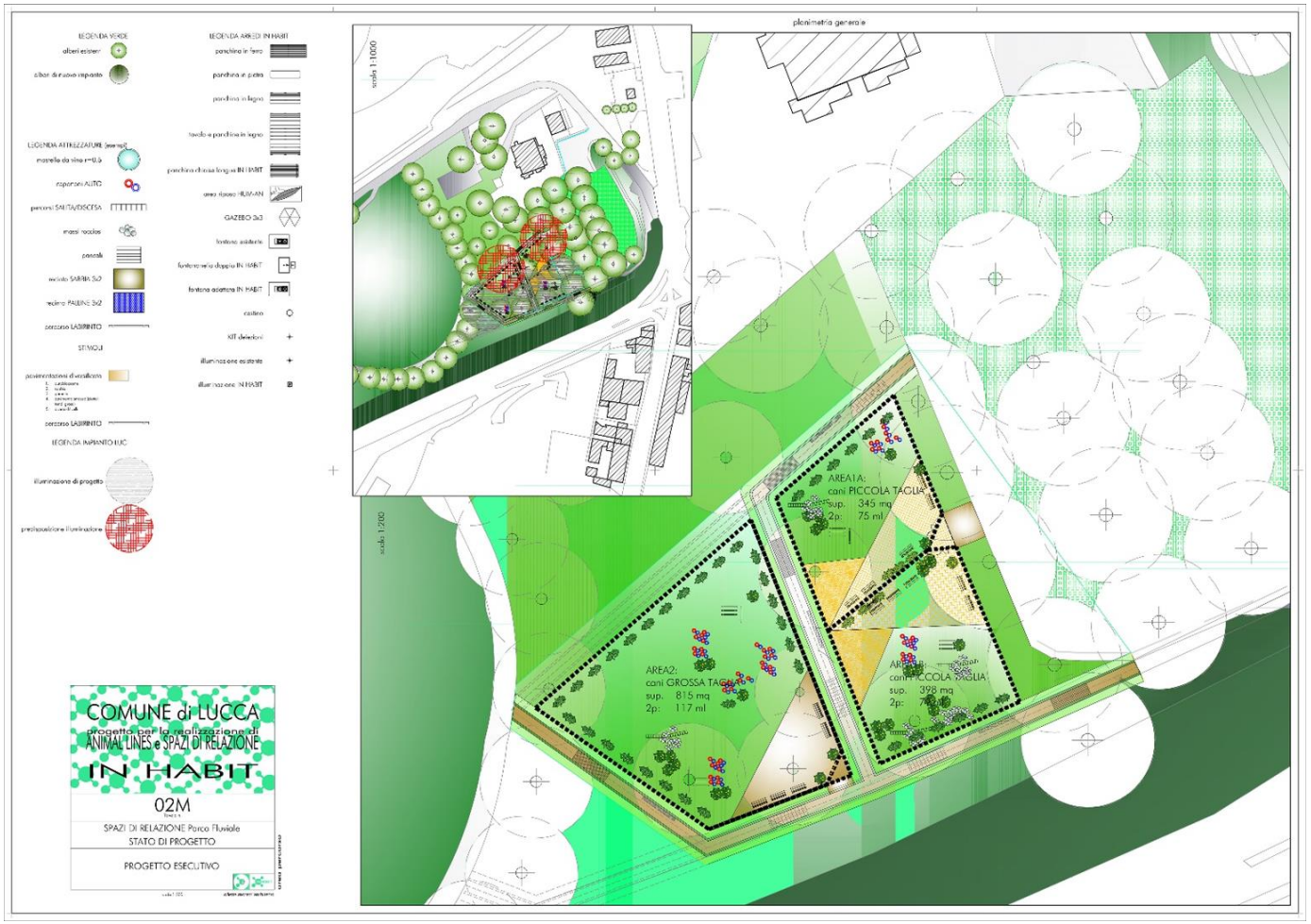

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